

References

1. Aarts NL, Caffee CS. (2005) Manufacturer predicted and measured REAR values in adult hearing aid fitting: accuracy and clinical usefulness. *Int J Audiol* 44(5):293-301.
2. Aazh H, Moore BC. (2007) The value of routine real ear measurement of the gain of digital hearing aids. *J Am Acad Audiol* 18(8):653–664.
3. Abrams HB, Chisolm TH, McManus M, McArdle R. (2012) Initial fit approach versus verified prescription-comparing self-perceived hearing aid benefit. *J Am Acad Audiol* 23(10):768-778.
4. American Academy of Audiology Clinical Practice Guidelines. (June 2013) *Pediatric amplification*.
<http://www.audiology.org/resources/documentlibrary/Documents/PediatricAmplificationGuidelines.pdf>.
5. Bentler R. (2004) Advanced hearing aid features: do they work? *Paper presented at the ASHA Convention Philadelphia, PA*.
6. Bretz K. (2006) A comparison of three hearing aid manufacturers' recommended first fit to two generic prescriptive targets with the pediatric population. *Independent Studies and Capstones. St. Louis: Program in Audiology and Communication Sciences, Washington University School of Medicine Paper 189*.
7. Hawkins DB, Cook JA. (2003) Hearing aid software predictive gain values: how accurate are they? *Hear J* 56(7):26–34.
8. Kochkin S. (2010) MarkeTrak VIII: Consumer satisfaction with hearing aids is slowly increasing. *Hear J* 63(1): 19-32.
9. Leavitt RJ, Flexer C (2012) The importance of audibility in successful amplification of hearing loss. *Hear Rev* 19(13):20-23.
10. Mueller HG. (1995) Probe-microphone measurements: unplugged. *Hear J* 48(1):10-12, 34-36.
11. Mueller HG. (2001a) Probe-microphone measurements: 20 years of progress. *Trends Amplif* 5(2):3-39.
12. Mueller HG. (2001b) *Using probe mics to measure directionality*.
<http://www.audiologyonline.com/ask-the-experts/using-probe-mics-to-measure-764>
13. Mueller HG. (2001c) *Directionality and WDRC*.
<http://www.audiologyonline.com/ask-the-experts/directionality-and-wdrc-763>
14. Mueller HG. (2005) Probe-mic measures: hearing aid fitting's most neglected element. *Hear J* 57(10): 33-41.
15. Mueller HG. (2011) *How loud is too loud? Using loudness discomfort level measures for hearing aid fitting and verification, Part 2*. <http://www.audiologyonline.com/articles/loud-too-using-loudness-discomfort-824>
16. Mueller HG. (2014) *20Q: Real-Ear Probe-Microphone Measures — 30 Years of Progress?*
<http://www.audiologyonline.com/articles/20q-probe-mic-measures-12410>

17. Mueller HG. & Hawkins DB. (1992) Assessment of fitting arrangements, special circuitry, and features. In HG. Mueller, D. Hawkins, J. Northern (Eds.). *Probe microphone measurements: Hearing aid selection and assessment* (pp. 92, 201-227). San Diego: Singular Press.
18. Palmer C. (2009) Best practice: it's a matter of ethics. *Audiol Today* 21(5):31-35.
19. Seewald R, Mills J, Bagatto M, Scollie S, & Moodie S. (2008) A comparison of manufacturer-specific prescriptive procedures for infants. *Hear J* 61(11):26-34.
20. Valente M, Abrams H, Benson D, Chisolm T, Citron D, Hampton D, Loavenbruck A, Ricketts T, Solodar H & Sweetow R. (2006) Guidelines for the audiological management of adult hearing impairment. *Audiol Today* 18(5):28-36.
21. Aazh H, Moore BC, & Prasher, D. (2012) The accuracy of matching target insertion gains with open-fit hearing aids. *Am J Audiol* 21(2):175-180.
22. Cox RM, Alexander GC, Johnson J, Rivera I. (2011) Cochlear dead regions in typical hearing aid candidates: prevalence and implications for use of high-frequency speech cues. *Ear Hear* 32(3):339-348
23. Cox RM, Johnson J and Alexander GC. (2012) Implications of high-frequency cochlear dead regions for fitting hearing aids to adults with mild to moderately severe hearing loss. *Ear Hear* 33(5):573-587.
