References

1. Vischer M, Kompris M, Seifert E, Häusler R. Das Cochlea-Implantat - Entwicklung von Gehör und Sprache mit einem künstlichen Innenohr. Therapeutische Umschau 2004; 61: 53-60
2. Helms J, Müller J. Die Auswahl eines Cochlea-Implants und die Ergebnisse der Implantation. Laryngo-Rhino-Otol 1999; 78: 12-13
3. Aschendorff A, Marangos N, Laszig R. Ergebnisse in der Rehabilitation erwachsener Cochlear-Implant-Patienten. Wien Med Wochenschr 1997; 147: 252-254
4. Wilson BS, Finley CC, Lawson DT, Wolford RD, Eddington DK, Rabinowitz WM. Better speech recognition with cochlear implants. Nature 1991; 352: 236-238
5. Gstoettner W, Adunka O, Hamzavi J, Baumgartner WD. Rehabilitation Horgeschädigter mit Cochlear-Implantaten - eine Übersicht. Wien Klin Wochenschr 2000; 112: 464-472
6. Hamzavi J, Franz P, Baumgartner WD, Gstoettner W. Hearing performance in noise of cochlear implant patients versus severely-profoundly hearing-impaired patients with hearing aids. Audiology 2001; 40: 26-31
7. Helms J, Müller J, Schön F, Moser L, Arnold W, Janssen T, Ramsden R, von-Ilberg C, Kiefer J, Pfennigdorf T, Gstottner W, Baumgartner W, Ehrenberger K, Skarzynski H, Ribari O, Thumfart W, Stephan K, Mann W, Heinemann M, Zorowka P, Lippert KL, Zenner HP, Bohndord M, Huttenbrink K, Hochmair-Desoyer I. et al. Evaluation of performance with the COMBI40 cochlear implant in adults: a multicentric clinical study. ORL J Otorhinolaryngol Relat Spec 1997; 59: 23-35
8. Adams JS, Hasenstab MS, Pippin GW, Sismanis A. Telephone use and understanding in patients with cochlear implants. Ear Nose Throat J 2004; 83: 96, 99-100, 102 - 103
9. Profant M, Kabatova Z, Simko S, Simkova L. Clinical results with Nucleus 22 and Combi 40 device in postlingually deaf patients. Adv Otorhinolaryngol 1997; 52: 291-293
10. Helms J, Müller J, Schön F, Brill S. Cochlea-Implantation: Ergebnisse und Kosten, eine Übersicht. Laryngo-Rhino-Otol 2003; 82: 821-825
11. Kiefer J, Müller J, Pfenningdorff T, Schön F, Helms J, von-Ilberg C, Baumgartner WD, Gstoettner W, Ehrenberger K, Arnold W, Stephan K, Thumfart W, Baur S. Speech understanding in quiet and in noise with the CIS speech-coding strategy (MED EL Combi-40) compared to the MPEAK and SPEAK strategies (Nucleus). Adv Otorhinolaryngol 1997; 52: 286-290
12. Wilson BS. The future of cochlear implants. Br J Audiol 1997; 31: 205-225
13. Wilson BS, Lawson DT, Müller JM, Tyler RS, Kiefer J. Cochlear implants: some likely next steps. Annu Rev Biomed Eng 2003; 5: 207-249
14. Müller J. Erste Ergebnisse der Bilateralen Cochlear Implant Versorgung. European Archives of Oto Rhino Laryngology 255: 38
15. Au KK, Jin H, Hui Y, Wei L. Speech discrimination with bilateral cochlear implants in noisy conditions. Zhonghua Er Bi Yan Hou Ke Za Zhi 2001; 36: 433-435
16. Kong W, Yu L, Xu Y, Yue J, Xiong X, Zhu L, Duan J. Benefit of bilateral cochlear implantation on congenital prelingually deafened Chinese-speaking children. Lin Chuang Er Bi Yan Hou Ke Za Zhi 2003; 17: 577-579
17. Lesinski-Schiedat A. et al. Bilateral Implantation in Young Children compared to Bimodally Fitted Children. Vortrag, 7th European Symposium Paediatric Cochlear Implantation, Geneva, Switzerland, May 2004.
