

Dataset for: "Age-related reduction of amplitude modulation frequency selectivity"

This file describes the contents of the dataset.

The dataset contains data for 11 young and 10 older listeners with normal hearing (young and older NH listeners).

The data collected were:

- Population data: age, tested ear, and reverse digit span score
- Audiograms
- Hearing threshold at the test frequency
- Amplitude modulation detection thresholds with short stimuli duration
- Amplitude modulation detection thresholds with extended stimuli duration
- Masked-threshold patterns (MTP; short stimuli duration)
- Masked-threshold patterns (MTP; extended stimuli duration)

Population Data

Dataset giving the population information for the 21 participants (*tp*), split into young NH and older NH (*group*), tested in the study. The data summarizes the participants' *age*, and tested ear (*ear*), as well as their Reverse Digit Span score (*rds_score*). The age is given in years, and the reverse digit span score is given on a normalized scale from 0 to 1.

Audiogram

Audiometric thresholds (*thresh*) were collected for 21 participants (*tp*), split into young NH and older NH (*group*), at frequencies (*freq*) of 0.125, 0.25, 0.5, 1, 2, 3, 4, 6, and 8 kHz. The thresholds are given in dB Hearing Level (HL).

Hearing Threshold

Hearing thresholds collected at the test frequency (2.8 kHz) for all listeners. 21 participants (*tp*), split into young NH and older NH (*group*) were tested. The thresholds (*thresh*) were measured across at least 3 repetitions (*repetition*) for each listener. If the standard error across repetitions exceeded 2 dB, additional repetitions were added until that limit was met. The thresholds are given in dB Sound Pressure Level (SPL).

AM Detection

Dataset for the amplitude modulation detection thresholds collected with a short stimulus duration (0.6 s).

21 participants (*tp*), split into young NH and older NH (*group*), were tested. Detection thresholds (*thresh*) were collected at four different target modulation frequencies (*fmod*) of 4, 16, 64, and 128 Hz. At least three repetitions (*repetition*) were collected for each condition. If the standard error across repetitions exceeded 2 dB, additional repetitions were added until that limit was met. In case a threshold was not obtainable in one of the repetitions, the *thresh* entry specifies "NaN". The thresholds are given for the target modulation depth on a dB scale: $M = 20\log_{10}(m)$, where m is the modulation depth on a linear scale.

AM Detection Extended

Dataset for the amplitude modulation detection thresholds collected with an extended stimulus duration (1.1 s).

21 participants (*tp*), split into young NH and older NH (*group*), were tested. Detection thresholds (*thresh*) were collected at a target modulation frequency (*fmod*) of 4 Hz. At least three repetitions (*repetition*) were collected for each condition. If the standard error across repetitions exceeded 2 dB, additional repetitions were added until that limit was met. In case a threshold was not obtainable in one of the repetitions, the *thresh* entry specifies "NaN". The thresholds are given for the target modulation depth on a dB scale: $M = 20\log_{10}(m)$, where m is the modulation depth on a linear scale.

Masked-Threshold Patterns (MTPs)

Dataset for the masked-threshold patterns (MTPs) collected with a short stimulus duration (0.6 s).

21 participants (*tp*), split into young NH and older NH (*group*), were tested. Masked thresholds (*thresh*) were collected at four different target modulation frequencies (*fmod*) of 4, 16, 64, and 128 Hz, and five to seven different masker-modulation center frequencies (given as octaves relative to the target modulation frequency, *mask_oct*) at -5, -4, -2, -4/3, -2/3, 0, +2/3, +4/3, and +2 octaves. At least three repetitions (*repetition*) were collected for each condition. If the standard error across repetitions exceeded 2 dB, additional repetitions were added until that limit was met. In case a threshold was not obtainable in one of the repetitions, the *thresh* entry specifies "NaN". The thresholds are given for the target modulation depth on a dB scale: $M = 20\log_{10}(m)$, where m is the modulation depth on a linear scale.

Masked-Threshold Patterns (MTPs) Extended

Dataset for the masked-threshold patterns (MTPs) collected with an extended stimulus duration (1.1 s).

21 participants (*tp*), split into young NH and older NH (*group*), were tested. Masked thresholds (*thresh*) were collected at a target modulation frequency (*fmod*) of 4 Hz, and seven different masker-modulation center frequencies (given as octaves relative to the target modulation frequency, *mask_oct*) ranging from -2 to +2 octaves, in steps of 2/3. At least three repetitions (*repetition*) were collected for each condition. If the standard error across repetitions exceeded 2 dB, additional repetitions were added until that limit was met. In case a threshold was not obtainable in one of the repetitions, the *thresh* entry specifies "NaN". The thresholds are given for the target modulation

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depth on a dB scale: $M = 20\log_{10}(m)$, where m is the modulation depth on a linear scale.

Ethical statement

All listeners were financially compensated for their time and gave written informed consent. Ethical approval for the study was provided by the Science-Ethics Committee for the Capital Region of Denmark (reference H-16036391).

Citation and links:

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