

## Initial experiences with the Matrix Type Stapes Prosthesis

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### Introduction and question

A new prosthesis joined the wide range of prostheses available for stapedioplasty about two years ago, the Kurz Matrix Type. This report describes our initial experience with this prosthesis with the postoperative audiology results and the handling during the operation.

### Method

Retrospective data analysis using the ENTstatistics digital database

### Results

A total of 22 patients received the Kurz Matrix Type Stapes Prostheses on one side (n=22) during a primary stapes operation from September 2014 to May 2015. A test of the 0.5, 1.0, 2.0 and 4.0 kHz frequencies showed an **average improvement of the air-bone gap of approximately 15 dB**. The postoperative follow-up for all patients was less than 12 months.

ABG, n=22	0.5-2kHz	0.5-3kHz	0.5-4kHz	0.5kHz	1kHz	2kHz	3kHz	4kHz
Average (AG1)	33.6		31.3	44.3	35.5	20.9		24.5
Stand. dev. (AG1)	7.4		6.7	10.4	7.4	8.5		9.2
Average (AG2)	14.8		15.9	18.9	16.8	8.6		19.1
Stand. dev. (AG2)	7.8		8.8	10.7	9.1	8		16
Average (Improvement)	18.8		15.5	25.5	18.6	12.3		5.5
Stand. dev. (Improvement.)	10.6		11.3	13.8	11.9	11.9		18.2
Min	-1.7		-10	5	-5	-10		-40
Max	31.7		30	55	35	30		30
Interquart.-Min.	10		6.3	15	10	0		-5
Interquart.-Max	26.7		23.8	35	30	20		20

### Expectations for the prosthesis

- **Greater stability for the attachment to the long process of the incus by**
  - large surface area of loop
  - perforations of loop - better fit on *irregular surface* of the long process of the incus

**Reference:** Tóth et al.: Anatomic parameters of the long process of incus for stapes surgery. 2013;34(9):1564-1570. doi:10.1097/MAO.0b013e3182a43619.

- **Prevention of potential necrosis of incus by improved pressure distribution**

### Discussion/conclusion

The initial analysis of the experience with the matrix type stapes prosthesis at our hospital appears to lead to good results in improving hearing.

In particular, the handling of the prosthesis during the operation is satisfactory for the surgeon. The new design of the loop with a wider and perforated surface and the spiral shape improves the crimping procedure in particular and the subsequent seating of the prosthesis on the long process of the incus. Now comparative studies with other types of prostheses and a longer follow-up are required to assess the long-term results.

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