

Force-choice pitch matching

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- **Good side**
 - Can be done with an audiometer
 - Can be helpful for the patient
 - Can be useful for some acoustic treatment
- **Bad side**
 - Poor test-retest reliability
 - Difficult for the patient (sometimes frustration)
 - Requires high-skilled clinicians
 - Time consuming
 - More than one frequency composing tinnitus?

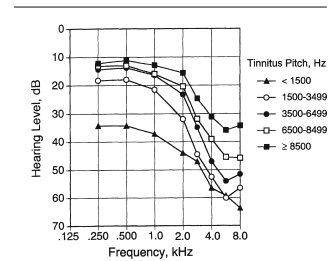
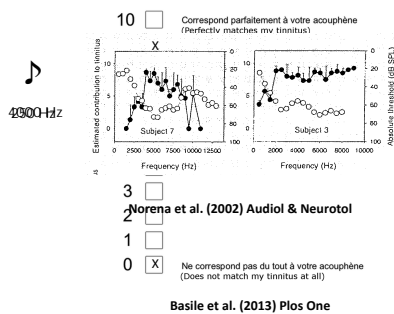


Fig. 5.5 Mean hearing threshold of the right ear for individuals in each group of patients according to the pitch of their tinnitus. Data are from patients who attended a tinnitus clinic. From Henry et al. [19]

Tinnitus likeness-spectrum



Spectrum pitch matching

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- **Good side**
 - Controlled by the patient (may decrease frustration)
 - Test a lot of different frequencies
 - Provide a spectrum rather than one single frequency
- **Bad side**
 - Not commercially available
 - What to do with all of these information's?

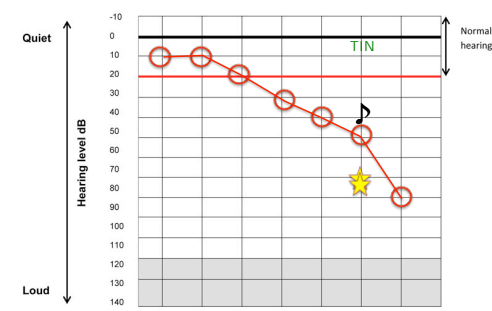
Loudness matching



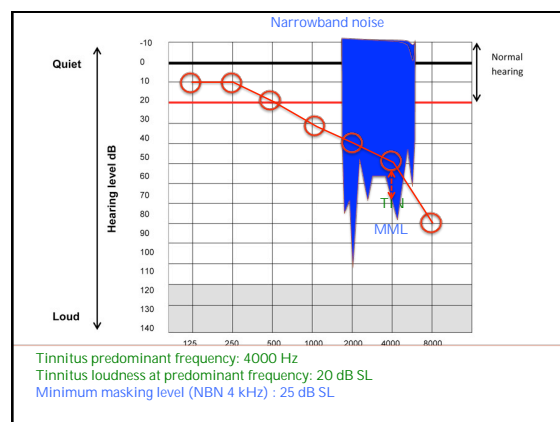
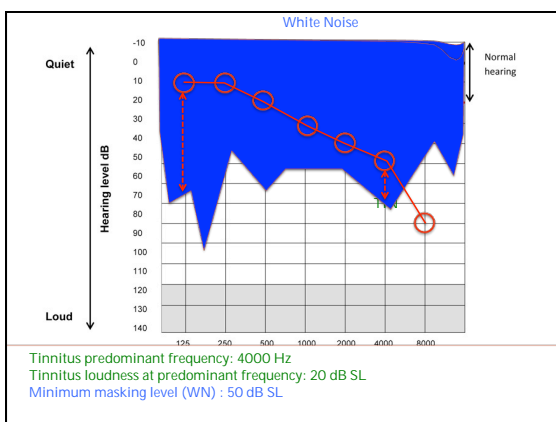
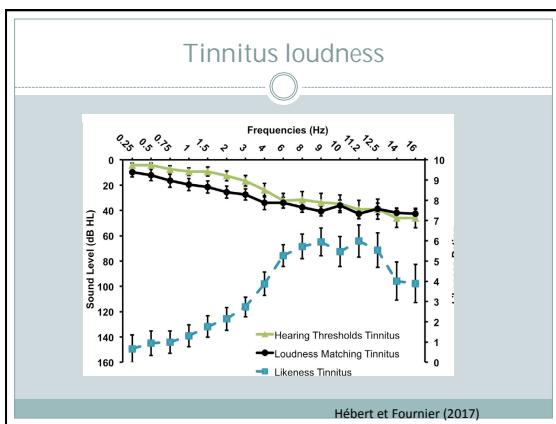
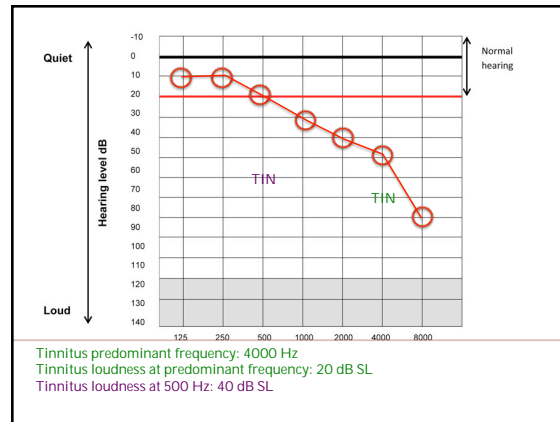
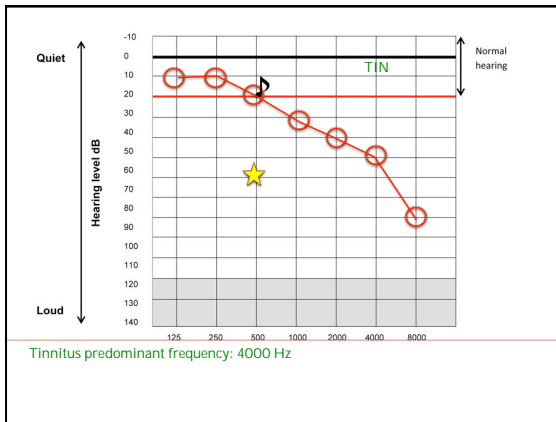
- Technique:
- Continuous presentation (ex: potentiometer)
 - Passive method vs. Active method

