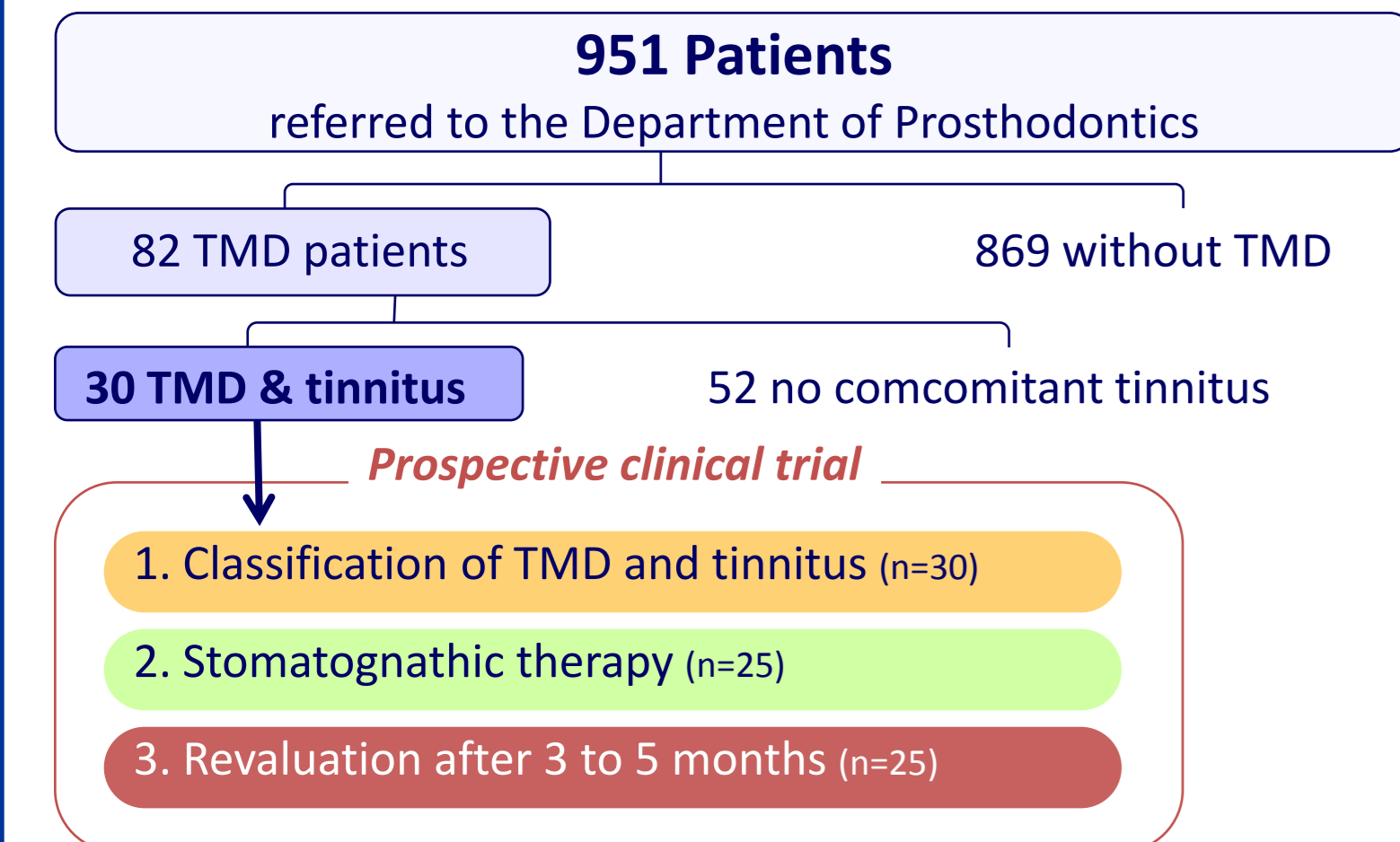


## Objectives

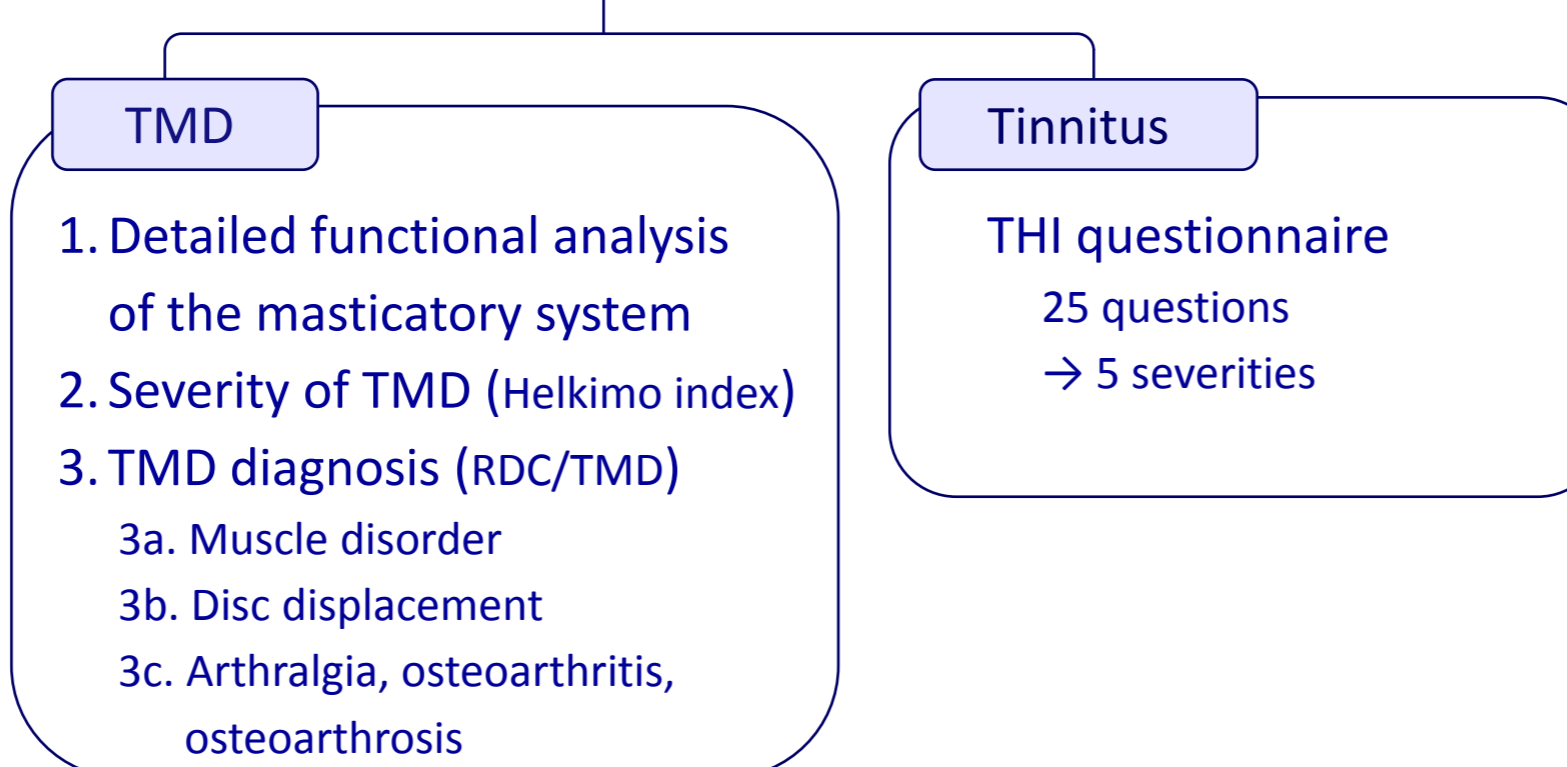
The frequent concurrent occurrence of tinnitus and temporomandibular joint and masticatory muscle disorders (TMD) has led to the assumption of a possible relationship between these two conditions. However, the scientific community still debates whether tinnitus and TMD are coexistent or independent, or whether the two symptoms have a causal connection. The present prospective clinical study was conducted to verify the potential correlation between TMD and tinnitus on the basis of three research hypotheses:

- I. The prevalence of perceived tinnitus is higher in patients with TMD than in patients without TMD.
- II. In patients with both tinnitus and TMD, TMD is found on the ipsilateral side.
- III. Dental functional therapy has a positive effect on perceived tinnitus distress.

