LDV studies

Study	Preparation	Number of bones	Preservation method	Max time from death (day)	Age (years)	Gender	Distance probe mic tip to TM (mm)	Measurement point	Vibration isolation table	Sound level at TM (dB SPL)	LDV laser angle (degrees)	Cosine correction	Scanned figure	Data	Includes variability	Lowest frequency (Hz)	Highest frequency (Hz)	Notes	Source for scanning
Albara et al 2001	Temporal bone. Specimens were obtained within 48 hours after death using a Schuknecht bone saw.	11 (1 of the 12 cadavers had stiff malleus and not included in velocity measurments)	The bones were preserved in 1: 10,000 merthiolate solution at 5 °C	6	36 to 81 (mean 67.9)	9 male 3 female	1-2	Stapes footplate	Yes	60 - 120 (actual value not given for Figure 7)	Not given	Yes	Figure 7	Mean and standard deviation for normalized velocity (mm/s/Pa)	Yes. Linear	50	10000	Mean +/1 standard deviation are not equally spaced mean on log plot. Individual data are shown in Figure 1 and for some frequencies it may be possible to calculate the standard deviation. Care needed though as individual plots greatly overlapping and at many frequencies it's not possible to see individual data discretely.	Publisher's pdf
Asai et al 1999	Fresh human temporal bones	22	The bones were preserved in 1: 10,000 merthiolate solution at 5 °C	6	52 to 92 (mean 73.6)	All male	1-2	Stapes footplate, anterior, centre, and posterior	Yes by reference to Nishara et al 1993	80	35 to 50. Not given directly but states methods same as Nishihara et al 1993	Yes. Not given directly but states methods same as Nishihara et al 1993	Figure 5 stapes	Figure 5 has mean peak-peak displacement only (no variability).	No	200	10000		Photocopy
Gan et al 2001	Group A: Fresh or fresh frozen cadaveric temporal bones; Group B: Temporal bone	Group A: 8 (6 fresh) 2 (fresh frozen) Group B: 9	Temporal (Group B)bones were preserved in 1: 10,000 merthiolate solution in 0.9% saline at 5 °C	6 (Group B)	Group A: 57 to 85 (mean 78.5); Group B: 32 to 96 (mean 64)	Group A: 5 male 3 female; Group B 8 male 1 female	2	Centre stapes footplate	Yes	90	30 to 50	Not given	Individual data in Figure 7A (Group A) and Figure 8A (Group B). Mean data in Fig 9A and 9B for Group A and Group B, respectively. Error basrs are sometimes smaller than the marker and so can't be used. Fig 9B gives best fit to Rosowski data and used for validation. Pooled individual data from Fig 7A and Fig 7B used for modified Rosowsjii criteria.	Mean peak-peak displacement and standard error	Yes. Log scale.	250	8000		Publisher's pdf
Goode et al 1994	Temporal bone. Specimens were obtained within 48 hours after death using an oscillating Schuknecht bone saw.	10	The bones were preserved in 1: 10,000 merthiolate solution at 5 °C	6	65 to 80 (mean 72)	All male	Not given	Centre of stapes footplate	Yes	104	Not given	Not given	Figure 1 124 dB SPL (104 dB SPL doesn't match Rosowski)	Mean and standard deviation for peak-peak displacement	Yes. Linear. Last data point at 6.5 kHz from only 9 ears. Not taken into account in analysis.	400	6000		Photocopy
Hato et al 2001	Fresh temporal bone. Specimens were obtained within 48 hours after death using a Schuknecht bone saw.	15	The bones were preserved in 1: 10,000 merthiolate solution at 5 °C	6	52 to 92 (mean 74.2)	13 male 2 female	< 3	Centre of stapes footplate	No given	80	30 to 50	No	Figure 3 before buttress removal	Mean peak-peak displacement and standard error	Yes. Linear	100	10000		Publisher's pdf
Hato et al 2003	Fresh temporal bone. Specimens were obtained within 48 hours after death using a Schuknecht bone saw.	10	The bones were preserved in 1: 10,000 merthiolate solution at 5 °C	6	52 to 75 (mean 62.8)	9 male 1 female	2	Anterior, posterior, inferior, superior and centre. Figure 3 based on centre.	Not given	80	50 to 60	Yes	Figure 3	Mean peak-peak displacement and standard error	Yes. Log	100	10000		Photocopy
Kurokawa and Goode 1995	Temporal bone. Specimens were obtained within 48 hours after death using a Schuknecht bone saw.	6	The bones were preserved in 1: 10,000 merthiolate solution at 5 °C	6	61 to 74 (mean 68.9)	All male	2	Stapes footplate	Yes	105	35 to 50	Yes	Figure 1 stapes	Figure 1 has mean peak-peak displacement only (no variability).	No	140	9000		Photocopy
Nishihara et al 1993	Temporal bone. Specimens were obtained within 48 hours after death using a Schuknecht oscillating bone saw.	15	The bones were preserved in 1: 10,000 merthiolate solution at 5 °C	6	44 to 84 (mean 67.9)	All male	2	Centre of stapes footplate	Yes	80	35 to 50	Yes	Figure 2 stapes	Mean and standard deviation for peak-peak displacement	Yes. Log	147	19433		Publisher's pdf
Voss et al 2000	Temporal bone. Specimens were generally obtained within 24 hours after death using a Schuknecht bone saw.	18	Refridgerated (not frozen) at 5 °C in approximately 300 cc saline with 10 ul of 10% Betadine	Generally made within 5 to 10 days	Not given	No given	< 2	Stapes footplate or posterior crus of the stapes	Not given	50-100	20 to 50	No	Fig 4 top right panel	Mean and standard deviation for normalized velocity (mm/s/Pa)	Yes. Log	100	4000		Publisher's pdf