18. Litovsky RY, Parkinson A, Arcaroli J, Peters R, Lake J, Johnstone P, Yu G. Bilateral cochlear implants in adults and children. Arch Otolaryngol Head Neck Surg 2004; 130: 648-655
19. Müller J. Angemeldete Diskussionsbemerkung. Dt. HNO-Kongress, Aachen 1999.
20. Müller J, Schön F, Helms J. Speech understanding in quiet and noise in bilateral users of the MED-EL COMBI 40/40+ cochlear implant system. Ear Hear 2002; 23: 198-206
21. Müller J. Cochlear-Implant-Versorgung heute. HNO 2002; 50: 793-796
22. Tyler RS, Gantz BJ, Rubinstein JT, Wilson BS, Parkinson AJ, Wolaver A, Preece JP, Witt S, Lowder MW. Three-month results with bilateral cochlear implants. Ear Hear 2002; 23 (1 Suppl): 80S-89S
23. Winkler F, Schön F, Peklo L, Müller J, Feinen C, Helms J. Würzburger Fragebogen zur Hörqualität bei CI-Kindern (WH-CIK). Laryngo-Rhino-Otol 2002; 81: 211-216
24. Kühn-Inacker H, Shehata-Dieler W, Müller J, Helms J. Bilateral cochlear implants: a way to optimize auditory perception abilities in deaf children?. Int J Pediatric Otorhinolaryngology 2004; 68: 1257-1266
25. Hochmair I, Arnold W, Nopp P, Jolly C, Müller J, Roland P. Deep electrode insertion in cochlear implants: apical morphology, electrodes and speech perception results. Acta Otolaryngol 2003; 123: 612-617
26. Brill SM, Gstoettner W, Helms J, von-Ilberg C, Baumgartner W, Müller J, Kiefer J. Optimization of channel number and stimulation rate for the fast continuous interleaved sampling strategy in the COMBI 40+. Am J Otol 1997; 18 (6 Suppl): S104-106
27. Garnham C, O'Driscoll M, Ramsden-And R, Saeed S. Speech understanding in noise with a Med-El COMBI 40+ cochlear implant using reduced channel sets. Ear Hear 2002; 23: 540-552
28. Czerny C, Gstoettner W, Adunka O, Hamzavi J, Baumgartner WD. Präoperative Bildgebung vor dem Einsetzen eines multikanalikulären Cochlear-Implantates mittels Computer- und Mag-

netresonanztomographie der Innenohrregion. Wien Klin Wochenschr 2000; 112: 481-486
29. Greess H, Baum U, Romer W, Tomandl B, Bautz W. CT und MRT des Felsenbeins. HNO 2002; 50: 906-919
30. Hofmann E, Preibisch C, Knaus C, Müller J, Kremser C, Teissl C. Noninvasive direct stimulation of the cochlear nerve for functional MR imaging of the auditory cortex. AJNR Am J Neuroradiol 1999; 20: 1970-1972
31. Müller J, Schön F. Lautheitsskalierung bei Cochlear-Implant-Patienten im Rahmen der präoperativen Austestung. Laryngo-Rhino-Otol 1994; 73: 128-131
32. Probst R. Cochlear Implants: Eine Erfolgsgeschichte und einige Fragen dazu. HNO 1998; 46: 4-6
33. van-Dijk JE, van-Olphen AF, Langereis MC, Mens LH, Brokx JP, Smoorenburg GF. Predictors of cochlear implant performance. Audiology 1999; 38: 109-116
34. Laszig R, Klenzner T. Cochlear Implant bei Resthörigkeit. HNO 1997; 45: 740
35. Klenzner T, Stecker M, Marangos N, Laszig R. Zur Indikationserweiterung des „cochlear-implant". Freiburger Ergebnisse bei Patienten mit Resthörigkeit. HNO 1999; 47: 95-100
36. Müller-Deile J, Rudert H, Brademann G, Frese K. Cochlear-Implant-Versorgung bei nicht tauben Patienten?. Laryngo-Rhino-Otol 1998; 77: 136-143
37. Scholtz LU, Mueller J, Schoen F, Moser LM, Helms J. Fast stimulator cochlear implants in patients with residual hearing. Adv Otorhinolaryngol 2000; 57: 401-404
