Supplemental Material S2. Effects of age at implantation on literacy and academic achievement with age as discrete variable: Information provided (cochlear implant [CI] users only) by authors and calculated effect sizes.

Authors	*N*	*M* (*SD*) age (yrs) at implant	*M* (*SD*) age (yrs) at test	*M* (*SD*) duration of use (yrs)	Assessment/ task	*M* (*SD*)[a]	Statistical analyses	Primary finding	Effect size[a]
Connor & Zwolan (2004)	40, 51	3.85 (0.89), 8.66 (2.40)	9.45 (1.63), 12.03 (2.77)	5.63 (1.56), 3.36 (2.00)	WRMT Passage Comprehension	76.42 (13.50), 65.02 (11.28)	Correlation	Earlier implantation but not duration of use associated with better reading scores	.42, –.12[b]
James et al. (2007)	9, 10	2.10 (0.40), 6.0 (0.60)	7.6 (1.0), 9.1 (1.0)	4.8 (0.10), 3.1 (0.70)	British Ability Scale Test of Word Reading	95.00 (12.81), 81.90 (9.09)	*t*-test	Earlier implantation associated with higher scores	.52
			1 year older	1 year more	British Ability Scale Test of Word Reading	89.11 (12.02), 81.33 (8.99)	*t*-test	No difference in word reading scores	.35
Johnson & Goswami (2010)	20, 19	2.58 (0.48) 4.91 (0.96)	9.25 (2.44), 10.92 (2.38)	6.58 (2.24), 6.08 (2.04)	NARA-R Reading Comprehension	85 (15.4), 81 (11.4)	*t*-test	No differences in NARA-R standard scores, but significant difference in quotient scores	.15, .35
DesJardin et al. (2009)	8, 8	1.73 (1.92), 2.57 (0.43)	At first test 4.05 (0.88) 4.78 (1.38)	5.28 (0.89)	WJ-III DRB (Basic Reading Score)	103.00 (16.08), 89.75 (17.77)	*t*-test	Neither age at implantation or duration of use associated with performance	.15
Venail et al. (2010)	74	3.68 (0.06)[c]	13.7 (0.30)[c]	10.6 (0.04)[c]	Parent and child telephone interviews	53% school failures	Logistic regression	No association between age at implantation and grade failure	NR
López-Higes et al. (2015)	19, 19	1.22 (0.47), 3.49 (1.08)	9.69 (1.13), 9.88 (1.17)	NR	ECCO-PRIMA Sentence Comprehension	15.37 (1.97), 12.63 (3.25) 14.31 (2.26), 11.95 (3.08)[3]	Mann–Whitney *U*	Differences on 2 of 4 sentence types: canonical word order and One proposition (vs. non-canonical word order and two proposition)	.40, .35 (.27, .27)
					Morphological Awareness: Nominals Verbals	16.05 (2.65), 13.95 (3.56) 23.79 (5.43), 16.11 (8.52)	Mann–Whitney *U*	Earlier implantation associated with better nominal and verb inflectional morphology	.32 .48
Gallego et al. (2016)	19, 19	1.22 (0.47), 3.49 (1.08)	9.69 (1.13), 9.88 (1.17)	NR	Reading comprehension cloze task	19.84 (13.63), 13.63 (6.99)	Kruskal–Wallis	Early implantation associated with better scores with overall	.49

Authors	*N*	*M* (*SD*) age (yrs) at implant	*M* (*SD*) age (yrs) at test	*M* (*SD*) duration of use (yrs)	Assessment/ task	*M* (*SD*)[a]	Statistical analyses	Primary finding	Effect size[a]
								(but only two of four item types)	
Colin et al. (2017)	Young 26, 20 Old 25, 19	Young 2.15 (0.39), 5.06 (1.86) Old 2.37 (0.49), 5.16 (1.63)	Young 8.22 (0.74), 9.16 (0.75) Old 10.18 (0.73), 11.13 (0.72)	NR	Reading comprehension cloze task	Young 53.9 (31.3), 25.9 (22.1) Old 65.9 (26.0), 43.2 (22.5)	Analysis of variance	Earlier implantation associated with better scores for both younger and older children, but earlier-implanted group had longer CI use	Young .47 Old .37
Domínguez et al. (2016)	35,42	1.68 (0.53), 5.41 (2.57)	10.95 (0.59), 10.93 (1.30)	6.78 (2.78), 6.98 (3.92)	READ Global Reading Task	Reading Delay –0.050 (2.50), –1.25 (2.86)	Analysis of variance	Earlier- and later-implanted groups did not differ in reading delays	.14
Harris & Terlektsi (2010)	30, 29	3.0 (0.32), 7.42 (2.94)	13.5 (1.18), 13.75 (1.35)	NR	British Ability Scale Test of Word Reading	Reading Delay –37.28 (29.71), –36.03 (34.67)	Analysis of variance	Earlier- and later-implanted groups did not differ in reading delays	.19
					Edinburgh Reading Test	Reading Delay –45.10 (29.68), –39.70 (35.89)	Analysis of variance	Earlier- and later-implanted groups did not differ in reading delays	.08

Note. NC = not calculable from information provided; NR = not reported; WRMT = Woodcock Reading Mastery Test; NARA-R = Neale Analysis of Reading Ability–Revised; WJ-III DRB = Woodcock-Johnson III Diagnostic Reading Battery; ECCO-Prima = Spanish sentence comprehension task.
[a]Multiple *M*s (*SD*s) listed correspond to the order of assessments/tasks; multiple effect sizes listed correspond to the order of primary findings.
[b]Insufficient information to calculate the effect size for duration of implant use, but correlation coefficient provided.
[c]Means for significant differences only.

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