24. Hawkins DB & Cook JA. (2003) Hearing aid software predictive gain values: how accurate are they? *Hear J* 56(26):28, 32, 34.
25. Glista D, Scollie S, Bagatto M, et al. (2009) Evaluation of nonlinear frequency compression: clinical outcomes. *Int J Audiol* 48(9):632-644.
26. Keidser G & Alamudi K. (2013) Real-life efficacy and reliability of training a hearing aid. *Ear Hear* 34(5):619-629.
27. Leavitt RJ & Flexer C. (2012) The importance of audibility in successful amplification of hearing loss. *Hear Rev* 19(13):20-23.
28. Mackersie CL, Crocker TL, Davis RA. (2004) Limiting high-frequency hearing aid gain in listeners with and without suspected cochlear dead regions. *J Am Acad Audiol* 15(7):498-507.
29. McCreery RW, Brennan MA, Hoover B, Kopun J, Stelmachowicz PG. (2013) Maximizing audibility and speech recognition with nonlinear frequency compression by estimating audible bandwidth. *Ear Hear* 34(2):24-27.
30. McCreery, RW, Bentler, RA and Roush, PA (2013). Characteristics of hearing aid fittings in infants and young children. *Ear Hear* 34(6):701-710.
31. Palmer C. (2012) *Implementing a gain learning feature*.
<http://www.audiologyonline.com/articles/siemens-expert-series-implementing-gain-11244>
32. Scollie S. D. (2008). "Children's speech recognition scores: The speech intelligibility index and proficiency factors for age and hearing level," *Ear Hear* 29, 543-556.
33. Seewald R, Mills J, Bagatto M, Scollie S, & Moodie S. (2008) A comparison of manufacturer-specific prescriptive procedures for infants. *Hear J* 61(11): 26, 28, 30, 32, 34.
34. Stelmachowicz P.G., Pittman A.L., Hoover B.M., Lewis D.E. (2002) Aided perception of /s/ and /z/ by hearing-impaired children. *Ear Hear* 23(4):316-324.
35. Stelmachowicz PG, Pittman AL, Hoover BM, Lewis DE, Moeller MP. (2004) The

- importance of high-frequency audibility in the speech and language development of children with hearing loss. *Ar Otolaryngol Head Neck Surg* 13(5):556–562.
36. Wolfe J, John A, Schafer E, et al. (2010) Evaluation of nonlinear frequency compression for school-age children with moderate to moderately severe hearing loss. *J Am Acad Audiol* 21(10):618–628.
 37. Wolfe J, John A, Schafer E, et al. (2011) Long-term effects of non-linear frequency compression for children with moderate hearing loss. *Int J Audiol* 50(6):396–404.
 38. Beck DL, Nilsson M. (2013) Speech-in-noise testing – a pragmatic addendum to hearing aid fittings. *Hear Rev* 16(37):24-26.
 39. Bench J, Kowal A & Bamford J. (1979) The BKB (Bamford-Kowal-Bench) sentence lists for partially-hearing children. *Br J Audiol* 13(3):108-112.
 40. Best V, Keidser G, Buchholz JM, and Freeston K. (2013) Psychometric effects of adding realism to a speech-in-noise test. *Proceedings of Meetings on Acoustics* 19:050067-73.
 41. Cox R, Alexander, GC & Gilmore, CA. (1987) Development of the connected speech test (CST). *Ear Hear* 8(S):119S-126S.
 42. Grant KW, Walden TC. (2013) Understanding excessive SNR loss in hearing impaired listeners. *J Am Acad Audiol* 24(4):258-273.
 43. Kalikow DN, Stevens KN, & Elliott, LL. (1977) Development of a test of speech intelligibility in noise using sentence materials with controlled word predictability. *J Acoust Soc Am* 61(5):1337-1351.
 44. Killion MC, Niquette PA, Gudmundsen GI, Revit LJ, Banerjee S. (2004) Development of a quick speech-in-noise test for measuring signal-to-noise ratio loss in normal-hearing and hearing-impaired listeners. *J Acoust Soc Am* 116(4 Pt 1):2395–2405.