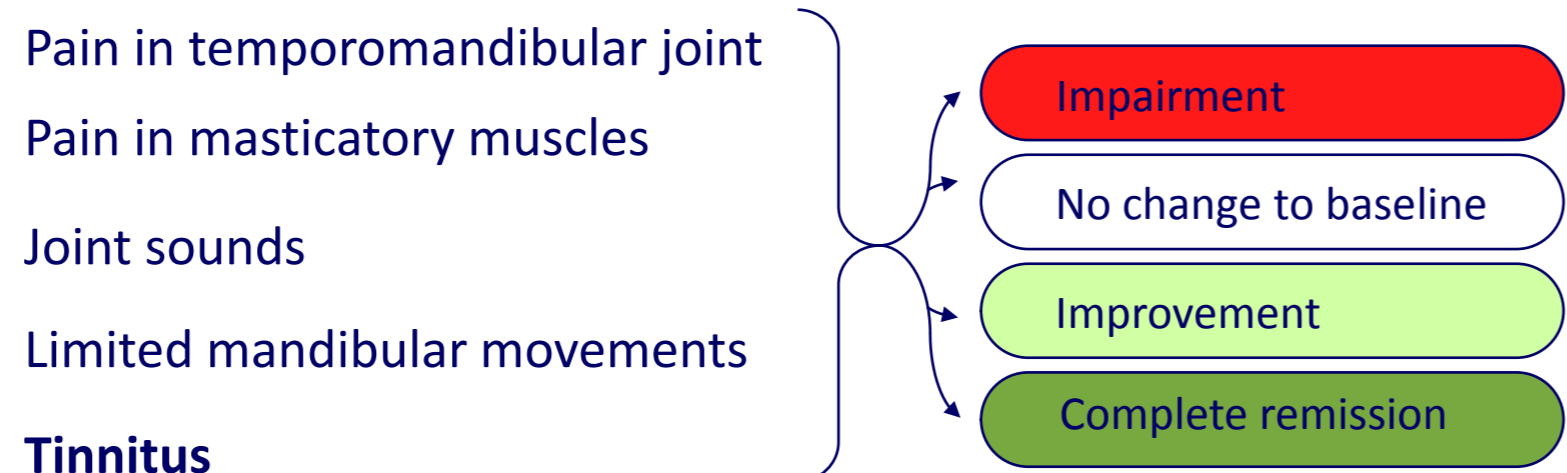
## Methods



### 1. Classification of TMD and tinnitus (n=30)



### 3. Reevaluation after 3 to 5 months (n=25)

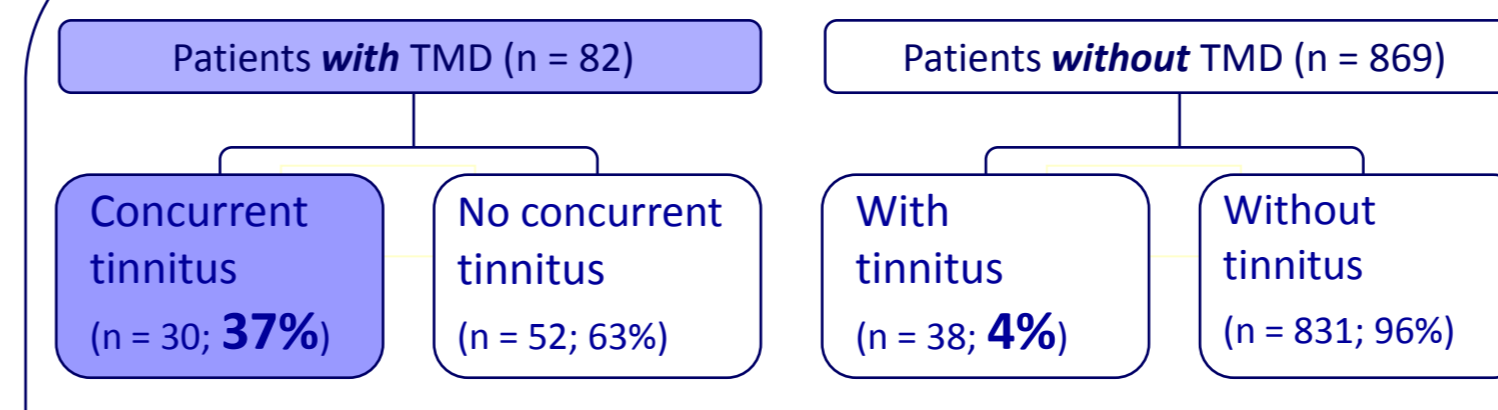


### 2. TMD functional therapy (n=25)



## Results

### Prevalences of TMD and tinnitus



	Tinnitus	CMD	Tinnitus & CMD
♀	36/478 (7,5 %)	56/478 (11,7 %)	19/478 (4,0 %)
♂	32/473 (6,8 %)	26/473 (5,5 %)	11/473 (2,3 %)

### Localisation of TMD and tinnitus

... in patients with both symptoms (n=30)

Tinnitus	TMD	n
unilateral	ipsilateral	8
unilateral	contralateral	0
bilateral	bilateral	14
bilateral	unilateral	5
unilateral	bilateral	3

### Therapeutic outcome (tinnitus)

	Tinnitus	Acute Tinn. <sup>1</sup>	Chronic Tinn. <sup>2</sup>
	25	8	17
No change	14 (56 %)	0	14 (82%)
Improvement	9 (36 %)	7 (87 %)	2 (12%)
Complete remission	2 (8%)	1 (13 %)	1 (6%)

<sup>1</sup> perception duration ≤ 12 months  
<sup>2</sup> perception duration > 12 months

### Therapeutic outcome (TMD)

	Myofascial pain	Joint sounds	Limited mandibular Movements
	22	16	6
No change	4 (18 %)	5 (31 %)	3 (50 %)
Improvement	9 (41 %)	7 (43 %)	0
Complete Remission	9 (41 %)	4 (25 %)	3 (50 %)

## Conclusions

- I. The risk of having tinnitus is 8.37-times higher for patients with TMD than for patients without TMD. All patients with unilateral TMD and unilateral tinnitus had both symptoms on the ipsilateral side. → The study strongly reinforces the putative association between tinnitus and TMD.
- II. The application of dental functional therapy in patients with TMD-related tinnitus improved or eliminated tinnitus symptoms in approximately half of the patients. → TMD therapy in patients with TMD-related tinnitus seems feasible.
- III. The treatment success of TMD-related tinnitus decreases with the duration of tinnitus. → Early intervention in patients with TMD-related tinnitus is necessary.