

# Reliability of the Dutch version of the TOM subscale dysarthria

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**Take home message:** The 'Nijmeegse Dysartrieschaal' (NDS) is the first Dutch dysarthria scale, based on the TOM, which scores dysarthria patients on levels of functioning and activity.

## Introduction

In the Netherlands, no validated rating scales for dysarthria severity are available. However, such an instrument would be very welcome, for diagnosis and change over time. Also for scientific purposes a rating scale is necessary. Here we describe the process of making the Therapy Outcome Measures (TOM)<sup>1</sup> subscale dysarthria applicable to the Dutch situation, resulting in the 'Nijmegen Dysarthria Scale' (NDS).

## Methods

First, the international dysarthria literature was studied to find single-item rating scales. Only 2 dysarthria rating scales were identified: the Therapy Outcome Measures (TOM)<sup>1</sup> and the Australian Therapy Outcome Measures (AusTOMs)<sup>2</sup>. We translated two dysarthria subscales on the levels of functioning and activity into Dutch and equalized the description of the items with our Dutch dysarthria assessment.

A Delphi procedure was used to evaluate face and content validity. Thirteen speech therapists evaluated the scale with six (4-point scale) questions. An agreement of 90% for each item was considered sufficient.

To assure inter- and intrarater reliability, fourteen speech therapists judged fourteen patients on video and three speech therapists repeated the experiment one week later.

## Results

The face and content validity of both translated and adapted subscales were found sufficient. On almost all questions a 90% agreement was reached. The comments were discussed in an expert panel and consensus was reached for the wording of the subscales. In the manual, some passages were rewritten to clear up some imprecisions.

Both the intra- and interrater reliability were substantial (weighted kappa > 0.70)<sup>3</sup> on the levels of functioning and activity. Experienced speech therapists, i.e. more than 10 years working experience, scored a high interrater reliability (weighted kappa > 0.90).

A		Second judgment							B		Second judgment							
		0	1	2	3	4	5	total			0	1	2	3	4	5	total	
First judgment	0	4	1					5	First judgment	0	0						0	
	1		6	1				7		1		2	1					3
	2			7	2	1		10		2		2	3	1				6
	3				4	3		7		3			2	4	3			9
	4					3	4	7		4					1	12	2	15
	5						2	4		6	5				1	3	5	9
	total	4	7	8	9	10	4	42		total	0	4	6	7	18	7	42	

Figure 1. Pattern of agreement regarding intrarater reliability between the first and second judgment on the levels of functioning (A) and activity (B).

## Discussion

The NDS is the first Dutch dysarthria scale, which scores dysarthria patients on levels of functioning and activity. Working experience increases reliability scores. This also supports the importance of training in using severity scales<sup>4</sup>.

Our aim is to use the NDS to improve the assessment of dysarthria severity for the purposes of diagnosing, evaluation of treatment and research. Reliability is satisfactory, but additional research needs to be done to further assess the validity of the NDS.

## References

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