 45. McArdle RA. & Wilson, RH. (2006) Homogeneity of the 18 QuickSIN™ lists. *J Am Acad Audiol* 17(3):157-167.
 46. Mueller HG, Johnson EE, & Weber J. (2010). *Fitting hearing aids: a comparison of three pre-fitting speech tests*.
www.audiologyonline.com/articles/article_detail.asp?article_id=2332 Audiology Online
 47. Nilsson M, Soli SD, & Sullivan JA. (1994) Development of the hearing in noise test for the measurement of speech reception thresholds in quiet and in noise. *J Acoust Soc Am* 95(2):1085-1099.
 48. Nittrouer S, Caldwell-Tarr A, Tarr E, Lowenstein JH, Rice C & Moberly AC (2013) Improving speech-in-noise recognition for children with hearing loss: potential effects of language abilities, binaural summation, and head shadow. *Int J Audiol* 52(8):513–525.
 49. Olsen WO. Average speech levels and spectra in various speaking/listening conditions: a summary of the Pearson, Bennett, & Fidell (1977) report. *Am J Audiol*. 1998;7(2):21-25.
 50. Paglialonga A, Grandori F, Tognola G. (2013) Using the Speech Understanding in Noise (SUN) test for adult hearing screening. *Am J Audiol* 22(1):171-174.
 51. Saunders G, & Cienkowski K. (2002) A test to measure subjective and objective speech intelligibility. *J Am Acad Audiol* 1(13):38-49.
 52. Soli SD, Sullivan JA. (1994) Development of the hearing in noise test for the measurement of speech reception thresholds in quiet and in noise. *J Acoust Soc Am*. 95(2):1085-1099.
 53. Wilson RH. (2003) Development of a speech in multi-talker babble paradigm to assess

- word-recognition performance. *J Am Acad Audiol* 14(9):453–470.
54. Wilson RH & Burks, CA. (2005) The use of 35 words to evaluate hearing loss in terms of signal-to-babble ratio: A clinic protocol. *J Rehab Res Dev* 42(6):839-852.
 55. Wilson RH and McArdle, R. (2005) Speech signals used to evaluate functional status of the auditory system. *J. Rehab Res Dev* 42(4):79–94.
 56. Wilson RH, & McArdle R. (2007) Intra-and inter-session test, retest reliability of the words-in-noise (WIN) test. *J Am Acad Audiol* 18(10):819–831.
 57. Wilson RH, McArdle R, & Smith SL. (2007a) An evaluation of the BKB-SIN, HINT, QuickSIN, and WIN materials on listeners with normal hearing and listeners with hearing loss. *J Speech Lang Hear Rev* 50(4):844–856.
 58. Wilson RH, Carnell C, and Cleghorn AL. (2007b) The Words-In-Noise (WIN) test with multitalker babble and speech-spectrum noise maskers. *J Am Acad Audiol* 18(6):522–530.
 59. Bentler R, Kramer S. (2000) Guidelines for choosing a self-report outcome measure. *Ear Hear* 21(4 Suppl):37S-49S.
 60. Bentler R, Niebuhr D, Getta J, & Anderson C.(1993) Longitudinal study of hearing aid effectiveness. II: Subjective measures. *J Speech Hear Res* 36(4):820–831.
 61. Bertoli S, Staehelin K, Zemp E, Schindler C, Bodmer D, et al. (2009) Survey on hearing aid use and satisfaction in Switzerland and their determinants. *Int J Audiol* 48(4):183-195.
 62. Brannstrom KJ, Wennerstrom I. (2010) Hearing aid fitting outcome: clinical application and psychometric properties of a Swedish translation of the international outcome inventory for hearing aids (IOI-HA). *J Am Acad Audiol* 21(8):512–521.
 63. Cox R, Alexander GC. (1995) The abbreviated profile of hearing aid benefit. *Ear Hear* 16(2):176–186.
 64. Cox R, Alexander GC. (1999) Measuring satisfaction with amplification in daily life: the SADL scale. *Ear Hear* 20(4):306–320.
