3rd CONGRESS
PROGRAMME
12-14 SEPTEMBER 2013
MALMÖ, SWEDEN
www.essd2013.org

DYSPHAGIA
DIAGNOSIS
AND TREATMENT
a multidisciplinary challenge
Satellite Symposium

**Linking protocols – from diagnosis to nutrition**

Interactive Workshop, Friday, 13th September 2013, 12:30 – 13:30h, Room Romeo

Chairperson

*Dr. B. Hanson, United Kingdom*

[www.fresenius-kabi.com](http://www.fresenius-kabi.com)
Dear colleagues and friends,

On behalf of the Local Organizing Committee, it gives us great pleasure to welcome you to the 3rd Congress of the European Society for Swallowing Disorders “Diagnosis and Treatment, A Multidisciplinary Challenge” Malmö, Sweden, 12-14 September 2013.

We are proud to present a programme with a distinguished faculty of the leaders in the field of dysphagia in Europe and the rest of the world. They will present state-of-the-art lectures and establish the best clinical practice. In addition, the congress is a forum for researchers to present and discuss the latest developments in all fields related to oropharyngeal and esophageal dysphagia.

The nature of oropharyngeal dysphagia involves a diverse spectrum of health care professionals and we have designed the programme to interest this multi-disciplinary team. The high prevalence of the condition, aging population and the proven cost-effectiveness of management of the patients with oropharyngeal dysphagia give enormous potential to development and improvement of care of these patients. In particular, clinical evaluation and treatment of patients who have undergone resection and radiotherapy for head-and-neck cancer will be covered.

In addition, we are running a precongress course on “What the Dysphagologist Needs to Know” on Thursday 12, and two workshops: “Electrical Stimulation in the Treatment of Dysphagia”, supported by Vitalstim, and “VFS and FEES, a Hands-on Workshop”, supported by PENTAX.

We also welcome you to our home city Malmö. September is usually warm and sunny and Malmö has a lot of interesting things to offer: sustainability, fair trade, green roofs and a warm and friendly atmosphere.

We invite you to join us in making this event a memorable one. Your participation will be the measure of our success and your feedback instrumental in improving the congress each year.

We look forward to greeting you,

Yours sincerely,

Olle Ekberg
Margareta Bülow
Co-Chairs of the Local Organizing Committee
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Committees

Local Organizing Committee

Olle EKBERG (Radiology)
Margareta BÜLOW (SLP)
Rolf OLSSON (Radiology)

Sophia ZACKRISSON (Radiology)
Beatriz ARENAZ BUA (ENT)
Eva PRAHL

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Eric VERIN, France
Edith WAGNER-SONNTAG, Germany
Margaret WALSHE, Ireland
Virginie WOISARD, France
Anita WUTTGE-HANNIG, Germany

SCIENTIFIC COMMITTEE

CHAIRS:
Olle EKBERG, Sweden
Pere CLAVÉ, Spain

MEMBERS:
Antonio SCHINDLER, Italy
Beatriz ARENAZ BUA, Sweden
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David SMITHARD, UK
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Eric VERIN, France
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Guntram ICKENSTEIN, Germany
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Lukas DAGDILELIS, Greece
Margaret WALSHE, Ireland
Margareta BÜLOW, Sweden
Maria KYNIGOU, Greece
Marjory MCLEOD, Ireland
Nathalie ROMMEL, Belgium
Peter POKIESER, Austria
Rainer DZIEWAS, Germany
Renée SPEYER, Australia
Rolf OLSSON, Sweden
Shaheen HAMYD, UK
Sophia ZACKRISSON, Sweden
Virginie WOISARD, France
Wolfgang SCHIMA, Austria
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<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>07:30-08:00</td>
<td>Registration</td>
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<tr>
<td>08:00-08:30</td>
<td>Physiology of OD</td>
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<tr>
<td>08:30-09:00</td>
<td>Clinical Diagnosis: EAT10, VVST, VFS</td>
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<tr>
<td>09:00-09:30</td>
<td>Standard treatment: diet, posture, exercises</td>
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<td>09:30-10:00</td>
<td>CNS strategies: r-TMS, t-DCS</td>
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<td>10:00-10:30</td>
<td>Peripheral strategies, sensory e-stim</td>
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<td>10:30-11:00</td>
<td>Neuromuscular Electrical Stimulation: Vitalstim therapy and currents</td>
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<td>11:00-11:15</td>
<td>Coffee break 11:00-11:15</td>
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<td>11:15-11:45</td>
<td>Sensory peripheral e-stim in neurogenic dys.</td>
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<td>11:45-12:15</td>
<td>Neurology for the dysphagologist, R. Dziewas, S Hamdy</td>
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<td>12:15-13:15</td>
<td>Role of NMES in muscle re-education</td>
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<td>13:15-14:00</td>
<td>Vitalstim electrode placement strategies</td>
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<td>14:00-14:30</td>
<td>Vitalstim electrode placement strategies</td>
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<td>14:30-15:00</td>
<td>Coffee</td>
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<tr>
<td>15:00-15:30</td>
<td>Case studies and Progressions</td>
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<td>15:30-16:00</td>
<td>Discussion and closing</td>
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<td>16:00-16:30</td>
<td>Practical labs: Vitalstim electrode placement</td>
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<tr>
<td>16:30-17:00</td>
<td>The physical examination J Regan</td>
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<tr>
<td>17:00-17:30</td>
<td>Therapy: More than manoeuvres JA Robbins</td>
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<td>17:30-18:00</td>
<td>LUNCH</td>
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**THURSDAY, Sept 12**

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<tr>
<td>08:45-09:00</td>
<td>Registration</td>
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<tr>
<td>09:00-10:00</td>
<td>The dysphagia team: The European experience J Regan, The US experience JA Robbins</td>
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<tr>
<td>10:00-11:00</td>
<td>Neurology for the dysphagologist, R. Dziewas, S Hamdy</td>
</tr>
<tr>
<td>11:00-11:30</td>
<td>Clinical history is crucial! P Pokieser</td>
</tr>
<tr>
<td>11:30-12:00</td>
<td>Radiology for the dysphagologist, B Martin-Harris</td>
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<tr>
<td>12:00-13:00</td>
<td>LUNCH</td>
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<tr>
<td>13:00-14:00</td>
<td>CT–MR–PET for the dysphagologist K Abul-Kasim</td>
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<tr>
<td>14:00-14:30</td>
<td>Esophagology for the dysphagologist R Shaker</td>
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<tr>
<td>14:30-15:00</td>
<td>Psychiatric aspects of dysphagia M Bülow</td>
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<tr>
<td>15:00-15:30</td>
<td>Coffee</td>
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<tr>
<td>15:30-16:00</td>
<td>The physical examination J Regan</td>
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<tr>
<td>16:00-16:30</td>
<td>Therapy: More than manoeuvres JA Robbins</td>
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### Programme Overview

#### 3rd ESSD Congress Malmöässan

#### FRIDAY, Sept 13

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>07:30-08:00</td>
<td>Registration</td>
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<tr>
<td>08:00-08:30</td>
<td>Pediatric dysphagia, position statements V Woisard, P. Fichaux-Bourin, M. Walshe</td>
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<tr>
<td>08:30-09:00</td>
<td>Dysphagia after treatment for head &amp; neck cancer G Lawson, A Schindler, B Martin-Harris</td>
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<tr>
<td>09:00-09:30</td>
<td>Coffee and Poster Viewing Group A</td>
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<tr>
<td>09:30-10:00</td>
<td>Coffee and Poster Viewing Group D</td>
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<tr>
<td>10:00-10:30</td>
<td>Welcome (10 min) O. Ekberg, P. Clavé</td>
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<tr>
<td>10:30-11:00</td>
<td>Dysphagia after treatment for head &amp; neck cancer cont. G Lawson, B. Martin-Harris, A. Schindler. Position statements</td>
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<tr>
<td>11:00-11:30</td>
<td>LUNCH</td>
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<tr>
<td>11:30-12:00</td>
<td>Feeding and respiration A H Cedborg, B. Martin-Harris, E Verin.</td>
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<tr>
<td>12:00-12:30</td>
<td>LUNCH</td>
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<tr>
<td>12:30-13:00</td>
<td>Scientific Presentation Diagnosis 1</td>
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<tr>
<td>13:00-13:30</td>
<td>Scientific Presentation Neur. Diseases</td>
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<tr>
<td>13:30-14:00</td>
<td>Scientific Presentation Miscellaneous</td>
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<tr>
<td>14:00-14:30</td>
<td>Scientific Presentation Diagnosis 2</td>
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<tr>
<td>14:30-15:00</td>
<td>Oral/Enteral feeding J. Ekström, J. Lexell, C. Stene</td>
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<tr>
<td>15:00-15:30</td>
<td>Scientific Presentation HNC</td>
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<tr>
<td>15:30-16:00</td>
<td>Scientific Presentation Treatment</td>
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<td>16:00-16:30</td>
<td>CLOSING CEREMONY</td>
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#### SATURDAY, Sept 14

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>08:30-09:00</td>
<td>The European curriculum V Woisard</td>
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<td>09:00-09:30</td>
<td>The US curriculum B Martin-Harris</td>
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<td>09:30-10:00</td>
<td>ESSD initiatives and guidelines</td>
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<tr>
<td>10:00-10:30</td>
<td>UES – friend or foe?</td>
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<tr>
<td>10:30-11:00</td>
<td>G Lawson, B. Martin-Harris, A. Schindler. Position statements</td>
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<tr>
<td>11:00-11:30</td>
<td>LUNCH</td>
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<tr>
<td>11:30-12:00</td>
<td>GER, globus, phonastenia and dysphagia</td>
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<tr>
<td>12:00-12:30</td>
<td>Nutricia Workshop</td>
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<tr>
<td>12:30-13:00</td>
<td>Position statements</td>
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<tr>
<td>13:00-13:30</td>
<td>Scientific Presentation Diagnosis 1</td>
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<tr>
<td>13:30-14:00</td>
<td>Scientific Presentation Neur. Diseases</td>
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<tr>
<td>14:00-14:30</td>
<td>Scientific Presentation Miscellaneous</td>
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<tr>
<td>14:30-15:00</td>
<td>Scientific Presentation Diagnosis 2</td>
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<tr>
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<td>Oral/Enteral feeding J. Ekström, J. Lexell, C. Stene</td>
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<tr>
<td>15:30-16:00</td>
<td>Scientific Presentation HNC</td>
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<tr>
<td>16:00-16:30</td>
<td>Scientific Presentation Treatment</td>
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<td>16:30-17:00</td>
<td>CLOSING CEREMONY</td>
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# Workshop 1: Electrical Stimulation in the treatment of dysphagia

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Faculty</th>
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<tr>
<td>08:30–09:00</td>
<td>Registration</td>
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<tr>
<td>09:00–09:30</td>
<td>Physiology of deglutition and pathophysiology of oropharyngeal dysphagia</td>
<td>Pere Clavé</td>
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<tr>
<td>09:30–10:00</td>
<td>Clinical diagnosis</td>
<td>Laia Rofes, Pere Clavé</td>
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<tr>
<td></td>
<td>• Clinical diagnosis, EAT-10, VVST</td>
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<td></td>
<td>• Videofluoroscopy</td>
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<tr>
<td>10:00–10:30</td>
<td>Review of standard treatments</td>
<td>Pere Clavé</td>
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<td></td>
<td>• Adaptation of diet – changes in bolus rheology</td>
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<td></td>
<td>• Posture; exercise and compensation techniques</td>
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<tr>
<td>10:30–11:00</td>
<td>Central nervous system strategies</td>
<td>Shaheen Hamdy</td>
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<tr>
<td></td>
<td>• rTMS (repetitive transcranial magnetic stimulation)</td>
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<td></td>
<td>• tDCS (transcranial direct current stimulation)</td>
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<tr>
<td>11:00–11:15</td>
<td>Coffee Break</td>
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<tr>
<td>11:15–11:45</td>
<td>Peripheral strategies</td>
<td>Shaheen Hamdy, Laia Rofes</td>
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<td></td>
<td>• Sensory electrical stimulation</td>
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<td>o Intrapharyngeal /paired</td>
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<td>o Transcutaneous</td>
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<tr>
<td>11:45–12:15</td>
<td>Sensory peripheral electrical stimulation in neurogenic dysphagia</td>
<td>Eric Verin</td>
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<tr>
<td>12:15–13:15</td>
<td>Neuromuscular Electrical Stimulation: Vitalstim therapy and currents</td>
<td>Dinesh Verma</td>
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<tr>
<td>13:15–14:00</td>
<td>Lunch</td>
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<tr>
<td>14:00–15:00</td>
<td>Role of NMES in facilitation muscle re-education</td>
<td>Dinesh Verma</td>
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<tr>
<td>15:00–15:30</td>
<td>Vitalstim electrode placement strategies - demonstration</td>
<td>Dinesh Verma, Radika Vasudeva</td>
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### Scientific Programme

**Workshops**

**WEDNESDAY SEPTEMBER 11**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Facilitators</th>
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<tr>
<td>15:30–15:45</td>
<td>Coffee Break</td>
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<tr>
<td>15:45–16:30</td>
<td>Practical Labs - Vitalstim electrode placements</td>
<td>Dinesh Verma - Radika Vasudeva</td>
</tr>
<tr>
<td>16:30–17:00</td>
<td>Case studies and progressions</td>
<td>Radika Vasudeva</td>
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<tr>
<td>17:00–17:30</td>
<td>Discussion and closing</td>
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**Faculty:** Clavé, Pere; Rofes, Laia; Hamdy, Shaheen; Verin, Eric; Verma, Dinesh, and Vasudeva, Radika

Supported by Vitalstim by DJO Global

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**Workshop 2: VFS and FEES, a hands-on workshop**

**Group A**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Facilitators</th>
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<tbody>
<tr>
<td>9:00-10:45</td>
<td>VFS</td>
<td>M Bülow, R. Olsson, P. Pokieser</td>
</tr>
<tr>
<td>10:45-11:00</td>
<td>Coffee break</td>
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<tr>
<td>11:00-13:00</td>
<td>FEES</td>
<td>D. Farneti, A. Schindler</td>
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**Group B**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Facilitators</th>
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<tbody>
<tr>
<td>9:00-10:45</td>
<td>FEES</td>
<td>M Bülow, R. Olsson, P. Pokieser</td>
</tr>
<tr>
<td>10:45-11:00</td>
<td>Coffee break</td>
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</tr>
<tr>
<td>11:00-13:00</td>
<td>VFS</td>
<td>D. Farneti, A. Schindler</td>
</tr>
</tbody>
</table>

**Faculty:** Olsson, Rolf (radiologist) Sweden, Bülow, Margareta (SLP) Sweden, Pokieser, Peter (radiologist) Austria, Schindler, Antonio (ENT and phoniatrician) Italy and Farneti, Daniele (ENT and phoniatrician) Italy.

Supported by PENTAX
Scientific Programme

Precongress Course
THURSDAY SEPTEMBER 12

08:45-9:00  Welcome  - Room: Julia
Bülow, Margareta; Clavé, Pere

09:00-10:00  Session 1. The dysphagia team
Moderator: Bülow, Margareta
The European experience. Regan, Julie
The US experience. Robbins, JoAnne

10:00-11:00  Session 2. Neurology for the dysphagologist
Moderator: Clavé, Pere
Neurophysiology of human swallowing in health. Hamdy, Shaheen
Pathophysiology of neurogenic dysphagia. Dziewas, Rainer

11:00-11:30  Coffee break  - Room: Exhibition Area

11:30-12:00  Session 3. The clinical history is crucial!
Moderator: Ekberg, Olle
Pokieser, Peter

12:00-13:00  Session 4. Radiology for the dysphagologist.
Moderator: Pokieser, Peter
Martin-Harris, Bonnie

13:00-14:00  Lunch  - Room: Exhibition Area

14:00-14:30  Session 5. CT–MR–PET for the dysphagologist.
Moderator: Hamdy, Shaheen
Abdul-Kasim, Kasim
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
<th>Room</th>
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<tbody>
<tr>
<td>14:30-15:00</td>
<td><strong>Session 6. Esophagology for the dysphagologist.</strong> Shaker, Reza</td>
<td>Moderator: Ekberg, Olle</td>
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<tr>
<td>15:00-15:30</td>
<td><strong>Session 7. Psychiatric aspects of dysphagia.</strong> Bülow, Margareta</td>
<td>Moderator: Speyer, Renée</td>
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<tr>
<td>15:30-16:00</td>
<td><strong>Coffee</strong></td>
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<td>Exhibition Area</td>
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<tr>
<td>16:00-17:00</td>
<td><strong>Session 8. The physical examination.</strong> Regan, Julie</td>
<td>Moderator: Walshe, Margaret</td>
<td>Julia</td>
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<tr>
<td>17:00-18:00</td>
<td><strong>Session 9. Therapy: more than manoeuvres.</strong> Robbins, JoAnne</td>
<td>Moderator: E Wagner-Sonntag</td>
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</table>
08:00-08:30 Session 1. Pediatric dysphagia – Position statements - Room: Julia
Walshe, Margaret; Woisard, Virginie, Fichaux-Bourin, Pascale
Moderator: Woisard, Virginie

08:30-10:00 Session 2 Dysphagia after treatment for head & neck cancer
Moderator: Lawson, Georges
+ 2 Scientific Presentations
1. Physiologic swallowing impairment and adaptation following oropharyngeal cancer treatment. Martin-Harris, Bonnie
2. Dysphagia post therapy: assessment tools and rehabilitation program in daily practice. Lawson, Georges
3. Management of Dysphagia during chemo-radiotherapy:
   a. Italian recommendations. Schindler, Antonio
   b. Belgian experience in CHU Mont Godinne. Lawson, Georges

OP01. SWALLOWING THERAPY DOES NOT ACCELERATE RETURN TO NORMAL FOOD INTAKE AFTER RADIOTHERAPY
Kalf, Hanneke; van den Berg, Manon; Merkx, Thijs; Wanten, Geert; Kaanders, Hans; Netherlands

OP02. LATE DYSPHAGIA AFTER IMRT FOR HEAD AND NECK CANCER AND CORRELATION WITH DOSE-VOLUME PARAMETERS
Mortensen, Hanna; Jensen, Kenneth; Aksølde, Karin; Behrens, Marie; Denmark

10:00-10:30 Coffee and Poster Viewing Group A, PP01-PP21, see abstract book - Room: Exhibition Area and Hamlet

10:30-10:40 Welcome. Ekberg, Olle; Clavé, Pere

10:40-12:00 Session 3. Dysphagia after treatment for H&N cancer continued
Moderator: A Schindler
1. Impairments and treatment of OD after surgery
a. After open neck surgery. Martin-Harris, Bonnie  
b. After supracriconid and supratracheal laryngectomy. Schindler, Antonio  
c. After transoral supraglottic laryngectomy. Lawson, Georges  
d. After transoral oropharyngectomy. Lawson, Georges

Position statements on clinical guidelines for HNC

12:00-13:30 Lunch  -  Room: Exhibition Area

12:30-13:00 FRESENIUS-KABI Satellite Symposium / interactive workshop  -  Room: Romeo
“Linking Protocols: from diagnosis to nutrition.” Hanson, Ben

13:30-14:30 Session 4 Feeding and respiration  -  Room: Julia
Moderator: Ekberg, Olle
1. Respiratory-swallow phase training: efficacy and effects. Martin-Harris, Bonnie
2. Neurophysiologic regulation of breathing and swallowing. Cedborg, Anne H.
3. Pulmonary consequences of aspiration. Verin, Eric

14:30-15:30 Session 5 Presbyphagia, normal and abnormal swallowing in the elderly  -  Room: Julia
Moderator: Smithard, David
1. The Aging Swallow- Presbyphagia: A “set-up” for dysphagia and is it preventable? Robbins, JoAnne
2. Effect of aging on the airway protective mechanisms against aspiration. Shaker, Reza

15:30-16:00 Coffee and Poster Viewing Group B PP22-PP42, see abstract book  -  Room: Exhibition Area and Hamlet

16:00-17:30 Parallel Session 06/1 Scientific Presentations: Diagnosis  -  Room: Julia
Moderator: Speyer, Renée
OP03. FLUID MECHANICS OF OROPHARYNGEAL SWALLOWING AND DYSPHAGIA  
Engmann, Jan; Burbidge, Adam; Ramaioli, Marco; Benjamin, Le Révérend  
Switzerland

OP04. COMPARISON STUDY OF DIAPHRAGM MOVEMENT DURING VOLUNTARY COUGH IN STROKE PATIENTS WITH DYSPHAGIA  
Im, Sun; Park, Geun Young; Lee, Eu Jin; Kim, Young Moon  
Republic of Korea

OP05. TRANSNASAL ENDOSCOPY - AN IRISH PILOT STUDY  
Lawson, Susan; Hall, Barry; Holleran, Grainne; Murphy, Maeve; McNamara, Deirdre  
Ireland

OP06. QUANTITATIVE ASSESSMENT OF PHARYNGO-ESOPHAGEAL FUNCTION IN PATIENTS WITH DYSPHAGIA USING AUTOMATED IMPEDANCE MANOMETRY (AIM) ANALYSIS  
Rommel, Nathalie; Selleslagh, Margot; Liesenborghs, Claudia; Scheerens, Charlotte; Cock, Charles; Fraser, Rob; Kritas, Stamatiki; Vanbeckevoort, Dirk; Tack, Jan; Dejaeger, Eddy; Omari, Taher  
Belgium

OP07. withdrawn

OP08. THE NUMBER OF SWALLOW TRIALS IN FEES PROTOCOLS TO ESTIMATE ASPIRATION RISK IN PATIENTS WITH OROPHARYNGEAL DYSPHAGIA  
Baijens, Laura; Pilz, Walmari; Roodenburg, Nel; Speyer, Renée  
Netherlands

OP09. DEVELOPING A SCALE TO IDENTIFY CHOKING RISK FOR ADULTS WITH INTELLECTUAL DISABILITY: INITIAL PILOT DATA  
Leavy, Deirdre; Barragry, Laura; O’Connor, Stephanie; Walshe, Margaret  
Ireland

OP10. PREDICTORS FOR OROPHARYNGEAL DYSPHAGIA AND ASPIRATION IN PARKINSON’S DISEASE  
Simons, Janine A; Katalinic, Alexander; Ceballos-Baumann, Andres; O; Fietzek, Urban, M  
Germany
Parallel Session 06/2 Scientific Presentations: Neurological Diseases - Room: Romeo
Moderator: Olsson, Rolf

OP11. PREVALENCE AND RISK FACTORS OF OROPHARYNGEAL DYSPHAGIA IN STROKE PATIENTS
Vilardell, Natàlia; Rofes, Laia; Muriana, Desiree; Alvarez-Berdugo, Daniel; Palomeras, Ernest; Clavé, Pere
Spain

OP12. ESOPHAGEAL SWALLOWING DISORDERS IN PATIENTS WITH DIFFERENT PARKINSONIAN SYNDROMES AS DETECTED BY HIGH RESOLUTION MANOMETRY
Suttrup, Inga; Suntrup, Sonja; Marie-Luise, Siemer; Bauer, Jutta; Hamacher, Christina; Oelengeberg, Stephan; Domagk, Dirk; Dziewas, Rainer; Warnecke, Tobias
Germany

OP13. THE IMPACT OF LESION LOCATION ON DYSPHAGIA PATTERN AND PNEUMONIA IN ACUTE STROKE
Suntrup, Sonja; Kemmling, Andre; Hamacher, Christina; Suttrup, Inga; Warnecke, Tobias; Dziewas, Rainer
Germany

OP14. VALIDATION AND INITIAL EXPERIENCE WITH THE DUTCH VERSION OF THE MCGILL INGESTIVE SKILLS ASSESSMENT (MISA-D) REGARDING HEALTH OUTCOMES IN AN ELDERLY POPULATION WITH NEUROGENIC DYSPHAGIA.
Vanderwegen, Jan; Kostermans, Tineke; Van Nuffelen, Gwen; De Bodt, Marc
Belgium

OP15. CLINICAL OROPHARYNGEAL SWALLOWING EVALUATION OF SUBACUTE SCLEROSING PANENCEPHALITIS IN RURAL AREA
Serel, Selen; Demýr, Numan; Karaduman, Ayse; Anlar, Banu
Turkey

OP16. EFFICACY OF DYSPHAGIA SCREENING IN PREDICTING ASPIRATION PNEUMONIA IN POSTSTROKE PATIENTS
Schindler, Antonio; Scarponi, Letizia; Mozzaica, Francesco; Franzia, Paola; Rosa, Silvia; Gambaro, Paola
Italy

OP17. LONG-TERM IMPROVEMENT IN DYSPHAGIA SEVERITY FOLLOWING PHARYNGEAL ELECTRICAL STIMULATION (PES) AFTER ACUTE STROKE: A PHASE II DOUBLE-BLINDED RANDOMISED CONTROLLED TRIAL
Vasant, Dipesh H; Michou, Emilia; Tyrrell, Philippa; Vail, Andy; Mistry, Satish; Jayasekeran, Vanoo; Anwar, Sajjad; Gamble, Ed; Hamdy, Shaheen
United Kingdom
Parallel Session 06/3 Scientific Presentations: Miscellaneous – Room: Hamlet
Moderator: Clavé, Pere; Arenaz-Bua, Beatriz

OP18. THE PSYCHOLOGICAL AND SOCIAL IMPACT OF OROPHARYNGEAL DYSPHAGIA ON PEOPLE WITH MULTIPLE SCLEROSIS
Walshe, Margaret; O’Connor, Ciara; Constantinou, Astero
Ireland

OP19. OROPHARYNGEAL COLONIZATION BY RESPIRATORY PATHOGENS IS PREVALENT IN PATIENTS WITH COMMUNITY ACQUIRED PNEUMONIA
Ortega, Omar; Sakwinska, Olga; Combremont, Severine; Jankovic, Ivana; Clavé, Pere
Switzerland

OP20. SWALLOWING DISORDERS IN THE ELDERLY: WHAT WE NEED TO KNOW
Nogueira, Dalia; Lopes, Inês; Reis, Elizabeth
Portugal

OP21. THE EFFECT OF STRESSFUL AND RELAXING VISUAL STIMULI ON UPPER ESOPHAGEAL SPHINCTER PRESSURE
Kuhn, Maggie; Domer, Amanda; Robinson, Aaron; Belafsky, Peter
United States

OP22. PHARYNGEAL PRESSURE FLOW METRICS ARE INDEPENDENTLY INFLUENCED BY AGE AND PRESENCE OF DYSPHAGIA.
Liesenborghs, Claudia; Omari, Taher; Scheerens, Charlotte; Selleslagh, Margot; Cock, Charles; Fraser, Robert; Kritas, Stamati; Van Oudenhove, Lukas; Goeleven, Ann; Dejaeger, Eddy; Rommel, Nathalie
Belgium

OP23. PERSPECTIVES ON THE SPEECH AND LANGUAGE THERAPIST’S ROLE IN PALLIATIVE CARE: RESULTS OF AN INTERNATIONAL SURVEY
O’Reilly, Aoife; Walshe, Margaret
Ireland
OP24. A LONGITUDINAL STUDY OF RISK OF PNEUMONIA DEATH IN INDEPENDENTLY LIVING OLDER PEOPLE WITH SYMPTOMS OF DYSPHAGIA IDENTIFIED ON QUESTIONNAIRE SURVEY

Nimmons, Danielle; Michou, Emilia; Jones, Maureen; Pendleton, Neil; Horan, Mike; Hamdy, Shaheen
United Kingdom

OP25. ATTITUDES, KNOWLEDGE, AND PRACTICES IN THE PROVISION OF ORAL CARE: A SURVEY

Hill, Fiona; Ryan-Withero, Phillippa; Connors, Siobhan
Ireland

OP26. ‘YES, WE CAN EAT’ IRELAND’S FIRST FEEDING TUBE WEANING PROGRAMME FOR CHILDREN WITH COMPLEX CARDIAC AND MEDICAL CONDITIONS.