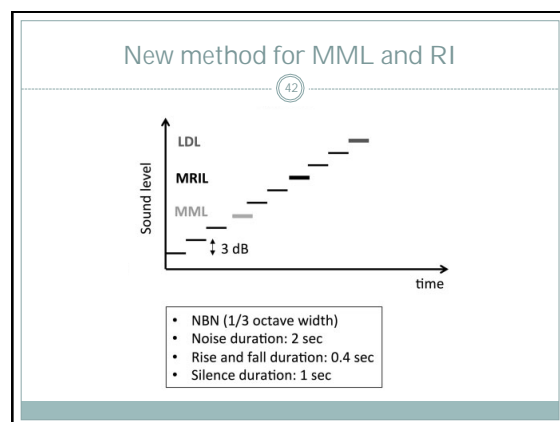
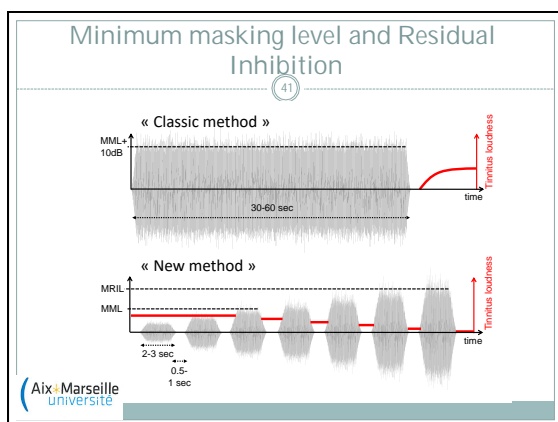
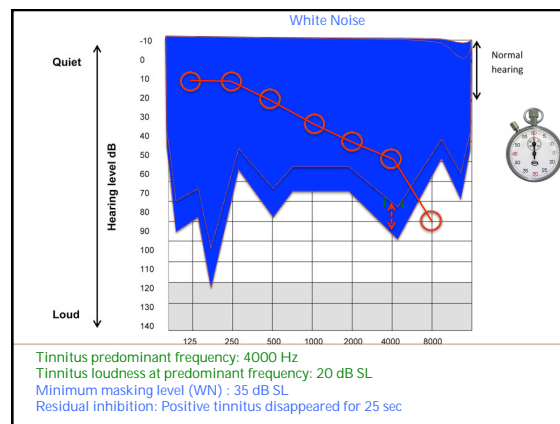
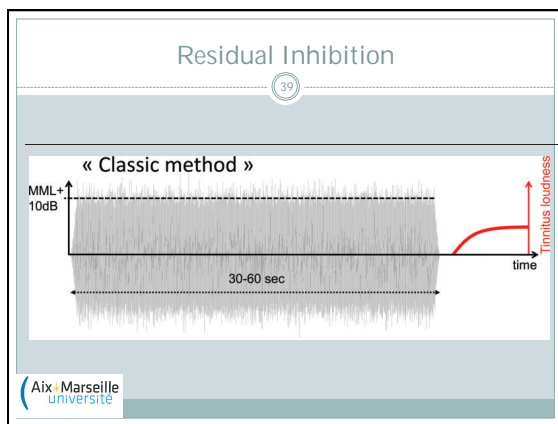
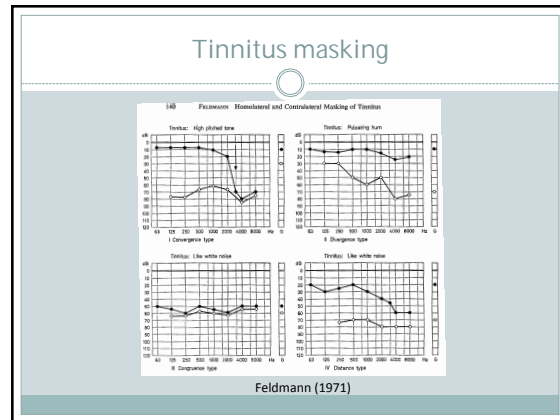
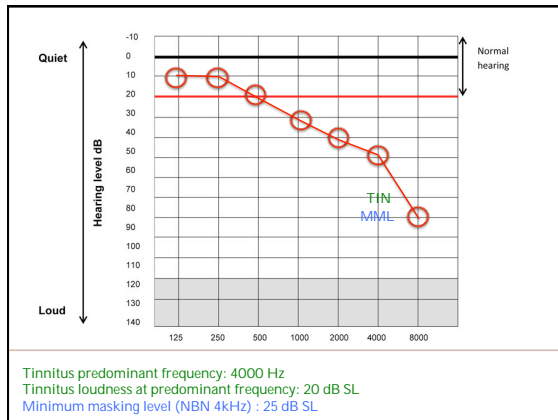