 65. Cox R, Alexander GC. (2001) Validation of the SADL questionnaire. *Ear Hear* 22(2):151-160.
 66. Cox R, Alexander GC. (2002) The International Outcome Inventory for Hearing Aids (IOI-HA): psychometric properties of the English version. *Int J Audiol* 41(1): 30-35.
 67. Cox R, Rivera I. (1992) Predictability and reliability of hearing aid benefit measured using the APHAB. *J Am Acad Audiol* 3(4):242–254.
 68. Cox R, Hyde M, Gatehouse S, Noble W, Harvey D, et al. (2000) Optimal outcome measures, research priorities, and international cooperation. *Ear Hear* 21(4):106S–115S.
 69. Cox R, Alexander G, Gray GA. (2005) Who wants a hearing aid? Personality profiles of hearing aid seekers. *Ear Hear* 26(1):12-26
 70. Cox R, Alexander G, & Xu J. (2009, March). Development of the Device Oriented Subjective Outcome Scale (DOSO). *Poster presented at the Annual Meeting of the American Auditory Society* Scottsdale, AZ
 71. Demorest ME & Erdman SA. (1986) Scale composition and item analysis of the communication profile for the hearing impaired. *J Speech Hear Res* 29(4):515-535.
 72. Dillon H, Birtles G, Lovegrove R. (1999) Measuring the outcomes of a national rehabilitation program: normative data for the Client Oriented Scale of Improvement

- (COSI) and the Hearing Aid User's Questionnaire (HAUQ). *J Am Acad Audiol* 10(2):67–79.
73. Dillon H, James A and Ginis J (1997) The Client Oriented Scale of Improvement (COSI) and its relationship to several other measures of benefit and satisfaction provided by hearing aids. *J Am Acad Audiol* 8(1):27-43.
 74. Gatehouse S. (1990) Determinants of self-reported disability in older subjects. *Ear Hear* 11(5 Suppl):57S–65S.
 75. Gatehouse S. (1999) Glasgow hearing aid benefit profile: derivation and validation of a client-centered outcome measure for hearing aid services. *J Am Acad Audiol* 10(2):80–103.
 76. Gatehouse S. (2001) Self-report outcome measures for adult hearing aid services: Some uses, users and options. *Trends Amplif* 5(3):91–110.
 77. Giolas TG, Owens E, Lamb SH, Schubert ED. (1979) Hearing performance inventory. *J Speech Hear Disord* 44(2): 169-195.
 78. Gnewikow D, Ricketts T, Bratt G, Mutchler L. (2009) Real-world benefit from directional microphone hearing aids. *J Rehab Res Dev* 46(5):603–618.
 79. Humes LE, Garner CB, Wilson DL and Barlow, NN (2001) Hearing-aid outcome measures following one month of hearing aid use by the elderly. *J. Speech Lang Hear Res* 44(3) 469–486
 80. Kießling J & Kreikemeier S (2013) User benefit of modern hearing aids: a comparative study. *HNO* 61(8):662-71.
 81. Knudsen LV, Oberg M, Nielsen C, Naylor G, Kramer SE. (2010) Factors influencing help seeking, hearing aid uptake, hearing aid use and satisfaction with hearing aids: a review of the literature. *Trends Amplif* 14(3):127-154.
 82. Kochkin S (1997) Subjective measures of satisfaction and benefit: establishing norms. *Seminars in Hear* 18(1):37–48.
 83. Newman CW, & Sandridge SA. (1998) Benefit from, satisfaction with, and cost-effectiveness of three different hearing aid technologies. *Am J Audiol* 7:115–128.
 84. Roup C, Noe C. (2009) Hearing aid outcomes for listeners with high-frequency hearing loss. *Am J Audiol* 18(1):45–52.
 85. Schum DJ (1993) Test-retest reliability of a shortened version of the hearing aid performance inventory. *J Am Acad Audiol* 4(1):18-21.
 86. Schum DJ. (1999) Perceived hearing aid benefit in relation to perceived needs. *J Am Acad Audiol* 10(1):40–45.
 87. Smith SL, Noe CM, Alexander GC. (2009) Evaluation of the international outcome inventory for hearing aids in a veteran sample. *J Am Acad Audiol* 20(6):374-80.