Butler, Celia; Greene, Zelda
Ireland

17:30-18:00 ESSD General Assembly
08:00-09:00  Session 7. International perspectives on dysphagia curriculums  -  Room: Julia
Moderator: Robbins, JoAnne
1. Dysphagia curriculum for graduate studies: knowledge and skills, case-based learning, and clinical practicum. Martin-Harris, Bonnie
2. An overview of the different organizations in charge of swallowing disorders training in Europe. Woisard, Virginie

09:00-10:00  Session 8. ESSD activities and initiatives
Moderator: Clavé, Pere
1. Overview. Clavé, Pere
2. Dysphagia Working Group ESSD/EUGMS. Smithard, David
3. Guideline and methodology to explore dysphagia amongst neurological patients: ESSD/ESPEN. Speyer, Renée
4. Agora educational platform for ESSD. Lewis, Jane
5. Rheological basis to develop a global classification
   i. In vitro. Hanson, Ben
   ii. In vivo. Clavé, Pere
   iii. A COST approach to research on rheology. Clavé, Pere; Lewis, Jane

10:00-10:30  Coffee and Poster Viewing Group C PP43-PP63, see abstract book  -  Room: Exhibition Area and Hamlet

10:30-12:00  Session 9. UES – friend or foe?  -  Room: Julia
Moderator: Lawson, Georges
UES, a friend: how can we manage its dysfunction medically. Shaker, Reza;
UES from the surgeon’s perspective. Feussner, Hubertus

12:00-13:30  Lunch  -  Room: Exhibition Area

12:30-13:30  WORKSHOP – NUTRICIA  -  Room: Ofelia
The proof is in the pudding
Chef Neil
13:30-14:30  **Session 10. GER, globus, phonastenia and dysphagia** - Room: Julia
Moderator: Martin-Harris, Bonnie
1. Voice and dysphagia. Farneti, Daniele
2. GERD-Induced esophageal dysphagia. Shaker, Reza

14:30-15:30  **Session 11. Oral/enteral feeding**
Moderator: Ekberg, Olle
1. The importance of enteral nutrition. Stene, Christina
2. Salivary functions and stimuli for secretion. Ekström, Jorgen
3. High-intensity training in neurological diseases: implications for dysphagia. Lexell, Jan

15:30-16:00  **Coffee and Poster Viewing Group D PP64-PP83, see abstract book** - Room: Exhibition Area and Hamlet

16:00-17:30  **Parallel Session 12/1 Scientific Presentations: Diagnosis 2** - Room: Julia
Moderators: Pokieser, Peter; Verin, Eric

**OP27. VALIDATION AND PSYCHOMETRIC ANALYSIS OF THE DUTCH VERSION OF THE SWAL-QOL (DSWAL-QOL).**
*Vanderwegen, Jan; Van Nuffelen, Gwen; De Bodt, Marc*
Belgium

**OP28. A HINT TOWARDS OBJECTIVE CORTICAL CORRELATES OF FUNCTIONAL DYSPHAGIA**
*Suntrup, Sonja; Teismann, Inga; Warnecke, Tobias; Suttrop, Inga; Hamacher, Christina; Pantev, Christo; Dziewas, Rainer*
Germany

**OP29. USEFULNESS OF CITRIC COUGH TEST FOR SCREENING OF SILENT ASPIRATION IN SUBACUTE STROKE PATIENTS: A PROSPECTIVE STUDY.**
*Guillén-Sola, Anna; Chiarella, Sandra; Martínez-Orfila, Joan; Alvarado Panesso, Martha Ligia; Bas Costas, Núria; Figueres Cugat, Antoni; Marco, Ester*
Spain
OP30. ARE SCREENING PROCEDURES USEFUL IN POSTACUTE DYSPHAGIC PATIENTS?
Ledl, Christian; Heller, Christina; Hinterberger, Kathrin; Houamed, Miriam; Klabuschnig, Melanie
Germany

OP31. PREVALENCE OF OROPHARYNGEAL DYSPHAGIA IN THE NETHERLANDS: A TELEPHONE SURVEY
Kertscher, Berit; Speyer, Renée; Heijnen, Bas
Netherlands

OP32. VALIDATION OF THE ITALIAN SWAL-QOL
Schindler, Antonio; Ginocchio, Daniela; Vedrodyova, Miriam; Farneti, Daniele; Chiarello, Giulia; Simonelli, Marilia; Calcagno, Paola; Accornero, Anna
Italy

OP33. CLINICAL VARIABLES INFLUENCING SCREENING TIME DURING VIDEOFLUOROSCOPY
Hill, Fiona; Keane, Julie; Flynn, Eadaoin; Gallagher, Ruth; Farrell, Eric; Murphy, Maeve
Ireland

OP34. THE INFLUENCE OF AGE, SEX AND VISUAL FEEDBACK ON MAXIMUM LIP STRENGTH AND ENDURANCE IN HEALTHY BELGIAN ADULTS.
Vanderwegen, Jan; Guns, Cindy; Van Nuffelen, Gwen; Elen, Rik; De Bodt, Marc
Belgium

Parallel Session 12/2 Scientific Presentations: Head and neck cancer
Moderators: Lawson, Georges; Fichaux-Bourin, Pascale

OP35. CORRELATION OF HEALTH-RELATED QUALITY OF LIFE WITH SWALLOWING PERFORMANCE IN PATIENTS WITH LOCALLY ADVANCED HEAD-NECK CANCER TREATED WITH CHEMORADIATION
Xinou, Ekaterini; Kynigou, Maria; Chrysogonidis, Ioannis; Printza, Athanasia; Kelekis, Anastasios; Iliopoulos, Chryssoula; Andreadis, Charalampas; Mangoudi, Doxa; Panagiotopoulou-Mpouka, Dimitra
Greece

OP36. PREVALENCE OF DYSPHAGIA AS A LONG TERM COMPLICATION OF HEAD AND NECK RADIOTHERAPY
Szczesniak, Michal; Maclean, Julia; Zhang, Teng; Graham, Peter; Cook, Ian
Australia
OP37. TWO-YEAR RESULTS OF A PROSPECTIVE PREVENTIVE SWALLOWING REHABILITATION TRIAL IN PATIENTS TREATED WITH CHEMORE- RADIATION FOR ADVANCED HEAD AND NECK CANCER
van der Molen, Lisette; van Rossum, Maya A; Rasch, Coen RN; Smeele, Ludi E; Hilgers, Frans JM
Netherlands

OP38. PROPHYLACTIC SWALLOWING EXERCISES ON DYSPHAGIA AFTER RADIOTHERAPY FOR HEAD AND NECK CANCER -- A PROSPECTIVE RANDOMIZED PHASE II TRAIL.
Mortensen, Hanna R; Jensen, Kenneth; Aksglæde, Karin; Lambertsen, Karin; Behrens, Marie; Eriksen, Eva; Grau, Cai
Denmark

OP39. DYSPHAGIA AND FEEDING MANAGEMENT AFTER SUPRACRICOID LARYNGECTOMY
Pizzorni, Nicole; Scarponi, Letizia; Ginocchio, Daniela; Schindler, Antonio
Italy

OP40. USE OF THE MODIFIED BARIUM IMPAIRMENT PROFILE (MBSIMP) SCORING IN CLINICAL PRACTICE: 1-YEAR EXPERIENCE IN AN ONCOLOGIC HOSPITAL IN GREECE.
Xinou, Ekaterini; Kymigou, Maria; Chrysogonidis, Ioannis; Printza, Athanasia; Iliopoulou, Chryssoula; Andreadis, Charalampous; Mangoudi, Doxa; Pazaitou-Panayiotou, Kalliopi; Panagiotopoulou-Mpouka, Dimitra
Greece

OP41. INTER-RATER RELIABILITY OF AUTOMATED IMPEDANCE-MANOMETRY (AIM) ANALYSIS AND FLUOROSCOPY IN PATIENTS WITH DYSPHAGIA FOLLOWING HEAD AND NECK RADIOTHERAPY.
Szczesniak, Michal; Omari, Taher; Maclean, Julia; Liu, Rong; Cook, Ian
Australia

Parallel Session 12/3 Scientific Presentations: Treatment - Room: Hamlet
Moderators: Wagner-Sonntag, Edith; Denk-Linnert, Doris-Maria

OP42. EFFORTFUL SWALLOWING DOES NOT AFFECT STRENGTH OF PHARYNGEAL CONTRACTION, RATHER ITS TIMING WITH BOLUS FLOW: AN AUTOMATED IMPEDANCE MANOMETRY (AIM) ANALYSIS
Scheerens, Charlotte; Vermeyen, Bénédicte; Van Oudenhove, Lukas; Selleslagh, Margot; Dejaeger, Eddy; Goeleven, Ann; Oustamanolakis, Pantelis; Tack, Jan; Omari, Taher; Rommel, Nathalie
Belgium
OP43. LOCALIZATION AND EXPRESSION OF TRPV RECEPTORS IN SENSORY AREAS OF THE HUMAN OROPHARYNX
  
  Alvarez-Berdugo, Daniel; Casamitjana, J Francesc; Enrique, Ana; Rofes, Laia; Clavé, Pere
  Spain

OP44. CRICOPHARYNGEAL DYSFUNCTION: BALLOON DILATATION AND LASER MYOTOMY, A PILOT STUDY
  
  Arenaz Bua, Beatriz; Olsson, Rolf; Bülow, Margareta; Ekberg, Olle; Westin, Ulla
  Sweden

OP45. PREPARATION OF THICKENED DRINKS: CAN ACCURACY BE IMPROVED BY USING PRE-THICKENED PRODUCTS AS A VISUAL REFERENCE?
  
  Hanson, Ben; Cohen, Stephen; Smith, Christina
  United Kingdom

OP46. REHABILITATION FOR UPPER OESOPHAGEAL DYSFUNCTION FOR ADULTS WITH NEUROLOGICAL DYSPHAGIA: AN EVIDENCE BASED SYSTEMATIC REVIEW
  
  Chiang, Mindy; Walshe, Margaret
  Ireland

OP47. DOES BOLUS VOLUME AND CONSISTENCY INFLUENCE SWALLOW PHYSIOLOGY DURING LEFT AND RIGHT HEAD ROTATION? AN AUTOMATED IMPEDANCE MANOMETRY (AIM) ANALYSIS
  
  Scheerens, Charlotte; Vermeyen, Bénédicte; Van Oudenhove, Lukas; Selleslagh, Margot; Dejaeger, Eddy; Goeleven, Ann; Oustamanolakis, Pantelis; Tack, Jan; Omari, Taher; Rommel, Nathalie
  Belgium

17:30-18:00 Closing Ceremony - Room: Julia
Scientific Information

**Oral Presentations**

Oral Presentations are in parallel sessions from 16:00-17:30 on Friday and Saturday except for two in the HNC session. All presentations must be downloaded at the speakers’ ready room at least 3 hours before the session.

**Posters**

See abstract book at end of programme

Poster viewing times:
- Poster Viewing Group A Friday 13, am coffee break, PP 01-21
- Poster Viewing Group B Friday 13, pm coffee break, PP 22-42
- Poster Viewing Group C Saturday 14, am coffee break, PP 43-63
- Poster Viewing Group D Saturday 14, pm coffee break, PP 64-83

Poster Viewing Room: Hamlet

Posters must be mounted before 9 am on Friday 13 September and Saturday 14 September. The room will be available on Thursday afternoon and from 7.30 am on Friday and Saturday. Posters must be dismounted after 18.00h on Friday and Saturday. Posters which are not collected will be discarded.

**Satellite symposia**

**Fresenius-Kabi** is offering a satellite symposium /interactive workshop titled “Linking Protocols: from diagnosis to nutrition” with chairman, Dr Ben Hanson
- Friday 13 September, 12:30-13:30 in the Romeo Room.

**Nutricia** is offering a workshop titled “the Proof is in the Pudding” with chef, Neil, on Saturday 14 September, 12:30-13:30 in the Ofelia Room

**Speakers’ ready room**

This is a space with computers where presenters can preview their presentations and must download them at least 3 hours before the session.

Opening hours:
- Thursday 12 September 7:30 – 18:30
- Friday 13 September 7:30 – 18:30
- Saturday 14 September 7:30 – 16:00

Presenters will not be allowed to use their personal computers for congress presentations
Congress information

Languages
The official language of the congress is English.

Programme changes
Delegates will be informed if any last-minute changes have been made to the programme.

Registration
On-site registration is available but places are limited and material cannot be guaranteed. Delegate registration includes:
• Access to all congress sessions and commercial exhibition
• Delegate bag including all congress materials and a name badge
• Lunches and coffee breaks according to the programme
• Welcome Reception in the Exhibition Room on Thursday 12 September

The registration desk will be open:

Thursday 12 September  7:30 – 18:30
Friday 13 September  7:00 – 18:00
Saturday 14 September  7:00 – 18:00
General information

Venue
MALMÖMÄSSAN
Mässgatan 6
215 32 Malmö
Telephone: +46 40 631 11 10
Web page: www.malmomassan.se/
e-mail: info@malmomassan.se

Main congress hotel
Scandic Triangeln Hotel
Triangeln 2
211 43 Malmö
Sweden
Telephone: +46 40 693 47 00
E-mail: triangeln@scandichotels.com

Transport
MalmöMässan can be easily reached from the official hotel, Scandic Triangeln Hotel and Copenhagen Airport by public transport, either by bus or by train.

Airport
Copenhagen Airport, Kastrup, is approximately 24km west of Malmö city centre on the other side of the Øresund Bridge. Every 20 minutes there is a train to and from Malmö (all stops).
Malmö Airport Sturup is 30km east of Malmö and connected to the city by buses every hour. Get the Flygbussarna from the airport to Malmö Södervärn and then change buses to N° 6 to Hyllie Vattenpark. Flygbussarna costs 99Kr

Train stations:
Copenhagen International Airport: 15 mins to Hyllie station, 20 to Triangeln, 25 mins to Malmö Central station, cost: 105kr, every 15-20 min
Hyllie station: for MalmöMässan, 5 min to Triangeln station, 21kr every 5-10 min.
Triangeln station: for Scandic Triangeln Hotel; for Department Radiology, Skåne University Hospital; for Smak Restaurant (congress dinner)

More information about railways and the Jojo discount card at: http://www.skanetrafiken.se (in Swedish and English)

By bus
LOCAL BUSES:
Lines 5, 6 and 33 all stops at the western long side of Hyllie station square.
Line 6 also stops at the bus stop Hyllie Vattenpark, which is just beside MalmöMässan.
General information

Bus 999 runs between Malmö-Copenhagen each hour during the day (no traffic on Sundays) and costs 100kr.
Flygbussarna runs between Malmö airport and Malmö Södervärn, approximately every hour and costs 99kr, change to Bus 6 for Hyllie Vattenpark. The journey takes 1h-1.30h.

REGIONAL BUSES
Bus line 346 departing from Trelleborg.
Bus line 300 departing from Näset and Vellinge (passing by Tygelsjö).
Bus line 170 departing from Lund.
All lines stops at the east short side of Hyllie station square.

Banks and exchange

Official opening hours of banks in Malmö are from 10:00 to 18:00, Monday to Friday.

Credit Cards

Most hotels, restaurants and shops in Malmö accept major credit cards.

Currency

The currency in Malmö is the Swedish Krona (SEK). Some exchange rates (on 21 August, 2013) are:
1 EUR = 8.76 SEK; 1 US$ = 6.55 SEK; 1 GBP = 10.28 SEK
1 SEK = 0.11 EUR; 1 SEK = 0.15 US$; 1 SEK = 0.10 GBP

Electricity

The electrical current in Sweden is 230V and 50Hz.
Shopping hours

Shopping in Malmö can be done from 10:00-18:00 for normal shops. Some shopping malls are open to 20:00 and supermarkets up to 23:00.

Tourist information

If you plan on visiting Malmö during your stay the main attractions of the city are:
 Turning Torso: 190-metre high residential building
 Lilla Torg: is a large outdoor area that is home to several of Malmö’s best known restaurants and clubs.
 Malmöhus Castle: major museums are housed within these historic walls
 Möllevångstorget: Is the most colourful district in Malmö. 174 countries are represented in this lively open-air market.

You can find more tourist information at http://www.malmotown.com/en/

Taxi:

Several taxi companies apply fixed prices in the Malmö area, ask the driver. Malmö Tourism supports following companies:
 Taxi 97, 040-97 97 97, www.taxi979797.nu
 Taxikurir, 040-70 000, www.taxikurir.se
 Limhamns Taxi, 040-15 00 00, www.limhamnstaxi.se

Weather

The temperature in Malmö in September ranges between 15º-18º maximum and 8º-11º minimum.
Social Programme

A welcome reception will be organized in the MalmöMässan Exhibition Room on Thursday 12 September 2013 at 18:30. All delegates are welcome.

The congress dinner will take place on Friday 13 September 2013 at 20:00H at Smak Restaurant near Triangeln. Tickets are 60€ and should be booked in advance.
Exhibition
Exhibition is located in the Restaurant where the coffee breaks and lunches will be served. The exhibition will be open Thursday 12- Saturday 14 September from 09:00 to 17:30.

Floor plan

Acknowledgements
ESSD and the Local Organizing Committee would like to thank all the sponsors for their participation and support. Finally we would like to thank the speakers, chairs and scientific committee for giving their time and expertise and whose support is greatly appreciated.
GOLD SPONSORS

**Fresenius Kabi** is a leading international health care company focusing on products for the therapy and care of critically and chronically ill patients inside and outside the hospital. Fresenius Kabi develops, produces and markets pharmaceuticals and medical devices. The product portfolio comprises a comprehensive range of I.V. generic drugs, infusion therapies and clinical nutrition products as well as the medical devices for administering these products. Within transfusion technologies, Fresenius Kabi have products for the whole blood collection and processing as well as for transfusion medicine and cell therapies. In the field of Enteral Nutrition, Fresenius Kabi offers a broad portfolio of ready to use tube feeds, oral nutritional supplements as well as powder products. For dysphagia patients and/or as an alternative to sip feeds, Fresenius Kabi offers texture modified products in different consistencies to meet the individual needs of different patients. With the corporate philosophy of “caring for life”, Fresenius Kabi is committed to supporting medical professionals in the best therapy of patients.

**About Nutricia Advanced Medical Nutrition**

Nutricia is a specialised healthcare unit of Danone, one of the fastest-growing food companies in the world. Nutricia expands and completes Danone’s mission to bring health through food to as many people as possible, by focusing on support for vulnerable people who are at nutritional risk for health reasons. Nutricia develops innovative, science-based nutrition concepts that deliver proven benefits and better clinical outcomes for patients, and so help to lower the overall cost of their care. Working in partnership with doctors, health care professionals, and caregivers, the company offers a very broad range of products for many conditions and age groups, especially in paediatrics, in critical care, and in the management of old age and frailty. www.Nutilis.com

SILVER SPONSORS

**VitalStim Therapy**

VitalStim Therapy is the use of neuromuscular electrical stimulation in conjunction with traditional exercise therapy, has shown excellent potential to provide significant and lasting improvement from this debilitating affliction (Freed, 2001; Carnaby-Mann, 2007). The treatment has been exposed to intense scrutiny in the professional literature and has been reviewed and cleared to market by the US FDA with a sample population of over 800 patients, including 300 cases followed up after 3 years with satisfying results (FDA clearance Notice 2001). The treatment is safe, effective and cost efficient. VitalStim is becoming a routine technique to treat dysphagia at several facilities internationally.
Sponsors & Exhibitors

EXHIBITORS

**Cook Medical** is a family owned global leader in medical devices. Since 1963, we have worked with physicians to create minimally invasive medical devices because they’re simpler, safer, and better for patients. Our Otolaryngology-Head and Neck Surgery (OHNS) clinical division collaborates with clinicians to streamline procedures and introduce proven product technology like the Hercules® 3-Stage Wire Guided Balloon. This balloon allows physicians to dilate narrowed areas of a patient’s oesophagus with strength and accuracy. The control that the Hercules balloon provides physicians reduces the risk of trauma to patients and the balloon’s 3-Stage design allows procedures to be completed quickly.

**Findus Special Food** has been developing consistency custom diet for almost 40 years. We have worked with leading experts in various fields who helped us to make Special Foods for a comprehensive concept for both people with eating and swallowing difficulties and for the staff working with the food. Findus Sweden AB is one of Sweden’s leading food companies and market leader in frozen vegetables, fish and cooked dishes. Findus vision is to be the unique company in frozen food - loved for our passion of making natural, delicious and nutritious food of sustainable origin.

**Karl Storz** is a renowned manufacturer that is well established in all fields of endoscopy and can be considered as market leader in rigid endoscopy. The still family held company was founded in 1945 in Tuttingen, Germany, and has grown to one with a worldwide presence and 5800 employees. KARL STORZ offers a range of both rigid and flexible endoscopes for a broad variety of applications. Today’s product range also includes fully integrated concepts for the OR and servicing.

At **Nestlé Health Science**, we aim for pioneering science-based nutritional solutions to deliver improved personalised health care for people with medical conditions.

**Pentax Medical** and KayPENTAX offer best solutions in Speech, Voice and Swallowing. The excellent reputation of Kay-PENTAX in diverse areas of laryngeal imaging, acoustics, swallowing instrumentation and aerodynamics has been established for many years. PENTAX Medical offers flexible endoscopes with cutting edge optical technology and exceptional visual quality. The products deliver outstanding precision in endoscopy, including innovative HD+ and i-scan technology.
Together, PENTAX Medical and KayPENTAX offer a product range which adds value to the daily practice in speech, voice and swallowing.

**Phagenesis Ltd** is committed to transforming the lives of people with dysphagia, using revolutionary treatments developed through a commitment to scientific and clinical excellence. The first product to be launched is Phagenyx. Phagenyx is the first dysphagia treatment clinically proven to improve swallow function using pharyngeal stimulation to restore neurological control. Dysphagia significantly increases the risk of stroke patients developing life-threatening pneumonia and can also lead to malnutrition and poor quality of life. Phagenyx offers a unique opportunity to treat the cause of dysphagia, thereby reducing the risk of complications and associated costs and improving outcomes.

**Rosemont Pharmaceuticals Limited** are leading specialists in the supply of licensed and ‘special’ oral liquid medicines for people who have difficulty swallowing solid medication. With over 40 years experience of R&D, manufacturing, and marketing of liquids; we offer an extensive range of over 150 different medicines. Our products are made to a formulation with active ingredients and excipients. Unlike some other ‘specials’ manufacturers we never crush, dissolve or suspend solid formulations to make our liquids. Through the promotion of best practice in medication administration; we provide training and educational materials to healthcare professionals. Rosemont is ‘The Source of Liquid Solutions’.

**XION** is one of few companies offering complete endoscopy systems for the application fields of ENT as well as arthroscopy, laparoscopy and gynecology. Innovative instruments and devices with perfect functionality are requisite for modern and patient-caring diagnostics and therapy procedures. XION consistently meets these high demands and has guaranteed highest quality for more than 20 years. The product range includes rigid and flexible endoscopes, navigation and camera systems, light sources, suction and irrigation pumps, insufflators and other equipment. More than 80 employees from the development, production and sales divisions form the XION team at the Berlin headquarters.
Abstract Book

10:30 - 12:00
Dysphagia after treatment for head & neck cancer cont.
Moderator: A. Schindler

**Nº OP01. SWALLOWING THERAPY DOES NOT ACCELERATE RETURN TO NORMAL FOOD INTAKE AFTER RADIOTherapy.**
Hanneke Kalf; Manon van den Berg; Thijis Merkx; Geert Wanten; Hans Kaanders
Radboud University Nijmegen Medical Centre, Netherlands

Introduction: Radiotherapy (RT) given for head and neck cancer (HNC) is known to induce dysphagia, resulting in modified food intake, energy supplements or tube feeding to maintain nutritional status. There is some evidence from underpowered studies that swallowing therapy during radiotherapy may prevent dysphagia. We aimed to study the effect of swallowing therapy in a large cohort of HNC patients after RT with “normalcy of food intake” (NFI: no tube feeding, energy supplements or modified foods) as the main endpoint. Methods: In a randomized controlled trial, individual dietary counselling (IDC) plus individual swallowing therapy (IST: exercises and compensations as much as patients needed or could tolerate) during RT was compared with IDC as single treatment. Between March 2010 and April 2012, 120 patients with stage T2-4 head and neck cancer treated by (adjuvant) (chemo)radiotherapy were randomly assigned to one of these groups. NFI was measured with the Performance Status Scale—Normalcy of diet (PSS-HN-ND) at start and end of RT and at 1, 3 and 6 months follow-up. Dysphagia severity was measured on a 6-point scale. Results: Before treatment 54% in the intervention and 45% in the control group had NFI and at six months 63% vs. 51% (p = 0.2). Mixed models showed no significant difference for PSS-HN-ND (0.48; 95% CI: -5.57 to 6.52) at six months. At one month follow-up dysphagia was significantly less for PSS-HN-ND (0.48; 95% CI: -5.57 to 6.52) at six months. A total of 65 patients were further examined with i.a. Modified Barium Swallow (MBS) and saliva samples. Data on patient, tumor and treatment characteristics were obtained from the DANAC database including observed-rated dysphagia and DVHs of relevant organs at risk (OAR) were analyzed. Results Median follow-up after treatment was 3.3 years (range 1.0-5.3), median age 63 years, 85% men, larynx 37%, pharynx 52%, oral cavity 11%; 57% stage IV disease; weekly cisplatin 41%, Zalutumumab 16%. The QoL data showed low degree of dysphagia with mean scores below 15. The most frequent objective swallowing dysfunction was retention on MBS, occurring in 41 of the 65 patients (63%). Penetration and aspiration was less common, 31% and 6%, respectively. In general, complications observed on MBS and observer assessed late dysphagia correlated with the dose to superior and middle POM, whereas quality of life endpoints correlated with dose-volume parameters in the larynx and supraglottic larynx. Conclusion In this cohort a high rate of retention was found on MBS whereas aspiration was rare. Objective and subjective swallowing dysfunction cannot be expected to be described using DVH parameters of the same OAR.

16:00 - 17:30
06/1 Diagnosis 1
Moderator: R Speyer

**Nº OP03. FLUID MECHANICS OF OROPHARYNGEAL SWALLOWING AND DYSPHAGIA**
Jan Engmann; Adam Burbidge; Marco Ramaioli; Le Révérend Benjamin
Nestlé Research Center, Switzerland

Introduction: We apply mathematical/physical techniques for the description of fluid flows to flows arising in liquid and semisolid bolus swallows and compare predictions with experimental data. Methods: Physically based mathematical descriptions of swallowing flows are used to draw conclusions about the effects of various material/physiological parameters, e.g. viscosity, density, muscle elasticity, throat geometry. Model experiments have been used to verify some of these conclusions. Results and Discussion: The (healthy) swallowing process appears to involve two kinds of flow processes: (i) a fast flow due to rapid tongue propulsion, for which the viscosity of the fluid is relatively unimportant; and (ii) a squeezing of the pharynx that strips out the remaining fluid boundary layer after the majority of the high speed bolus has passed, for which the fluid viscosity is extremely important. One can describe the flow process as a balance between muscular (elastic) squeezing and fluid resistance to flow (due to viscosity). This balance defines a timescale for the fluid passage, the residence time being proportional to the ratio of viscosity/elasticity and one can predict the quantitative changes due to a change in either quantity. Effects of geometry are more subtle, but in general, smaller flow paths lead to increased residence times. This improved understanding should result in better guidelines for rheological modification to specific patterns of physiological impairment in swallowing. Model verification is currently severely restricted by a lack of high resolution, dynamical, in-vivo imaging techniques, which we are beginning to address.
Abstract Book

**Nº OP04. COMPARISON STUDY OF DIAPHRAGM MOVEMENT DURING VOLUNTARY COUGH IN STROKE PATIENTS WITH DYSPHAGIA**

Sun Im1; Geun Young Park2; Eu JIn Lee2; Young Moon Kim2  
1The Catholic University of Korea, College of Medicine, Bucheon St. Mary’s Hospital, Korea, Republic of; 2Catholic University of Korea, College of Medicine, Korea, Republic of

Introduction: This study was carried out to determine if stroke patients with dysphagia (group A) have reduced diaaphragm excursion movement compared to stroke patients without dysphagia (group B) and to normal healthy controls (group C). Materials and Method: Diaphragm movement was assessed using M-mode ultrasonography. Diaphragm movements were examined during quiet breathing, deep inspiration and voluntary cough. Maximal inspiratory, expiratory pressures (cm H2O) along with peak cough flow (liter/min) during voluntary cough were measured. Results and discussion: A total of 74 patients (group A=23, group B=24, group C=27) were recruited. The mean \\
\[% SD (cm H2O)\] diaphragm movement of the hemiplegic side for group A/B/C during quiet breathing, deep inspiration and voluntary cough were: 1.5 \[% 0.4 (1.1-2.1)\], 1.4 \[% 0.5 (1.0-2.0)\], 2.4 \[% 0.7 (3.3)\], 1.1 \[% 0.5 (2.5)\], 0.9 \[% 0.5 (4.1)\], 0.8 \[% 0.8 (1.0)\], respectively and the differences were statistically significant. Differences were also observed in the maximal inspiratory (P<.001), expiratory pressures (P<.001) and peak cough flow (P<.001) between the three groups. During deep inspiration, there was also significant difference in the non-hemidiaphragmatic excursion in group A (P<.05). Stroke patients with dysphagia have significantly reduced diaphragm excursion movement and weak inspiratory, expiratory and cough forces, consistent with respiratory muscle weakness compared to normal healthy controls and to stroke patients without dysphagia. Compromised respiratory muscle function along with reduced diaphragm movement and impaired cough forces, may put stroke patients with dysphagia at increased risk of aspiration pneumonia.

**Nº OP05. TRANSNASAL ENDOSCOPY – AN IRISH PILOT STUDY**

Susan Lawson1; Susan Lawson2; Barry Hall3; Gráinne Hölteran3; Maeve Murphy4; Deirdre McNamaras

1Tallaght Hospital, Ireland; 2Department of Speech and Language, Tallaght Hospital, Ireland; 3Department of Clinical Medicine, Tallaght Hospital, Ireland; 4Department of Speech & Language Therapy, Tallaght Hospital, Ireland  
5Society of Gastrointestinal Interdisciplinary Endoscopists, Ireland

Introduction: Unsedated trans-nasal endoscopy (TNE) offers the possibility of accurate, safe & efficient endoscopic assessment of the pharynx, oesophagus & stomach with less cost & fewer risks compared with sedated upper endoscopy (SE). Our aim: to compare the feasibility, safety & tolerance of TNE as an alternative to SE in an Irish context. Methods: Patients attending a joint SLT/Gastroenterology dysphagia clinic scheduled for SE were prospectively recruited & invited to undergo TNE. Patients opting for unsedated SE acted as controls. Indications, findings, duration & complications were recorded. A visual analogue scale was used to assess patient tolerance.

All statistics performed using SPSS19. Results: Experienced as a mean compared with student T-test (P<0.05=significant). Logistic regression analysis was performed for variables associated with endoscopy. Results: 19 (TNE=10 SE=9) patients were enrolled. Majority of patients were male (n=10), mean age 56 (range 35-74). Intubation achieved with all patients with no reported complications. No difference in pain on intubation or during the procedure between the two groups was evident. Choking on intubation was lower in TNE (p=3.2[1.4-4.9, 95%CI]) compared to SE (p=5.4[2.9-7.9, 95% CI]). This was statistically significant. There was a statistical difference in gagging experienced on intubation, with gagging lower in TNE group. TNE (p=2.4[0.9-3.9, 95% CI]) & SE (p=5.1[2.2-7.9, 95% CI]). Statistically significant differences were evident in gagging during the procedure, TNE (p=1.8[1.2-2.9, 95% CI]) being better tolerated than SE (p=4.1[1.8-6.5, 95% CI]). Discussion: This small study has shown that TNE may be a valuable alternative to SE in diagnostic upper endoscopy; with greater patient tolerance leading to increased accuracy of assessment.

**Nº OP06. QUANTITATIVE ASSESSMENT OF PHARYNGO-ESOPHAGEAL FUNCTION IN PATIENTS WITH DYSPHAGIA USING AUTOMATED IMPEDANCE MANOMETRY (AIM) ANALYSIS**

Nathalie Rommel1; Margot Selleslagh1; Claudia Liesenborgs2; Charlotte Scheerens2; Charles Cock3; Rob Fraser3; Stamatiki Kritas4; Dirk Vanbeekvoort5; Jan Tack6; Eddy Dejaeger7; Taher Omari8  
1KU Leuven, Neurosciences, ExpO RL, Belgium; 2KU Leuven, Neurosciences, ExpO RL, TARGID, Belgium; 3Repatriation General Hospital, Australia; 4Women’s and Children’s Health Service, Australia; 5University Hospital Leuven, Radiology, Belgium; 6KU Leuven, TARGID, Belgium; 7University Hospital Leuven, Belgium; 8School of Paediatrics and Reproductive Health, University of Adelaide, Australia

Introduction: Automated Impedance Manometry (AIM) analysis defines swallow metrics indicative of bolus timing and presence, contractile vigour and luminal diameter. The Swallow Risk Index (SRI) and integrated nadir impedance to impedance ratio (I2N/I2Z) are global indices correlating with aspiration risk and post-swallow residue respectively (Omari et al., Gastroenterology 2011; Omari et al., Neurogastro. Mot. 2012). This study compared AIM metrics, the SRI and I2N/I2Z ratio for controls and dysphagic patients. Material and methods: 87 asymptomatic controls 20-91y (39M, mean 59y) and 201 dysphagic patients 17-91y (117 male, mean 67y) were investigated. Swallowing of 5-10ml liquid boluses was recorded by solid state manometry-impedance catheter (Oesys Medical, Australia). Aimplor software was used to derive AIM metrics, SRI and I2N/I2Z indices. Results: 140 patients had abnormal swallowing function (SRI>15). 123 patients had significant post-swallow residue (I2N/I2Z>500). The SRI and I2N/I2Z ratio were higher in relation to dysphagia (Table). The latency from bolus flow to pharyngeal contraction was shorter and pharyngeal bolus dwell time was longer in patients with dysphagia (Kruskal-Wallis, p<0.001, p<0.05 for all pairwise comparisons). UES relaxation pressures were not significantly different in relation to dysphagia. Discussion: Pharyngeal HRIM with AIM analysis can detect increased swallow dysfunction and post-swallow residue in dysphagic patients.
**Abstract Book Oral Presentations**

**FRIDAY SEPTEMBER 13**

**Nº OP08. THE NUMBER OF SWALLOW TRIALS IN FEES PROTOCOLS TO ESTIMATE ASPIRATION RISK IN PATIENTS WITH OROPHARYNGEAL DYSPHAGIA**

Laura Baijens1; Renee Speyer2; Walmari Pilz1; Nel Roodenburg1; Renée Speyer3

1Maastricht University Medical Center, Netherlands; 2School of Public Health, Tropical Medicine and Rehabilitation Sciences, James Cook University, Australia; 3Department of Otorhinolaryngology and Head and Neck Surgery, Leiden University Medical Center, Netherlands

**Introduction.** A reliable and valid assessment tool to detect patients at risk for aspiration is of great importance. In the literature the assessment protocols to identify aspiration during FEES frequently use a restricted number of swallow trials per patient. Materials and Methods. The present study estimated the probability of aspiration as function of the number of swallow trials in dysphagic patients using FEES. Eighty-four patients were included. Two different patient populations were distinguished: one group consisted of patients having oropharyngeal dysphagia due to head and neck cancer and possible oncological treatment effects on swallowing (N=34) whereas the second group contained patients having oropharyngeal dysphagia as a result of a neurological disease (N=50). All patients underwent a standardized FEES examination using ten swallows of thin liquid followed by ten swallows of thick liquid boluses of 10 cc each. FEES recordings were rated for aspiration by an expert panel blinded to patients’ identity and clinical history. Descriptive statistics, Kaplan-Meier survival analysis technique, and Log Rank/Mantel-Cox tests were used. Results. In both patient populations the aspiration risk is underestimated when using a limited number (three or four) of swallow trials. The oncology and neurology patients differ significantly in the number of swallow trials required to determine aspiration for thin liquid consistency (median values 2 and 7 respectively, p=0.006). Conclusion. Present data suggest that FEES protocols using a limited number of swallow trials can underestimate the aspiration risk in both oncological and neurological patients suffering from oropharyngeal dysphagia, especially when using thin liquid viscosities.

**Nº OP09. DEVELOPING A SCALE TO IDENTIFY CHOKING RISK FOR ADULTS WITH INTELLECTUAL DISABILITY**

Deirdre Leavy1; Laura Barrargry2; Stephanie O’Connor2; Margaret Walsh1

1Trinity College, Ireland; 2Cheeverstown House, Ireland

**Introduction.** Choking is a significant risk for adults with Intellectual Disability (ID). Early identification of high risk clients is important. Speech and language therapists (SLTs), and multi-disciplinary team (MDT) members require a user friendly scale to identify these individuals. This study aims to develop a valid reliable Choking Risk Scale (CRS) for MDT use.

**Methods.** Scale content and construct validity was developed from the literature and other scales. To develop content, construct, face and ecological validity the 37 item CRS was piloted on 54 people with ID. SLTs initially completed a likert scale on their perceptions of choking risk on these clients. One month later, a CRS was completed on each client. Content validity was checked by comparing CRS scores with perceptions of risk likert scores. Qualitative data was obtained on content, face and ecological validity. Inter-rater reliability was also examined. Results. Data was incomplete on 5 people with ID and these were excluded from the analysis. Data on 49 people was analysed. A significant correlation was found between CRS scores and likert scale ratings (p<0.001) suggesting that perception of choking risk is validated by CRS scores. Feedback was given on content and face validity. Strong inter-rater reliability (p<0.001) on the CRS was found between raters. Discussion. The CRS was amended based on these results. It is now ready to develop its psychometric properties further and prepare for publication. Once validated, the CRS should inform clinical practice and improve the overall management of clients with ID.

**Nº OP10. PREDICTORS FOR OROPHARYNGEAL DYSPHAGIA AND ASPIRATION IN PARKINSON’S DISEASE**

Janine A. Simons1; Alexander Katalinic1; Andres, O. Ceballos-Baumann2; Urban, M. Fietzek2

1University of Luebeck, Institute of Social Medicine and Epidemiology, Germany; 2Schoen Klinik Muenchen Schwabing, Center for Parkinson’s disease and Movement Disorders, Germany

**Introduction:** Dysphagia is a relevant but often unrecognized and underestimated problem in patients with Parkinson’s disease (PD). In this paper we investigated swallowing impairments and clinical charac-
Abstract Book

Introduction: Oropharyngeal dysphagia (OD) is a severe condition in stroke patients that can lead to malnutrition, respiratory infections and death.

Aims: To assess prevalence and risk and prognostic factors associated to post-stroke OD.

Materials and Methods: We conducted a prospective, observational study on stroke patients consecutively admitted to a General Hospital over 10 months. OD was clinically assessed using the volume-viscosity swallow test (V-VST), Rankin Scale (RS), Barthel Index (BI), and National Institute of Health Stroke Scale (NIHSS) were collected during the admission.

Clinical and neuroanatomical data were collected according to National Spanish Stroke Register (Renisen).

Results: During the study period, 254 patients were screened 180 fulfilled the inclusion criteria (74.2±11.5 years, 51.8% males). Previous to stroke, patients presented good functional status (BI 90.4±17.1, RS≤1 72.8%). Prevalence of post-stroke OD was 41.7%. OD was significantly more often in group-B (38%) and C (77%). Significant differences in the mean UPDRSIII values could be outlined between group-A (20.89±12.71) and B (31.50±19.77) with p=0.02, or C (36.64±14.28) with p=0.03. Weak correlation existed between dysphagia and rising drooling-score-scale (rs=0.264, p=0.020), and no significance regarding the results of disease duration, cognitive assessment, BMI or dysarthria score. Discussion: Evaluations of swallowing were highly correlated with H&Y-stage and motor performance. According to clinical relevance sensible cut-offs for necessary swallowing diagnostics have to be determined.

10:00 - 10:20

Nº OP11. PREVALENCE AND RISK FACTORS OF OROPHARYNGEAL DYSPHAGIA IN STROKE PATIENTS

Natàlia Vilardell1; Laia Rofes2; Desiree Muriana1; Daniel Álvarez- Berdugo1; Ernest Palomeras1; Pere Clavé2

1Hospital de Mataró, Spain; 2Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (Ciberehd), Institut, Spain

Materials and Methods: Data were gathered from 77 PD patients at a German Movement Disorder Center. Patients received neurological examinations as well as clinical and endoscopic swallowing evaluations (FEES) with different consistencies. Patients were assigned to three groups ‘not dysphagic-A’, ‘oropharyngeal dysphagia-B’ and ‘dysphagia with penetration/aspiration-C’ (PIA) along their severity grades of underlying rating-scales. Significance or correlation analyses were performed with the Kruskal-Wallis and Fisher’s exact test, or shown with Spearman’s rho coefficient. Results: 21 patients were not dysphagic (mean age 68.8 years, median mod. Hoehn & Yahr 3), 34 patients showed oropharyngeal dysphagia (70.7±9.4y, H&Y3) and 22 patients dysphagia with PIA (71.8±5.9y, H&Y4). Whereas H&Y values ≥4 are represented in group-A <10% only, they were found significantly more often in group-B (38%) and C (77%). Significant characteristics to classify predictors for the development of dysphagia and aspiration risk. Materials and Methods: Data were gathered from 77 PD patients at a German Movement Disorder Center. Patients received neurological examinations as well as clinical and endoscopic swallowing evaluations (FEES) with different consistencies. Patients were assigned to three groups ‘not dysphagic-A’, ‘oropharyngeal dysphagia-B’ and ‘dysphagia with penetration/aspiration-C’ (PIA) along their severity grades of underlying rating-scales. Significance or correlation analyses were performed with the Kruskal-Wallis and Fisher’s exact test, or shown with Spearman’s rho coefficient. Results: 21 patients were not dysphagic (mean age 68.8 years, median mod. Hoehn & Yahr 3), 34 patients showed oropharyngeal dysphagia (70.7±9.4y, H&Y3) and 22 patients dysphagia with PIA (71.8±5.9y, H&Y4). Whereas H&Y values ≥4 are represented in group-A <10% only, they were found significantly more often in group-B (38%) and C (77%). Significant

10:20 - 10:40

Nº OP12. ESOPHAGEAL SWALLOWING DISORDERS IN PATIENTS WITH DIFFERENT PARKINSONIAN SYNDROMES AS DETECTED BY HIGH RESOLUTION MANOMETRY

Inga Sutrup1; Sonja Suntrup1; Siemer Marie-Luise2; Julia Bauer2; Christina Hamacher1; Stephan Dolenberg1; Dirk Domagk2; Rainer Dziewas1; Tobias Warnecke1

1UKM Münster, Department of Neurology, Germany; 2UKM Münster, Department of Gastroenterology, Germany

Materials and Methods: We included 42 consecutive patients (25 men; 17 women; mean age 65.8 ± 9.1 years) with different Parkinsonian syndromes, i.e. idiopathic Parkinson’s disease (PD; n = 33), multiple system atrophy (MSA; n = 5), progressive supranuclear palsy (PSP; n = 3) and Lewy-body-disease (LBD; n = 1). All subjects were questioned about symptoms of dysphagia and underwent fiberoptic endoscopic evaluation of swallowing (FEES) as well as high resolution manometry (HRM). Results: HRM detected dysmotility of the esophagus in 85.7% of subjects (rated as severe in 50%). Whereas 61.9% of all patients showed a disturbed function of the upper esophageal sphincter (UES), only 21% revealed slight impairment of the lower esophageal sphincter (LES). Oropharyngeal dysphagia was detected in 59.5% of patients by using FEES. In the group of patients that were not complaining about any symptom of dysphagia (n = 15), oropharyngeal swallowing impairment was found in 60% and esophageal disturbance in 66.7% of subjects. Although the disease severity, i.e. Hoehn and Yahr scale, did not differ between the group of PD patients and the group of patients with atypical Parkinsonism (MSA, PSP, LBD), the latter showed a significantly higher prevalence of both oropharyngeal and esophageal swallowing disorders. Discussion: Dysmotility of the esophagus is the most common finding of swallowing dysfunction in patients with PD and atypical Parkinsonism and even more frequent than oropharyngeal dysphagia.

10:40 - 10:55

Nº OP13. THE IMPACT OF LESION LOCATION ON DYSPHAGIA PATTERN AND PNEUMONIA IN ACUTE STROKE

Sonja Suntrup1; Andre Kemmling2; Christina Hamacher1; Inga Sutrup1; Tobias Warnecke1; Rainer Dziewas1

1Department of Neurology/University of Muenster, Germany; 2Department of Radiology/University of Hamburg, Germany

Introduction: Dysphagia is a common symptom in patients with Parkinsonian syndromes and may affect all stages of deglutition. Whereas oropharyngeal dysphagia has been well investigated, not much data exist on esophageal swallowing disorders in different Parkinsonian syndromes. Materials and Methods: We included 42 consecutive patients (25 men; 17 women; mean age 65.8 ± 9.1 years) with different Parkinsonian syndromes, i.e. idiopathic Parkinson’s disease (PD; n = 33), multiple system atrophy (MSA; n = 5), progressive supranuclear palsy (PSP; n = 3) and Lewy-body-disease (LBD; n = 1). All subjects were questioned about symptoms of dysphagia and underwent fiberoptic endoscopic evaluation of swallowing (FEES) as well as high resolution manometry (HRM). Results: HRM detected dysmotility of the esophagus in 85.7% of patients (rated as severe in 50%). Whereas 61.9% of all patients showed a disturbed function of the upper esophageal sphincter (UES), only 21% revealed slight impairment of the lower esophageal sphincter (LES). Oropharyngeal dysphagia was detected in 59.5% of patients by using FEES. In the group of patients that were not complaining about any symptom of dysphagia (n = 15), oropharyngeal swallowing impairment was found in 60% and esophageal disturbance in 66.7% of subjects. Although the disease severity, i.e. Hoehn and Yahr scale, did not differ between the group of PD patients and the group of patients with atypical Parkinsonism (MSA, PSP, LBD), the latter showed a significantly higher prevalence of both oropharyngeal and esophageal swallowing disorders. Discussion: Dysmotility of the esophagus is the most common finding of swallowing dysfunction in patients with PD and atypical Parkinsonism and even more frequent than oropharyngeal dysphagia.
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Oral Presentations
FRIDAY SEPTEMBER 13

**N° OP14. VALIDATION AND INITIAL EXPERIENCE WITH THE DUTCH VERSION OF THE MCGILL INGESTIVE SKILLS ASSESSMENT (MISA-D) REGARDING HEALTH OUTCOMES IN AN ELDERLY POPULATION WITH NEUROGENIC DYSPHAGIA.**

Jan Vanderwegen1; Tineke Kostermans2; Gwen Van Nuffelen3; Marc De Bodt4
1UMC Saint-Pierre, Belgium; 2AZ Sint-Lucas, Belgium; 3Antwerp University Hospital, Belgium; 4Ghent University, Belgium

Introduction: Although early identification of patients at risk for dysphagia is crucial in acute stroke care, predicting whether a particular patient is likely to have swallowing problems based on the admission brain scan is difficult because a comprehensive model of swallowing control is missing. In this study we systematically evaluated whether stroke location is associated with specific dysfunctional swallow patterns. Methods: 200 acute stroke patients were investigated with FEES. Stroke lesions were obtained from each patient’s neuroradiological and neuroimaging test-retest reliability for intra- and interrater reliability. Results: 165 patients were diagnosed with dysphagia, 80 of whom even had severe swallow impairment. For each item there were significant differences of regional % infarction in distinct brain areas between patients who showed that specific swallowing dysfunction and those who did not. For example, significant difference of regional % infarction between dysphagia and no-dysphagia cases was found in the right precentral, postcentral and supramarginal gyri, opercular region and related white matter tracts. Discussion: Our data show that distinct brain lesion locations are associated with characteristic swallowing disturbance patterns. Neuroradiological obtained for stroke ascertainment may function as a tool to risk-stratify patients.

**N° OP15. CLINICAL OROPHARYNGEAL SWALLOWING EVALUATION OF SUBACUTE SCLOEROSING PANENCEPHALITIS IN RURAL AREA**

Selen Serel; Taner Demir; Ayse Karaduman; Banu Anlar
Hacettepe University, Turkey

Introduction: The MISA-D is the Dutch version of the McGill Ingestive Skills Assessment (MISA) used to evaluate feeding abilities in elderly patients with neurogenic dysphagia. Research questions were: Can MISA-D be performed in a variety of patients? Corroboration that age is uncorrelated with ingestive skills? Are cognitive decline and MISA-D scores correlated? Is MISA-D predictive for airway-problems or mortality? To further validate MISA-D scores using known-groups. Determine test-retest reliability for intra- and interrater reliability. Methods: 82 patients (mean age = 79 yr) were included: Parkinson’s disease (n=17), stroke (n=32), dementia (n=23) and normal controls (n=10). Standardized observation was followed-up for up to 180 days with monitoring of pneumonia or death. Results: Feasibility of MISA-D was excellent in all patients. No significant correlation with age or MMSE was found. Pulmonary infection incidence was too low to allow statistical analysis. Survival analyses revealed higher MISA-D scores to be correlated with decreased risk of death. Comparing controls and patients revealed significant differences in all MISA-D subscores. Intra- and interrater reliability was excellent (ICC > 0.70). Discussion: The MISA-D allows reliable differentiation between normal and abnormal feeding skills. This study adds to evidence that the relationship between MISA-D scores and risk of mortality is age-independent. The lack of pneumonia may point to recommending too restrictive diets in patients able to safely consume a more challenging diet. These results provide further evidence for the use of the MISA-D in elderly patients with neurogenic ingestive skill loss, making it helpful in advancing clinical research on ingestion skills and its treatment.

**N° OP16. EFFICACY OF DYSPHAGIA SCREENING IN PREDICTING ASPIRATION PNEUMONIA IN POSTSTROKE PATIENTS**

Antonio Schindler1; Letizia Scarponi1; Francesco Mozznaica1; Paola Franza2; Silvia Rosa2; Paola Gambaro2
1Department of Biomedical and Clinical Sciences “L. Sacco”, University of Milan, Italy; 2Stroke Unit, Sacco Hospital, Italy

Introduction: Post-stroke dysphagia ranges between 29% and 78% years. 80% of the patients were in level V and the others were level II according to GMFCS.We found that 35% of them had open mouth, 25% had open bite, 60% had high palate in orofacial structure evaluation. 40% of them had tongue thrust but the percentage of food spillage from the mouth was 80%. 90% had oral hygiene problems. In clinical swallowing evaluation all of them had liquid intake, 85% could take pudding consistency and only 25% had solid food intake. This result showed us they have had chewing problem (75%) 28% of them had recurrent pneumonia history and coughing, choking during feeding. Their families refused transition to nonoral feeding despite recurrent pneumonia. Discussion: SSPE is characterized with serious disabilities that affects the children and their families’ quality of life negatively. Problems with orofacial structures and hygiene, chewing problems and these oral intake despite recurrent pneumonia histories draws attention in our study. So these problems should be handled in detail, risks about swallowing problems should be explained and family training should be given.
Abstract Book

Oral Presentations
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Nº OP17. LONG-TERM IMPROVEMENT IN DYSPHAGIA SEVERITY FOLLOWING PHARYNGEAL ELECTRICAL STIMULATION (PES) AFTER ACUTE STROKE: A PHASE II DOUBLE-BLIND RANDOMISED CONTROLLED TRIAL

Dipesh H Vasant1; Emilia Michou1; Philippa Tyrell2; Andy Vail3; Satish Mistry1; Vanoo Jayasekeran1; Sajjad Anwar4; Ed Gamble5; Shaheen Hamdy1

1Gastrointestinal Centre, Institute of Inflammation and Repair, University of Manchester, United Kingdom; 2Stroke Medicine, United Kingdom; 3Medical Statistics, University of Manchester, United Kingdom; 4Trafford General Hospital, United Kingdom; 5University Hospital South Manchester, United Kingdom

Introduction Pharyngeal Electrical Stimulation (PES) is a promising treatment, already known to activate pharyngeal motor pathways and in pilot studies improved swallowing function 2 weeks after acute stroke[1-2], however the longer-term effects on swallowing remain unexplored. Materials and Methods 36 hospitalised patients with new-onset dysphagia (22 males, mean age 70 ± 2.1 years), were recruited within 6 weeks of stroke after failing a standardised swallowing-screening test (3). Patients were randomised to either Active (n=18) or Sham (n=18) PES via an intraluminal pharyngeal catheter at 5Hz, at 75% maximum-tolerated intensity for 10 minutes, for 3 days. A validated Dysphagia Severity Rating (DSR) scale (0-12 (normal-severe dysphagia))[2] was applied by independent, blinded speech therapists at baseline, 2 weeks and 3 months post-intervention. Data were compared using non-parametric tests and intention to treat analysis. Results Active but not Sham PES improved DSR at 2 weeks, (Active: baseline median 12 (IQR 12-5), 2 weeks median 4 (IQR 3-0), U=43.5, **p=0.018, Sham: baseline 9 (IQR 11-3), 2 weeks 5 (IQR 10-1), U=62.5, p=0.1). At 3 months, compared to baseline there was overall improvement in DSR in both groups (Active: 3 months median 2 (IQR 3-0), U=9.5, p=0.001, Sham: 3 months median 9 (IQR 11-3), U=28, p=0.001). However, when DSR at 2 weeks and 3 months were compared there was only improvement in the Active PES group (Active: U=43.3, **p=0.018, Sham: U=62, p=0.09). Discussion These data provide further evidence that PES expedites swallowing recovery post-stroke, an effect that is maintained at 3 months after intervention. References 1. Fraser, C., et al., Neuron, 2002. 2. Jayasekeran, V., et al., Gastroenterology, 2010. 3. Martino, R., et al., Physiotherapy, 2009.

Nº OP18. THE PSYCHOLOGICAL AND SOCIAL IMPACT OF OROPHARYNGEAL DYSPHAGIA ON PEOPLE WITH MULTIPLE SCLEROSIS

Margaret Walshe; Ciara O’Connor; Astero Constantinou
Trinity College Dublin, Ireland

Introduction The prevalence of dysphagia in multiple sclerosis (MS) is estimated to range from 32% to 55%. Studies to date have focused on the impairment of dysphagia with limited information on its impact on the person’s psychological and social functioning. Personal accounts of dysphagia suggest that it does have a significant effect on the individual. The aim of this study is to explore the psychological impact of oropharyngeal dysphagia (OD) on a group of people MS. The research questions are: (1) what is the psychosocial impact of OD in this population? (2) Is there a correlation between the severity of OD and the severity of psychosocial impact? Materials and Methods Ninety-two people with MS covering a range of severities of MS impairment participated in the study, All were screened for cognitive impairment. The Dysphagia Handicap Index (DHI), MASA, 3oz water swallow test and videofluoroscopy studies were completed on all individuals. Results The results of the DHI suggest that dysphagia does impact on the person with MS limiting their social and psychological functioning. There is no strong correlation between the severity of OD impairment and the impact experienced by these people with MS. Discussion The impact of dysphagia on people with MS is discussed. The clinical utility of the DHI with this population is examined. Implications for clinical practice are outlined with directions for further research in this area.

16:00 – 17:30 Ramlet
06/3 Miscellaneous
Moderator: P Clavé

Nº OP19. OROPHARYNGEAL COLONIZATION BY RESPIRATORY PATHOGENS IS PREVALENT IN PATIENTS WITH COMMUNITY ACQUIRED PNEUMONIA

Omar Ortega1; Olga Sakwinska2; Severine Combremont2; Ivana Jankovic2; Pere Clavé

Introduction The prevalence of oropharyngeal colonization by respiratory pathogens is estimated to range from 32% to 55%. Studies to date have focused on the impairment of dysphagia with limited information on its impact on the person’s psychological and social functioning. Personal accounts of dysphagia suggest that it does have a significant effect on the individual. The aim of this study is to explore the psychological impact of oropharyngeal dysphagia (OD) on a group of people MS. The research questions are: (1) what is the psychosocial impact of OD in this population? (2) Is there a correlation between the severity of OD and the severity of psychosocial impact? Materials and Methods Ninety-two people with MS covering a range of severities of MS impairment participated in the study, All were screened for cognitive impairment. The Dysphagia Handicap Index (DHI), MASA, 3oz water swallow test and videofluoroscopy studies were completed on all individuals. Results The results of the DHI suggest that dysphagia does impact on the person with MS limiting their social and psychological functioning. There is no strong correlation between the severity of OD impairment and the impact experienced by these people with MS. Discussion The impact of dysphagia on people with MS is discussed. The clinical utility of the DHI with this population is examined. Implications for clinical practice are outlined with directions for further research in this area.

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Omar Ortega1; Olga Sakwinska2; Severine Combremont2; Ivana Jankovic2; Pere Clavé
**Nº OP20. SWALLOWING DISORDERS IN THE ELDERLY: WHAT WE NEED TO KNOW**

Dalia Nequeira1; Inês Lopes2; Elizabeth Reis2
1Escola Superior de Saúde de Alcoitão, Portugal; 2Lisbon University Institute, Portugal

Introduction: Risk factors affecting the ability to swallow are varied considering the mechanical, neurologic, and mental status changes common in the older population. Cognitive disorders, motor function and nutritional status are major risk factors for both swallowing and feeding. Even when the swallow is functional, dementia patients may be unable to sustain nutrition with oral feeding. Assessment of mobility should consider the patient’s ability to execute the activities of daily living. A multidisciplinary approach is necessary for an effective and preventive diagnosis with a careful attention to the individual’s description of his or her swallowing difficulties. Each aspect of the clinical evaluation contributes to a more comprehensive understanding of the individual’s swallowing problem. Materials and Methods: The study examined 136 elderly receiving permanent or partial care but not oral cavity being 63% in CAP patients, 60% in dysphagic patient without CAP and 36% in healthy elderly (p<0.05). In contrast, total bacterial load was similar between all groups of patients. The oral cavity was more colonized by pathogens than the nasopharynx in all patients (55% vs. 20%; p<0.001). Pyrosequencing showed clear differences in microbial population structure between oral cavity and nasopharynx. Conclusions: Dysphagic patients, and particularly those with CAP, presented high rates of oral colonization by respiratory pathogens and videofluoroscopic signs of impaired safety of swallow. Further studies will confirm the role of these bacteria in the pathophysiology of CAP.

**Nº OP21. THE EFFECT OF STRESSFUL AND RELAXING VISUAL STIMULI ON UPPER ESOPHAGEAL SPHINICTER PRESSURE**

Maggie Kuhn1; Amanda Domer2; Aaron Robinson1; Peter Belafsky1
1University of California, Davis, United States; 2University of South Florida, United States

Introduction: Dysfunction of the upper esophageal sphincter (UES) is associated with swallow disability and globus pharyngeus. Though auditory and chemical stimuli have previously been shown to influence UES pressure, the effect of visual stimuli on UES pressure has not been assessed. We sought to evaluate the influence of stressful and relaxing visual stimuli on UES pressure. Materials and Methods: High-resolution manometry (HRM) was performed on 8 healthy patients with no history of dysphagia. Baseline UES pressures (mmHg) were established. Each subject was randomly presented stressful and calming images during separate trials. Pre- and post-visual stimulus data were blindly evaluated and compared with the paired samples t test. Results: The mean age of the cohort was 30.6 (±7.5) years. 87.5% (7/8) was female. The mean UES baseline pressure was 44.8 (±13.7) mmHg. When presented with the stressful image, average UES pressure increased to 52.6 (±16.9) mmHg (p = 0.003). When presented with a calming image, average UES pressure decreased to 42.5 (±13.3) mmHg (p = 0.213). Discussion: Stressful imagery significantly elevated UES resting pressure in healthy adults. Calming imagery did not appear to influence UES pressure. These results may have clinical significance in the treatment of UES dysfunction and globus pharyngeus.

**Nº OP22. PHARYNGEAL PRESSURE FLOW METRICS ARE INDEPENDENTLY INFLUENCED BY AGE AND PRESENCE OF DYSPHAGIA**

Claudia Liesenborghs1; Taher Omari2; Charlotte Scheeren3; Margot Selleslagh1; Charles Cock3; Robert Fraser3; Stamatiki Kritas2; Lukas Van Oudenhove4; Ann Goeleven5; Eddy Dejaeger6; Nathalie Rommel1
1Translational Research Centre for Gastrointestinal Disease (TARGID)/ Dept Neurosciences (ExpORL); KU, Belgium; 2Women’s and Children’s Health Network, Australia; 3Repatiation General Hospital, Australia; 4Translational Research Centre for Gastrointestinal Disease (TARGID); KU Leuven, Belgium; 5Dept Neurosciences (ExpORL); KU Leuven, Belgium; 6Geriatrics, University Hospital Leuven, Belgium

Introduction: Swallowing problems are common in the elderly. The two factors considered responsible for this phenomenon are a higher prevalence of diseases associated with oropharyngeal dysphagia and a natural decline of swallowing ability with ageing. This study assessed the influence of ageing on swallowing function in dysphagic patients. MATERIAL AND METHODS: 72 patients (47M, mean 61y, range 17-89y) were referred for videomanometric assessment. The control group consisted of 68 healthy volunteers (29M, mean 59y, range 20-91y) (Omari 2013). All underwent impedance manometry assessment using a high-resolution manometric system (Biomedical Instruments, Massachusetts, USA). The system recorded pressure and flow as functions of distance using 20-30 cm of catheter and 8 transducers spanning the pharynx and upper esophagus. The participants were seated upright and were asked to swallow liquids of different consistencies (water, applesauce, jelly) under control and forced conditions. Results: Healthy controls and patients with dysphagia had comparable values for liquid transit time and pharyngeal phase duration, but the two groups differed significantly in the number of swallows and the pharyngeal transit time. The values were similar between the control group and patients with dysphagia, but significantly lower than those in patients with dysphagia. CONCLUSION: The results suggest that dysphagia patients have a reduced pharyngeal transit time, which may be responsible for the reduced number of swallows.
resolution solid-state catheter (OD 3.2mm, 36 P at 1cm, 12 Z at 2cm). Liquid bolus swallows (5-10ml) were analysed with Automated Impedance Manometry (AIM) (Omari 2011). Statistical analysis of pressure flow metrics was done using non-parametric two-way ANOVA comparing: 1) patients with healthy controls and 2) participants <60 and ¡Ý 60y of age. RESULTS: Patients significantly differed from controls in 11 out of 13 AIM-metrics studied (Table 1). Participants under 60y differed in 7 AIM-metrics in comparison to those over 60y indicating higher aspiration risk, poorer bolus propulsion, reduced bolus clearance and poorer UES compliance in the aged. Some AIM-metrics were influenced solely by age or solely by dysphagia presence. The impact of dysphagia on AIM-metrics is present in both young and aged groups. DISCUSSION: We conclude that pressure flow metrics in elderly dysphagic patients are influenced independently by disease presence and by increased age. Consequently, swallowing skills of these patients are challenged in a multifactorial fashion.

**Nº OP23. PERSPECTIVES ON THE SPEECH AND LANGUAGE THERAPIST’S ROLE IN PALLIATIVE CARE: RESULTS OF AN INTERNATIONAL SURVEY**
Aoife O'Reilly; Margaret Walshe
Trinity College Dublin, Ireland

INTRODUCTION: Palliative care (PC) aims to affirm life, minimise the complications of life limiting disease and maximise quality of life (Roe & Leslie, 2010). Speech and language therapists (SLTs) can improve the quality of life of people receiving PC through management of their communication and swallowing difficulties (Tomblin & Mueller, 2012). However, the role of the SLT in this area is poorly defined and little is understood about current international SLT practice in this area. MATERIALS AND METHODS: A descriptive research approach was used with an anonymous, non-experimental, cross-sectional study design. Purposive and snowball sampling was used to recruit participants internationally using gatekeepers. An online survey was disseminated using Survey Monkey (www.surveymonkey.com). RESULTS: Three hundred and twenty (320) SLTs from Ireland, Germany, UK, Canada, Australia, USA, New Zealand and Singapore responded to the survey. Practices in this area were similar across continents. Current SLT practices as well the as barriers and facilitators to this practice were identified. The need for a position paper in this area was emphasised. DISCUSSION: Internationally, SLTs believe that they have a role in PC. Respondents acknowledged that the area of dysphagia management and communication is under-resourced, under-acknowledged and under developed. They highlighted the need for additional research as well as specialist training and education for SLTs as well as other MDT members.
tom threshold, severity and pneumonia deaths in this cohort (p=0.301, OR=1.383, CI=0.749-2.553). Discussion: We found no compelling evidence that dysphagia symptom score on questionnaire survey predicted pneumonia deaths in this cohort of older people. The results suggest that symptoms (in contrast to clinical signs) of dysphagia are not a reliable indicator of risk of pneumonia and death. This highlights the importance of understanding how swallowing changes with age and how symptoms vs. clinical signs of dysphagia affect the lives of elderly people.

**Nº OP25. ATTITUDES, KNOWLEDGE, AND PRACTICES IN THE PROVISION OF ORAL CARE: A SURVEY**

Fiona Hill1; Philippa Ryan-Witheroff2; Siobhan Connors3

1Dept of Speech & Language Therapy, Tallaght Hospital, Ireland; 2Nurse Practice Development, Tallaght Hospital, Ireland; 3Clinical Nursing Intensive Care, Tallaght Hospital, Ireland

Introduction Inadequate oral care may predispose hospitalised individuals to difficulties chewing, difficulties swallowing, and respiratory complications, including aspiration pneumonia. Despite the positive effects of appropriate oral care on health and quality of life there is a paucity of local, national, and international evidence based oral care guidelines. Consequently, variability exists in the management of oral care. The aim of this study is to explore attitudes, knowledge, and oral care practice patterns of hospital healthcare staff.

Methods 92 participants were unsure or reported that no oral care protocol existed on their ward. 21% and 39% did not routinely use toothbrushes or toothpaste, respectively, while 72% of respondents consistently used foam sponges for oral care. Factors influencing attention to oral care included patients’ condition, status of oral cavity, and workload and time constraints. Discussion Findings of this research support the need for oral care educational initiatives for healthcare staff and development and promotion of quality evidence based oral care protocols in the hospital setting.

