Taylor, B. (2007, September 17). Changes in Hearing Aid Benefit Over Time: An Evidence-Based Review. *Audiology Online*, Article 1853. Available via the Article Archives at http://www.audiologyonline.com

Study	N	Age	Unilateral (U)/ Bilateral (B) Fitting	Hearing Loss	Experienced or New User	Hearing Aid Technology/ Fitting Method	Subjective or Objective Measure & Timetable	Results/ Comments	Does out-come change over time?
Malinoff and Weinstein. (1989). *JARA*, *22*, 54-60.	25	55 to 90	U	Moderate SNHL	New	Linear	HHIE, 3,12, 52 weeks	Large improvement in benefit after 3 weeks, decreased slightly thereafter	No
Gatehouse. (1992). *JAAA*, *92*, 1258-1268.	4	N/A	U	Mild to Moderate SNHL	New	Linear; Insertion gain to achieve maximum intelligibility	FAAF at 0, 1,2,4,5,6,8,10,12 weeks	Significant benefit over the 12 week period	Yes
Cox and Alexander. (1992). *Ear and Hearing*, *13*(3), 131-141.	17	52 to 81, Mean = 67	9 U 3 B	Mild sloping to moderate symmetrical high-frequency SNHL	8 New 9 Experienced	Prescriptive fitting, verified with real-ear measures	CST +7, +12 SNR, PHAB, 2 weeks & 10 weeks post fitting.	Benefit improves during the first 10 weeks of hearing aid use. Initial benefit in noisy/reverberant situations is a good estimate of long-term benefit in same situations	Yes
Gatehouse. (1993). *Ear and Hearing*, *4*(5), 296-306.	36	46 to 81, Mean = 64	U	Mild to Moderate SNHL	Experienced	Linear; Matched NAL insertion gain target	FAAF at 0, 8 and 16 weeks	Improved aided speech understanding over the 16 weeks	Yes
Bentler, et al. (1993). *JSHR*, 36, 820-831.	65	21 to 84, Mean = 63.8	37 U 21 B	Mild to moderate SNHL	39 New 26 Experienced	BILL, adaptive compression, Zeta noise blocker, linear. Matched NAL insertion gain target	SPIN +8SNR, NST +5SNR, HPI-38, 4,12,24,52 weeks post fitting	No significant changes in benefit for either group at the four intervals tested	No

Humes & Halling. (1996). *JSHR*, *39*(5), 923-936.	20	63 to 78 Mean = 71.5	B	Bilateral symmetrical SNHL	10 New 10 Experienced	Programmable ITEs. Prescriptive fit (NAL-type target)	NST, HINT, HAPI, HHIE 1, 2, 4, 8, 12, 24 weeks post fitting	Benefit is stable over time, especially at or beyond 30 days post fit	No
Suanders & Cienkowski. (1997). *Ear and Hearing*, *18*(2), 129- 139.	48 males	59 to 75 Mean =69	B	Mild to moderate symmetrical SNHL	24 New 24 Experienced	All subjects used 3 devices for three months each: AGC-O. AGC-I and WDRC, prescriptive target matched	CID W-1 & HINT, no subjective tests reported	No significant change in aided benefit when measured at 1,2, and 3 months post-fitting	No
Horwitz & Turner. (1997). *Ear and Hearing*, *18*(1), 1-11.	26	Mean for New = 68 Mean for Exp = 71	U	Sloping SNHL	13 New 13 Experienced	Compression and linear. Subjects fit by local audiologists, not authors.	PHAB 3,6,10,14 and 18 weeks post fitting; NST, +20 SNR	There is significant change in objective benefit over time when practice effects and user gain are controlled	Yes, but only for new users on objective test
Surr, Cord, & Walden. (1998). *JAAA*, *9*, 165-171.	15	55-75 Mean = 67	B	Bilaterally symmetric moderate to severe, gradually sloping SNHL	New	WDRC	PHAB at 6 weeks and 1.5 years; CST at +10, +5 & +2 SNR	Degree of benefit unchanged between 6 months and 1 ½ years	No
Humes, et al. (2002). *Ear and Hearing*, *25*(5), 428-438	134	60 to 89	B	Flat or gently sloping ,SNHL, symmetrical	New	Class D Linear with AGC-O. Prescriptively fitted	NST, HINT, NU-6, HASS, GHABP, HDABI at 1, 6, 12 and 24 months	No changes in satisfaction and benefit from 1 month to 2 years	No
Kuk, et al. (2003). *JAAA*, *14*(2), 84-99.	20	43 to 92 Mean = 55	B	Bilateral, symmetrical severe-to-profound SNHL	20 Experienced	BTE with 3 channel, WDRC w/ slow time constants	Aided sound-field thresholds, SPIN at 50, 65 in quiet & 75 dB+ 10 dB SNR, APHAB, WUQ, MarkeTrak, HHIE-S, tests conducted at 4 sessions over a 3 month period	Objective measures of speech intelligibility in quiet improved over first month, with plateau between 1 and 3 months post fitting.	Yes, for experienced users of linear hearing aids wearing WDRC devices for the first time

Munro & Lutman. (2004). *IJA*, *43*(10), 555-562.	32, 2 groups of 16 Moving group (reported outcome in relation to initial fit) & Fixed group (reported outcome in relation to last visit)	M = 74 F = 71	U	Moderate SNHL	New	Programmable, AGC-O	GHABP every 3-4 weeks; No objective tests conducted	Pattern of benefit over time is different for the two groups. M group showed improvement over time; however this change is largely attributed to "halo" effect. No change in benefit over time for F group	No
Vestergaard. (2006). *IJA*, *45*(7), 382-392.	25 (3 women, 22 men)	Mean = 60	B	Steeply-sloping hearing loss	20 New 5 Experienced	Programmable, 2 channel, No VC, manufacturers "first fit"	Hagerman sentences (60 to 70 dBHL, OdBSNR), GHABP, IOI-HA, HAPQ, SADL at 1, 4 and 13 weeks post-fitting	Self-reports of outcomes increased over time, no change in objective measures were observed.	No
Yund, et al. (2006). *JRRD*, 43(4). 517-536.	39 (29 men and 10 women)	43 to 84 Mean = 67	B	Sloping, bilateral symmetrical, moderate low-frequency to severe high-frequency	39 New	ITC with MCWDRC and linear amplification (LA) NAL-R fitting target	NST (15, 5 and -5 dB SNR) recorded through fitted hearing aid & presented at 1,2, 4,8,16,32 weeks, PHAB, HAPI at 2,8,32 weeks	4 separate conditions studied using crossover design, no acclimatization effects observed with LA processing or when MCWDRC is introduced after LA is used	Yes, for new first time MCWDRC hearing aid users only
Amorim & De Almeida. (2007). *Pro*	16	17 to 89	B	Moderate to Severe SNHL	16 "recent" users	WDRC, functional gain	Aided sound-field thresholds, AHPAB, HHIE	Although short-term real-world benefit was obtained, no long	No

Fono 19(1), 39-48.							at 0, 4 and 16/18 weeks post fitting	term improvements over time were measured	