

Table 2 General aspects of the selected articles

AUTHOR SAND YEAR	N° POPULATION	AGE	IC MANUFACTURER/ IC SYSTEM/ IC PROCESSOR/ IC ELECTRODE	ACTIVATION TYPE	AI M	RESULT S	FOLLOW-UP
Marsella, et al, 2014 ³⁸	22 children (5 excluded)	1-8 years old	Cochlear, Nucleus Freedom	EA: 7 +/- 1 days (10ears) CA: 32+/-9 days (10 ears)	Anatomical, electrophysiological and perceptual findings in CA Vs EA.	Complications Impedances Impedance variance ECAP	Intraoperative. Postoperative 3, 7 y 15 days,y 1, 2 ,4 ,6, 9 months.
Alsabellh, et al, 2014 ⁴¹	23Subjects (Children and adults)	2 y 30 years old	MEDEL, Concerto	EG: EA 5 days (10) CG: CA 4 weeks(13)	Effect of EA on the adjustment parameters and electrode impedance.	Impedances MCL	Intraoperative, initial fitting (5days EA, 4 week CA and 4 week later initial fitting.
Günter, et al, 2018 ³⁴	41 adults	26-82 years old	MEDEL,Synchrony Flex28 (12). COCHLEAR,CI532 (14; 2 BCI) and CI512 (15; ICB simultaneous)	GE: EA < a 8 days (21) GC: CA > 8 days(20)	Benefits and limits of a CI for EA based on medical, technical, audiological and subjective outcomes and feasibility.	Questionnaires Feasibility First activation Voice recognition Magnet strength Average processor usage Side effects Self-assessment.	Intraoperative, initial fitting, 3,6 and 12 months.
Batuk, et al, 2019 ²⁶	294 Subjects (Children and adults))	9 months — 77 years old	Advanced Bionics (51), Cochlear (159), Med-EL (68) and Oticon (16)	EA: < 7 days (230) CA: 9 to 46 days (64)	Comparison of complaints and complications between BTE and OTE processors, and the impact on impedance after EA	Initial activation. Electrode impedance value Complications	Intraoperative, 1 day, and 1 month.
Sun, et al, 2019 ³⁰	40 Subjects (Children and adults)	1-65 years old	MED-EL; Sonata; Standard® or FLEX soft	EA: 24 hours (20) CA: (20)	Feasibility of EA by assessing impedance and speech perception	Feasibility and safety Impedance results in both groups Possible factors affecting impedance Impedance stationary time in each group Hearing preservation rate in both groups Hearing perception results	EA: intraoperative, 24 hours week 1 and 2, month 1, 3 and 6. CA: Intraoperative, month1, 3and 6.
Sunwoo, et al, 2021 ³⁵	84 Subjects	NR	Cochlear; CI532 or CI632	EA: 24 hours later (26) CA: 2 to 4 weeks(58)	Impedance changes in CI with a thin modiolar electrode in EA and CA.	Impedance	Period 1: Intraoperative

							Period 2: <2 week after surgery, EA are 24 hours switch on Period 3: Week 2, 3 and 4. Period 4: Week 5, 6 and 7. Period 5: Week 8, 9 and 10 Period 6: Week 11, 12 and 13. Period 7: More than 14 weeks
Bruschke, et al, 2021 ²⁷	127 adults	>18 years old	Advanced Bionics (8); Cochlear (82); Med-el (50)	EA: 14 days later (67) CA: 3 to 5 weeks (60)	Long-term effects between EA and AC	Feasibility Voice recognition Magnet strength Medical check-up record	3, 6 and 12 months.
Alhabib, et al, 2021 ³²	54Subjects (Children)	1— 7 years old ^a	MED-EL; Flex28	EG: AT 1 day (24) CG: CA 1 month (30)	Evolution of electrode impedance, maximum pain threshold, minimum threshold (THR) and dynamic range in CA and EA.	Impedance MCL THR DR	Intraoperative,activation session (switch on) 1, 3, 6 and 12 months
Saoji, et al, 2022 ³³	51 Subjects (Adults)	>40 years old ^a	Cochlear Nucleus, Kanso / Kanso2 (11); N7 40); CI622 (48), 612 (51), 632 (2)	EA: 5 hour later surgery (14) EA: 1 day (17) CA: 1 month (20)	Decrease in electrode impedances within 24 hours after surgery.	Impedance	Intraoperative, same day (EA),first day, week 2 and month 1.
Wolf, et al, 2015 ²⁸	43 subjects (Children and adults)	1-87	Medel, Concerto; Flex28 (32), estándar (11) and Flex 24 (2)	EA: 24 hours	Viability of EA < than 4 weeks andpostoperative changes in telemetry.	Complications Impedance assessment.	Intraoperative, day 1, week 2 and 6.

Chen, et al, 2015 ⁴⁰	79 subjects (Children and adults)	1.3-81 years old	Cochlear (48), Med-El (31); Nucleus24 (11), Freedom (33), CI422 (4), Concerto Flex soft (12), SONATAti100 Flex Soft (9), SONATAti100 Flex Standard (8), Concerto Flex24 (1), SONATAti100 COMPRESSED (1).	EA: 24 hours	Safety and feasibility of initial connection within 24 hours in pure tone hearing and complications.	Complications Tone audiometry	Preoperative Postoperative
Hagr, et al, 2015 ²⁴	29 Subjects (Children and adults)	1 - 42 years old	MED-EL Concerto CI standard	EA: 1 day	Effect of EA on healing and evolution of impedance and stimulation parameters.	Impedance THR MCL DR	Intraoperative, day 1 y week1.
Hu, et al, 2017 ²⁹	30 Subjects (Children and adults)	2 - 79 years old	Cochlear; Nucleus24 RECA	EA: Day 1	Effect of EA on the evolution of electrode impedance.	Impedance	Intraoperative, day 1, week 1, week 4 and week 8.
Aldhafeeri, et al, 2020 ³¹	9 adults	25-68 years old	Med-el; Synchrony	G1: EA same day G2: EA 1 day	Audiological adaptation on the same day of CI in the recovery room	Impedance telemetry THR MCL	Intraoperative, day 1, weeks 2, 4, 6 and 8
Wei, et al, 2021 ⁴³	16 Subjects (Children and adults)	2-75	Advanced Bionics; Mid-Scale (16)	EA 24 hours later (16)	Impedance evolution for CI and contributing factors after the switch-on session 24 hours after surgery.	Impedance	Intraoperative, 1 day, week 1, 2, 4 and 8.