38. Hamzavi J, Pok SM, Gstoettner W, Baumgartner WD. Speech perception with a cochlear implant used in conjunction with a hearing aid in the opposite ear. Int J Audiol 2004; 43: 61-65
39. Kral A, Hartmann R, Tillein J, Heid S, Klinke R. Hearing after congenital deafness: central auditory plasticity and sensory deprivation. Cereb Cortex 2002; 12: 797-807
40. Kral A, Hartmann R, Tillein J, Heid S, Klinke R. Delayed maturation and sensitive periods in the auditory cortex. Audiol Neurootol 2002; 6: 346-362
41. Klinke R. Sprachanbahnung über elektronische Ohren - so früh wie möglich. Dt Ärztblatt Jg 1998; 46: 3049-3052
42. Luxford WM, House WF, Hough JV, Tonokawa LL, Berliner KI, Martin E. Experiences with the Nucleus multichannel cochlear implant in three young children. Ann Otol Rhinol Laryngol Suppl 1988; 135: 14-16
43. Lenarz T, Hartrampf R, Battmer RD, Bertram B, Lesinski A. Die Cochlear-Implant-Versorgung bei Kleinkindern. Laryngo-Rhino-Otol 1996; 75: 719-726
44. Lenarz T, Lesinski-Schiedat A, von-der-Haar-Heise S, Illg A, Bertram B, Battmer RD. Cochlear implantation in children under the age of two: the MHH experience with the CLARION cochlear implant. Medizinische Hochschule Hannover. Ann Otol Rhinol Laryngol Suppl 1999; 177: 44-49
45. Anderson I, Weichbold V, D'Haese PS, Szuchnik J, Quevedo MS, Martin J, Dieler WS, Phillips L. Cochlear implantation in children under the age of two - what do the outcomes show us?. Int J Pediatr Otorhinolaryngol 2004; 68: 425-431
46. Sainz M, Skarzynski H, Allum JH, Helms J, Rivas A, Martin J, Zorowka PG, Phillips L, Delauney J, Brockmeyer SJ, Kompis M, Korolewa I, Albegger K, Zwirner P, Van-De-Heyning P, D'Haese P. Assessment of auditory skills in 140 cochlear implant children using the EARS protocol. ORL J Otorhinolaryngol Relat Spec 2003; 65: 91-96
47. Mack KF, Müller J, Helms J. Dimensions of the temporal bone in small children in relation to the cochlear implant - an analysis of CT scans. Adv Otorhinolaryngol 1997; 52: 57-59
48. Manrique M, Cervera-Paz FJ, Huarte A, Molina M. Advantages of cochlear implantation in prelingual deaf children before 2 years of age when compared with later implantation. Laryngoscope 2004; 114: 1462-1469
49. McConkey-Robbins A, Koch DB, Osberger MJ, Zimmerman-Phillips S, Kishon-Rabin L. Effect of age at cochlear implantation on auditory skill development in infants and toddlers. Arch Otolaryngol Head Neck Surg 2004; 130: 570-574
50. Miyamoto RT, Houston DM, Kirk KI, Perdew AE, Svirsky MA. Language development in deaf infants following cochlear implantation. Acta Otolaryngol 2003; 123: 241-244
51. Yang HM, Lin CY, Chen YJ, Wu JL. The auditory performance in children using cochlear implants: effects of mental function. Int J Pediatr Otorhinolaryngol 2004; 68: 1185-1188
52. Nikolopoulos TP, O'Donoghue GM, Archbold S. Age at implantation: its importance in pediatric cochlear implantation. Laryngoscope 1999; 109: 595-599
53. Nikolopoulos TP, Dyar D, Archbold S, O'Donoghue GM. Development of spoken language grammar following cochlear implantation in prelingually deaf children. Arch Otolaryngol Head Neck Surg 2004; 130: 629-633
54. Nikolopoulos TP, Gibbin KP, Dyar D. Predicting speech perception outcomes following cochlear implantation using Nottingham children's implant profile (NChIP). Int J Pediatr Otorhinolaryngol 2004; 68: 137-141
55. Niparko JK, Blankenhorn R. Cochlear implants in young children. Ment Retard Dev Disabil Res Rev 2003; 9: 267-275
56. Svirsky MA, Teoh SW, Neuburger H. Development of language and speech perception in congenitally, profoundly deaf children as a function of age at cochlear implantation. Audiol Neurootol 2004; 9: 224-233
57. Szagun G. Learning by ear: on the acquisition of case and gender marking by German-speaking children with

normal hearing and with cochlear implants. J Child Lang 2004; 31: 1-30

58. Geers AE. Speech, language, and reading skills after early cochlear implantation. Arch Otolaryngol Head Neck Surg 2004; 130: 634-638
59. Geers AE, Nicholas JG, Sedey AL. Language skills of children with early cochlear implantation. Ear Hear 2003; 24 (1 Suppl): 46S-58S
60. Calmels MN, Saliba I, Wanna G, Cochard N, Fillaux J, Deguine O, Fraysse B. Speech perception and speech intelligibility in children after cochlear implantation. Int J Pediatr Otorhinolaryngol 2004; 68: 347-351
61. Sharma A, Tobey E, Dorman M, Bharadwaj S, Martin K, Gilley P, Kunkel F. Central auditory maturation and babbling development in infants with cochlear implants. Arch Otolaryngol Head Neck Surg 2004; 130: 511-516
62. Sharma A, Dorman M, Spahr A, Todd NW. Early cochlear implantation in children allows normal development of central auditory pathways. Ann Otol Rhinol Laryngol Suppl 2002; 189: 38-41
63. Sharma A, Dorman-And MF, Spahr AJ. A sensitive period for the development of the central auditory system in children with cochlear implants: implications for age of implantation. Ear Hear 2002; 23: 532-539
64. Sharma A, Tobey E, Dorman M, Bharadwaj S, Martin K, Gilley P, Kunkel F. Central auditory maturation and babbling development in infants with cochlear implants. Arch Otolaryngol Head Neck Surg 2004; 130: 511-516
65. Dowell RC, Dawson PW, Dettman SJ, Shepherd RK, Whitford LA, Seligman PM, Clark GM. Multichannel cochlear implantation in children: a summary of current work at the University of Melbourne. Am J Otol 1991; 12 Suppl: 137-143
66. Eisenberg LS, House WF. Initial experience with the cochlear implant in children. Ann Otol Rhinol Laryngol Suppl 1982; 91: 67-73
67. Hehar SS, Nikolopoulos TP, Gibbin KP, O'Donoghue GM. Surgery and functional outcomes in deaf children receiving cochlear implants before age 2 years. Arch Otolaryngol Head Neck Surg 2002; 128: 11-14
68. Zwolan TA, Ashbaugh CM, Alarfaj A, Kileny PR, Arts HA, El-Kashlan HK, Telian SA. Pediatric cochlear implant patient performance as a function of age at implantation. Otol Neurotol 2004; 25: 112-120
69. Schauwers K, Gillis S, Daemers K, DeBeukelaer C, Govaerts PJ. Cochlear implantation between 5 and 20 months of age: the onset of babbling and the audiologic outcome. Otol Neurotol 2004; 25: 263-270
70. Clark G. Cochlear implants in children: safety as well as speech and language. Int J Pediatr Otorhinolaryngol 2003; 67 (Suppl 1): S7-20
71. O'Neill C, O'Donoghue GM, Archbold SM, Nikolopoulos TP, Sach T. Variations in gains in auditory performance from pediatric cochlear implantation. Otol Neurotol 2002; 23: 44-48
72. Johnson IJ, Gibbin KP, O'Donoghue GM. Surgical aspects of cochlear implantation in young children: a review of 115 cases. Am J Otol 1997; 18 (6 Suppl): S69-70
73. Osberger MJ. Cochlear implantation in children under the age of two years: candidacy considerations. Otolaryngol Head Neck Surg. 1997 Sep; 117 (3 Pt 1): 145-149
74. Lehnhardt E, Gnadeberg D, Battmer RD, von Wallenberg E. Experience with the cochlear miniature speech processor in adults and children together with a comparison of unipolar and bipolar modes. ORL J Otorhinolaryngol Relat Spec 1992; 54 (6): 308-313
75. House WF, Eisenberg LS. The cochlear implant in preschool-aged children. Acta Otolaryngol 1983 May - Jun; 95 (5 - 6): 632-638
76. Govaerts PJ, De Beukelaer C, Daemers K, De Ceulaer G, Yperman M, Somers T, Schatteman I, Offeciers FE. Outcome of cochlear implantation at different ages from 0 to 6 years. Otol Neurotol 2002 Nov; 23 (6): 885-890
77. Schulze-Gattermann H, Illg A, Lesinski-Schiedat A, Schönermark M, Bertram B, Lenarz T. Kosten-Nutzen-Analyse der Cochlea-Implantation bei Kindern. Laryngo-Rhino-Otol. 2003 May; 82 (5): 322-329
78. Laszig R, Aschendorff A, Schipper J, Klenzner T. Aktuelle Entwicklung zum Kochleaimplantat. HNO 2004; Apr 52 (4): 357-362
79. NIH Consensus statement 1995. Cochlear Implants in Adults and Children. 15 - 17 May 1995; 13 (2): 1-30
80. Albegger KW. NIH-Konsensuskonferenz über Cochlea Implantate bei Erwachsenen und Kindern, 15. bis 17. Mai 1995. HNO 1996 Mar; 44 (3): 118
81. Offeciers E. The impact of changing selection criteria on the outcome of CI. Instructional Session, 5th Congress of EUFOS. Rhodes, GR: 2004
82. Kühn-Inacker H. et al. Assessing Auditory Development in very Young Children using the Little EARS Questionnaire. Vortrag, 7th European Symposium Paediatric Cochlear Implantation. Geneva, Switzerland: May 2004
83. Fröber R. Jena, pers. Mitteilung. 11. Thüringer Kurs „Mikrochirurgie des Felsenbeines". Erfurt: März 2004
84. Fayad JN, Wanna GB, Micheletto JN, Parisier SC. Facial nerve paralysis following cochlear implant surgery. Laryngoscope 2003 Aug; 113 (8): 1344-1346
85. Helms J. OP-Manual. Bibliothek der Univ.-HNO-Klinik Würzburg 2004
86. Lehnhardt E. Intracochleäre Platzierung der Cochlea-Implant-Elektroden in soft surgery technique. HNO 1993; 41: 356-359
87. Kempf HG, Johann K, Weber BP, Lenarz T. Complications of cochlear implant surgery in children. Am J Otol 1997 Nov; 18 (6 Suppl): S62-63

88. Buchman CA, Higgins CA, Cullen R, Pillsbury HC. Revision cochlear implant surgery in adult patients with suspected device malfunction. Otol Neurotol 2004 Jul; 25 (4): 504-510; discussion 510
89. Baumgartner W, Kronenberg J, Hamzavi J, Franz P. Der Suprameatale Zugang - eine Alternative Op-Technik zur Cochlea Implantation. Vortrag Deutsch-Östereichischer HNO-Kongress 2002. HNO-Informationen 2. Demeter Verlag April 2002, p. 88
90. Gibson WP, Harrison HC, Prowse C. A new incision for placement of cochlear implants. J Laryngol Otol 1995 Sep; 109 (9): 821-825
91. Kronenberg J, Migirov L, Baumgartner WD. The suprameatal approach in cochlear implant surgery: our experience with 80 patients. ORL J Otorhinolaryngol Relat Spec 2002 Nov - Dec; 64 (6): 403-405
92. Kronenberg J, Migirov L. The role of mastoidectomy in cochlear implant surgery. Acta Otolaryngol 2003 Jan; 123 (2): 219-222
93. James AL, Papsin BC. Device fixation and small incision access for pediatric cochlear implants. Int J Pediatr Otorhinolaryngol 2004 Aug; 68 (8): 1017-1022
94. Laszig R, