Assessment of swallowing function using EAT-10: A swallowing assessment tool

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One common complication after these surgeries is dysphagia, but the definition and severity of dysphagia has not been standardized.
Introduction

EAT-10 (10-item Eating Assessment Tool)
(Belafsky et al., Ann Otol Rhinol Laryngol., 2008)

- 10 questions
- 4 points for each question
- Min.: 0 point
- Max.: 40 points
- ≥ 3 points may have swallowing problems
Introduction

EAT-10 (10-item Eating Assessment Tool)  
(Belafsky et al., Ann Otol Rhinol Laryngol., 2008)

1. My swallowing problem has caused me to lose weight.
2. My swallowing problem interferes with my ability to go out for meals.
3. Swallowing liquids takes extra effort.
4. Swallowing solids takes extra effort.
5. Swallowing pills takes extra effort.
6. Swallowing is painful.
7. The pleasure of eating is affected by my swallowing.
8. When I swallow, food sticks in my throat.
9. I cough when I eat.
10. Swallowing is stressful.

0 = no problem  
1  
2  
3  
4 = severe problem
The purpose of this study is to assess the swallowing function of patients who visit our orthopedic surgery outpatient clinic using EAT-10.

Patients who came to our orthopedic surgery outpatient clinic between Sep. 2013 and Mar. 2014 and consented to participate in the study were eligible to participate in the study.
Respondent
N=2032

Excluded

Included
N=1907

Patients who had surgeries of
• Cervical spine
• Esophagus
• Trachea
• Thyroid grand
• Any other oral surgeries

N=125

M: 906   F: 1001
Age   57.2±18.5 years old
Results

The percentage of patients whose EAT-10 $\geq 3$ points was 8.7\% (166/1907)

The percentage increases with the patient’s age from seventy.
Factors which influence EAT-10 score in the present study were

• **Age**
  
  Higher age : Higher EAT-10

• **Sex**
  
  Female : Higher EAT-10

Multiple Regression Analysis

Age had the stronger effect on the score than sex.
Results

Medical records of the patients whose EAT-10 $\geq 10$ were examined.

- EAT-10 $\geq 10$, $N=27$
- Excluded patients who have past history which apparently influences swallowing function, $N=6$

- $N=21$
  - Traffic accident, $N=4$
  - Psychiatric disease, $N=6$

The EAT-10 might be influenced by patient’s mental status.
EAT-10
(Belafsky et al., Ann Otol Rhinol Laryngol., 2008)

- Excellent internal consistency, test-retest reproducibility, and criterion-based validity
  - Normal cohort 0.40
  - Esophageal dysphagia 23.58
  - Oropharyngeal dysphagia 23.10
  - Voice disorders 9.19
  - Head and neck cancer 22.42
  - Reflux 11.71

(N=482)

- The EAT-10 score of 3 or higher is abnormal.

The validity and reliability of the EAT-10 has been verified.
Conclusions

- 8.7% of the 1907 patients scored 3 points or higher on the EAT-10, which means 8.7% of the patients may have swallowing problems with no particular cause.

- The EAT-10 score was influenced by age and sex; older patients and female patients scored significantly higher.

- The EAT-10 might be influenced by mental status.
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