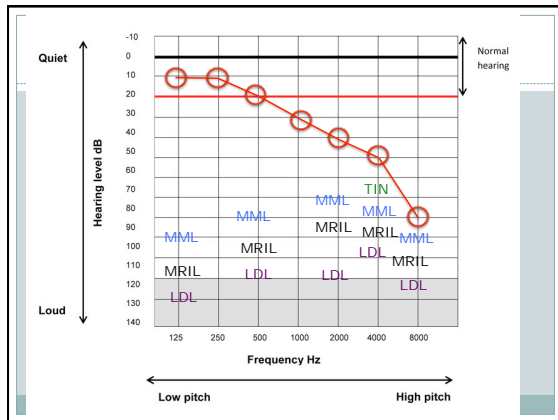
- Difference between methods:
- at the tinnitus predominant pitch ?
 - For every frequency ?
 - In a region with NH (ex. 1 kHz) ?
 - Ipsilateral vs. contralateral



Tinnitus predominant frequency: 4000 Hz







Participants

Marseille site	Lyon site
n = 34	n = 34
mean age: 50.6, SD: 12.9	mean age: 58, SD: 14.3
Bilateral tinnitus mostly (Bilateral, n=27, Unilateral n = 7)	Unilateral tinnitus only
Goal: Explore the effect of stimulus duration and spectrum of the new method	Goal : Validate the clinical application of the new method

Methods

Both sites
<ul style="list-style-type: none"> Hearing test (.25 to 12.5 kHz) Tinnitus pitch and loudness matching MML (new method) MRIL (new method)
Lyon site only
<ul style="list-style-type: none"> Loudness discomfort levels Classical RI testing

Results

CHARACTERISTICS OF MML AND MRIL
DISTRIBUTION

Distribution

A total of 68 tinnitus patients tested :	
Total MML : (n=67)	98.5 %
Total MRIL : (n=59)	86.7 %
Residual inhibition was categorized as follows:	
Complete inhibition	69.1 %
Partial inhibition	11.8 %
Persistent inhibition	5.8 %
Increase tinnitus loudness	5.8 %
Change in tinnitus pitch	2.9 %
Others (n=3)	4.4 %

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Fournier, et al. (2018) Trends in Hearing

Results

INDIVIDUAL CASES

