

# Development and validation of a new mealtime assessment tool for patients with dysphagia

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**Background and Aims** Meal observation describes and analyzes patient behavior while taking their meal minimizing influences of the observer; it is a component of the dysphagic patient evaluation process during and after the rehabilitation phase. Tools for meal observation and in particular the MAT, for the ease of administration contemplate the possibility of involvement of the caregiver, thus expanding the opportunities for use of the tool.

**Aim:** to develop and validate a questionnaire that could be administered by both health personnel and caregivers to explore patients' mealtime behavior: the meal time assessment tool.

**Method:** The development and validation process was divided into three phases. The first phase included the identification of items for the questionnaire. The second phase involved pilot testing of the first version of the tool. In the final phase caregivers and the treating speech therapist administered the MAT to adult inpatients with diagnosed or undiagnosed oropharyngeal dysphagia. Correlation and internal consistency were evaluated with De Pippo and Cronbach alpha test (> 0,70).

**Results:** we enrolled 140 adult caregivers, MAT Cronbach Alpha was 0.710; we used the test of De Pippo (ROC curve) to verify the sensitivity and the specificity of the scale: results demonstrated 97% sensitivity and 90% specificity. Hence it was possible to establish a pathology-score cut off.

Mealtime Assessment Tool

Meal: breakfast - lunch- dinner operator:

- Does the patient collaborate actively during the meal?  

Always	Almost always	Sometimes	Almost never	Never	Not evaluable
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- Is the patient sitting during the meal?  

Always	Almost always	Sometimes	Almost never	Never	Not evaluable
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- Are tv, tablet computer or smartphone switched off during the meal?  

Always	Almost always	Sometimes	Almost never	Never	Not evaluable
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- Is the patient autonomous during the meal?  

Always	Almost always	Sometimes	Almost never	Never	Not evaluable
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- Does the patient drink during the meal?  

Always	Almost always	Sometimes	Almost never	Never	Not evaluable
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- Does the patient completely consume the food?  

Always	Almost always	Sometimes	Almost never	Never	Not evaluable
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- Does the patient eat in silence?  

Always	Almost always	Sometimes	Almost never	Never	Not evaluable
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- Does the patient eat without coughing?  

Always	Almost always	Sometimes	Almost never	Never	Not evaluable
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- Is the patient's voice the same before and after the meal?  

Always	Almost always	Sometimes	Almost never	Never	Not evaluable
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- After chewing, are the patient's lips cleaned of food residues?  

Always	Almost always	Sometimes	Almost never	Never	Not evaluable
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- After chewing the patient's tongue is cleaned of food residues?  

Always	Almost always	Sometimes	Almost never	Never	Not evaluable
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- After chewing the patient's nostrils are cleaned of food residues?  

Always	Almost always	Sometimes	Almost never	Never	Not evaluable
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Case Processing Summary							
		Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
age * sex		140	100,0%	0	0,0%	140	100,0%
age * sex Cross-tabulation							
		sex		Total	Count		
		female	Male				
age	young	1	8	9			
	adult	3	5	8			
	Mature	13	8	21			
	Young Old	17	21	38			
	Old old	43	21	64			
Total		77	63	140			

Gender-age of the sample