 88. Taylor K. (1993) Self-perceived and audiometric evaluations of hearing aid benefit in the elderly. *Ear Hear* 14:390–395.
 89. Uriarte M, Denzin L, Dunstan A, Sellars J, Hickson L. (2005) Measuring hearing aid outcomes using the Satisfaction with Amplification in Daily Life (SADL) questionnaire: Australian data. *J Am Acad Audiol* 16(6): 383–402.
 90. Ventry I, Weinstein B. (1982) The hearing handicap inventory for the elderly: a new tool. *Ear Hear* 3(3):128–134.
 91. Vuorialho A, Karinen P, Sorri M (2006) Effect of hearing aids on hearing disability and quality of life in the elderly. *Int J Audiol* 45(7):400–405.
 92. Walden B, Demorest M, Hepler E. (1984) Self-report approach to assessing benefit derived from amplification. *J Speech Hear Res* 27(1):49–56.

93. Williams VA, Johnson CE and Danhauer JL. (2009) Hearing aid outcomes: effects of gender and experience on patients' use and satisfaction. *J Am Acad Audiol* 20(7):422-432.
94. Yueh B, McDowell JA, Collins M, Souza P, Loovis C. et al (2005) Development and validation of the effectiveness of corrected auditory rehabilitation scale. *Arch Otolaryngol Head Neck Surg* 131(10):851–856.
95. Blair JC. Effects of amplification, speechreading, and classroom environments on reception of speech. *Volta Rev.* 1977;79:443-449 .
96. Finitzo-Hieber T. Classroom acoustics. In: Roeser RJ, Downs MP, eds, *Auditory Disorders in School Children*. New York: Thieme-Stratton Inc;1981:250-262 .
97. Markides A. Speech levels and speech-to-noise ratios . *Br J Audiol.* 1986;20:115-120.
98. Crandell CC. Speech recognition in noise by children with minimal degrees of sensorineural hearing loss. *Ear Hear.* 1993;14:210-216 .
99. Humes LE, Dubno JR, Gordon-Salant S, Lister JJ, Cacace AT, Cruickshanks KJ, Gates GA, Wilson RH , Wingfield A. (2012) Central presbycusis: a review and evaluation of the evidence. *J Am Acad Audiol* 23(8): 635-66.
100. Gates GA. (2012) Central presbycusis: an emerging view. *Otolaryngol Head Neck Surg* 147(1):12.
101. Killion MC and Mueller HG (2010) Twenty years later: a new count-the-dots method. *Hear J* 63(1):10-17.
102. ANSI S3.5-1997, R 2007. (2007) American National Standard Methods for Calculation of the Speech Intelligibility Index. *American National Standards Institute*, New York.
103. ANSI S3.5-1997, R 2007. (2007) American National Standard Methods for Calculation of the Speech Intelligibility Index. *American National Standards Institute*, New York.
104. McArdle RA. & Wilson RH. (2006) Homogeneity of the 18 QuickSIN™ Lists. *J Am Acad Audiol* 17(3):157-167.
105. Kochkin S. (2010) MarkeTrak VIII: Consumer satisfaction with hearing aids is slowly increasing. *Hear J* 63(1): 19-32.
106. Goodman AC (1965) Reference zero levels for pure-tone audiometers. *ASHA* 7:262–263.
107. Kryter KD. (1998) Evaluation of hearing handicap. *J Am Acad Audiol* 9(2):141–146.
108. Blair J, EuDaly M., & Benson P. (1999) The effectiveness of audiologists' information sources for classroom teachers. *Lang Speech Hear Serv Schools* 30(2):173-182
109. Leavitt RJ and Vossler-Welch CB (2012) An alternative to traditional hearing loss classification systems. *Poster presented at AudiologyNOW!*, Boston, MA.
110. Haggard R, & Primus M. (1999) Parental perceptions of hearing loss classification in children. *Am J Audiol* 8(2):83–92.
111. Aguila-Vinson M, Lister J, Hnath-Chisolm T, and Blake-Rahter P. (2004) Perception of hearing loss by graduate students of speech-language pathology. *Contemp Issues Comm Sci and Dis* 31:205-214.