**Nº OP26. ‘YES, WE CAN EAT’ IRELAND’S FIRST FEEDING TUBE WEANING PROGRAMME FOR CHILDREN WITH COMPLEX CARDIAC AND MEDICAL CONDITIONS.**

Celia Butler1; Zelda Greene2

1Our Lady’s Children’s Hospital, Ireland; 2Our Lady’s Children’s Hospital Crumlin, Ireland

INTRODUCTION: As a consequence of life saving complex medical and surgical interventions, an increasing number of infants are tube fed. Following surgery a significant number of infants remain ‘tube dependent’. In 2012; 89% of paediatric referrals to a Cardiology Speech & Language Therapy (SLT) Service were tube fed. To address this the Cardiology service established Ireland’s first Multidisciplinary (SLT, Dietitian, Psychologist, Play Specialist, Medical, Nursing) ‘Yes, We Can Eat’ intensive paediatric tube weaning programme. METHOD: 51 infants (25 Female, 26 Male-age range 6mths-72mths; average age 21.5 months) with a range of medical diagnoses attended the programme (September 2008 – December 2012). The average length of inpatient stay–20 days. A strict protocol was followed: Infants had appropriate and safe reduction of tube feeds and by days 5–8 the tube feeds were stopped. Infants were monitored daily by the Medical team and Dietitian. Infants attended daily ‘messy picnic’ with the SLT and Clinical Psychologist. If infants were medically stable, parents were encouraged to have time outside of the hospital with their child. RESULTS: 45/51 participants successfully tube weaned. Of the 4 cases who did not wean; 1 child had a suspected metabolic condition, 1 child had aspiration pneumonia secondary to reflux and 2 children experienced excessive weight loss. 2 participants were partially tube weaned. Range of weight loss 0–22% (average 8.1%). The success rate –88%. DISCUSSION: Establishment of oral feeding is fundamental to a child’s global and nutritional development. This multidisciplinary approach is successful in tube weaning children with complex medical backgrounds. Longer term outcomes need to be assessed.

**Nº OP27. VALIDATION AND PSYCHOMETRIC ANALYSIS OF THE DUTCH VERSION OF THE SWAL-QOL (DSWAL-QOL).**

Jan Vanderwegen1; Gwen Van Nuffelen2; Marc De Bodt2

1UMC Saint-Pierre, Belgium; 2Antwerp University Hospital, Belgium

Introduction The aim of this study was to translate, validate and study the psychometric properties of the Dutch version of the SWAL-QOL. This will provide a reliable tool to measure quality of life in patients with oropharyngeal dysphagia. Methods The original SWAL-QOL was translated into Dutch according to international guidelines. 268 patients with stable dysphagia of different etiologies (head and neck cancer, stroke, degenerative neurological disorders) and 124 healthy subjects filled out the questionnaire; 50 patients were recruited for a 2-week test-retest reliability. Results The mean age of the study population was 67.8 yo; 66% were males, 12 and 4% were on nonoral food and liquid status respectively. All DSWAL-QOL subscales were non-normal distributed with a negative skew and several ceiling effects, but the full range of score distribution was observed. Internal consistency using Cronbach’s alpha showed that only one scale (sleep) failed to reach the 0.80 standard. Spearman’s rho and Intraclass Correlation Coefficient showed the test-retest reliability to be 0.78 and 0.794 (median values). Principal components analysis with oblique rotation yielded 6 components (1: eating desire, food selection, burden and eating duration; 2: fatigue and sleep; 3: symptoms; 4: social functioning; 5: communication; 6: fear and mental health). Clinical validity showed significant results of the DSWAL-QOL in discriminating healthy and dysphagic patients, tube-
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feeder versus oral feeders, patients on normal versus soft or pureed diet, and patients on thin versus thickened or no liquids. Discussion The DSWAL-QOL combines acceptable psychometric properties and good clinical validity, making it an excellent tool to examine the impact of dysphagia on quality of life in Dutch-speaking populations.

Nº OP28. A HINT TOWARDS OBJECTIVE CORRELATES OF FUNCTIONAL DYSPHAGIA

Sonja Suntrup1; Inga Teismann1; Tobias Warnecke1; Inga Suntrup1; Christina Hamacher1; Christo Pantev2; Rainer Dziemias1
1Department of Neurology/University of Muenster, Germany; 2Institute for Biomagnetism and Biosignalanalysis/University of Muenster, Germany

Background: Psychogenic or “functional” dysphagia is a rare phenomenon of largely unknown etiology. However, current research on functional disorders provides growing evidence for objective neuronal correlates of allegedly psychogenic symptoms. This study investigated whether functional dysphagia is associated with alterations in the cortical swallowing network. Methods: Five patients diagnosed with functional dysphagia after thorough neurological, gastroenterological and ENT examination participated in this study. We assessed swallow-related cortical activation applying whole-head magnetoencephalography and statistically compared the activation pattern to that of an age- and gender-matched healthy subject group using a nonparametric permutation algorithm. Results: Swallow performance did not differ between groups der-matched healthy subject group using a nonparametric permutation statistic. Results: Disability was moderately severe in 33.6% in the modified Rankin scale. Barthel index at admission was 42.8 (SD 18.6), with a moderate, negative correlation between the Penetration Aspiration Scale and the Barthel index at admission (r = -0.369, p< 0.001) and at discharge (r = -0.430, p< 0.001). In the total sample with a positive CCT, the VFS revealed penetration in 14 (38.9%) cases, aspiration in 5 (13.9%), silent aspiration in 5 (13.9%) and normality in 12 (33.3%) patients. The sensitivity and specificity indexes for determining the reliability of the CCT as a screening method for silent aspiration in comparison with the VFS were 0.19 and 0.71, respectively. Other comparisons were made between silent aspirators (PAS = 8) and different subgroups of patients but values of sensitivity, specificity, efficiency and predictive values remained very poor. The CCT also was not useful to classify aspirators and nonaspirators. Conclusion: The CCT not a useful screening tool for silent aspiration in patients with stroke.

Nº OP30. ARE SCREENING PROCEDURES USEFUL IN POSTACUTE DYSPHAGIC PATIENTS?

Christian Ledl1; Christina Heller; Kathrin Hinterberger; Miriam Houamed; Melanie Klabuschnig
Schoen Klinik Bad Aibling, Germany

Introduction: Several procedures have been proposed to screen acute patients for dysphagia. Criteria comprise water tests in combination with judgments on lingual pareses, voice change, the presence of dysarthria or delayed swallow. This study aims to compare the predictiveness of various screening procedures on aspiration of saliva, fluids and puree in patients with postacute dysphagia. Method: In 27 patients, FEES, Toronto Bedside Swallowing Screening Test (TOR-BSTST), Daniels Test and swallow provocation tests (0.4 ml and 2 ml volumes) were performed within six hours. Patients were 68.7 years old and 80.4 days post onset (mean values). Etiologies were ischemic stroke (7), hemorrhagic stroke (7), neuropathies (7), TBI (3) and others (3). Saliva, water (5ml) and puree were tested during FEES (reference procedure) and raters were blinded to the results of the screening tests. Results: TOR-BSTST reached 100% sensitivity for all consistencies; Daniels achieved 95% sensitivity for fluids, 100% for saliva and puree. The 0.4 and 2 ml (in parentheses) provocation tests obtained 77% sensitivity (25) for saliva, 62.2% (77.8) for fluids and 100% (100) for puree. Specificity values were low and differed for various consistencies (TOR-BSTST: 71%, 14.3%, 3.8% for saliva, fluids and puree; Daniels:28.6%, 42.9%, 15.4%; 0.4 provocation: 38.5%, 14.3%, 33.3%; 2.0 provocation: 46.2%, 71.4%, 39.1%). Discussion: TOR-BSTST and Daniels tests detect aspiration reliably but overestimate the presence of dysphagia in chronic patients. The clinical relevance of these procedures in postacute patients is restricted due to the high number of false positives. The 2ml provocation test reaches sufficient sensitivity and specificity for fluids but fails to predict results for saliva and puree.

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SATURDAY SEPTEMBER 14
Introduction: Oropharyngeal dysphagia is a common problem and comorbidity among various patient groups and puts a patient at risk for pneumonia, malnutrition and possibly death. However, recent and specific figures of prevalence are often missing. This pilot study investigated the prevalence of dysphagia in the Netherlands as retrieved by a telephone survey. Method and Materials: In order to acquire the general prevalence of oropharyngeal dysphagia in the Dutch population, the Eating Assessment Tool (EAT-10 questionnaire) has been conducted over the phone using a standardized protocol. The EAT-10 is a validated questionnaire containing ten questions about solid intake, fluid intake and swallowing. Results: In total, 6700 persons were reached by telephone. 2609 persons (39 %) agreed to participate. The participants were divided into eight age groups. Based on the EAT-10 outcome, prevalence data per age group differed from 3.3% (30-39 years) to 28.4% (80-89 years). In total 219 participants (8.4%) scored a score of three or higher on the EAT-10 questionnaire indicating swallowing abnormalities. Discussion: 8.4% of the participants, representing a random selection of the general Dutch population, showed abnormalities in swallowing. As expected, the risk of oropharyngeal dysphagia increased with age. Most participants having difficulties in swallowing experienced extensive problems with swallowing pills.

**Nº OP31. PREVALENCE OF OROPHARYNGEAL DYSPHAGIA IN THE NETHERLANDS: A TELEPHONE SURVEY**

Berit Kertscher1; Renée Speyer2; Renée Speyer3; Bas Heijnen3 1Institute of Health Studies, HAN University of Applied Sciences, Netherlands; 2School of Public Health, Tropical Medicine and Rehabilitation Sciences, James Cook University, Australia; 3Department of Otorhinolaryngology and Head and Neck Surgery, Leiden University Medical Center, Netherlands

Introduction: Oropharyngeal dysphagia is a common problem and comorbidity among various patient groups and puts a patient at risk for pneumonia, malnutrition and possibly death. However, recent and specific figures of prevalence are often missing. This pilot study investigated the prevalence of dysphagia in the Netherlands as retrieved by a telephone survey. Method and Materials: In order to acquire the general prevalence of oropharyngeal dysphagia in the Dutch population, the Eating Assessment Tool (EAT-10 questionnaire) has been conducted over the phone using a standardized protocol. The EAT-10 is a validated questionnaire containing ten questions about solid intake, fluid intake and swallowing. Results: In total, 6700 persons were reached by telephone. 2609 persons (39 %) agreed to participate. The participants were divided into eight age groups. Based on the EAT-10 outcome, prevalence data per age group differed from 3.3% (30-39 years) to 28.4% (80-89 years). In total 219 participants (8.4%) scored a score of three or higher on the EAT-10 questionnaire indicating swallowing abnormalities. Discussion: 8.4% of the participants, representing a random selection of the general Dutch population, showed abnormalities in swallowing. As expected, the risk of oropharyngeal dysphagia increased with age. Most participants having difficulties in swallowing experienced extensive problems with swallowing pills.

**Nº OP32. VALIDATION OF THE ITALIAN SWAL–QOL**

Antonio Schindler1; Daniela Ginocchio2; Miriam Vedrodyova2; Daniele Farletti3; Giulia Chiarello3; Marilia Simonelli4; Paola Calcagnone3; Anna Accornero3 1Department of Biomedical and Clinical Sciences “L. Sacco”, Italy; 2Maugeri Foundation, Italy; 3ENT Department, Italy; 4IRCCS S. Lucia, Rome, Italy

Introduction. The SWAL-QOL is a questionnaire currently adopted for the assessment of dysphagia-related disability in patients with dysphagia of different origin. The SWAL-QOL is available in English, Dutch, Chinese, Swedish, while no Italian version is available. The aim of the study is to analyze reliability and clinical validity of the Italian SWAL-QOL. Method and materials: Six different dysphagia centers were involved in this cross-sectional study. The study consisted of 4 phases: item generation, internal consistency and reliability analysis, normative data generation, validity analysis. Discussion of SWAL-QOL with 30 patients and its back translation were accomplished. The final version was checked for readability. Recruited population included 90 patients and 200 asymptomatic subjects to test internal consistency, 78 dysphagia patients for test-retest reliability analysis. Normative data were gathered from the 200 subjects. The scores of patients and asymptomatic subjects were compared. SWAL-QOL and fiberoptic endoscopic evaluation of swallowing (FEES) scores in 78 patients were correlated through Spearman test. Results: The Italian SWAL-QOL is readable to people of five year of education. Excellent internal consistency and strong test-retest reliability were found. SWAL-QOL mean score of the normal cohort was 210.1 ±5.1. Asymptomatic patients scored higher than dysphagic patients on Mann-Whitney test (p = 0.001). SWAL-QOL and FEES scores mildly correlated. Discussion. The Italian SWAL-QOL is reliable and valid; it application in everyday clinical practice is recommended.

**Nº OP33. CLINICAL VARIABLES INFLUENCING SCREENING TIME DURING VIDEOFLUOROSCOPY**

Maeve Murphy Department of Speech & Language Therapy, Tallaght Hospital, Ireland

Introduction: Videofluoroscopy (VFS) is an important instrumental examination for evaluating oropharyngeal swallow biomechanics and interventions. Radiation exposure must comply with the As Low As Reasonably Achievable (ALARA) principle but numerous variables may influence fluoroscopy screening time. This study examines the impact of Speech and Language Therapist (SLT) experience, dysphagia severity, and screener on fluoroscopy screening time. Methods: A retrospective review was carried out on 1006 adult VFSs completed over a five year period in a Dublin Academic Teaching Hospital. The VFSs were carried out jointly by SLTs and radiologist or radiographer. SLT VFS experience, dysphagia severity, screener (i.e. radiologist or radiographer) and fluoroscopy screening time were the variables recorded for analysis. Results: Average fluoroscopy screening time was 5.3 min (95% confidence interval: 5.17 – 5.47 min). Fluoroscopy screening time was not associated with screener (p=0.05). Greater dysphagia severity resulted in statistically significant increases in screening time (p <0.001). SLTs with more VFS experience had significantly shorter fluoroscopy screening time (p <0.001). These effects were independent (by linear regression). Discussion: While the average screening time found in this study is above recently reported averages, the study supports previous research findings on the impact of SLT VFS experience and dysphagia severity on VFS screening time. Therapists should be cognisant of these influences in their clinical practice and strive to minimise their effects with robust procedures. Further research is needed to investigate the impact of other patient and procedural factors which may significantly influence patient radiation exposure during VFS.

**Nº OP34. THE INFLUENCE OF AGE, SEX AND VISUAL FEEDBACK ON MAXIMUM LIP STRENGTH AND ENDURANCE IN HEALTHY BELGIAN ADULTS.**

Jan Vanderwegen1; Cindy Guns2; Gwen Van Nuffelen2; Rik Elen3; Marc De Bodt2 1UMC Saint-Pierre, Belgium; 2Antwerp University Hospital, Belgium; 3Thomas More, Belgium

Introduction To investigate the influence of age, sex, and visual feedback on maximum lip strength and endurance in healthy Belgian adults. Normative data will be determined to allow for future use. Methods The IOPI (Iowa Oral Performance Instrument) device was used to...
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**Oral Presentations**

**SATURDAY SEPTEMBER 14**

**Nº OP35. CORRELATION OF HEALTH-RELATED QUALITY OF LIFE WITH SWALLOWING PERFORMANCE IN PATIENTS WITH LOCALLY ADVANCED HEAD AND NECK CANCER TREATED WITH CHEMORADIATION**

Ekaterini Xinou1; Maria Kyngiou1; Ioannis Chryssostomou2; Athanasia Printza3; Anastasios Kelekitis2; Chryssoula Iliopoulou1; Charalampos Andreadis1; Doxa Mangoudi1; Dimitra Panagiotopoulou-Mpouka1

**Theagenion Anticancer Hospital, Greece; 2AHEPA University Hospital, Greece**

**Introduction:** The aim of this study was to assess the longitudinal changes of HR-QoL and to test the hypothesis that a worse swallowing performance severity scale (SPSS) correlates with a lower health-related quality of life (HR-QoL) both before and after concurrent chemoradiation (CRT) in patients with locally advanced head-neck cancer (HNC). Materials and Methods: In this prospective, longitudinal study, 41 patients with locally advanced HNC were treated uniformly with CRT (with or without induction chemotherapy). Overall QoL was assessed by summary scores of the EORTC QLQ C30 and H&N 35 questionnaires. Quality of life and objective evaluations (SPSS scoring of videofluoroscopic evaluation) were recorded longitudinally starting before initial treatment and ending at 12 months following therapy. Correlations between SPSS and overall QoL were assessed using longitudinal repeated measures of analysis and Pearson correlations. Results: Almost all QoL scores worsened 1 month after therapy and improved at 2 and 6 months, with minor further improvements at 12 months. The highest symptom score on QLQ-C30 was for fatigue, followed by financial problems and appetite loss. In the H&N35 module, dry mouth, sticky saliva, and senses problems ranked as the three worst symptoms. Global health status (GoL) score showed a correlation with SPSS only before therapy (p=0.031). A high correlation (p<0.0001) of SPSS with swallowing, coughing and trouble with social eating was noted before therapy, whereas after therapy this correlation was lower. Discussion: The results of the study suggest that HR-QoL is correlated with SPSS after treatment and that despite worse swallowing patients experience a better quality of life after therapy.

**Nº OP36. PREVALENCE OF DYSPHAGIA AS A LONG TERM COMPLICATION OF HEAD AND NECK RADIOTHERAPY**

Michal Szczesniak1; Julia Maclane2; Teng Zhang3; Peter Graham4; Ian Cook3

**1Dept of Gastroenterology and Hepatology, Australia; 2Speech Pathology Department, St George Hospital, Australia; 3Department of Gastroenterology and Hepatology, St George Hospital, Australia; 4Department of Radiation Oncology, Cancer Care Centre, St George Hospital, Australia**

**Introduction:** The aim of this study was to determine the prevalence, severity, morbidity and time course of dysphagia symptoms after head and neck radiotherapy (>1 year). Materials and methods: An observational cross-sectional study was conducted in a large consecutive series of head and neck cancer patients. All patients on the St George Hospital Cancer Care database, who had received head and neck radiotherapy or chemo-radiotherapy with curative intent 0.5 - 8yrs previously (2004 -- 2011) and recorded as being alive were surveyed by the SSO. Causes of mortality were assessed from medical records (n = 101). Results: Patients were surveyed a mean 3yrs post radiotherapy. From initial mail out of 124 questionnaires, response rate was 83/124 (67%). Impaired swallowing (SSQ Score > 234) was reported in 59% of patients. Most frequent complaints were 1) Difficulty swallowing hard foods, 2) Difficulty swallowing dry foods, 3) Feeling of food getting stuck in throat 4) Coughing and choking when swallowing solid foods. Neither age, tumour location, adjuvant treatments nor time from radiotherapy had any effects on severity of self-reported dysphagia. Record review revealed that cancer accounted for 61% (63/101) of deaths and aspiration pneumonia was responsible for 18% (7/39) of non-cancer-related deaths. Nineteen patients died of other causes, and in 13 the cause was unknown. Discussion: Dysphagia is a very prevalent long term complication of head and neck radiotherapy and aspiration pneumonia is a causing significant mortality in this population.

**Nº OP37. TWO-YEAR RESULTS OF A PROSPECTIVE PREVENTIVE SWALLOWING REHABILITATION TRIAL IN PATIENTS TREATED WITH CHEMORADIATION FOR ADVANCED HEAD AND NECK CANCER**

Lisette van der Molen1; Maya A van Rossum2; Coen RN Rasch3; Ludi E Smeele4; Frans JM Hilgers4

**1The Netherlands Cancer Institute, Netherlands; 2Previously affiliated with the University Medical Centre Leiden, Netherlands; 3Department of Radiation Oncology, Academic Medical Centre/University of Amsterdam, Netherlands; 41Department of Head and Neck Oncology & Surgery, The Netherlands Cancer Institute, Netherlands**

**Introduction:** The aim of this study was to determine the prevalence, severity, morbidity and time course of dysphagia symptoms after head and neck radiotherapy (>1 year). Materials and methods: An observational cross-sectional study was conducted in a large consecutive series of head and neck cancer patients. All patients on the St George Hospital Cancer Care database, who had received head and neck radiotherapy or chemo-radiotherapy with curative intent 0.5 - 8yrs previously (2004 -- 2011) and recorded as being alive were surveyed by the SSO. Causes of mortality were assessed from medical records (n = 101). Results: Patients were surveyed a mean 3yrs post radiotherapy. From initial mail out of 124 questionnaires, response rate was 83/124 (67%). Impaired swallowing (SSQ Score > 234) was reported in 59% of patients. Most frequent complaints were 1) Difficulty swallowing hard foods, 2) Difficulty swallowing dry foods, 3) Feeling of food getting stuck in throat 4) Coughing and choking when swallowing solid foods. Neither age, tumour location, adjuvant treatments nor time from radiotherapy had any effects on severity of self-reported dysphagia. Record review revealed that cancer accounted for 61% (63/101) of deaths and aspiration pneumonia was responsible for 18% (7/39) of non-cancer-related deaths. Nineteen patients died of other causes, and in 13 the cause was unknown. Discussion: Dysphagia is a very prevalent long term complication of head and neck radiotherapy and aspiration pneumonia is a causing significant mortality in this population.
Introduction: The addition of chemotherapy to radiotherapy is associated with a substantial increase in early and late toxicities. Keeping the involved musculature active during CCRT despite cessation of swallowing might be a valuable adjunct to the reduction of the radiation dose. In this presentation, the long term (2-year) overall results of preventive exercising are presented, as are subgroup analyses according to exercise regime and site of disease. Material and Methods: The study cohort consisted of 29 patients, randomized in two exercise groups: a standard (S) group receiving routine swallowing exercises (N=14), and an experimental (E) group receiving swallowing exercises based on TheraBite Jaw Motion Rehabilitation system (N=15). Assessment of functional changes was carried out with multidimensional outcome-measures (e.g., video-fluoroscopy, study-specific questionnaires) at 4 time points (pretreatment, at 10-weeks, 1-year, and 2-years post-treatment). Results: Overall, in the first year post-treatment many initial tumor- and treatment-related problems diminished significantly, except xerostomia (59%). The only additional improvement at 2-years is that overall weight significantly further increased (p = .000), however, without regaining baseline value. In the subgroup analysis according to exercise group, this difference was significant in the E-group only (p = .002). The same was the case for the subgroup analysis according to site of disease, with a significant weight gain in the ‘below the hyoid bone’ group only. Feasibility and compliance of both preventive exercise programs were good. Discussion: This study shows that overall functional swallowing outcomes within the first two months after RT.

Nº OP38. PROPHYLACTIC SWALLOWING EXERCISES ON DYSPHAGIA AFTER RADIOTHERAPY FOR HEAD AND NECK CANCER -- A PROSPECTIVE RANDOMIZED PHASE II TRIAL.
Hanna R Mortensen1; Kenneth Jensen2; Karin Aksgaard3; Karin Lambertsen4; Marie Behrens5; Eva Eriksen5; Cai Grau2
1Department of Oncology, Denmark; 2Department of Oncology, Aarhus University Hospital, Denmark; 3Motility Laboratory, Department of Gastroenterology L and Department of Radiology, Aarhus University Hospital, Denmark

Nº OP39. DYSPHAGIA AND FEEDING MANAGEMENT AFTER SUPRACRICOID LARYNGECTOMY
Nicole Pizzorni1; Letizia Scarponi1; Daniela Ginocchio2; Antonio Schindler1
1Department of Biomedical and Clinical Sciences “L. Sacco”, University of Milan, Milan, Italy; 2IRCSC “Salvatore Maugeri”, Italy

DYSPHAGIA AND FEEDING MANAGEMENT AFTER SUPRACRICOID LARYNGECTOMY Nicole Pizzorni, Letizia Scarponi, Daniela Ginocchio, Antonio Schindler Department of Biomedical and Clinical Sciences “L. Sacco”, University of Milan, Milan, Italy. Introduction: Supracricoid laryngectomy (SCL) is increasingly performed all over the world for the treatment of selected laryngeal cancers. The aim of the study is to describe the management of dysphagia and feeding in the early stage after SCL. Material and methods: 22 patients who underwent SCL (6 females, 14 males), aged 67 ± 4 years (range 56-78) have been included in the study. Each patient underwent fiberoptic endoscopic evaluation of swallowing (FEES) with both a trans-nasal and trans-tracheostomy approach 4 days after surgery and with week intervals in order to decide the rehabilitation program and when to start oral feeding. Penetration aspiration scale (PAS), pooling score (PS) and Dysphagia outcome and severity scale (DOSS) were used for quantification of FEES. Results: The criteria applied in order to start oral feeding after SCL were: PAS < 7 with at least one consistency and the possibility to introduce at least 1500 Kcal/die (DOSS > 7). Eight patients underwent PEG before surgery, while in 14 patients a nasogastric tube was inserted after surgery. No case of pulmonary
Abstract Book

complication was found, but in 2 patients oral feeding could not be achieved. In the remaining 20 patients the mean length of enteral feeding was 34 days (range 14-78). The mean number of FEES per patients was 9 (range 5-12) before oral feeding. Discussion: The results of this study suggest that MBSImP™© scoring is feasible and practical in everyday practice. It does not lead to unnecessary radiation exposure during VFSS and facilitates comparison between and within patients.

Nº OP40. USE OF THE MODIFIED BARIUM IMPAIRMENT PROFILE (MB-SIMP) SCORING IN CLINICAL PRACTICE: 1-YEAR EXPERIENCE IN AN ONCOLOGIC HOSPITAL IN GREECE.
Ekaterini Xinou1; Maria Kynigou1; Ioannis Chrysogonidou2; Athanasia Printza3; Chryssoula Ilipoulou1; Charalampos Andreadis1; Doxa Mangoudi1; Kalliopi Pazaitou-Panayioutou1; Dimitra Panagiotopoulou1; Mpouka1
1Theagenion Anticancer Hospital, Greece; 2AHEPA University Hospital, Greece; 3Papageorgiou University Hospital, Greece
Introduction: MBSImP™© is a new modified barium swallow rating tool, which provides a standardized objective assessment of videofluoroscopic studies (VFSS). The aim of this study was to examine the feasibility and the clinical usefulness of MBSImP™© scoring in clinical treatment protocol in an oncologic hospital in Greece. Materials and Methods: Between April 2012 and May 2013, 317 VFSS were performed in 208 patients (132 males/ 76 females; age range 27-89 years). All studies were completed by a radiologist trained/certified in the data collection protocol, interpretation and scoring of the MBSImP™©. Radiation exposure and time needed to complete MBSImP™© overall impression form was calculated in all studies. Results: The majority of the studies were performed in patients with head-neck (80%), lung (9%) and breast cancer (3%). Average radiation exposure time using the MBSImP™© approach was 3.4 min (range 1.9 -- 4.9 min) and the average time needed to complete MBSImP™© overall impression form was 13 min. Comparison of the oral score, the pharyngeal score and the score of the individual parameters within each patient permitted a better objective evaluation of swallowing improvement or deterioration and an easier communication with the clinicians. Discussion: The results of this study suggest that MBSImP™© scoring is feasible and practical in everyday practice. It does not lead to unnecessary radiation exposure during VFSS and facilitates comparison between and within patients.

Nº OP41. INTER-RATER RELIABILITY OF AUTOMATED IMPEDANCE-MANOMETRY (AIM) ANALYSIS AND FLUOROSCOPY IN PATIENTS WITH DYSPHAGIA FOLLOWING HEAD AND NECK RADIOTHERAPY.
Michal Szczesniak1; Taher Omari2; Julia Maclean3; Rong Liu4; Ian Cook5
1Dept of Gastroenterology and Hepatology, Australia; 2School of Paediatrics and Reproductive Health, Australia; 3St George Hospital, Department of Speech Pathology, Australia; 4Department of Geriatric Medicine, The First Hospital of Lanzhou University, China; 5University of New South Wales, St George Clinical School, Australia
Introduction: AIM is new non-radiological method to analyse impedance-derived bolus flow and pressures measured during the pharyngeal swallow. We compared the inter-rater reliability of videofluoroscopy in assessing post-swallow residue to that of AIM-derived residue measurement (iZn/Z) and the swallow risk index (SRI) in a population of patients with dysphagia following head and neck radiotherapy. Materials and Methods: From 16 patients, 86 videofluoroscopic swallows were classified into aspiration, penetration or no aspiration-penetration by three blinded experts (Rosenbek 1996). The iZn/Z (measure of post-swallow residue) was derived for a post-swallow region spanning the mid-point of the pharyngeal stripping wave. The iZn/Z was evaluated by 1 expert and 2 novice observers. Results: Among individual swallows, agreement among observers assessing penetration and aspiration on videofluoroscopy was modest with intra-class correlation coefficient (ICC) of 0.57 [0.46, 0.68]. Agreement among observers for AIM-derived swallow risk index (SRI) and the iZn/Z was good with ICC 0.78 [0.74, 0.82] and ICC 0.79 [0.74, 0.82]. When compared with historical age-matched controls, the SRI was higher in patients with aspiration ∆30 [55.8, 4.6, p<0.05] as was iZn/Z, in patients with aspiration ∆244 [419.7, 69.52, p<0.05]) or penetration ∆240 [394.3, 85.77, p<0.05]) Discussion: The AIM-derived markers of residue (iZn/Z) and global index of swallowing dysfunction (SRI) are reliable and easily determined objective non-radiological markers of clinically relevant features of disordered swallowing after head and neck radiotherapy.

Oral Presentations
SATURDAY SEPTEMBER 14

16:00 - 17:30 Hamlet
12/3 Treatment
Moderators: E Wagner-Sonntag, DM Denk-Linnert

Nº OP42. EFFORTFUL SWALLOWING DOES NOT AFFECT STRENGTH OF PHARYNGEAL CONTRACTION, RATHER ITS TIMING WITH BOLUS FLOW: AN AUTOMATED IMPEDANCE MANOMETRY (AIM) ANALYSIS
Charlotte Scheeren1; Bénédicte Vermeyen2; Lukas Van Oudenhove3; Margot Selleslagh1; Eddy Dejaeger4; Ann Goeleven2; Pantelis Oustamanolakis3; Jan Tack1; Taher Omari5; Nathalie Rommel1
1Translational Research Center for Gastrointestinal Disorders and ExpORL Dept. of Neurosciences, Belgium; 2ExpORL Dept. of Neurosciences, Belgium; 3Translational Research Center for Gastrointestinal Disorders, Belgium; 4Geriatric Medicine, Belgium; 5Gastroenterology Unit, Child, Youth & Women’s Health Service, Australia
Introduction: AIM is a new non-radiological tool which allows the assessment and analysis of esophageal motility in real time during swallowing. AIM was first validated in healthy subjects. AIM analysis can be performed in patients who cannot tolerate endoscopy. AIM can be performed in the bedside and in the clinic. AIM analysis is practical in everyday practice. It does not lead to unnecessary radiation exposure during VFSS and facilitates comparison between and within patients. Discussion: The results of this study suggest that MBSImP™© scoring is feasible and practical in everyday practice. It does not lead to unnecessary radiation exposure during VFSS and facilitates comparison between and within patients.
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Introduction The effortful swallow (ES) is designed to increase tongue base to posterior wall contact in patients with reduced oropharyngeal pressure, hereby improving bolus clearance. However, the effect of bolus volume and consistency on swallowing during this maneuver is unclear. Hence, we aim to quantify the effect of ES on pressure flow metrics and its interaction with bolus volume and consistency in healthy subjects.

Material and Methods 12 healthy controls (6M, mean age 32yrs, 21-53yrs) swallowed 3 bolus consistencies (liquid, semi-solid, solid) in 2 volumes (small [5ml-2cm²] or large [10ml-4cm²]). All swallows were recorded with combined high resolution manometry-impedance (36P12Z) and analyzed using AIMplot software, deriving swallow metrics for the pharynx and upper esophageal sphincter (UES). Different mixed models were estimated with each AIM metric as dependent variable, and volume, consistency and head posture as within-subject independent variables. Pairwise differences were tested using post-hoc t-tests corrected for multiple comparisons.

Results No significant effect of ES on pharyngeal peak pressure was found (p=0.4). ES significantly increased time from nadir impedance to pharyngeal peak pressure (p=0.0001), indicating improved bolus propulsion compared to head neutral position. Discussion This study shows that ES does not increase the strength of the pharyngeal contraction, but rather influences its timing with bolus flow. We believe this observation may be clinically relevant as ES is often the maneuver of choice in patients with pharyngeal hypocontractility. Our finding may contribute to the understanding of inconsistent treatment success while using this swallow maneuver.