Studies using video stroboscopy

Study	Preparation	Number of bones	Preservation method	Max time from death (days)	Age (years)	Gender	Distance probe mic tip to TM (mm)	Measurement point	Vibration isolation table	Sound level at TM (dB SPL)	LDV laser angle (degrees)	Cosine correction	Scanned figure	Data	Includes variability	Lowest frequency (Hz)	Highest frequency (Hz)	Notes
Gyo et al 1987	Temporal bone. Specimens were obtained within 24 hours after death using a Schuknecht bone saw.	14	The bones were preserved in 1: 10,000 merthiolate solution at 5 °C	3	49 to 88 (mean 72.5)	Not given	Unclear. Hole in bony portion of external auditory canal wall 2-3 mm from TM	Head of stapes	Yes	124	N/A	N/A	Figure 4a stapes head	Mean peak-peak displacement and standard deviation	Yes. Linear	200	4000	
Gyo and Goode 1988	Temporal bone. Specimens were obtained within 24 hours after death using a Schuknecht bone saw.	7	The bones were preserved in 1: 10,000 merthiolate solution at 5 °C	6	Not given	Not given	Unclear. Hole in bony portion of external auditory canal wall 2-3 mm from TM	Head of stapes	Not given, but likely given same methods as Gyo et al 1987	124	N/A	N/A	Figure 3	Mean peak-peak displacement and standard deviation	Yes. Linear	100	2000	
Murakami et al 1997	Fresh temporal bone. Specimens were obtained within 48 hours after death using a Schuknecht bone saw.	15	The bones were preserved in 1: 10,000 merthiolate solution at 5 °C	6	42 to 95 (mean 67.8)	Not given	Not given, but likely to be the same as Gyo et al 1987	Head of stapes	Not given, but likely given same methods as Gyo et al 1987	134	N/A	N/A	Figure 4 left 0 mm H20	Mean peak-peak displacement and standard deviation	Yes. Only upper error bar so can't tell whether log or linear	200	3500	

Study with measure of RW pressure

Study	Preparation	Number of bones	Preservation method	Max time from death (days)	Age (years)	Gender	Distance probe mic tip to TM (mm)	Measurement point	Vibration isolation table	Sound level at TM (dB SPL)	LDV laser angle (degrees)	Cosine correction	Scanned figure	Data	Includes variability	Lowest frequency (Hz)	Highest frequency (Hz)	Notes	Source for scanning
Kringlebotn et al 1985	Human temporal bone	68	The temporal bones were stored at a few degrees centigrade.	<6 days for 48/68 ears.	Not given but can be determined from Figure 6	Not given	"close to the eardrum"	Round window volume	N/A	105	N/A	N/A	Figure 5. Note y axis is in dB	Mean volume displacement per unit pressure	No	50	5000	See equation 3 for conversion of volume displacement to mean rms stapes displacement. This then needs to be converted to a normalized velocity. Because the displacement is already an rms value we don't need to scale by 1/2 * sqrt (2) as for other conversions.	Publisher's pdf