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THÈME: AUDITORY OBJECTIVE MEASURES

Stimulus-Frequency Otoacoustic Emissions: Test Retest Reliability

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Introduction

Currently, the use of SFOAE measurements has been restricted to research laboratories that develop the appropriate equipment for its measurement. Based on the availability of electroacoustic equipment for use in research on SFOAE, the study proposed is justified, studying listeners with normal hearing and without auditory complaints, to determine their response of SFOAE, aiming to establish criteria for future studies involving people with hearing complaints.

Considering that SFOAE responses may be useful in clinical practice, it is important to verify the stability of the response and test and retest measurements. Thus, the present study aims to analyze the responses of SFOAE in young adults to verify test and retest reliability.

Objective

To analyze the responses of stimulus-frequency otoacoustic emissions (SFOAE) in adults and verify reliability in test and retest.

Method

Participants

- **26 (aged between 19 - 31 years)**
- **Hearing thresholds better than 15 dB HL.**
- **A-TypeTympanograms**
- **TEOAE presents**
- **Were excluded participants with incomplete test.**

Procedures

- PTA (250 to 8000 Hz, octave interval).
- Acoustic immitance Measurements.
- WBT (reflectance)
- TEOAE (80dB p.e.)

Meeting Inclusion Criteria

5 minutes interval between test and retest

- Test SFOAE (right ear)
- Stimulus clusters around 1, 2 and 4 kHz 40 dBSPL; supressor level 60dBSPL (47 Hz above test freq.)

- Reinsert probe
- Retest SFOAE
- Same ear and same parameters as Test.

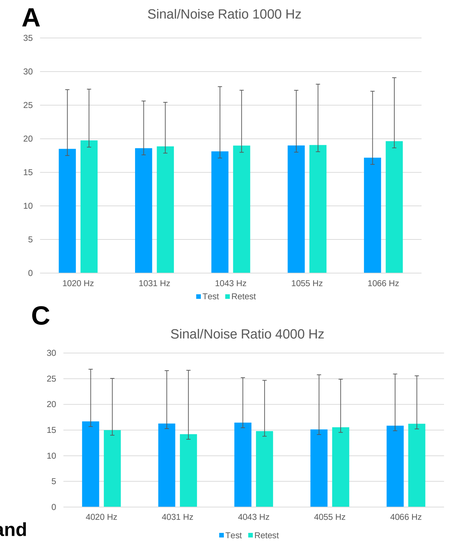
SF response and SNR ratio were analyzed

The variables stimulus-frequency (SF) response and Signal/Noise ratio (SNR) were analysed. Data were statistically analyzed (descriptive) and Interclass Correlation Coefficient (ICC) was used to analyze agreement between test and retest conditions (CI 95%).

Results

Frequency (Hz)	Response SF	Mean	SD	ICC
1020	Test	5.76	7.76	0.937
	Retest	6.96	6.84	
1031	Test	6.43	7.05	0.955
	Retest	7.55	6.1	
1043	Test	5.73	9.11	0.938
	Retest	7.05	7.39	
1055	Test	6.51	7.54	0.946
	Retest	6.8	8.30	
1066	Test	5.59	8.83	0.950
	Retest	6.85	8.28	
2027	Test	-0.39	8.80	0.918
	Retest	-0.511	12.48	
2039	Test	0.24	8.85	0.978
	Retest	-0.85	9.37	
2051	Test	-0.25	9.85	0.981
	Retest	0.84	9.62	
2062	Test	-0.20	9.62	0.978
	Retest	0.42	10.16	
2074	Test	-1.70	12.48	0.923
	Retest	-0.08	11.29	
4020	Test	2.41	10.02	0.941
	Retest	1.04	10.36	
4031	Test	1.87	10.49	0.939
	Retest	0.31	12.41	
4043	Test	2.63	9.32	0.937
	Retest	1.50	10.12	
4055	Test	1.69	10.75	0.908
	Retest	2.26	9.22	
4066	Test	1.64	10.43	0.917
	Retest	2.71	9.59	

Table 1 – Descriptive statiscal and ICC between test retest for SF measurement



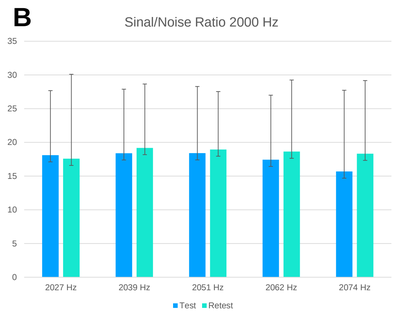


Figure 1: Comparison between test retest for SNR measurement.
A- Clusters around 1000 Hz
B- Clusters around 2000 HZ
C- Clusters around 4000 Hz

The ICC revealed excellent (ICC>0.90) agreement between test and retest for all frequencies for variable SF response (Table 1). There was good agreement (ICC between 0.86 and 0.96) for the SNR variable

Conclusion

The findings suggest high reproducibility between test and retest conditions in young adults, providing reliability for future use in clinical practice.

Références

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