Oral Presentations
SATURDAY SEPTEMBER 14

Confocal microscope image from human pharynx marked with anti-TRPV1 antibodies (red colour). Cell nucleus are marked with DAPI (blue colour). TRPV1 signal is seen along the epithelium with the highest signal strength in deepest layers.

Discussion: We found that TRPV1 is expressed in all the human oropharyngeal regions we examined, with a higher relative level in the tongue than in the epiglottis. We also found that TRPV1 is expressed in both

Abstract 1:

**Nº 0643. LOCALIZATION AND EXPRESSION OF TRPV1 RECEPTORS IN SENSORY AREAS OF THE HUMAN OROPHARYNX**

Daniel Alvarez-Berdugo1; J Francesc Casamitjana1; Ana Enrique1; Laia Reves2; Pere Clavé2

1Hospital de Mataró, C5dM, Spain; 2CIBERehd, Instituto de Salut Carlos III, Spain

Introduction: In earlier studies, we demonstrated that stimulation of TRPV1 with capsaicinoids improved swallow response in patients with oropharyngeal dysphagia (OD) suggesting that TRPV1 agonists could become useful pharmacological tools in the treatment of OD. TRPV1 expression has been explored in animal models but there is little information for humans. We aimed to characterize the quantitative expression and cellular type localization of TRPV1 receptors in the human oropharynx using RT-qPCR and immunofluorescence.

Materials and Methods: Human biopsies from areas innervated by cranial nerves V (tongue), IX (pharynx) and X (epiglottis) were obtained during surgical interventions. mRNA was extracted from 10 samples and retrotranscribed to cDNA for TRPV1 expression quantification by RT-qPCR. Four samples were marked with TRPV1 and PGP9.5 (neural marker) specific antibodies to produce immunofluorescent preparations visible under a confocal microscope.

Results: Relative expression of TRPV1 was maximal in the tongue (2.583±0.1487) and decreased in the epiglottis (1.399±0.1300, p<0.05). We found TRPV1 immunofluorescence in nerve fibres marked with PGP9.5 and basal epithelial cells from all three studied regions.
Abstract Book

sensory fibres and epithelial cells from the tongue (V) through the pharynx (IX) to the epiglottis (X). This information will be useful for future pharmacological assays using TRPV1 agonists to treat swallowing disorders. Confocal microscope image from human pharynx marked with anti-TRPV1 antibody(red) and antiPGP9.5 antibody(green). Cell nuclei are marked with Hoechst(blue). TRPV1 signal is found in the basal lamina of the epithelium and in some nerves innervating the epithelium.

Nº OP46. CRICOPHARYNGEAL DYSFUNCTION: BALLOON DILATATION AND LASER MYOTOMY, A PILOT STUDY
Beatriz Arenaz Bua; Rolf Olsson; Margareta Bülow; Olle Ekberg; Ulla Westin
SKÅNE UNIVERSITY HOSPITAL, Sweden

Introduction: Cricopharyngeal dysfunction (CPD) is caused by failed or partial sphincter relaxation, a lack of pharyngooesophageal coordination, or a reduction in the muscular compliance of the upper esophagus sphincter (UES). Typical symptoms are dysphagia, frequent aspiration, and functional narrowing at the level of the UES. It is characteristic a reduction in the maximal opening of the UES during transphincteric flow. Clinical and radiological assessment of CPD can be challenging: videomanometry combining solid state manometry and videofluoroscopy allows direct comparison of pressure readings with dynamic anatomy. Materials and Methods: This is a prospective randomized pilot study in order to study the effect of balloon dilatation (BD) and laser myotomy (LM) of the cricopharyngeal muscle (CM), using videomanometry as an objective measure and the Swedish version of Sydney Swallowing Questionnaire (SSQ) to register patient’s self-assessment at baseline and 6 months after treatment. Descriptive statistics and repeated measures ANOVA will be used to analyze data using SPSS version 21. Results: Ten patientes were included, but only 8 completed the study, 4 were treated with BD and 4 with LM. The UES sagittal diameter in millimeters increased significantly: pre-operative mean 7.53, CI (6.54, 8.67), and 6 months post-operative mean 8.11, CI (6.37, 10.36), p=0.017. According to the SSQ score, all patients felt better 1 month after treatment, but after 6 months 50% of those treated with BL showed a trend to worsen. Discussion: We will discuss how SSQ score and videomanometry parameters change pre- and post-operatively and how they can help us to choose the right technique for each patient.

Nº OP45. PREPARATION OF THICKENED DRINKS: CAN ACCURACY BE IMPROVED BY USING PRE-THICKENED PRODUCTS AS A VISUAL REFERENCE?
Ben Hanson; Stephen Cohen; Christina Smith
University College London, United Kingdom

Background Fluid thickeners are widely used for dysphagia management, however the ability to produce a thickened drink to the required consistency varies significantly. This study investigated whether pre-thickened products - of known consistency - could assist in the preparation of thickened drinks by providing a reference. Methods 60 student volunteers produced 200ml drinks to stages 1, 2 and 3 by mixing starch-based thickener with (i) apple juice (ii) apple juice already pre-thickened to stage 1 (iii) naturally-thick tomato juice. Half the volunteers –Group A– were provided with UK National Descriptors and thickener manufacturer’s instructions. Group B were additionally provided with 200ml pre-thickened oral nutritional supplements in glasses. Performance indicators were measured (quantities of powder and liquid, viscosity, mixing quality) and volunteers completed questionnaires on their experiences. Results Despite having identical instructions, the subjects’ approaches varied widely in terms of mixing order, measuring quantities, and the duration and vigour of mixing. Thickening apple juice: Group B showed less variability in powder/liquid ratio and viscosity compared to Group A. When the apple juice had already been slightly thickened Group A showed the largest variability of all tests: some “stage 1” results were higher viscosity than some “stage 3”. In comparison, Group B’s results were closer to the target consistency and much less variable. Similar advantages of Group B were noted when thickening naturally-thick tomato juice.

Conclusions Written instructions are insufficient to produce repeatable results, especially when a drink is not naturally thin. The provision of a pre-thickened product as a “reference” liquid improved the accuracy of thickening drinks.

Nº OP46. REHABILITATION FOR UPPER OESOPHAGEAL DYSFUNCTION FOR ADULTS WITH NEUROLOGICAL DYSPHAGIA: AN EVIDENCE BASED SYSTEMATIC REVIEW
Mindy Chiang; Margaret Walshe
Trinity College Dublin, Ireland

Introduction: Upper oesophageal sphincter (UOS) dysfunction is prevalent in adults with neurological dysphagia, with reported incidence ranging from 5.7% - 44%. Treatment options include surgery, pharmacological interventions and rehabilitation techniques. Clinicians have limited direction on the efficacy and effectiveness of these approaches. While a Cochrane systematic review is in progress on pharmacological interventions, there is little information on other interventions. The aim of this systematic review is to evaluate the evidence on non pharmacological interventions, specifically rehabilitation approaches involving exercise to improve UOS function and dysphagia. Materials and Methods: Inclusion criteria were all published and unpublished randomized and non randomized studies in all languages on adults who had UOS dysfunction associated with a neurological condition. Electronic databases (PubMed, EMBASE, CINAHL, AMED, Web of Science, Scopus) were searched from inception to April 2013. Grey literature was hand searched. Data was extracted by two independent reviewers and moderated by a third person. Appraisal of quality was completed using the Cochrane risk of bias tool. Results and Discussion: 306 studies were identified. Only 5 studies met the inclusion criteria. These studies involved four exercise interventions: jaw opening exercise, Shaker exercise, Mendelsohn manoeuvre with sEMG biofeedback, and effortful swallow with electrical stimulation. Overall, the methodological quality of the studies was weak. This review highlights the critical lack of evidence supporting exercise interventions for UOS dysfunction. The implications for clinical practice and research are discussed.
**Abstract Book**

**N° OP47. DOES BOLUS VOLUME AND CONSISTENCY INFLUENCE SWALLOW PHYSIOLOGY DURING LEFT AND RIGHT HEAD ROTATION? AN AUTOMATED IMPEDANCE MANOMETRY (AIM) ANALYSIS**

Charlotte Scheerens1; Bénédicte Vermeyen2; Lukas Van Oudenhove3; Margot Selleslagh1; Eddy Dejaeger4; Ann Goeleven2; Pantelis Oustamanolakis3; Jan Tack3; Taher Omari5; Nathalie Rommel1

1Translational Research Center for Gastrointestinal Disorders and ExpORL Dept. of Neurosciences, Belgium; 2ExpORL Dept. of Neurosciences, Belgium; 3Translational Research Center for Gastrointestinal Disorders, Belgium; 4Geriatric Medicine, Belgium; 5Gastroenterology Unit, Child, Youth & Women’s Health Service, Australia

**Introduction**

Head rotation is a postural change used to prevent aspiration or residue in patients with asymmetric laryngeal or pharyngeal impairment. However, the effect of bolus volume and consistency on swallowing during this postural change is unclear. Hence, we aim to quantify the effect of left and right head turn on pressure flow metrics and the interaction with bolus volume and consistency in healthy subjects. Materials and Methods 12 healthy controls (6M, mean age 32yrs, 21-53yrs) swallowed 3 consistencies (liquid, semisolid, solid) in 2 volumes (small [5ml-2cm2] or large [10ml-4cm2]). All swallows were recorded with high resolution manometry-impedance (36P12Z) and analyzed with AIMplot, deriving swallow metrics for pharynx and upper esophageal sphincter (UES). Mixed models were estimated with each AIM metric as dependent variable, and volume, consistency and head posture as within-subject independent variables. Pairwise differences were tested using post-hoc t-tests corrected for multiple comparisons. Results Left and right turn showed a significant increase in UES nadir impedance, indicating reduced UES diameter compared to head neutral. Larger volumes elicited significantly higher pharyngeal peak pressures compared to smaller boluses in left and right turn. More viscous boluses significantly decreased UES nadir impedance, indicating larger UES diameter compared to thin boluses. Discussion First, this study shows that swallow metrics during head rotation are affected by bolus volume and consistency in healthy controls. This implies that the therapeutic outcome of head rotation may differ according to the swallowed bolus. Second, our study shows that head rotation impacts on the UES diameter and strength of pharyngeal contraction during deglutition.

**Figure 1. Interaction effects on AIM parameters Peak Pressure (Figure 1a) and UES Nadir Impedance (Figure 1b)**
**Nº PP01. HEALTHCARE WORKERS INVOLVED IN THE CARE OF INDIVIDUALS WITH DYSPHAGIA IN NURSING HOMES: THEIR PERCEPTIONS OF DYSPHAGIA AND ITS MANAGEMENT**  
Aileen Galligan1; Rachel Leonard2  
1National University of Ireland Galway, Ireland; 2Discipline of Speech and Language Therapy, National University of Ireland Galway, Ireland  

Introduction: The incidence of Dysphagia increases with age and prevalence among residents in nursing homes is particularly high. Aspiration pneumonia is recognised as a cause of morbidity and mortality in the elderly population. Yet healthcare workers with frequent patient contact may be limited in their knowledge and training in Dysphagia. Therefore research in this area is required.

Materials and methods: A questionnaire design was used. Questionnaires were forwarded to participants responsible for the care and feeding of older adults with Dysphagia in nursing homes. The aim was to explore healthcare staffs’ perceptions in relation to the identification and management of Dysphagia and assess the need for further education.

Results: 92% of participants stated that more training was required, while 52% identified ‘lack of knowledge/training’ as a factor preventing them from following Speech and Language Therapists’ (SLT) guidelines. Findings also highlighted a significant lack of awareness around the role of the SLT in swallowing and assessing the need for further education.

Materials and methods: A questionnaire design was used. Questionnaires were forwarded to participants responsible for the care and feeding of older adults with Dysphagia in nursing homes. The aim was to explore healthcare staffs’ perceptions in relation to the identification and management of Dysphagia and assess the need for further education.

Discussion: There is a need to identify how improvements can be made to ensure those with Dysphagia receive appropriate care and management and those involved in their care receive adequate training and support to deal with the problem effectively. This may be achieved through provision of basic training to healthcare workers.

**Nº PP02. PREVALENCE OF OROPHARYNGEAL DYSPHAGIA IN PATIENTS WITH STABLE COPD**  
Margareta Gonzalez Lindh1; Hirsh Koyi2; Lennart Fredriksson3  
1Logopedmott., Sweden; 2Department of Respiratory Medicine, Gävle Hospital, Sweden; 3Centre for Research & Development, Uppsala University/City Council of Gävleborg, Gävle, Sweden, Sweden  

Introduction: Prevalence of dysphagia in patients with Chronic Obstructive Pulmonary Disease (COPD) is widely an unknown phenomenon in Sweden. The cause is believed to lie in the intricate coordination of swallowing and breathing. The aim of this study was primarily to test 51 patients with moderate to severe COPD using a timed waterswallow test, a cookieswallow test and a questionnaire to explore the prevalence of oro-pharyngeal dysphagia. Was it possible to determine at what stage of the disease (GOLD) the patient start experiencing symptoms of dysphagia and is there a difference between men and women regarding the amount of dysphagia symptoms. Materials and method

Results: 92% of participants stated that more training was required, while 52% identified ‘lack of knowledge/training’ as a factor preventing them from following Speech and Language Therapists’ (SLT) guidelines. Findings also highlighted a significant lack of awareness around the role of the SLT in swallowing and assessing the need for further education.

Discussion: There is a need to identify how improvements can be made to ensure those with Dysphagia receive appropriate care and management and those involved in their care receive adequate training and support to deal with the problem effectively. This may be achieved through provision of basic training to healthcare workers.

Materials and methods: A questionnaire design was used. Questionnaires were forwarded to participants responsible for the care and feeding of older adults with Dysphagia in nursing homes. The aim was to explore healthcare staffs’ perceptions in relation to the identification and management of Dysphagia and assess the need for further education.

Discussion: There is a need to identify how improvements can be made to ensure those with Dysphagia receive appropriate care and management and those involved in their care receive adequate training and support to deal with the problem effectively. This may be achieved through provision of basic training to healthcare workers.

**Nº PP03. APNEA-HYPOPNEA DURING WATER SWALLOWING IN PATIENTS WITH AMYOTROPHIC LATERAL SCLEROSIS**  
Sonoko Nozaki1; Shuhei Sugishita2; Toshio Saito3  
1Hyogo University of Health Sciences, Japan; 2Takasago Municipal Hospital, Japan; 3Toho University National Hospital, Japan  

Introduction: Swallowing difficulty is increased along with progression of respiratory disturbance in patients with Amyotrophic Lateral Sclerosis (ALS). To analyze the respiratory patterns during swallowing is important for the management of this disease. We evaluated the respiratory cycle at rest and after swallowing, and apnea/hypopnea (A/H) during water swallowing. Materials and Methods@We evaluated respiratory patterns in swallowing in 10 ALS patients(66.0±7.1 yo) and in 10 healthy volunteers as control (61.7±10.0 yo). Respiratory patterns were evaluated by simultaneous recording of cervical swallowing sound in water swallow. A hypersensitive microphone measured cervical sound. A thermister was used for pneumography. The means of four continuous respiratory cycles at rest and after swallowing of water were used for analysis. Respiration with amplitude of 1/2 or smaller than that of the pneumography wave defined as A/H. Results and Discussion

**Nº PP04. THE PERFORMANCE OF SPEECH AND LANGUAGE PATHOLOGIST IN THERAPY NUTRITIONAL MULTIDISCIPLINARY TEAM**  
Thiago Ferrerira1; Ana Catarina Torres2; Ana Maria Furkim3  
1PRIMAVERA HOSPITAL, Brazil; 2Federal University of Bahia, Brazil; 3FEDERAL UNIVERSITY OF SANTA CATARINA, Brazil  

Introduction: Care with dysphagic patient has stood out among health workers and institutions are more aware about their care, the risk of aspiration and prolonged and recurrent hospitalizations. The Speech and Language Pathologist (SLP) is part of the Therapy Nutritional Multidisciplinary Team (TNMT), in order to optimize this service. The
aim of this research is to characterize the performance of the SLP in TNMT. Material and Methods: This is a transversal study, conducted with the TNMTs coordinators in four hospitals of two brazilian cities, using a questionnaire that included the duties of this teams. Results and Discussion: Of the hospitals surveyed had 67.8% TNMT. The aspects considered to define the reintroduction of oral diet were: level of consciousness (n = 4), the results of swallowing objective exams (n = 2) and SLP evaluations (n = 2). The SLP evaluations are backed up by evaluation protocols in 100% of the teams. For the removal of feeding tubes were considered the following factors: percentage of acceptance of oral diet (n = 4), no coughing or choking (n = 2) SLP prognosis (n = 2). Among the professionals involved in this definition the SLP was cited by all teams and was related to the volume of the oral diet offered in 100% of the responses. From SLP that make up these teams, 60% are specialists in dysphagia or ‘hospital SLP’. The SLP, a member recently inserted therein, assumes role of utmost importance in the conduct of feeding planning of the individual.

Nº PP05. LONG TERM FOLLOW UP OF SEVERE DYSPHAGIC PATIENTS WITH CHRONIC ASPIRATION : REPORT OF 3 CASES
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Introduction The evolution of pulmonary status in patients of chronic aspiration is rarely described. Material and Methods In this presentation, the case of 3 patients living with severe chronic aspirations since more than 7 years is exposed before stopping eating by the mouth. In the 3 cases, a combined follow up was organized with the swallowing center and the pulmonary departement because of the refusal of a non oral feeding. Results and Discussion The aetiologies of the swallowing disorders are (1) irradiation for a Hodgkin lymphoma performed in 1978, (2) surgery and radiation therapy for a Head Neck Cancer in 2003, (3) symptomatic Oculopharyngeal myopathy since 2000. The three patients are now fed by a PEG because of a progressive denutrition. Only the case (3) have some typical pneumonia before the placement of the PEG. The case (1) presented a severe respiratory decompensation as an early complication of the PEG. The case (2) never presented an acute episode. The pulmonary diseases observed by tomodensitometry, fiberendoscopy and functional assessment will be described. A chronic inflammatory pneumonia is a constant disease. Several profiles of decompensation are possible.

Nº PP06. DYSPHAGIA SECONDARY TO THE UES DYSFUNCTION CAUSED BY TRACHEOSTOMY PRESENCE.
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INTRODUCTION The epidemiological profile of hospitalized patients in rehabilitation has changed. This matter requires speech therapists rethink treatment models in order to board sub-acute patients since their hospitalization. The admission of tracheostomized patient in our facility has increased exponentially. Although endotracheal intubation, ventilator support and tracheostomy are life sustaining procedures during hospitalization, they complicate the normal swallowing physiology. Superior airway isolation by tracheostomy makes swallowing and speech difficult or can even prevent it. OBJECTIVES To evaluate tracheostomy tube on the UES opening effects and its consequent dysphagia. To describe the physiopathological mechanism that cuff inflated tracheostomy causes on swallowing and respiratory mechanics. To predict if airway instrumentation by a tracheal tube affects UES opening. MATERIAL-METHODS A prospective study was undertaken in 25 tracheostomized patients in a rehabilitation hospital with two diagnostic categories: neurological disorders and respiratory diseases. Dysfunction of the UES opening and presence of dysphagia were diagnosed by videofluoroscopy study, which was made by deflated cuff and speech valve. RESULTS The appearance of reduced UES opening during swallowing and decrease of hiolaryngeal excursion were observed in 80% of the study population. This situation causes penetration and/or aspiration due to abundant residues after swallowing on posterior tongue, pharyngeal wall, vallecula and pyriform sinus. DISCUSSION A correct therapeutic approach of these patients that recovers impaired muscular function caused by the tracheostomy presence would accelerate the recovery of oral feeding and communication and decrease some procedure to dilate the UES.

Nº PP07. Withdrawn
Nº PP09. PSYCHOMETRIC CHARACTERISTICS OF QUESTIONNAIRES ON FUNCTIONAL HEALTH STATUS IN OROPHARYNGEAL DYSPHAGIA: A SYSTEMATIC LITERATURE REVIEW
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INTRODUCTION In the assessment of oropharyngeal dysphagia in adults, it is common practice to use a symptom list to describe a patient’s functional health status (FHS). This systematic review provides an overview of FHS questionnaires and the corresponding psychometric characteristics. MATERIAL AND METHODS A systematic literature search was performed by two independent reviewers using two different electronic databases Pubmed and Embase. All available inclusion dates up to April 2013 were used. Key words (Mesh and Thesaurus terms) were supplemented by using free text words. Only original articles describing FHS questionnaires in oropharyngeal dysphagia were included, thus, excluding for example Health Related Quality of Life questionnaires (HRQoL). Questionnaires that did not provide information on psychometric characteristics as well as lack the necessary information to determine psychometric characteristics were listed but excluded from outcome tables. RESULTS Although quite a few FHS questionnaires can be retrieved from the literature, only limited information is available on the psychometric characteristics of FHS questionnaires. DISCUSSION Further research is required on determining the psychometric characteristics of FHS questionnaires. The use of FHS questionnaires not showing good validity and/or reliability must be avoided because of their questionable contribution to patients’ outcome measurement.

Nº PP10. THE OROPRESS: A NEW SAFE, VALID AND RELIABLE WIRELESS TOOL FOR MEASURING SWALLOWING AND ISOMETRIC PRESSURES.
Alison Perry1; Vincent Casey2; Richard Conway2; Joanne McCormack2; Catraione Hickey2; Carmel Ni Chualain2; Margaret Walshe3

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INTRODUCTION Existing tools for measurement of oral tongue-palatal pressures during swallowing and isometric conditions in the oropharynx area, there is great danger of aspiration pneumonia. In most cases, temporary tracheostomy and a change of diet to enteral nutrition is inevitable. Method:
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Individual case studies of 5 patients (4 male and 1 female, aged 43-57). Results: Relevant factors, such as the number of preserved arth河道 cartilages, age, compliance and general health of a patient significantly affect the outcome of a successful rehabilitation of voice and swallowing. Discussion: Although anatomic structures present great changes after CHP or CHEP, swallowing free of aspiration and the formation of a strong voice is possible.

Nº PP12. TONGUE PRESSURES, ENDURANCE AND SWALLOWING PRESSESURES AS CLINICAL INDICES IN DYSPHAGIC POPULATION
Elena Pavlidou; Athanasia Printza; Stefanos Triaridis; Charalampos Goutsikas; Spyros Mataxas; Jiannis Konstantinidis
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Introduction: The aims of this study are 1) to evaluate and analyze the range of the tongue strength and the endurance in patients with various causes of dysphagia, 2) to document the impact of the reduced tongue strength on swallowing function by examining the swallowing pressures and 3) the comparison of all these clinical indices between the disordered groups. Materials and Methods: Thirty patients with swallowing disorders participated in the study. Ten patients with degenerative neurologic disease, ten post stroke dysphagic patients and ten Head and Neck Cancer patients were included. All clinical measures were obtained using the Iowa Oral Performance Instrument (IOP). Maximum isometric pressures were evaluated by compressing the air-filled balloon into the palate with the maximum voluntary effort. Additionally dry swallow pressures were recorded. All measures were obtained three times for each subject. Result: All measured pressures statistically significantly reduced in the dysphagic population. Statistically significant differences were noted between the subgroups for the mid and posterior tongue endurance. Swallowing pressures did not differ significantly between the groups. Discussion: Lower tongue endurance is the main finding in the dysphagic population. The magnitude of the decrease depends on the specific medical condition. A holistic approach of the oromotor mechanism may provide a better insight into the pathology in terms of swallowing function.

Nº PP13. CLINICAL SWALLOWING EVALUATION AND ITS IMPACT ON QUALITY INDICATORS IN HOSPITAL FOR SURGICAL PATIENTS
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Clinical Swallowing Evaluation and Its Impact on Quality Indicators in Hospital for Surgical Patients: Authors: Castaño R, Cesario H, Hita A, Pratesi P, Grassi D, Sacco P. Introduction: Oropharyngeal dysphagia is a consequence of many acute and chronic diseases, a functional consequence of many a surgery and oncological treatment. This study analyzed the results and impact on quality indicators chosen by a long-term acute care hospital. Material and Methods: A professional specialized in swallowing disorders used Clave’s bedside volume-viscosity swallow test (V-VST) in the context of general wards as well as in intensive care and coronary units. This observational retrospective epidemiological study analyses the results of the evaluation of 97 patients aged 18 years old and over, during two successive years. The variables analysed are four: Impaired safety, efficiency, food intake, and dysphagia classification. Results: The authors’ critique of a systematic revision on aspects such as the lack of studies on a single evaluation and the differentiation of safety and efficiency impairments, given that they determine different comorbidities, was considered to analyse the results. We could observe that dysphagia prevalence in the aforementioned groups was similar to the evidence; the relevant aspect of this study is that there is a direct relation between safety impairments, no oral feeding and mild severe dysphagia. Discussion: These findings indicate that systematic lingual exercises improve the strength of the tongue and the endurance and enable patients with dysphagia to improve their swallowing ability.

Nº PP14. IMPROVEMENT OF TONGUE STRENGTH AND ENDURANCE VIA LINGUAL EXERCISES IN PATIENTS WITH DYSPHAGIA
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Introduction: It is clinically important to examine tongue function in terms of rehabilitation of swallowing difficulties. The purpose of the study is to evaluate the effects of the lingual exercises in patients with dysphagia by measuring the strength and the endurance of the tongue before and after treatment. Materials and Methods: This is a prospective cohort intervention study with 4 and 8 weeks follow-ups. Eleven patients with dysphagia (seven neurologic and four Head and Neck Cancer patients) were included in the study. Subjects performed an 8-week isometric lingual exercise program by using the Iowa Oral Performance Instrument (IOP). Anterior, mid and posterior tongue elevation and endurance were obtained by compressing an air-filled bulb between the tongue and the hard palate. Isometric pressures, endurance and the screening EAT 10 questionnaire were collected at baseline, week 4 and week 8. Results: There was a statistically significant increase in maximum isometric pressures (week 4: P<.003 anterior tongue; week 8: P<.002 anterior tongue and P<.001 posterior tongue) and endurance (week 8: P<.003 anterior tongue; P<.004 posterior tongue). EAT 10 was significantly decreased in all subjects (week 8: P<.001). Discussion: These findings indicate that systematic lingual exercises improve the strength of the tongue and the endurance and enable patients with dysphagia to improve their swallowing ability.

Nº PP15. LATE DIAGNOSIS, SUCCESS AND FAILURE IN SWALLOWING REHABILITATION THERAPY.
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Title: Late Diagnosis, Success and Failure in Swallowing Rehabilitation Therapy. Authors: Castaño R, Bilbao J, Cesario H. Introduction: This study purports to evaluate the results of swallowing rehabilitation therapy on tertiary care patients. The variables analyzed were paramount for their association with this study results and for future discussion on the scope of this study. Material and methods: 30 patients aged between 16 and 91 years old were studied. They were subjected to a swallowing and rehabilitation protocol during an average three-month period on
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Nº PP16. EFFECTS OF THE TALK TOOLS® ASSESSMENT AND TREATMENT OF THE JAW ON FEEDING SKILLS IN CHILDREN WITH DEVELOPMENTAL FEEDING AND/OR SWALLOWING DISORDERS

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Introduction: Oral motor disorders in children with oral-preparatory dysphagia are frequently associated with functional feeding difficulties. While oral motor exercises (OMEs) are routinely used in clinical practice, evidence for their efficacy is lacking. The study aims to explore the effects of the Talk Tools® Assessment and Treatment of the Jaw on oral-motor skills that are important for functional feeding on children with oral-preparatory dysphagia (OPD). Additionally, it aims to determine whether parents of children with oral-preparatory dysphagia observe a reduction in the perception of drooling. Materials and Method: Seven (N=7) participants with OPD participated in six-weeks of intervention utilizing the Talk Tools® Jaw Program. The Schedule of Oral Motor Assessment (SOMA), Feeding functional Assessment (FFA) and the Drooling Impact Scale (DIS) were used as baseline measures, and re-administered immediately following a 6 week therapy block and at a 4 week post-therapy maintenance point. Participants’ caregivers completed a questionnaire on their perception of the Talk Tools® Jaw program once therapy had concluded. Results: A significant improvement for oral-motor skills in response to the Talk Tools® Jaw Program was found in the SOMA and FFA. A significant improvement was maintained after a 4 week maintenance period. There were no significant reductions in the impact of drooling. Parental responses on a feeding questionnaire revealed positive perceptions with regards to improvements in feeding and chewing abilities. Discussion: The findings of this phase 1 study suggest that the Talk Tools® Jaw Program is be effective in improving oral motor skills in children with oral-preparatory dysphagia.

Nº PP17. COMPARISON OF THE EFFECT OF PYRIFORM BALLOON SWALLOW IN STROKE PATIENTS WITH DYSPHAGIA DEPENDING ON THE LESION SIDE

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Introduction The objective is to compare effects of balloon swallow at pyriform sinus depending on the lesion side in stroke patients with dysphagia. Material and Methods Subjects 16 stroke patients with cricopharyngeal dysfunction in videofluoroscopic swallow study(VFSS) were divided into 2 groups. One are 8, brain lesion on the right, and the other are 8, brain lesion on the left. Intervention The balloon using 16 Fr Foley catheter was inserted through the left nostril into the left pyriform sinus.Balloon was positioned on the pharyngo-esophageal segment(PES) under fluoroscopy. The balloon was swallowed into the esophagus. After swallow it was de-ballooned and then relocated on the PES. This was repeated for 5 minutes. Evaluation The changes of pre and post-balloon swallow in laryngeal elevation, pharyngeal transit time, and pharyngeal remnants of VFSS were compared between two groups. Results There was a significant decrement of post-swallow in pharyngeal remnants after balloon swallow in both groups. The remnants after balloon swallow in the group of right hemispheric lesion were less than those in the group of left hemispheric lesion. Discussion Balloon swallow at pyriform sinus can be one of the modalities to relieve dysphagic symptom in stroke patients with cricopharyngeal dysfunction. Furthermore, the application of balloon on the contralateral side of pyriform sinus would be more effective for decrease of pharyngeal remnants.

Nº PP18. HEALTH CARE PROFESSIONALS’ PERCEPTIONS OF DYSPHAGIA IN THE ACUTE CARE SETTING

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Introduction: Dysphagia is a condition which may lead to negative health consequences. The role of the Speech and Language Therapist (SLT) in the management of Dysphagia is well established. However research shows that a team approach is essential in improving patient outcomes. Compliance with SLT recommendations by members of the multi-disciplinary team is reported to be low thus impinging on the standard of care being provided to those with dysphagia.

Materials and Methods: Anonymous questionnaires were distributed to health care providers working with people with Dysphagia in an acute care setting.

Results: Lack of time and knowledge were identified as the main barriers to compliance with SLT recommendations (46%). 10% of participants stated that they would always ‘like to follow guidelines’ but time pressures prevented them from doing so. 17% of participants stated that they felt the patients’ quality of life is of greater importance than complying with SLT recommendations and, 33% reported the patient’s refusal to comply with modifications was a factor in non-compliance. 83% reported that further training and supervision is required for those working with people with dysphagia in the acute care setting.
Discussion: Healthcare providers in the acute care setting have acknowledged that it is not always possible to comply with SLT recommendations. Similar to other studies conducted in the area, lack of knowledge and time were the key risk factors for non-compliance. A need for further training to ensure an adequate standard of care is provided to those with dysphagia was identified.

Nº PP19. RESULTS OF PARAESOPHAGEAL HERNIA REPAIR AFTER 9 YEARS -- AN ANATOMICAL REPAIR IS SUFFICIENT!
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Introduction Paraesophageal hernia (PEH) should be repaired because of typical symptoms and the risk of severe complications. Controversy persists as to the surgical approach and whether an antireflux procedure and a mesh repair is required. Data of a systematic longterm follow-up after an anatomical repair without mesh and with a fundoplication on demand are analysed. Material and Methods This study reviews the longterm results of 117 patients who underwent surgical repair of large paraesophageal hernia, either via the open, transabdominal or the laparoscopic approach without mesh reinforcement. A fundoplication was only added in case of a manifest reflux disease. Mean follow-up was 9 years. Patients were reviewed by means of a standardized questionnaire and had a thorough diagnostic work-up in case of disease related symptoms. Results 20% of investigated patients showed a sliding hernia in esophagograms, however most of the patients were free of symptoms. True recurrences were observed in 2 patients after conventional open repair and in 2 patients after a laparoscopic procedure. Surgical mortality was 1.7% over the entire follow-up period. Reoperations were necessary in 12 patients for incisional hernia, for small bowel obstruction in one patient and for the mentioned recurrences in 4 patients. 85% of patients had an improved symptoms score after PEH repair. A fundoplication had been applied in 12 patients to prevent from reflux. Discussion Our data report improved symptoms score after PEH repair. A fundoplication had been added in case of manifest reflux disease and four patients are head and neck cancer. Before surgery, all patients need tube feeding, and thirteen patients already with tracheal canula. We assess the effect after surgery by oral feeding and no tracheal cannula necessary and the invasion of surgery by postoperative complication and hospitalization. Nine patients with mild level of independent living of bedridden are often oral feeding and sometimes no tracheal canula necessary. Nine patients with severe level of independent living of bedridden are tracheal canula necessary and tube feeding after surgery. No serious postoperative complications, but postoperative cutaneous fistula with three patients. The mean hospitalization of six patients including five severe bedridden patients who were planned hospitalization could leave our hospital for 12 days. This surgical procedure is minimally invasive and successful in treating mild and severe bedridden patients with progressive neural disease as well as head and neck cancer.

Nº PP20. SURGERY OF GLOTTIS CLOSURE FOR TREATMENT TO PREVENT ASPIRATION PNEUMONIA IN ADULTS.
Miki Nagai: Keisuke Enomoto; Kazuya Takeda; Shotaro Harada; Yoshiaru Sakata
Osaka General Medical Center, Japan
This report describes a surgical procedure for intractable aspiration pneumonia, and is investigated the effect and the invasion of surgery of glottis closure for treatment to prevent aspiration pneumonia. For two years, eighteen patients suffering from severe aspiration pneumonia were treated with a glottis closure originally reported by Montgomery in 1975 and modified by Kano et al. in Japan in 2007. Eleven patients are progressive neural disease, and four patients are head and neck cancer. Before surgery, all patients need tube feeding, and thirteen patients already with tracheal canula. We assess the effect after surgery by oral feeding and no tracheal cannula necessary and the invasion of surgery by postoperative complication and hospitalization. Nine patients with mild level of independent living of bedridden are often oral feeding and sometimes no tracheal canula necessary. Nine patients with severe level of independent living of bedridden are often oral feeding and sometimes no tracheal canula necessary. Nine patients with severe level of independent living of bedridden are tracheal canula necessary and tube feeding after surgery. No serious postoperative complications, but postoperative cutaneous fistula with three patients. The mean hospitalization of six patients including five severe bedridden patients who were planned hospitalization could leave our hospital for 12 days. This surgical procedure is minimally invasive and successful in treating mild and severe bedridden patients with progressive neural disease as well as head and neck cancer.

Nº PP21. CORRELATING SWALLOWING- AND SPEECH OUTCOME IN PATIENTS WITH ADVANCED HEAD AND NECK CANCER TREATED WITH CHEMORADIOTHERAPY
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Introduction Several structures in the head and neck area have an important role in both swallowing and speech. Previous analyses showed that one year after patients with advanced head and neck cancer finished chemoradiation treatment, articulation precision and strength were decreased. The decreases were significantly related to mean radiation doses to structures such as e.g. the tonsil fossa/soft palate. Here, we analyze whether swallowing- and speech outcome correlate in this patient group, and to what extent correlating measures are related to the same structures.
Material and Methods Thirty-four patients with advanced stage (III, IV) squamous cell carcinoma were recorded before, (10 weeks and) one year after chemoradiation therapy. Swallowing data were available for the same assessment points. Articulation data, swallowing outcome, and mean radiation doses to structures in the head and neck area were correlated.
Results One year after the end of treatment, patients who reported to have no problems in swallowing solid consistencies showed the strongest /k/-plosives whereas those who experienced problems showed weaker plosives. Swallowing and articulation measures both correlated significantly with mean doses to the tonsil fossa/soft palate. In contrast, swallowing fluid consistencies was neither correlated to velar plosive strength, nor to mean radiation doses to the tonsil fossa/soft palate. Work in progress includes further analyses on the relationship of articulation-, voice- and swallowing outcome.
Discussion Articulation and swallowing outcome that reflect velopharyngeal closure and base of tongue movement were both comparably affected by radiation doses to the tonsil fossa/soft palate.

CHEMORADIOTHERAPY PATIENTS WITH ADVANCED HEAD AND NECK CANCER TREATED WITH CHEMORADIOTHERAPY
Osaka General Medical Center, Japan
This report describes a surgical procedure for intractable aspiration pneumonia, and is investigated the effect and the invasion of surgery of glottis closure for treatment to prevent aspiration pneumonia. For two years, eighteen patients suffering from severe aspiration pneumonia were treated with a glottis closure originally reported by Montgomery in 1975 and modified by Kano et al. in Japan in 2007. Eleven patients are progressive neural disease, and four patients are head and neck cancer. Before surgery, all patients need tube feeding, and thirteen patients already with tracheal canula. We assess the effect after surgery by oral feeding and no tracheal cannula necessary and the invasion of surgery by postoperative complication and hospitalization. Nine patients with mild level of independent living of bedridden are often oral feeding and sometimes no tracheal canula necessary. Nine patients with severe level of independent living of bedridden are tracheal canula necessary and tube feeding after surgery. No serious postoperative complications, but postoperative cutaneous fistula with three patients. The mean hospitalization of six patients including five severe bedridden patients who were planned hospitalization could leave our hospital for 12 days. This surgical procedure is minimally invasive and successful in treating mild and severe bedridden patients with progressive neural disease as well as head and neck cancer.
Introducing: We aimed to show the comparison of swallowing outcomes after transoral CO2 laser surgery (TLS) versus partial laryngectomy (PL). Material and Methods: The study included 15 supraglottic larynx cancer patients. The patients were divided into two groups according to surgery type. All patients evaluated with ﬁberoptic endoscopic swallowing evaluation 10 days and 6 weeks after surgery, the Penetration Aspiration Scale (PAS) was used. The decannulation time, discharge time, oral intake start and nasogastric tube (NG) removal time were noted. Results: 8 of the patients had PL and 7 of them had TLS. There was no statistically signiﬁcant difference between two groups in PAS scores (p>0.05) 10 days and 4 weeks after surgery. The mean decannulation time was 9.13±9.28 days, the mean discharge time was 18.6±6.64 days, the mean oral intake start 18±5.97 days and NG removal time was 28,93±7.79 days in PL. The mean decannulation time was 14±3.74 days, the mean oral intake start 13.57±3.36 days and NG removal time was 22.43±3.69 days in TLS. Only one patient of TLS had tracheostomy and the decannulation time was 18 days. There was statistically signiﬁcant difference between two groups in their decannulation, discharge, oral intake start and NG removal times in favour of TLS group (p<0.05). Discussion: TLS is used extensively for its favourable features including an effective cutter penetrating target tissue, sealing off blood vessels with minimal thermal effect and collateral damage. So we think these features may affect the swallowing outcomes better. So we found statistically signiﬁcant difference between two groups in their decannulation, discharge, oral intake start and NG removal times in favour of TLS group if the group numbers is increased, the differences can be shown better.

Nº PP23. HOW TO DEVELOP THE FEEDING SKILLS IN PATIENT WITH CLEFT LARYNX?
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Our aim was to present the effects and methods used during the development and the therapy of feeding skills. A 2.5 years boy, born with a cleft larynx and subglottic stenosis of the larynx, trachea ﬂaccidity and other defects, was qualiﬁed for surgery of the larynx by-step. The patient came under our care at the time when he was after his ﬁrst surgery and prior to the ﬁnal reconstruction. Patient choked after all kinds of foods and food appeared in tracheostomy. The ﬁnal reconstruction of tracheostomy could not be done due to dysphagia. The feeding team (gastroenterologist, speech therapist, nutritionist, psychologist, radiologist) was involved during whole feeding therapy. We began the diagnostic approach with the Videofluoroscopic Swallow Study (VFSS) which showed a large proportion of food in the tracheostomy tube as a result of the leaking food penetration from the outside into the tube. It turned out that the boy was not properly fed by his parents, what resulted in a lack of control over the food in the mouth. The diagnostic evaluation of swallowing function with FEES (ST) [ﬁberoptic ﬂuoroscopic swallowing study are indispensable to reveal the pathophysiology of dysphagia and to establish a therapy regimen. In addition, subjective rating scales should be used to describe the impaired quality of life. Functional swallowing therapy comprises individually tailored causal, compensatory and adaptive treatment modalities and should start as early as possible. Early therapy onset seems to be a positive prognostic factor of therapeutic success. In case of insufﬁcient oral nutrition, non-oral feeding (PEG) has to be provided. Until so far, no possible prevention strategies (dose and protocols of radiation, structures to be spared) have been deﬁned. Therefore, prospective clinical trials are necessary for further research. Case studies will demonstrate the diagnostic and therapeutic management challenges.

Nº PP24. DYSPHAGIA AND ASPIRATION AFTER CHEMORADIATION – HOW TO MANAGE?
Doris-Maria Denk-Linnert; Imme Roesner; Matthias Leonhard
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Chemoradiation, an organ-preserving treatment modality in head and neck cancer patients, often has a debilitating effect on swallowing function, even years after therapy. Acute and long-term dysphagia and aspiration are often underestimated sequelae. They do not only bring about potentially life-threatening complications due to pulmonary consequences (aspiration pneumonia) or malnutrition but also have a negative impact on quality of life. The prevalence data vary widely. Tube feeding is necessary in a great number of treated patients - even during 5 years follow-up (13-25%, Bourhis et al. 2011). For the diagnostic workup, instrumental diagnostic evaluation of swallowing function with FEES(ST) (ﬁberoptic (ﬂexible) evaluation of swallowing (with sensory testing) and/or videofluoroscopic swallowing study are indispensable to reveal the pathophysiology of dysphagia and to establish a therapy regimen. In addition, subjective rating scales should be used to describe the impaired quality of life. Functional swallowing therapy comprises individually tailored causal, compensatory and adaptive treatment modalities and should start as early as possible. Early therapy onset seems to be a positive prognostic factor of therapeutic success. In case of insufﬁcient oral nutrition, non-oral feeding (PEG) has to be provided. Until so far, no possible prevention strategies (dose and protocols of radiation, structures to be spared) have been deﬁned. Therefore, prospective clinical trials are necessary for further research. Case studies will demonstrate the diagnostic and therapeutic management challenges.
Nº PP27. LEVDOPA AND SWALLOWING IMPAIRMENTS IN PARKINSON'S DISEASE (PD) REVISITED

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Introduction: Dysphagia affects up to 27-50% of stroke patients. Swallowing disorders complications can lead to malnutrition, bronchoaspirative pneumonia and increase mortality, and has an impact on health care costs. Objectives To determine the incidence of dysphagia in a Stroke Unit and the usefulness of Water Swallow test (WST) in detecting aspiration in the acute phase. Material and Methods: Retrospective study of stroke patients sample ( n=530) who were attended from January 2012 to December 2012 in a Stroke Unit of Tertiary University Public Hospital. Water Swallow test (WST) were performed in all patients in order to detect swallowing disorders. Demographic variables , WST
Abstract Book

Nº PP29. SWALLOWING EVALUATION IN PATIENTS WITH LARYNGEAL DYSTONIA BEFORE AND AFTER TREATMENT WITH BOTULINUM TOXIN
Roberto Dantas; Leda Alves; Hilton Ricz
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Introduction: Dystonia is a syndrome consisting of involuntary muscle contractions. A form of focal disease is laryngeal dystonia, causing a tense voice quality and discontinuous speech during the involuntary closing of the vocal folds during phonation. The treatment can be carried out with the injection of botulinum toxin in the muscle groups affected. The aim of this study was to evaluate swallowing in patients with laryngeal dystonia before and after treatment with botulinum toxin.
Materials and Methods: We evaluated 17 patients with ages between 23-88 years (mean: 61 years), diagnosed with laryngeal dystonia, before and after 22-40 days (mean: 33 days) treatment with the injection, guided by electromyography, of botulinum toxin type A in the thyroarytenoid muscle, and 20 healthy subjects, ages between 32-83 years (mean: 63 years) as controls. Videofluoroscopic evaluation was performed with three 5 ml swallows of liquid barium and three 5 ml swallows of paste barium prepared with liquid barium and food thickener. The sequence of swallows was random. Results: After the injection of botulinum toxin in the patients, there was no difference in oral and pharyngeal bolus transit duration compared with the evaluation before the injection. The patients had pharyngeal transit faster than the controls, for liquid and paste boluses. Discussion: Injection of botulinum toxin into the thyroarytenoid muscle for the treatment of vocal disorders caused by laryngeal dystonia did not change the oral and pharyngeal transit duration about 30 days after the injection. Patients with laryngeal dystonia showed faster pharyngeal transit than controls.

Nº PP30. VIDEOFUOROSCOPY FINDINGS ON SWALLOWING EXAM, IMPAIRED NUTRITIONAL STATUS AND QUALITY OF LIFE IN STROKE PATIENTS
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Introduction: Oropharyngeal dysphagia is common in stroke patients, occurring in 45-65% of cases. We aimed to characterize the most frequent videofluoroscopic findings on swallowing exam in stroke patients; identify impaired nutritional status and quality of life in this population and to analyze the possible factors associated with these complications.
Materials and Methods: We studied 30 stroke patients admitted to the Emergency Unit of the Hospital of School of Medicine at Ribeirão Preto - USP between August 2011 and January 2012, about 30 days after the ictus. Stroke was evaluated by neuroimaging and clinically by neurological scales. Swallowing was assessed by videofluoroscopy. Nutritional status and quality of life were assessed, respectively, by the instrument MNA® and SWAL-QOL questionnaire. Results: We found high frequency of complaints related to swallowing among our patients. Disorders in the oral phase of swallowing were associated with lesions in the right hemisphere, whereas disorders in the pharyngeal phase with lesions in the left hemisphere. Most of our patients had impaired nutritional status, and this was associated with cognitive impairment, depression, functional disability in the univariate analysis. Impaired nutritional status was independently associated with scores on the NIHSS and pharyngeal residues on multivariate logistic regression. The studied subjects also had worse quality of life when compared to healthy elderly individuals. The presence of aspiration and malnutrition was associated with a worse score in the fatigue domain.
Discussion: Stroke patients had high prevalence of swallowing disorders, nutritional loss and impaired quality of life. Studies are required to evaluate the impact of these complications in the patients prognosis.

Nº PP31. VARIABILITY IN ORAL AND PHARYNGEAL TRANSIT BETWEEN PAIRED SWALLOWS IN CHAGAS’ DISEASE
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Introduction: Chagas’ disease causes lower esophageal sphincter achalasia, dysphagia, regurgitation and retention of food in the esophageal body. The patients have longer pharyngeal clearance, which might be consequent of the involvement of central nervous system (CNS) or an adaptation to the esophageal transit impairment. If there is CNS involvement, we expect a larger difference in the duration of oral and pharyngeal phases of swallowing between paired swallows than that seen in healthy subjects. The objective of this investigation was to compare the variation of oral and pharyngeal transit durations between paired swallows in patients with Chagas’ disease and healthy subjects.
Materials and Methods: By videofluoroscopy, the duration of oral and pharyngeal transit, pharyngeal clearance, upper esophageal sphincter transit, hyoid movement and oropharyngeal transit was measured in 17 patients with Chagas’ disease and 15 healthy volunteers. Each subject swallowed in duplicate 5 mL and 10 mL of liquid barium and 5 mL and 10 mL of paste barium boluses. The differences between the two swallows were calculated. Results: There were no differences between healthy subjects and patients in the values of variation of the paired swallows, excepted for the hyoid movement duration of the 5 mL liquid bolus, which causes a higher variation in healthy subjects than in patients. Discussion: Oral and pharyngeal transit variation between paired swallows is similar in patients with Chagas’ disease and healthy subjects, which suggests that the longer pharyngeal clearance duration previously described is not a consequence of impairment of CNS control of swallowing.
Nº PP32. CLINICAL IMPLICATIONS OF LIVED EXPERIENCE AND ADAPTATION TO REDUCED ABILITIES TO SWALLOWING AND EATING FOLLOWING ACQUIRED BRAIN INJURY

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Purpose: The aim of this study is to explore and interpret how persons with acquired brain injury (ABI) experience and adapt to reduced abilities to swallowing and eating - and clinical implications. Method: Explorative multiple-case study with qualitative interviews of six persons following ABI and is a part of a larger randomised controlled trial. A constant comparative method was adopted for data analysis. The lived experience of difficulties in swallowing and eating were investigated and the processes of change were understood as processes of adaptation. Results: Five main themes emerge from the analysis: individual psychological assets, swallowing and ingestion, eating and drinking, communication and meals, rehabilitation of swallowing and eating. Three predominating sub-themes were: feeding by tube, difficulties in swallowing and meals with social interactions, and inpatient rehabilitation. Conclusion: This study implies that living with difficulties in swallowing and eating follow ABI and is a part of a larger randomised controlled trial. A constant comparative method was adopted for data analysis. The lived experience of difficulties in swallowing and eating were investigated and the processes of change were understood as processes of adaptation. Results: Five main themes emerge from the analysis: individual psychological assets, swallowing and ingestion, eating and drinking, communication and meals, rehabilitation of swallowing and eating.

Nº PP33. RELATIONSHIP BETWEEN MAXIMUM TONGUE PRESSURE AND SWALLOWING FUNCTION IN ALL PATIENTS

Keiji Tanimoto1; Masayasu Matsumoto1; Yuishin Izumi2; Kamori1; Toshikazu Nagasaki3; Naohisa Hosomi4; Kazuhiro Tsuga1; Mineka Yoshikawa1; Aya Hesaka1; Sachiko Takaki2; Masahiro Nakamura1; Toshikazu Nagasakii; Naohisa Hosomik; Kazuhiko Tsugai1; Keiji Tanimoto1; Masayasu Matsumoto1; Yuishin Izumi2
1Hiroshima University, Japan; 2Bihiara Hananatoso Hospital, Japan; 3Hiroshima University, Japan; 4Hiroshima University, Japan

Introduction Low-impact, simple and high validity swallowing examination is desired to consider the food morphology/tube feeding with deterioration of swallowing function at regular intervals in ALS patients. Tongue pressure measurement can be one of the examinations to satisfy these requests. However, few reports indicated the relationship between tongue pressure and swallowing function in ALS. Characteristics of dysphagia and significance of tongue pressure measurement are considered through inquiring the relationship among ALS condition/progression, swallowing function, and maximum tongue pressure. Material and Methods Ten ALS patients (4 male, 6 female, mean age 68.9 y) were evaluated by using ALS functional scale (ALSFRS-R), VF and tongue pressure measurement. Residues in oral and pharynx, aspiration, penetration, lip closure etc. at 5 g paste swallowing in VF were estimated, and maximum tongue pressure (MTP). Material was also measured (TPM-01TM, Hiroshima, Japan). Results Patients were divided into the levels of 68-40 points (n=2), 39-30 points (n=7), and <19 points (n=1) in ALSFRS-R. No aspiration and penetration was found. Difficulty of bolus holding with lip closure failure (n=2), poor bolus formation with tongue movement disorder (n=3), and poor coordination of tongue thrust (n=4) were found. Mean value of MTP was 20.8 ± 13.4 kPa, and the correlation between ALSFRS-R points of bulbar symptoms and MTP was indicated (r=0.88, P<0.01). A significantly lower MTP was found in patients with lip closure failure (P<0.01), and MTP in the patients with poor coordination of tongue thrust indicated lower value than the one in patients with normal tongue thrust (P<0.01). And lower MTP in the patients with much oral residue was shown compared to the patients with small oral residue (P<0.01). Swallowing function at pharyngeal stage was still maintained even at the relatively advanced level of ALS, and this might indicate the deterioration of oral function is main in ALS. Tongue pressure measurement might be useful to evaluate the oral function in ALS.

Nº PP34. CORRELATION BETWEEN ORAL AND PHARYNGEAL PROBLEMS IN ADULT NEUROMUSCULAR PATIENTS

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Introduction: The aim was to determine the correlation between oral and pharyngeal problems in adult neuromuscular patients who admitted with swallowing disorders. Materials and Methods: Swallowing ability and function evaluation (SAFE) was used for oral phase evaluation. Videofluoroscopic swallowing evaluation (VFSE) was done and the Penetration Aspiration Scale (PAS) was used to determine the severity of pharyngeal problems. Results: 31 patients with the mean age of 58.3 ± 12.74 years, mean height of 164.26 ± 9.65 cm and mean weight of 60.8 ± 15.5 kg were admitted. 51.6% of patients were Amyotrophic Lateral Sclerosis. 22.6% of patients were motor neuron patients, 16.1% of patients were Myasthenia Gravis and 9.7% of patients were myopathic patients. The mean SAFE oral phase score was 2.5±0.5. The mean PAS score was 5.9±2.9. But there is no statistically significant correlation between oral phase and pharyngeal phase problems (p>0.05).

Discussion: Swallowing is a function and all phases affect each other. So phases should not separated from each other. But our study show that evaluation one phase of swallowing is not enough to predict the exact problem of the other phases. Therefore we should support clinical swallowing evaluation with instrumental evaluation.

Nº PP35. NEUROGENIC DYSPHAGIA (ND): PARANEOPLASTIC PHENOMENON

Irina Ardyunina; Vladimir Selivanov; Lyudmila Chernikova; Eduard Pavlov; Evgenia Seliverstova; Nataliya Vuytsik
Research Center of Neurology, RAMS, Russian Federation

Introduction: The aim was to determine the correlation between oral and pharyngeal problems in adult neuromuscular patients who admitted with swallowing disorders. Materials and Methods: Swallowing ability and function evaluation (SAFE) was used for oral phase evaluation. Videofluoroscopic swallowing evaluation (VFSE) was done and the Penetration Aspiration Scale (PAS) was used to determine the severity of pharyngeal problems. Results: 31 patients with the mean age of 58.3 ± 12.74 years, mean height of 164.26 ± 9.65 cm and mean weight of 60.8 ± 15.5 kg were admitted. 51.6% of patients were Amyotrophic Lateral Sclerosis. 22.6% of patients were motor neuron patients, 16.1% of patients were Myasthenia Gravis and 9.7% of patients were myopathic patients. The mean SAFE oral phase score was 2.5±0.5. The mean PAS score was 5.9±2.9. But there is no statistically significant correlation between oral phase and pharyngeal phase problems (p>0.05).

Discussion: Swallowing is a function and all phases affect each other. So phases should not separated from each other. But our study show that evaluation one phase of swallowing is not enough to predict the exact problem of the other phases. Therefore we should support clinical swallowing evaluation with instrumental evaluation.
MRI of the brain and electoneurotomography afford us an opportunity to specify defect nature and location. Results. *Evident aspiration in all patients caused pulmonary complications and necessity of artificial alimentation *Severity of ND as a dominant neurological disturbance determined patients’ state severity *In all cases there were signs of respiratory failure * “Disturbance of upper airways patency” ND syndrome triggered by apparent tongue and pharynx hypertonia (associated with normal peripheral muscle tone) was observed in the tymoma patient. Movement of a fiberoptic endoscope through the close-ended pharynx constrictors was hindered and caused soreness. Thymoma resection led to swallowing and respiration recovery * Pulmonary and nutritional complications of ND in patient with thyroid tumor turned out to be lethal * VFSS in patient with multiple myeloma showed severe disturbances of oral phase, considerable delay of swallow initiation, pharynx constrictors weakness, cricopharyngeal achalasia with regurgitation and aspiration. Discussion. Complicated central genesis swallowing disturbances combined with peripheral neurologic derangements (with clinical, roentgenologic, electrophysiological or MRI differences from classical cases) showed the need to rule out the paraneoplastic lesion of the nervous system. The severity of cancer-associated ND as a result of diversified oropharyngeal dysfunction deteriorates patient condition.

**Nº PP36. NATURE, RISK AND PREVALENCE OF FEEDING AND SWALLOWING DIFFICULTIES IN PRETERM INFANTS**

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Trinity College Dublin, Ireland

**INTRODUCTION:** Feeding and swallowing difficulties are a recognised complication in preterm infants with significant consequences for key stakeholders. The epidemiology of these difficulties is not established. With increased chances of survival for preterm infants, clinicians working in paediatric settings must be aware of the incidence, prevalence, and risk factors for these difficulties. It is important to identify high risk preterm infants early and commence intervention promptly to reduce complications and length of hospital stay. This evidence based systematic review aims to (1) describe the nature of feeding and swallowing difficulties in preterm infants, (2) identify associated risk factors, (3) determine the frequency of feeding problems. MATERIALS & METHODS: Published and unpublished reports were sought in all languages. Eight electronic databases were searched from inception to April 2013. Conference proceedings of five relevant organisations were hand searched. Two authors decided on eligibility. All authors extracted data and assessed methodological quality of reports. RESULTS: The search yielded 2740 titles. Screening identified 33 potentially relevant articles with six eligible for inclusion. One article was retrieved on prevalence. A wide range of feeding and swallowing problems were reported. Methodological quality was varied. Overall risk of bias was moderate. Difficulties occurred in all stages of swallowing. Main risk factor was low gestational age. Prevalence ranged from 15% to 21%. DISCUSSION: This review provides important information for clinicians. Directions for research are provided.

**Nº PP37. SCREENING METHOD TO EVALUATE PHARYNGEAL SWALLOWING PHASE IN PATIENTS WITH TRACHEOTOMY**

Catalina Ortiz; Raquel Esquerra; Sergio Pinillos; Alejandra Guittierrez; Vicente Varea
Hospital San Joan de Déu, Spain

**INTRODUCTION:** Up to 79% of patients suffer from dysphagia following anterior cervical spine surgery (ACSS). This pilot study investigates factors associated with post-operative dysphagia. MATERIALS & METHODS: Patient parameters (sex, smoking-status, cervical-operation level, number of surgeries and operated segments) were collected from 19 patients (10 women, mean age 58, range 44–72). Pre vs post-surgical videofluoroscopic (VF) analyses were conducted using penetration-aspiration score (PAS) and oral and pharyngeal residue for 4 boluses per video (tsp thin liquid, sip thin liquid, paste, solids). Pre-VF was conducted the day before surgery and post-VF within 4.53 days (average). Wilcoxon Rank-Sum test compared pre- and post- surgical VF findings by texture and volume and McNemar’s test compared post-operative VF findings by demographic groups. RESULTS PAS: Statistical analysis revealed no significant differences for pre versus post-surgical PAS scores regardless of texture or volume. Residue: More residue was only observed for post-surgical vallecular residue with teaspoon liquid (p=.034) and solids (p=.018). Patient parameters: More than one surgery (p=.036) was associated with greater postoperative residues in piriform sinus for thin liquids by tsp. Furthermore, smokers dem-
onstrated more postoperative vallecular residue with solids (p=0.049). Moreover, patients with a surgery on > 1 cervical segment showed more penetration of liquids (PAS >1)(p=0.017), although PAS scores were largely within functional levels. DISCUSSION This pilot sample of ACS patients demonstrated increased residue post-surgery. Smoking-status, multiple surgeries and surgical segments appear to increase symptoms of dysphagia. These data provide support for future hypothesis-guided study design.

Nº PP39. TO INVESTIGATE THE INCIDENCE AND NATURE OF OROPHARYNGEAL DYSPHAGIA POST OESOPHAGECTOMY  
Caoimhe Mulgrew1; Ceire Daly2  
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Introduction: St. James’s Hospital performs 65-70% of the total number of oesophagectomies nationally including 2 stage, 3 stage and transhiatal procedures. These patients are routinely seen Day 4 post-op for swallow assessment by the SLT department due to the high incidence of respiratory complications in this population. There is limited research on the characteristics of dysphagia seen in this population. The aim of this study was to build a profile of this cohort by quantifying the presence and features of oropharyngeal dysphagia in patients who have undergone 2 stage, 3 stage and transhiatal oesophagectomy and to investigate if there was correlation with our findings and those of the literature. Material and Methods: 40 patient charts were analysed retrospectively over an 18th period using an audit questionnaire capturing specific information relating to oropharyngeal dysphagia. Data was collated and coded using Microsoft Excel. Results: 50% of the sampled population presented with oropharyngeal dysphagia requiring diet/fluids modification and/or use of compensatory strategies in order to tolerate oral intake safely. Dysphagia was equally present across the three types of surgery. 75% of the dysphagic symptoms had resolved within a 20 day period which is in keeping with the literature (Heitmiller & Jones, 1991). 18% also presented with dysphonia. Discussion: This study revealed that although a significant proportion of patients presented with initial swallow difficulties, upon discharge these had predominantly resolved. Therefore, this population exhibit good potential for recovery. Findings also support the notion of reduced hyolaryngeal elevation in this population. This study has facilitated a more indepth understanding of dysphagia after oesophagectomy.

Nº PP40. SYMPTOMS OF ANXIETY AND DEPRESSION ASSESSED WITH THE HOSPITAL ANXIETY AND DEPRESSION SCALE IN PATIENTS WITH OROPHARYNGEAL DYSPHAGIA.  
Rob Verdonschot1; Laura Bajens1; Jan Serroyen2; Carsten Leue3; Bernd Kremer1  
1Department of Otorhinolaryngology, Head and Neck Surgery, Maastricht University Medical Center, Netherlands; 2Department of Methodology and Statistics, Maastricht University, Netherlands; 3Departments of Psychiatry and Neuropsychology, Maastricht University Medical Center, Maastricht, Netherlands  
Introduction. A prospective study on symptoms of anxiety and depression (affective symptoms) in patients with oropharyngeal dysphagia was carried out. The aim of this study was to determine the presence and severity of symptoms of anxiety and depression in these patients. Materials and Methods. Symptoms of anxiety and depression were prospectively assessed in 96 patients, visiting the outpatient clinic for dysphagia using the Hospital Anxiety and Depression Scale. In addition, all patients underwent a standardized examination protocol used for regular healthcare in the outpatient setting for dysphagia including: an otorhinolaryngological examination, a logopedic observation of oral intake, fiber optic endoscopic evaluation of swallowing, videofluoroscopy of swallowing, the Functional Oral Intake Scale, a dysphagia severity scale, and the M.D. Anderson Dysphagia Inventory. Depending on the presence/absence of symptoms of anxiety and depression, several groups were distinguished. Descriptive statistics, Mann-Whitney U tests, and logistic regression models were used. Results. Clinically relevant symptoms of anxiety were observed in 37% (N=34) and clinically relevant symptoms of depression in 32.6% (N=31) of the present patient population, with 21.3% having symptoms of both anxiety and depression. In total 47.3% (N=43) of this patient population showed affective symptoms. Discussion: Given that psychological burden can enhance somatic complaints, the high number of patients suffering from affective symptoms is a relevant clinical outcome in dysphagic patients. The contribution of anxiety or depression to the development or worsening of oropharyngeal dysphagia and their role in interdisciplinary treatment strategy is warranting further research.

Nº PP41. NONNUTRITIVE SWALLOWING DISORDER IN OBSTRUCTIVE SLEEP APNEA SYNDROME  
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1Pneumology department, La Rabta Hospital, Tunisia; 2Pneumology Department (La Rabta Hospital), Tunisia; 3* Pneumology department, La Rabta Hospital, Tunisia  
Introduction: Swallowing disorders in obstructive sleep apnea (OSA) syndrome are known to be asymptomatic. However, we observed that some patients with suspected OSA report a difficulty to swallow saliva in a context of dry mouth necessitating water intake either during the night or in the morning. Our aim was to assess the significance of this symptom in OSA. Material and Methods: 40 patients (age>17 years) with OSA diagnosed by respiratory polygraphy [Apnea Hypopnea Index (AHI)≥5] were questioned to determine if a nocturnal dry mouth and a difficulty to swallow saliva were present. We determined the frequency of dry mouth in all patients and the frequency of difficult nonnutritive swallowing in patients with dry mouth. We determined also the frequency of severe OSA (AHI≥30) respectively in patients with dry mouth and difficult nonnutritive swallowing, patients with only dry mouth and patients without these symptoms. Results: Dry mouth was present in 80% of patients with OSA. It was associated with difficult nonnutritive swallowing in 74% of cases. Severe OSA was present respectively in 67% of patients with dry mouth and difficult nonnutritive swallowing, 53% of patients with only dry mouth and 50% of the rest of patients. Discussion: The difficulty to swallow saliva is often associated with dry
Abstract Book

SATURDAY SEPTEMBER 14

10:00 - 10:30
Poster Viewing Group C

Hamlet

Nº PP44. VIDEOFLUOROGRAPHIC STUDY OF VELAR VELOCITY DURING SPEECH AND SWALLOWING

Keiji Tanimoto1; Konishi2; Yukimi Yasuhara3; Mineka Yoshikawa4; Tetsuji Ogawa5; Toshikazu Nagasaki1; Kiyohito Oota1; Satsuki Minamitani1; Masaru Dakihara1

Introduction: The velopharynx closes in swallowing and pneumatic activities. Pneumatic closure, which is acquired, prevents expiratory air from passing into the nasal cavity, whereas during swallowing, velopharyngeal closure is achieved innately, preventing regurgitation into the nasal cavity. These findings suggest that velopharyngeal closure during swallowing is operated by a different mechanism from that during speech. The purpose of this study was to clarify the maximum velocity differences of the velum during swallowing and speech using videofluorography.

Materials and methods: Eight normal adults served as subjects. Radioopaque markers were glued to the velar fleshpoint at the midline of the depression on the elevated soft palate. Subjects were instructed to produce /bampa/ five times at a speed of once every two seconds and swallow saliva five times, and then the activities of the velum were recorded by videofluorography from a lateral view. The marker positions were measured frame by frame and the maximum velar elevation velocity during swallowing (V-sw) and speech (V-sp) was calculated using video analysis software (DP1Motion PRO by Ditec Co.).

Results: In all subjects, V-sw was significantly smaller than V-sp. The average of V-sw of all subjects was 25.4 ± 7.1 mm/s, and that of V-sp was 72.0 ± 13.6 mm/s.

Discussion: These results suggested that movement of the velum in swallowing is operated by a different mechanism from that of speech. The results of this study propose the necessity of distinguishing velopharyngeal closure during swallowing from that during speech.

Nº PP45. SNACK EATING AND RESPIRATION IN HEALTHY ADULT HUMANS

Toshikazu Nagasaki1; Kiyohito Ota1; Satsuki Minamitani1; Masaru Konishi2; Yukimi Yasuhara3; Mineka Yoshikawa4; Tetsuji Ogawa5; Keiji Tanimoto1

mouth. It may be the consequence of a severe dry throat and a mechanical trauma of the pharyngeal tissues during sleep. This sign seems to be a characteristic symptom suggesting often a severe OSA.

Nº PP42. ESOPHAGEAL MANIFESTATIONS IN SYSTEMIC SCLEROSIS WITH PULMONARY ARTERIAL HYPERTENSION: ABOUT 20 CASES

Yacine Ouahchi1; Mourina El Euch2; Mourir Lamloun2; Imed Ben Ghorbel1; Thouraya Ben Salem2; Amira Hamzaoui2; Monia Khanfir2

1Pneumology department, La Rabta Hospital, Tunisia; 2Internal Medicine Department (La Rabta Hospital), Tunisia

Introduction The esophagus is the most common localization of systemic sclerosis (SS). If not diagnosed at an early stage, resulting complications may include esophagitis and increased risk of interstitial lung disease. Patients and methods This is a retrospective study conducted in our department about 20 patients hospitalized between 2000 and 2012 with esophageal achievement of SS complicated with pulmonary arterial hypertension. We used esophageal manometry (EM) and high digestive fibroscopy (HDF) to explore the esophageal manifestations. Results Our patients were 50.7 years old on average (2970) with a clear female predominance (1 man and 19 women). Esophageal symptoms present at diagnosis of SS were low dysphagia to solids (13 cases), heartburn (8 cases) and gastro esophageal reflux (3 cases). The EM showed a decrease of esophageal motility and the lower esophageal sphincter tone (10 cases). The HDF was normal (3 cases) and showed an esophagitis (2 cases) or Barrett’s esophagus (2 cases). The therapy was based on proton pump inhibitors, immunosuppressive drugs and Bosentan (1 case). The evolution was stabilized (19 cases) or aggravated (1 patient died in a context of heart failure). Discussion Esophageal involvement remain very common and early appear in SS. EM is the most sensitive test for accurate diagnosis of motor dysfunction. Appropriate treatment mainly proton pump inhibitors ameliorate symptoms and prevents complications.

Nº PP43. COORDINATION OF BREATHING AND SWALLOWING IN RATS WITH PULMONARY FIBROSIS

Ines Ghannouchi1; Jean Paul Marie2; Eric Verin2

1Hopital Farhat Hached/ University of Rouen, Tunisia; 2University of Rouen, France

Introduction: Temporal coordination of swallowing and ventilation is essential to preventing pulmonary aspiration. In healthy individuals, breathing is interrupted during swallowing and resumes in the expiratory phase. The ventilatory dysfunction can alter the swallowing function as well as the coordination of swallowing and ventilation. Patients with COPD or pulmonary fibrosis can be susceptible to changes in the coordination of swallowing due to impaired lung function. The aim of this study was to study the swallowing function as well as the coordination swallowing–ventilation in unrestrained rat with pulmonary fibrosis. Methods: The study was carried out on 20 male Sprague-Dawley rats subdivided in 2 groups (G1: Healthy control, G2: model of pulmonary fibrosis induced by Bleomycine), using whole-body plethysmography and video recordings. Results: At rest, in G2, a decrease of expiratory time (TE) and total respiratory time (TTOT) was observed when compared to G1. The mean inspiratory flow (VT/TI) didn't increase significantly in G2 when compared to G1 at rest. However during drinking, TE and VT/TI increased significantly in Fibrosis group. Swallowing frequency didn't significantly change but the % of inspiratory swallowing (I-I) increased significately when compared to G1. Discussion: Pulmonary fibrosis probably alter the deglutition and increase swallowing dysfunction and aspiration.

Nº PP44. VIDEOFLUOROGRAPHIC STUDY OF VELAR VELOCITY DURING SPEECH AND SWALLOWING

Kanjy Nohara; Etsuko Takai; Nami Ueda; Takayoshi Sakai

Osaka University Dental Hospital, Japan

Introduction: The velopharynx closes in swallowing and pneumatic activities. Pneumatic closure, which is acquired, prevents expiratory air from passing into the nasal cavity whereas during swallowing, velopharyngeal closure is achieved innately, preventing regurgitation into the nasal cavity. These findings suggest that velopharyngeal closure during swallowing is operated by a different mechanism from that during speech. The purpose of this study was to clarify the maximum velocity differences of the velum during swallowing and speech using videofluorography.

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Nº PP45. SNACK EATING AND RESPIRATION IN HEALTHY ADULT HUMANS

Toshikazu Nagasaki1; Kiyohito Ota1; Satsuki Minamitani1; Masaru Konishi2; Yukimi Yasuhara3; Mineka Yoshikawa4; Tetsuji Ogawa5; Keiji Tanimoto1
LOWING DISORDERS

swallowing may be affected by mastication. In 35, others in 2, in comparison with normal breathing pattern during mastication before the first swallowing, and non-

This method might be very useful when credible manometric data is not available.

For patients with COPD, the coordination between breathing and swallowing is more affected, as the tracheal breathing episodes resulting from swallowing disorders may lead to the exacerbation of the disease. This way, patients with COPD may present swallowing disorders known as oropharyngeal dysphagia. Methodology: Research carried out in a University Hospital, based on data from medical files of patients handled there. From the files, data were collected regarding age, gender, base diagnosis, disease time, previous treatments, comorbidities, changes in the respiratory pattern and swallowing alterations. Results: Files from 20 patients were analyzed. The prevalent diagnosis was COPD (13), followed by Pulmonary Emphysema (4), Chronic Bronchitis (3). Among the most commonly found comorbidities are HAS, 100%, followed by ICC, 55% and DM, 45%. 90% presented some sort of dietary modification and 4 patients used an alternative way for feeding. Discussion: It seems that the alterations in respiratory patterns of COPD patients may result in swallowing disorders, which may yield to malnutrition, dehydration, pulmonary complications and death. Knowing the factors that may result in worsening the clinical condition of COPD allows the professionals to adopt preventive and protective measures regarding patient health, preventing COPD aspiration and decompensation episodes and reducing the hospital costs due to the handling of the disease.

In chronic obstructive pulmonary disease, there is the chronic obstruction or limitation of the air flow, presenting slow and irreversible progression. For patients with COPD, the coordination between breathing and swallowing is more affected, as the tracheal breathing episodes resulting from swallowing disorders may lead to the exacerbation of the disease. This way, patients with COPD may present swallowing disorders known as oropharyngeal dysphagia. Methodology: Research carried out in a University Hospital, based on data from medical files of patients handled there. From the files, data were collected regarding age, gender, base diagnosis, disease time, previous treatments, comorbidities, changes in the respiratory pattern and swallowing alterations. Results: Files from 20 patients were analyzed. The prevalent diagnosis was COPD (13), followed by Pulmonary Emphysema (4), Chronic Bronchitis (3). Among the most commonly found comorbidities are HAS, 100%, followed by ICC, 55% and DM, 45%. 90% presented some sort of dietary modification and 4 patients used an alternative way for feeding. Discussion: It seems that the alterations in respiratory patterns of COPD patients may result in swallowing disorders, which may yield to malnutrition, dehydration, pulmonary complications and death. Knowing the factors that may result in worsening the clinical condition of COPD allows the professionals to adopt preventive and protective measures regarding patient health, preventing COPD aspiration and decompensation episodes and reducing the hospital costs due to the handling of the disease.

The population was formed by 32 patients hospitalized in the Department of Advanced General Dentistry, Japan. Normal spontaneous swallowing occurs during the expiratory phase, but co-ordination of breathing and mastication is not known. We reveal whether mastication affects the swallowing process.

Introduction: Normal spontaneous swallowing occurs during the expiratory phase, but co-ordination of breathing and mastication is not known. We reveal whether mastication affects the swallowing process.

Materials and Methods: After Endoscopic Teaching 2012 for dentists and dental students, we obtained informed consent from 51 (26 female and 25 male; aged 22-33, Ave. 26.4 years) to give permission to analyze their data. The Examination System used was Endoscopic System (VF12, PENTAX, Tokyo, Japan). Respiratory Monitoring System (Polymate II, TEAC, Tokyo, Japan) using accordion belts on upper chest and belly, A Digital Video (Ivis HFM31, Canon Co, Tokyo, Japan) for recording jaw and neck movement of the swallowing. Their data were synchronized and integrated into one video field. We observed, swallowing by endoscopic image, respiration by the thorax movement, and mastication by jaw movement. We analyzed the phase of breathing in the first swallowing during a piece of BiscoTM(4.5g of snack; sandwich creams between two biscuits) mastication. We also compared the pattern of breathing during the mastication before the first swallowing, and non-mastication period. Result and Discussion: 38 of the 51 first swallowing apneas during mastication, occurred during the inspiratory phase. The breathing pattern during mastication was not change in 14, depressed in 35, others in 2, in comparison with normal breathing pattern during non-mastication. The first swallowing apnea during the inspiratory phase occurred in 14 no change group, 29 in depressed group, and 1 in 2 other group. These results suggest that the breathing phase of the swallowing process may be affected by mastication.

Nº PP47. OUTCOME PREDICTION OF BOTULINUM TOXIN TREATMENT FOR DIFFICULTY OF RELAXATION IN THE UPPER ESOPHAGEAL SPHINCTER

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Introduction: Nasal backflow results in frequent aspiration and may also lead to aspiration pneumonia. A recent study has shown that endoscopic treatment is effective in treating nose-backflow. However, endoscopic treatment is not without its limitations (i.e. costs, high relapse rates, and complications). Botulinum toxin is known to be effective in the treatment of pharyngeal constriction and is a safe and relatively economic treatment method. An additional benefit is that the treatment is non-invasive. However, it is known that the outcome of botulinum toxin treatment is not always favorable. Therefore, we tried to find another factor affecting the outcome and hypothesized that pharyngeal constriction could be another factor. Materials and Methods: We retrospectively reviewed eleven patients who showed nasal backflow and pharyngeal stasis in videofluoroscopic swallowing study and who were also treated using botulinum toxin between Jan. 2011 and Dec. 2012. They were divided into two groups according to their outcomes (G: good or B: bad). Pharyngeal strength was measured using the pharyngeal constriction ratio (PCR) which was compared between the two groups using Mann-Whitney U test. If there was a significant difference between the two groups, we tried to find the cut-off value of PCR to predict the favorable outcome using receiver operation characteristic (ROC) curve. Results: Only five patients showed esophageal passage regardless of aspiration after botulinum toxin injection. The mean PCR of group G was 0.03 (0.11), which was significant different from that of group B (0.29 (0.16) (p<0.05). ROC curve showed that the sensitivity and specificity was 100% and 80% respectively when the cut-off value of PCR was 0.11. Discussion: Pharyngeal constriction has revealed to be an important factor that affects the outcome after botulinum toxin treatment for difficulty of relaxation in UES. If we carefully select patients using both nasal backflow and PCR, we can predict good results from botulinum toxin treatment. This method might be very useful when the credible manometric data is not available.

Nº PP48. IDENTIFICATION OF RISK GROUPS FOR OROPHARYNGEAL DYSPHAGIA IN PATIENTS HOSPITALIZED IN A UNIVERSITY HOSPITAL

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Introduction: The complications caused by oropharyngeal dysphagia in hospitalized patients increase hospitalization time, the risk of infections, as well as hospitalization costs. Methods: The study was exploratory and transversal with quantitative and statistical analysis of the results. The population was formed by 32 patients hospitalized in the UH of UFSC. Historical patient data were collected and a swallowing assessment was carried out. Results: From the patients, 27 used O2 at home. Medication use was 55%, 45% used O2 at home. Among the most commonly found comorbidities were HAS, 100%, followed by ICC, 55% and DM, 45%. 90% presented some sort of dietary modification and 4 patients used an alternative way for feeding. The population was formed by 32 patients hospitalized in the UH of UFSC. Historical patient data were collected and a swallowing assessment was carried out. Results: From the patients, 27 used O2 at home. Medication use was 55%.
sorting with functional assessment of feeding and nutritional status was performed. Results and Discussion: Forty-one percent of the patients participating in the research presented a risk factor for oropharyngeal dysphagia, and seventy-five percent presented nutritional impairment. Patients hospitalized with respiratory diseases, Chronic Obstructive Pulmonary Disease (COPD), Congestive Heart Failure (CHF) and patients with xerostomia presented statistically high chances of presenting oropharyngeal dysphagia. Patients with pulmonary impairment presented lack of coordination between swallowing and breathing. Respiratory difficulty is one of the most common CHF symptoms. This may explain the findings in oropharyngeal dysphagia among these three groups. One of the main functions of the saliva is the humidification of the oral cavity and the bolus. With xerostomia, the patients may present difficulty in preparing the bolus, oral phase of swallowing. Coughing, respiratory discomfort and dyspnea are the main symptoms of COPD and bronchoaspiration. These common symptoms limit the safe assessment of swallowing, as they may “mask” the cough trigger (COPD or bronchoaspiration). Studies with instrumental assessments are mandatory in order to move on with this discussion.

Nº PP49. PULSE OXIMETRY AND BRONCHOASPIRATION
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Introduction: The dysphagia is a symptom of a base disease and which may bring clinical complications. Aspiration is defined as the inhalation of oropharyngeal or gastric content to the larynx and lower respiratory tract. For detecting the aspiration, methods that make it possible to better view the oropharyngeal swallowing function are used, such as videofluoroscopy, associated to a method like pulse oximetry. Methodology: The study was performed in the Hospital of the Federal University of Santa Catarina on 12 patients with medical indication for videofluoroscopy and monitoring of pulse oximetry concomitant. The oximeter repose values of the patient in the beginning of the examination and at oscopy and monitoring of pulse oximetry concomitant. The oximeter of Santa Catarina on 12 patients with medical indication for videofluoroscopy, associated to a method like pulse oximetry. Better view the oropharyngeal swallowing function are used, such as tongue strength and endurance/stamina, and by biofeedback (feedback through senses). Such variables have been examined by measuring isometric (pushing against resistance) tongue strength (ITS) and endurance (ITE). The impact of biofeedback on swallowing has also been examined but not its effect on isometric tongue pressure (ITP).

Nº PP50. ICU PATIENTS : AN EARLY DYSPHAGIA SCREENING ON INTUBATED AND VENTILATED PATIENTS.
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Introduction : tracheal intubation is known to provide local lesions and physiological modifications on the swallowing mechanisms. The aim of our study was to develop an easy, reliable and reproducible bedside tool to assess swallowing disorders in intubated patients. Material & Method : a randomized controlled study on two groups of ten patients, similar in age and intubation duration, with no dysphagia history, intubated for minimum 48 hours, has been conducted in several intensive care units of our hospital. The control group was tested in the usual way before extubation. In the experimental group, upper aero digestive tract was assessed by an additional 10 items test, just before extubation, 24h, 48h and 72h after extubation. The 10 items are based on evaluation of drooling, pharyngeal noise, cheek tonicity, labial and lingual mobility, head position, mandibular movements, vagal nerve sensitivity, and swallowing. Results : 60 % of the experimental group patients showed swallowing disorders. After results analysis, we’ve pointed out that the most reliable items on the dysphagia screening on intubated ICU patients are drooling, mandibular hypomobility, absence of swallowing, tongue base retraction, and labial hypomobility. We could also notice that this 10 items tool shows statically significance until 48h after extubation, later, there is no difference with the control group. Discussion : in order to shorten the hospitalization and to minimize the re-intubation risk, we’ve proposed to develop a screening tool, short (less than five minutes), easy to use by several healthcare professionals. It seems to be acceptable to assess this 10 items tool before and 24h after every extubation, to detect and prevent the swallowing disorders in this frail patient population.

Nº PP51. THE OROPRESS: A PILOT STUDY TO EXAMINE THE TOOL’S PROPERTIES OF MEASUREMENT AND USE AS A BIOFEEDBACK TOOL FOR ISOMETRIC TASKS
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Introduction: Swallowing is a trait which can be affected by variables such as tongue strength and endurance/stamina, and by biofeedback (feedback through senses). Such variables have been examined by measuring isometric (pushing against resistance) tongue strength (ITS) and endurance (ITE). The impact of biofeedback on swallowing has also been examined but not its effect on isometric tongue pressure (ITP).

Aims: To examine the psychometric properties of a wireless tool the OroPress when used to measure (i) ITS and (ii) ITE pressures and (iii) to assess its effectiveness as a biofeedback tool.

Method: 35 normal healthy adults (17 males; 18 females) across two age groups, 18-38yrs (n=21) and >38yrs (n=14), were recruited. ITSs were obtained with and without biofeedback, using the OroPress. The effect of age and gender on ITP was examined for face validity; the correlation between two methods of extracting data was examined for construct validity and the effects of biofeedback on ITP were inspected.

Results: Data are reported on 34 subjects-(16 males; 18 females). Males had significantly higher ITS pressures than females (P<.05) but there was no effect for age. Neither age nor gender affected ITE pressures. Large positive correlations (P<.0005) were found between two data extraction methods, and ITP pressure increased significantly with biofeedback (P<.005) but there was a non-significant effect for ITE pressure.
Conclusion: The OroPress demonstrated validity for measuring ITPs. Excellent validity was found for data extraction. As a biofeedback tool, the OroPress significantly increased ITS pressure but had a non-significant effect on ITE pressure.

**Nº PP52. THE SENSITIVITY AND SPECIFICITY OF EAT-10 FOR DYSPHAGIA AND MALNUTRITION IN JAPANESE ELDERLY WITH DYSPHAGIA OR SUSPECTED DYSPHAGIA**

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Introduction: 10-item Eating Assessment Tool (EAT-10) is a self-administered swallowing screening tool and score 3 or above means having swallowing problems. The purpose is to assess the validity of EAT-10 in Japanese elderly. Methods: A cross-sectional study was performed in 393 elderly aged 65 years and older with dysphagia or suspected dysphagia. Severity of dysphagia was assessed by Dysphagia Severity Scale (DSS). Nutrition status was evaluated by Mini Nutritional Assessment Short Form (MNA-SF). The sensitivity and specificity of EAT-10 for dysphagia and malnutrition were assessed. Results: There were 130 men, 263 women. Mean age was 83.3 years. Median Barthel Index was 30 (5, 65) points. A total of 237 patients (60%) could respond EAT-10. Based on DSS, 82 were normal swallowing function, 139 were dysphagia without aspiration, and 172 were dysphagia with aspiration. MNA-SF revealed that 174 elderly were malnourished, 175 were at risk for malnutrition, and 40 had a normal nutritional status. Elderly who could not respond EAT-10 were likely to have dysphagia and malnutrition. The sensitivity and specificity of not responding EAT-10 for dysphagia were 0.489, 0.951, for dysphagia with aspiration were 0.640, 0.792, and for malnutrition were 0.868, 0.995, respectively. Median EAT-10 score of 230 respondents was 1 (0, 9), and 101 respondents were more than 3. The sensitivity and specificity of EAT-10 score 3 or above for dysphagia were 0.522, 0.897, for dysphagia with aspiration were 0.758, 0.749, and for malnutrition were 0.652, 0.598, respectively. Conclusion: EAT-10 is a useful swallowing screening tool for Japanese elderly.

**Nº PP53. RELATIONSHIP BETWEEN HYOID MOVEMENT AND SWALLOWING FUNCTION DURING VOLUNTARY SWALLOWING IN DYSPHAGIC PATIENTS**

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This study was designed to validate the difference in swallowing behaviors between healthy volunteers and dysphagic patients by comparing hyoid excursion and bolus transport spatially and temporally. Thirty-five dysphagic patients and 20 normal volunteers (10 young and 10 elderly adults) were examined by videofluoroscopic (VF) swallowing. Subjects were instructed to swallow test foods, and lateral VF images of oral and pharyngeal areas were acquired to record displacement of the hyoid and food bolus. The origin of the hyoid position was defined as the anterior ridge of the fourth cervical vertebra. Patients were further classified into subgroups on the basis of their primary diseases. The oral and pharyngeal transit times of the bolus were longer in the patient than in the control group, as was the time between entry of the bolus head into the pharynx and the start of pharyngeal swallowing (rapid elevation of the hyoid). Pharyngeal transit time also differed significantly between young and elderly healthy volunteers. Although the basic pattern of hyoid movements during pharyngeal swallowing did not differ in the patient and control groups, movements before pharyngeal swallowing were more complicated in the patient group. In some disease groups, there was a correlation between the distance and duration of hyoid movement before the onset of pharyngeal swallowing. In the patient group, swallowing-related hyoid movement was significantly correlated with bolus transport, a correlation that may eventually cause critical problems, including pharyngeal residues and/or penetration/aspiration, in dysphagic patients. Aging may also affect hyoid movement.

**Nº PP54. REFERENCE STANDARD TOOLS FOR EVALUATING NEW TONGUE PRESSURE INSTRUMENTS: ISSUES AND CHALLENGES**

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INTRODUCTION: Much clinical time is spent working on tongue strength and endurance to ultimately improve swallow function. However, research is hampered by the lack of a robust tool to measure these parameters. The OroPress wireless tool (University of Limerick, Ireland) has been developed to address these limitations. New tools must be tested against a current reference or ‘gold’ standard. The IOPI was selected as the reference standard since recent evidence suggests that the IOPI is a valid and reliable tool (Adams et al., 2013). The aim of this study was to validate the OroPress using the IOPI as the chosen reference standard. MATERIALS AND METHODS: Isometric tongue pressure was collected from 11 healthy women (18-27 years) using the OroPress and the IOPI following the standard protocol for the IOPI (Luschei, 2011). To examine the concurrent validity of the OroPress, pressure measures from both devices were correlated. To compare comfort of both devices, participants rated both on a likert scale. RESULTS: No statistically significant correlation was found between measures obtained with the OroPress and the IOPI. Measures from the OroPress were higher for all isometric pressure tasks. Participants reported problems with placement of the IOPI bulb and difficulty maintaining its position in the anterior oral cavity. DISCUSSION: The IOPI is not suitable as a reference standard in this instance. The next phase of the study will compare the OroPress to the fixed position three sensor tongue array from the Pentax® Swallowing Signals Lab.

**Nº PP55. NORMAL VALUES FOR SYDNEY SWALLOW QUESTIONNAIRE (SSQ)**

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Introduction: Sydney Swallow Questionnaire (SSQ) is a validated 17 question (scale range 0-1700), self-report inventory measuring the...
Abstract Book

symptomatic severity of oral-pharyngeal dysphagia. The SSQ was de-
veloped to provide a measure of severity that is sensitive to alteration.
It showed strong test-retest reliability as well as face, content and con-
structs validity. Up to date no normative ranges have been established
for the questionnaire and the aim of the current study was to derive up-
per limit of normal for the SSQ. Materials and methods: An upper limit
of normal for the Sydney Swallow Questionnaire (SSQ) was established
by collecting responses from 73 (45 males, 28 females, mean age 58.6
years, range 22.0-82.1) patient controls without any history of swal-
lowing problems (eg: Parkinson’s, motor neuron disease, myopathies,
stroke, upper GI or head and neck surgery, oesophageal motility dis-
orders, tumours, head/neck/chest radiotherapy). Upper limit of normal
reference interval for SSQ was calculated using robust method (Horn,
1998) using Reference Value Advisor software after Box-Cox transfor-
mation of raw data to normality. Results: SSQ was administered to 73
healthy participants. No statistically significant relationship between
SSQ scores and either age ($r_{73} = 0.140$, $p = 0.239$) or gender ($r_{73} =$
0.021, $p = 0.857$) was found. The mean total SSQ score from responders
was 59.0 (SD=56.7), and the calculated upper limit of reference interval
was 234 with 90%CI of [193,277]. Discussion: The upper limit of normal
for the SSQ should prove valuable when assessing prevalence or inci-
dence of dysphagia in communities or various patient populations.

Nº PP56. CEREBRAL ACTIVATION DURING SWALLOWING IN HEALTHY
INDIVIDUALS: A BRIEF REVIEW
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Introduction: Swallowing involves neuromuscular activation, senso-
riomotor integration and sensorial stimulus. Changes on its integration
leads to dysphagia. The knowledge of cerebral functions and neuro-
plasticity involved in swallowing can help develop better rehabilitation
programs for patients with dysphagia. Methods: We reviewed the sci-
entific literature on cerebral activation and swallowing in healthy indi-
viduals within three international databases. We included studies with
cortex activation description during a swallowing task published on the
last 10 years. Results: Twenty prospective articles were included. Mean
age ranged between 18 and 89 years. Nine studies correlated swallow-
ing with different stimulus (visual, auditory and tongue tapping) and
11 with gustatory, electrical and magnetic stimulus, maneuvers and
finger tapping. Swallowing involved saliva, water, barium and liquids
associated with different flavors. The cerebral activation areas ob-
served with functional resonance magnetic image (fMRI) were the pre-
tal gyrus, supplementary motor area, parietal lobe, cerebellum, insula,
prefrontal and postcentral gyrus and sensoriomotor cortex. Discussion:
There is a great variability on the studies included on this review and
inclusion of low number of subjects (maximum number of study par-
ticipants was 20). fMRI protocols vary and can lead to intersubject in-
terpretation variability. Considering the participants age, with the same
variability, is also important as physiologic changes in oropharyngeal
swallowing begin to manifest in individuals over 60 years old. Conclu-
ion: Knowing the neural circuits involved in healthy swallowing can
lead to the development of specific rehabilitation protocols based on
neuroplasticity and not only on anatomic function.

Nº PP57. COMBINED LARYNGOPEXY – CRICOPHARYNGEAL MYOTOMY:
ANOTHER WAY TO MANAGE INTRACTABLE ASPIRATION
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Introduction Intractable Aspiration (IA) is a life-threatening condition
due to advanced oropharyngeal dysphagia. Several invasive procedures
have been proposed to secure airways while allowing oral feeding. Un-
fortunately, these procedures impedes voicing. Material & Method We
present three IA cases treated by combined laryngopexy and CP myo-
tomy (CLM). All patients presented a Rosenbec score of 7 and above at
the procedure. Both patients A and C did not experience any further as-
piration pneumonia to date. Patient A had an exclusive oral feeding for
7 years. The subsequent discovery of an oropharyngeal cancer justified
a complementary enteral feeding and an arrest of professional activi-
ties. Patient C always experiences a mixed, oral and enteral, feeding.
Discussion Larynx closure, laryngotracheal separation, total larynge-
tomy and LT-mold stenting? are procedures that secure airways at the
expense of voicing capacities. CLM represents a different approach of
securing the airways of IA patients, favoring voice and allowing some
swallowing. Conclusion CLM alternative should be proposed to IA pa-
tients according to their outcome preferences.

Nº PP58. ON THE EFFECT OF SALIVA ON THE RHEOLOGY OF ORAL NU-
TRITIONAL SUPPLEMENTS FOR DYSPHAGIC PATIENTS
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Introduction Oral nutritional supplements (ONS) have been rheologically
analysed and the flow of the bolus through the pharynx numerically modelled. Materials and Meth-
ods Two proprietary formulations (Fresubin™ thickened stages 1 and 2)
were characterized in terms of viscous flow behaviour. Small amounts of \(\alpha\)-amylase (according to previously reported protocols) were added to the ONS samples in an ad-hoc rheometry tool and the evolution of torque with the elapsed mixing time was monitored until a constant value was obtained. The viscous flow behaviour of the bolus was then characterised and used for modelling the flow of the bolus through the pharynx. Results Both formulations show shear-thinning viscous flow behaviour before and after \(\alpha\)-amylase addition, although a clear tendency to reach a high-shear-rate-limiting viscosity is always noticed. Sisko’s model fits the results obtained fairly well. The \(\alpha\)-amylase addition significantly increases the flow index, yielding a larger influence on the ONS consistency at low shear rates. In regard to the flow modelling, neither reflux nor bigger vortices were noticed after the addition of \(\alpha\)-amylase. Discussion The \(\alpha\)-amylase addition to the ONS used in this study does not modify the initial consistency class of the product. Likewise, no qualitative influence from a hydrodynamic standpoint is noticed. Consequently, both formulations can be considered as safe supplements for dysphagic patients.

**Nº PP59. DOES INCREASED SWALLOWING REHABILITATION PRACTICE IMPROVE OUTCOMES: A REPORT OF DOSAGE AND OUTCOMES IN A METROPOLITAN STROKE UNIT.**

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In swallowing rehabilitation post stroke, few studies have described the dosage of practice of indirect exercises that can be completed in clinical rehabilitation sessions. This study aims to: describe the dosage of swallowing rehabilitation practice participants were able to complete and document swallowing outcomes achieved. A descriptive feasibility study was conducted in a metropolitan comprehensive stroke unit. Twenty participants with persisting dysphagia underwent an instrumental assessment before being prescribed individualized evidence based swallowing rehabilitation programs of indirect interventional exercises (e.g. Shaker exercise). Throughout the program each participant’s total dosage (i.e. number of repetitions) of exercises was recorded. Participants’ pre and post-treatment outcome measures included the Mann Assessment of Swallowing Ability (MASA) and the Functional Oral Intake Scale (FOIS). Overall, following a comprehensive swallowing rehabilitation program, there was a significant improvement (p<.01) in the MASA scores from moderate to nil dysphagia (148 vs. 179). Participants also showed a significant progression (p<.01) in their recommended diets on the FOIS (3.5 vs. 5.3). Total dosage of swallowing rehabilitation practice achieved (\(y = 3091 \) range 363 -- 10,704) and number of therapy days (\(y = 17 \) range 4 -- 52) was variable. Further analysis was conducted investigating trends and associations between variables. Dosage of swallowing rehabilitation practice and outcomes will vary across stroke survivors. Preliminary results suggest that rehabilitation of persisting dysphagia in the sub-acute phase of stroke may facilitate faster recovery. However, further investigation of the specific factors of practice that facilitate recovery is required.

**Nº PP60. VOCAL FOLD INJECTION MEDIALIZATION LARYNGOPLASTY IN PATIENTS WITH UNILATERAL VOCAL FOLD PARALYSIS AND SYMPTOMS OF DYSPHAGIA**

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Introduction: Unilateral vocal fold paralysis (UVFP) can cause glottic insufficiency which results in a particularly hoarse voice. Some patients with UVFP show associated symptoms of dysphagia with or without aspiration. In addition to improve the voice, classical voice therapy and surgical approaches (thyroplasty, vocal fold injection medialization laryngoplasty) take account of more and more swallowing difficulties. Method: Between 2009 – 2012 transoral vocal fold injection medialization laryngoplasty was performed on 63 patients with UVFP in an office-based setting (Department of Phoniatrics and Logopedics, University Hospital of Zurich). Among these patients, 23 patients had symptoms of dysphagia. Results: 21 of the 23 UVFP patients with symptoms of dysphagia finally managed to improve their swallowing problems. Discussion: The transoral injection laryngoplasty offers an easy and fast technique for unilateral vocal fold paralysis with symptomatic dysphonia and dysphagia. The video-controlled treatment can be performed in outpatient office under topic anesthesia. This effective surgical option should be discussed with the patients affected by UVFP and dysphagia.

**Nº PP61. THERAPY OUTCOMES WITH NEUROMUSCULAR ELECTRICAL STIMULATION (NMES): CASE SERIES ON DYSPHAGIA MANAGEMENT FROM SINGAPORE.**

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ABSTRACT Background Electrical stimulation (NMES) in Dysphagia Management is relatively new in Asia. We have seen publications from countries such as Thailand (Leelamanit V, 2002) and Korea (S.Y.Lee et al, 2012) on this. Launched during 2005 in Singapore, Vitalstim therapy as a modality for dysphagia management has been steadily growing in this part of the world. Purpose This paper reports therapeutic outcomes of electrical stimulation with functional exercises on six clients with varied etiological conditions in the age range 3 – 80 years. Methods All patients in this study had an initial clinical assessment followed by an objective assessment of swallowing with either Functional Endoscopic Examination of Swallowing and or Videofluoroscopy. They underwent daily therapy sessions up to 20, using Vitalstim therapy (NMES). The Stimulation lasts 45 minutes each session, while the patients consumed appropriate foods and fluids and also performed specially chosen oral-motor, voice or swallowing exercises. Results All patients demonstrated improved swallowing as reflected by a series of outcome measures: VFS/FEES ratings, FOIS scores, clinical and subjective reports. Conclusion This study highlights the importance of using a modality such as NMES as an integral part of therapy.
Nº PP62. TREATMENT OF DYSPHAGIA RELATED TO WALLENBERG SYNDROME: REPORT OF TWO CASES.
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Introduction: Wallenberg’s syndrome (WS) is a rare, but well-defined clinical condition, usually caused by lateral medullary infarction (LMI). It may include severe pharyngeal dysphagia or even aphagia, causing tube feeding dependency and the need to spit out saliva to prevent continuous aspiration. Some patients even require a canula for tracheal suctioning. Clear evidence is lacking for the optimal treatment approach. Methods: Two patients with a history of WS and no recovery were referred for a second opinion to our university hospital. Patient B. (man, 66 years), suffered from a LMI resulting in aphagia (FOIS 1) and mild ataxia. He was assessed at six months post onset. Swallowing seemed to be recovering slightly, but he still choked on most trial swallows. He was taught to swallow hard while swallowing normal sips of only water, one cup three times a day. He gradually regained control and after two months of intensive training he could drink and eat almost everything (FOIS 6). Patient K. (man, 74 years), suffering from severe WS and severe ataxia was assessed at one year post onset. With the same approach he recovered from FOIS 1 to FOIS 4. Results: Two patients with pharyngeal aphagia gradually recovered swallowing at six and twelve months post onset by intensive exercises with water while swallowing hard. Discussion: Many more cases and controlled comparisons are needed to understand the best approach and timing to rehabilitate this severe dysphagia.

Nº PP63. EVALUATION AND TREATMENT: LATE SWALLOWING DYSFUNCTION IN PHARYNGEAL CANCER PATIENT TREATED WITH RADIOTHERAPY
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Introduction: Pharyngeal cancer is one of the low-grade head and neck tumors and has a good prognosis. Radiotherapy protocols try to preserve the essential organs for swallowing and speech, but do not guarantee correct future functionality. Material and Methods: A 58-year-old, former smoker of 3 packs/day, with a history of squamous cell carcinoma in both left pyriform sinus and arytaeno-epiglottic fold (T2N0M0). It was treated with radical intention radiotherapy. The patient received a total dose of 70 Gy and 50 Gy on the tumoral and risk areas, respectively, for two months. 11 years later, is referred to the Rehabilitation department for a swallowing study after showing xerostomy, dysphonia, nasal regurgitation, sore throat, cough with liquid and increased intake time. Videofluoroscopy and EMG were performed and the patient started treatment with transcutaneous electrical neuromuscular stimulation. Results: The videofluoroscopy revealed severe oropharyngeal dysphagia with impaired signs of efficacy and safety for oral and pharyngeal phase. These determine a deficit of the airway protection and a 25-50% bolus residue level of vallecula, pyriform sinus, hypopharynx and upper esophageal sphincter, presenting aspirations to medium volumes of liquid and nectar (PAS 7.DOSS 3). EMG supported post-radiation neuropathy affecting the superior laryngeal nerve and facial nerve portion of the neck muscles. After 15 sessions of VitalStim, videofluoroscopy showed a slight improvement due to a better residual control, but not sufficient to change the rating scale score. Conclusion: Most patients who undergo radiotherapy (65-70Gy) experience significant side effects and long term complications. The effects of radiation therapy can appear years later, need to be present.

Nº PP65. PARAMETER EXTRACTION FOR TONGUE PRESSURE MEASUREMENTS USING DIMENSIONALITY REDUCTION
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Introduction: Oral measurements for swallowing typically utilize a measure of peak pressure for assessing the efficacy of a subject’s swallow. While using only one parameter simplifies classification, it fails to exploit other distinguishing information. Other parameters such as timing (including rise and fall times) have been used, but these make interpretation and comparison across swallows difficult. Methods and Materials: In this paper we describe Principal Components Analysis (PCA) as a method for extracting relevant parameters from the swallow impulse response. For swallowing, the time-sampled impulse response represents an N-dimensional signal (where N is the number of samples, e.g. 400). These impulse responses are used with PCA to obtain a new basis of representation using only K values, where K varies from 3 to 10. These K terms represent the most significant components needed to reconstruct the signal and, most importantly, they enable calculation of a distance metric. Results: Using trial data obtained from healthy subjects, this technique has been successfully deployed. For an individual subject, values of K from 3 to 10 are required to represent 90% of the original signal’s energy, while for a group of subjects, K varies from 15 to 30. Discussion: A significant advantage of PCA is that a comparison of subjects’ swallows is possible by computing a distance metric using the new basis representation. The distance metric is a single scalar value that can be used directly by clinicians to quantitatively; (i) access changes in an individual’s swallows and (ii) compare an individual with benchmark distance metrics.

Nº PP66. CLINICAL EVALUATION OF COMPLAINTS AND SWALLOWING IN PATIENTS AFFECTED BY HEAD AND NECK CANCER TREATMENT IN CANCER HOSPITAL
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Introduction: Dysphagia has received special attention as a symptom of cancer, as there is an intrinsic relationship between this elementary function of swallowing and general condition of the patient especially in terms of nutrition and also about the risk of aspiration. In this sense, the dysphagia is reported as one of the main complaints of patients with head and neck cancer, considered serious sequel of this disease and anticancer treatment. Currently the Speech character sets as significant for health promotion in hospitals to investigate the relationships between the neoplastic disease, its location at the head and neck, their possible treatments, and its effects on swallowing, thus justifying the purpose of this paper. Methodology: Exploratory research at the Cancer Hospital of Cascavel, Brazil, patients with head and neck cancer, with site investigation and staging of the lesion and the clinical evaluation of dysphagia. Results: 100% of patients complained of dysphagia, with 22.22% having seen the symptoms already before the onset of cancer. The 3 speech complaints of dysphagia more incidences were cough, 81.14%, pain, 74.07%, and the feeling of “wet voice”, 66.67%. Decreased vocal intensity after swallowing, choking and discomfort were seen in 48.15% of the reports. In turn, it was found burning and Decrease in voice quality after swallowing in 40.74%, 22.22% had difficulty breathing after swallowing. After the offering, 75% auscultation Showed positive; 82% had wet voice, and 67.86% had Reduced vocal intensity. Discussion: That is evidence of Significant changes in swallowing process, before and after the diagnosis of cancer. And that complaints about swallowing were highly incidents, as well as clinical signs During the evaluation of these patients.

Nº PP67. SWALLOWING DISORDERS AND QUALITY-OF-LIFE IN THE ELDERLY: RELATION WITH SELF-PERCEPTION AND SIGNS OF DYSPHAGIA
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Introduction: The ability to take oral feeding has a great emotional and social impact. When older people have swallowing disorders they often have problems to eat in public. In addition, as food plays an important sociocultural role, eating difficulties sometimes bring anxiety and social withdrawal. Material and Methods: The present study was designed to determine the prevalence of self-perceived and objective signs of dysphagia and its related quality-of-life issues in a population 65 and older (136) receiving institutional care. A set of instruments were used to assess and quantify different domains of health. Observable signs of dysphagia were assessed by a SLP and registered as positive or negative. The Eating Assessment Tool (EAT 10) was used to assess self perception of swallowing disorders and the EQ-5D (EuroQol Group) to assess quality of life related to health. Results and Discussion: About 30% of the total sample presented positive signs for dysphagia but only 11% referred problems when completing the EAT 10. In conclusion, there is a relatively high prevalence of positive signs of dysphagia in this population and a self-reported quality-of-life impairment is also a frequent finding. However, the EQ-5D weakly correlated with the EAT 10. In conclusion, this study reports a fair prevalence of swallowing concerns in the elderly, even among those who were identified as having positive signs for dysphagia which points to an inaccurately self perception of the swallowing problems, supporting the role of education about the risk of dysphagia in this population.

Nº PP68. DYSPHAGIA TRIAL IN ELDERLY POPULATION
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Introduction: Feeding is a necessary act to human survival, being considered source of pleasure and fellowship. In the aging process, one of the functions that suffers alteration is the swallow, which may change the oral, pharyngeal and esophageal stage. The swallowing disturbs caused by the aging can be conceptualized as presbyphagia. However, the swallowing disturbances caused by neurological and structural disorders are called dysphagia, and even those disturbances as the presbyphagia may result in an alteration of the individual clinical state. The complications from those swallowing disturbances may generate nutritional issues, including occasional death. Methodology: Was realized the Screening for Dysphagia Oropharyngeal in Elderly Population Group Risk protocol, which had questions about dysphagia’s signs and symptoms. The protocol was applied in 97 individuals above 60 years, from both genders. Results: In this study 56.70% of elderly individuals presented susceptibility to develop dysphagia. Discussion: We conclude that exists a tendency of swallowing complaints and consequently a possible dysphagia frame in elderly population.

Nº PP69. SPEECH THERAPY CONTRIBUTION TO AN INSTITUTIONAL PROTOCOL IN CEREBRAL VASCULAR ACCIDENT
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Introduction: According to the World Health Organization, Cerebral Vascular Accident (CVA) is defined as “a clinical sign of quick development of a focal disturbance of brain function having a possible vascular source, and with more than 24 hours”. Studies that comprised the epidemiological aspects and natural history of dysphagia, associated to CVA clinical conditions, point out an incidence around 50% for swallowing disorders. The elaboration of protocols aims at assuring the quality of what is being offered, besides allowing the application of the actualizing concept, based in evidences contributing for a better assistance. Material and Methods: a retrospective study was performed through the records of 115 patients (75M/40F) diagnosed with CVA included in an institutional protocol of a general hospital in Sao Paulo, in the period between January 2010 and March 2012. Results: was observed that 22% had an alternative way of feeding previously to the speech therapy.
**Nº PP70. PREOPERATIVE SWAL-QOL AND SWALLOWING FUNCTION IN PARKINSON’S PATIENTS SELECTED FOR DEEP BRAIN STIMULATION**

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**Introduction**
Parkinson’s patients are often troubled by dysphagia, affecting quality of life and the physical wellbeing of the patients. The primary aim of this study was to describe Swallowing Quality of Life (SWAL-QOL) data from patients selected for Deep Brain Stimulation and to investigate the correlation between SWAL-QOL and preoperative fiber endoscopic evaluation of swallowing as well as self-assessments on a visual analogue scale. A secondary aim was to investigate the correlations between disease duration and the SWAL-QOL scores as well as the parameters from the fiber endoscopic examination.

**Method**
Ten patients (age 45-69 yrs., median 61.5 yrs., all male) with Parkinson’s disease who were selected for Deep Brain Stimulation completed a Swallowing Quality of Life form, self-assessed their swallowing function using a visual analogue scale and underwent a fiber endoscopic examination.

**Results**
The total SWAL-QOL median score was 94% and the mean score was 91% (100% equals best possible SWAL-QOL). The median score from self-assessments was 85% and the mean score was 93% (100% equals perfect self-perceived swallowing function). A correlation was seen between low total SWAL-QOL score and long disease duration measured as years since diagnosis (r=-.72, p<.05). Long disease duration measured as years with symptoms correlated with more pre-swallow spillage (r=.63, p<.05).

**Discussion**
The swallowing related quality of life was high in the studied group. Results from self-assessments and the fiber endoscopic evaluations also indicated good swallowing function in the patients. Long disease duration was found to correlate with negative influence on swallowing function and lower SWAL-QOL scores.

**Nº PP71. EVALUATION OF DISEASE SPECIFIC QUALITY OF LIFE IN DYSPHAGIC STROKE PATIENTS USING CLINICAL SCORING INSTRUMENTS**

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**Introduction**
The management of neurogenic oropharyngeal dysphagia (NOD) is an important factor to prevent complications like pneumonia, malnutrition and reduced quality of life. It is essential to identify the factors that cause a reduction in the quality of life and thus develop a suitable therapy that counteracts these. There is still a question what kind of clinical parameters would identify neurogenic oropharyngeal dysphagia at an early stage and are therefore predict stroke- or swallowing specific quality of life at the same day with the strongest correlation between the grade of swallowing dysfunction and the swallowing-specific quality of life (r=0.70). In addition the need of a nasogastric tube in connection with reduced functional status was highly correlated with reduced stroke- specific quality of life (R2 = 0.64). Interestingly in consideration with the subscales of SWAL-Qol the „fear of choking“ only marginally affected the quality of life. Discussion: More and more attention is given to structured concepts for diagnosis and treatment of dysphagia in the last years. Because the quality of life is highly correlated with functional deficits (NIHSS > 10, FCM < 4, FIM < 63), there is a need of early diagnosis and treatment of functional status to enhance the individualized neurorehabilitation concept and the present quality of life. Currently no multivariate model exists, that predicts the three months outcome of stroke- or swallowing-specific quality of life by means of clinical scoring systems.

**Nº PP72. FUNCTIONAL MAGNETIC STIMULATION FOR POST-STROKE DYSPHAGIA.**

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Introduction: Recently the usefulness of neuromuscular electrical stimulation and repetitive transcranial magnetic stimulation for post-stroke dysphagia has been reported. However there is no report that describes the effectiveness of functional magnetic stimulation (FMS) for dysphagia. The purpose of this study is to clarify the effectiveness of FMS for post-stroke dysphagia. Material and Methods: Twenty post-stroke dysphagic patients (age at treatment: 51-80 years; interval between onset of stroke and treatment: 6–38 months) were randomly assigned to a real group or a sham group. In the real group, FMS of 30 Hz was applied for suprathyroid muscles in a 20-s train using a parabolic coil for 10 min (total 600 pulses). In the sham group, sham stimulation was applied for 10 min at the same site. Swallowing function was evaluated by the timed water swallow test, inter-swallow interval (ISI), swallowing volume velocity (speed), and volume per swallow (capacity) were measured before and after stimulation. Results and Discussion: All patients completed the stimulation and none showed any adverse reactions throughout the stimulation. The improvement of speed and capacity of swallowing after stimulation was significantly larger in the real group compared with the sham group (all p<0.05). However, no significant difference in the ISI was found between the groups. FMS of neck using a parabolic coil can potentially improve swallowing function in post-stroke dysphagia patients.

**Nº PP73. THE IMPACT OF SWALLOWING IMPAIRMENT ON QUALITY OF LIFE IN DIFFERENT PARKINSONIAN SYNDROMES**

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Introduction: Dysphagia is a common symptom in Parkinsonian syndromes predisposing the patient to malnutrition and aspiration pneumonia. The aim of the present study was to collect specific data about the impact of swallowing impairment on quality of life in different Parkinsonian syndromes. Methods: Forty-two consecutive patients with idiopathic Parkinson’s disease (PD; n=23; m/w 12/11; age 65.83 ± 12.10 years), multiple system atrophy (MSA; n=7; m/w 4/3; age 62.14 ± 9.96 years) and progressive supranuclear palsy (PSP; n=12; m/w 4/8; age 68.83 ± 5.54 years) were included. Disease stage was measured with the Hoehn and Yahr scale. All subjects underwent fiberoptic endoscopic evaluation of swallowing (FEES). Dysphagia severity was rated according to an endoscopic 4-point-scale (0 = no, 1 = mild, 2 = moderate, 3 = severe). Every participant was also asked to fill out the Swallowing Quality of Life Questionnaire (SwalQuol). Results: The mean Hoehn and Yahr scale was distinctly higher in PSP patients (3.73 ± 1.10) compared to PD patients (2.57 ± 0.95) and MSA patients (2.71 ± 0.76). FEES revealed a mean dysphagia severity score of 1.0 (± 0.00) for dysphagic patients with MSA, of 1.25 (±0.62) for dysphagic patients with PSP and of 1.25 (±0.62) for dysphagic patients with PD indicating mild swallowing impairment in the majority of cases. Eleven PD patients showed a normal swallowing function. The mean total score of the SwalQuol was 169.58 in dysphagic PD, 187.74 in dysphagic MSA, and 154.17 in dysphagic PSP. PD patients without dysphagia had a mean total score of 207.35. Discussion: In PD, MSA and PSP even mild dysphagia without aspiration events is associated with a significant decrease in quality of life compared to nondysphagic subjects.

**Nº PP74. SWALLOWING ASSESSMENT IN MYOTONIC DYSTROPHY USING FEES**

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Introduction: Myotonic dystrophy type 1 patients show clinical and morphological abnormalities in the oropharyngeal area. Dysphagia is a common symptom in the condition and for the majority severe enough to require gastrostomy for many years. The aim of our study was therefore to test the effect of cortical repetitive transcranial magnetic stimulation (rTMS) to improve oropharyngeal dysphagia in these patients. Method: Three patients were studied. Swallowing function was explored by pharyngeal high resolution video manometry before and after each session of rTMS.
There were three sessions of rTMS spaced by 6 months. Each rTMS session consisted in 20 minutes of 1 Hz frequency cortical stimulations on the pharyngeal motor cortex, 10 minutes on each hemisphere. During the rTMS session, submental electrical stimulation was performed with TENS at sensitive threshold. Results: The three patients did not present adverse effect of magnetic stimulations. Initially, before rTMS, all the patients presented a pharyngeal residue of all the bolus, without any efficient swallowing with an increase of superior oesophageal sphincter. This was responsible of bronchial aspirations. After three sessions of rTMS, 18 months later, one patient could have a partial oral feeding, one patient recovered a pharyngeal peristalsis with an opening of the superior oesophageal sphincter, and one patient did not improve the swallowing function. Conclusion: This study showed that transcranial rTMS could be an original treatment of oropharyngeal dysphagia in brainstem infarction and should be evaluated.

**Nº PP77. THE ENDOSCOPIC EVALUATION OF SWALLOWING WITH DIFFERENT CONSISTENCIES IN POST-STROKE INDIVIDUALS**

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Stroke is the most common neurological disorder in adults associated with oropharyngeal dysphagia and the fiberoptic endoscopic evaluation of swallowing (FEES) is important to determine the presence and severity of dysphagia. The aim of this study was to evaluate if the different food consistencies interfere with the findings of the FEES in the post-stroke individuals. A cross-sectional clinical study was performed with 81 supratentorial post-ischemic stroke individuals, with mean age of 67.7 years, 37 female and 44 male, average time since injury of 24 months, 33 right side and 48 left side. All underwent FEES with pureed, thickened liquid, and 5/10 mL, via spoon, and evaluated parameters such as premature oral leakage, pharyngeal residues, laryngeal penetration, and tracheal aspiration. Premature oral leakage was observed in 61/81 (75.3%) individuals with pureed, 66/81 (81.5%) with thickened liquid, and 71/81 (87.6%) with liquid consistency (p≤0.00); pharyngeal residues in 27/81 (33.3%) with pureed and thickened liquid, and 28/81 with liquid (p≤0.01); penetration in 10/81 (12.3%) with pureed consistency, 15/81 (18.5%) with thickened liquid, and 23/81 (28.4%) with liquid (p≤0.00); aspiration in 4/81 (5%) with pureed consistency, 9/81 (11.1%) with thickened liquid, and 19/81 (23.5%) with liquid (p≤0.00). There were statistically significant differences (ANOVA Friedman) in the premature oral leakage, laryngeal penetration and tracheal aspiration. These findings confirm different consistencies demonstrate interference in FEES. The liquid consistency was the most altered, followed by thickened liquid and pureed.

**Nº PP78. ORAL FEEDING OUTCOMES IN A POPULATION OF TRACHEOSTOMY AND VENTILATOR DEPENDENT BABIES AND YOUNG CHILDREN WITH CONGENITAL MEDICAL CONDITIONS: ON DISCHARGE FROM HOSPITAL AND AT LONGER TERM FOLLOW UP**

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**INTRODUCTION** With increasing survival rates of children with medically complex conditions, the incidence of babies and young children who are tracheostomy and ventilator dependent (TVD) is on the rise. The effects of tracheostomy and ventilation on swallowing are documented. Oral feeding in this group is complex and outcomes are underexplored. This study aimed to determine feeding outcomes in this complex population and to investigate contributing factors to these.

**METHODS** This retrospective review followed cases discharged from a transitional care unit (TCU) in an acute pediatric teaching hospital. Medical diagnosis, length of stay (LOS), airway requirements and oral feeding status both on discharge and at long term (12+ months) follow up were recorded. RESULTS: 27 cases met inclusion criteria. 3(11%) were full oral feeders (FOF), 13(48%) had feeding tubes and varying levels of oral intake, 8(29%) were aversive to oral feeding, 3 were fully tube fed for medical reasons. 22(81%) were TVD, 2 had tracheostomy only, 2 deacannulated, 1 needed overnight ventilation only. At follow up (N=25; 1 RNP/unknown) 4 more had become FOF i.e. total 7 (28%) FOF. 10(40%) had feeding tubes and varying levels oral intake, 5 were averaged.
sive feeders, 1 fully tube fed for medical reasons, 7 were decannulated, 6 had weaned off ventilation but still had tracheostomy. A wide variance existed for length of stay and medical diagnosis. Shorter length of stay appeared to have some positive effect on feeding outcomes. DISCUSSION Oral feeding outcomes in this complex group of patients are poor, but appear to improve post discharge and appears to be associated with ventilation weaning, decannulation, and possibly reduced LOS. The complexities of oral feeding in this population are discussed.

N° PP79. EFFECT OF GENDER, AGE, HEIGHT, BODY MASS INDEX ON EAT-10 SCORE IN HEALTHY BRASILIAN POPULATION

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Introduction: The Eating Assessment Tool (EAT-10) is a self-administered, symptom-specific outcome instrument for dysphagia. The purpose of this study was to evaluate the effect of gender, age, height, and body mass index (BMI) on EAT-10 score in healthy Brazilian volunteers. Material and Method: We used the Portuguese version (Brazil) of EAT-10 translated from the original publication (Belafsky et al., Ann Otol Rhinol Laryngol. 2008;117:919). Weight and height were measured and body mass index (BMI) of the volunteers was calculated. All subjects had no symptoms, did not take regular medications nor were in treatment for any disease and had no previous neurological diseases, head and neck surgery nor digestive surgery. Results: We included 186 healthy volunteers, 121 women and 65 men, ages 20 to 60 years old. The mean (SD) of the total of EAT-10 score was 0.93 (2.08). The question with highest score was “Swallowing pills takes extra effort”. There was no difference between men and women. There was a negative correlation between height and the score. There was no influence of age and BMI on EAT-10 scores. Discussion: The EAT-10 test is a reliable method to measure swallowing performance (Handy et al., Neurogastroen Motil 2003;15:69). The results showed that the acidic liquid has a different dynamic ingestion than the neutral liquid, which may be consequence of the slower transit through the distal esophageal body (Alves et al, Dis Esophagus 2013;26:305).

N° PP80. HUMAN SWALLOWING BEHAVIOR OF ACIDIC AND NEUTRAL LIQUID

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Introduction: The swallowing function is influenced by chemical and sensory stimuli. Swallows of a sour bolus resulted in a stronger contraction of mylohyoid, geniohyoid and anterior belly of the digastric muscles. Sour acidic liquid has a slower distal esophageal transit than a neutral liquid. Our hypothesis is that an acidic sour bolus has a different ingestion dynamic than a neutral bolus. Material and Method: We evaluated the ingestion dynamics of 100mL of acidic sour liquid (concentrated lemon juice, pH: 3.0) and 100mL of water (pH: 6.8). In 45 healthy subjects and 14 patients in treatment with proton pump inhibitor for gastroesophageal reflux disease (GERD). We measured the time to ingest the total volume of 100mL, the number of swallows to ingest the volume, the interval between swallows, the flux of ingestion and the volume ingested in each swallow. Results: In both groups, healthy subjects and patients in treatment of GERD, the acidic liquid takes a longer time to be ingested, as a higher number of swallows causes a slower flux of ingestion and a smaller volume in each swallow than the neutral bolus. There was no difference between healthy subjects and patients with GERD. Discussion: The swallowing test was a reliable method to measure swallowing performance (Handy et al., Neurogastroen Motil 2003;15:69). The results showed that the acidic liquid has a different dynamic ingestion than the neutral liquid, which may be consequence of the slower transit through the distal esophageal body (Alves et al, Dis Esophagus 2013;26:305).

N° PP81. EFFECT OF ACID INPUTS IN THE PHARYNX ON HUMAN SWALLOWING

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[Introduction] Pharyngeal mechanical stimulation can easily evoke swallowing reflex. However, it still remains unknown how the chemical inputs such as taste stimulation are involved in the initiation of swallow. In the present study, to clarify the effect of acid stimulation alone in the pharynx on swallowing initiation, we applied taste solution with several conditions to the pharynx at a very slow infusion rate and evaluated the effects of the stimulation on the swallowing behaviors. [Materials and Methods] Ten healthy volunteers participated in this study. Taste solution (sucrose, NaCl, HCl, citric acid and acetic acid) was applied into the pharynx through a fine silicone tube at a very slow rate. During taste stimulation, each subject was instructed to perform repetitive swallowing as quickly as possible and swallowing interval (SI) was measured using suprathyroid muscles EMG recordings. In addition, sensory scale of taste intensity during swallowing was measured. [Results and Discussion] Out of taste stimulants tested, acid solution facilitated initiation of swallow, in that the SI was significantly shorter during acid stimulation as compared to other taste ones. Sensory scale of taste intensity during swallowing was higher in acid solution. The function may contribute to prevention of irritant inhalation during gastroesophageal reflux.

N° PP82. ROLE OF SPEECH LANGUAGE PATHOLOGIST IN DIAGNOSIS AND TREATMENT OF DYSPHAGIA - WHAT IS THE SITUATION IN CROATIA?

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The aim was to determine the approximate number of patients with swallowing difficulties sent to fluoroscopy during the period of two years in Croatian general county hospital. We started researching medical diagnostics to determine the difficulties which patients are initially sent for and where they continue the process of diagnosis and rehabilitation. These data are important due to the fact that the speech pathologist in Croatia treat patients with dysphagia when it occurs almost only when it is recognized by the speech pathologist in cases where dysphagia present itself with other conditions and/or diseases. Making swallowing difficulties insufficiently recognized.
The paper presents a review of the fluoroscopy findings. It was done 39 fluoroscopy’s. Of the total number of participants there were 21 men and 18 women. Average age in men was 60 and in women 52. Identified 7 patients (5 men and 2 women), according to the findings of radiologists, had changes in terms of the objective difficulties in swallowing process. The most common changes in swallowing have been described as lagging contrast in valleculae (4 patients). None of the patients in whom is confirmed objective difficulties with swallowing is sent to speech pathologists treatment. The data show our concern of low awareness in the case of swallowing difficulties in our country making us want to change that in terms of future research and general education of population and of all health professionals.

Nº PP83. SEPSIS AND PROLONGED MECHANICAL VENTILATION ARE SIGNIFICANT RISK FACTORS OF POST-EXTUBATION DYSPHAGIA
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INTRODUCTION: Patients staying in ICU for a long period seem to experience difficulties in swallowing, either as a result of their illness or as a result of the treatments they receive. The risk factors associated with the development of postextubation dysphagia have been relatively unexplored. AIM: To evaluate post-extubation dysphagia in septic mechanically ventilated ICU patients. METHODS: Prospective study over a period of eight months set in a 25 bed University Hospital ICU. A total of 57 (39 men) mechanically ventilated patients were included in the study who were successfully extubated. Patients with stroke and neuromuscular disease were excluded. The group of patients was divided into septic 37 (21 men) and non septic 20 (9 men).

All patients in the septic group met the ACCP/SCCM consensus criteria for sepsis. Days of mechanical ventilation and tracheostomy performed was recorded. A simple bedside swallow challenge with 90ml of water was performed in all patients upon extubation and the results were recorded. RESULTS: Septic patients were older (66±17 vs. 45±20 years, p<0.001), and had a higher APACHE II (21±5 vs. 14±6, p<0.001) along with a higher SOFA score (8±3 vs. 3±3, p<0.001) compared to non-septic patients. 58% vs 32% of the septic group had tracheostomy, along with more days on mechanical ventilation (12±6 vs 9±5) in comparison to the non septic group. 76% of the septic group had positive bedside swallow evaluation (BSE) and were classified as having dysphagia vs 52% of the non septic group. CONCLUSIONS: Septic patients with prolonged mechanical ventilation seem to be at higher risk of post-extubation dysphagia regardless of the tracheostomy. More research is needed to identify the factors that contribute to post ex-tubation dysphagia and prevent complications.
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