Supplemental Material S3. Additional studies that reported associations between age at cochlear implantation (CI) and language (effect of age at CI was not the main goal of the study).

Authors	N	Mean age at implantation [range] (SD)	Mean age at testing [range] (SD)	Mean duration of CI use [range] (SD)	Language domain: Assessment/task[1]	Statistical analyses	Primary findings
Castellanos, Kronenberger, Beer, Henning, Colson, & Pisoni (2014)	35	25.47 mo [8.28–47.70] (10.77)	13.48 y [7.80–23.36] (10.77)	11.36 y [7.08–19.84] (3.40)	Receptive vocabulary: PPVT; Receptive and expressive language: CELF	Regression	Receptive vocabulary and speech intelligibility during preschool predicted later outcomes. Age at implantation did not add to the variance in language outcomes.
Duchesne, Sutton, & Bergeron (2009)	27	21.66 mo [8–28] (5.47)	68.4 mo [42–99] (17.76)	46.85 mo [23–71] (15.61)	Receptive and expressive language: RDLS	Correlations	Correlation between RDLS scores and age at implantation were not statistically significant.
Geers et al. (2017)	97	21.8 mo	early (5.0–7.9 y) and late (9.0–11.9 y) elementary grades	—	Receptive and expressive language: CASL	Regression	Age at implantation significantly predicted CASL scores, both in early and later elementary grades.
Guasti, Papagno, Vernice, Giuliani, & Burdo (2012)	33	21.7 mo [12–56] (10.4)	63.9 mo [50–82] (8.66)	42.7 mo [23–60] (9.5)	Receptive vocabulary: PPVT Receptive grammar: TCGB Elicitation of clitic pronouns	Mixed model analysis	A significant effect of age at implantation was found for the production of clitic pronouns.

Authors	N	Mean age at implantation [range] (SD)	Mean age at testing [range] (SD)	Mean duration of CI use [range] (SD)	Language domain: Assessment/task[1]	Statistical analyses	Primary findings
Hammer, Coene, Rooryck, Gillis, & Govaerts (2010)	48	16 mo [5–43]	Between 4 and 7 years of age	—	Finite verb production (z-scores): spontaneous language sample	Regression	A significant association between finite verb production and age at implantation was found at 4 and 5 years of age.
Nittrouer, Lowenstein, & Holloman (2016)	51	22 mo (17)	103 mo (5)	Testing at 36, 48, and 72 months of age, and in second grade	Expressive grammar: - MLU - number of conjunctions - number of personal pronouns	Pearson product-moment correlations	No significant correlations we found between age at (first) CI and any of the grammatical measures.
Nittrouer, Sansom, Low, Rice, & Caldwell-Tarr (2014)	21	21 mo (13)	82 mo (5)	61 mo (13)	Expressive language (language sample): - MLU number of: - conjunctions - personal pronouns - final bound morphemes - different words	Correlations	Age at (first) implant was significantly correlated with: - MLU - number of different words.
Ruffin, Kronenberger, Colson, Henning, & Pisoni (2013)	51	35.4 mo (19.9)	15.2 y (4.5)	12.2 y (3.6)	Receptive vocabulary: PPVT Receptive and expressive language: CELF	Correlations	Age at implantation was not associated with both PPVT and CELF scores.

[1]Note: CASL = Comprehensive Assessment of Spoken Language; CELF = Clinical Evaluation of Language Fundamentals; MLU = mean length of utterances; PPVT = Peabody Picture Vocabulary Test; RDLS = Reynell Developmental Language Scales; TCGB = Test di Comprensione Grammaticale per Bambini.