Audiogram of humans (*Homo sapiens*)

Data from:

Jackson, L.L., Heffner, R.S., and Heffner, H.E.(1999) Free-field audiogram of the Japanese macaque (*Macaca fuscata*).*Journal of the Acoustical Society of America*, 106, 3017-3023. (7 individuals, free field)

Sivian, L.J., and White, S.D. (1933) On minimum audible sound fields. *Journal of the Acoustical Society of America*, 4, 288-321. (average of group C, free-field)

ISO (1961) ISO R. 226. “Normal equal-loudness level contours” (International Organization for Standardization, Geneva).

Average absolute thresholds (in dB re 20 µN/m^2) for humans

Frequency (in kHz)	Threshold (in dB)			Average
	Jackson et al., 1999	Sivian & White, 1933	ISO Human Standard	
.016	82.4	—	—	82
.032	58.2	—	58	58
.060	—	45	—	45
.063	35.8	—	37	36.5
.120	—	29	—	29
.125	17.1	—	23	20
.240	—	18	—	18
.250	10	—	11	10.5
.480	—	8	—	8
.500	10	—	8	9
.960	—	6	—	6
1	-3.7	—	2	-1
1.92	—	-7	—	-7
2	-9.9	—	-2	-6
3.85	—	-7	—	-7
4	-10.3	—	-7	-8.5
5.4	—	1	-2	-.5
7.8	—	9	—	9
8	9	—	10	9.5
10.5	—	13	—	13
15	—	24	18	21
16	25.4	—	43	34
18	71.2	—	—	71
20	>91	—	—	>91

Lowest and highest frequencies audible at sound pressure levels (SPL) ranging from 30 to 70 dB SPL

SPL (in dB)	Lowest audible frequency (in kHz)	Highest audible frequency (in kHz)
70	.023	18
60	.031	17.6
50	.041	17
40	.055	16.6
30		

Additional Parameters:

Body weight = 75 kg

Functional interaural distance= 875 µs

(Time required for sound to travel around the head from one auditory meatus to the other.)

Comments: Two observers in our laboratory (GK & HH) report that sine waves lose their tonal quality below 22.5 Hz and take on a pulsing quality.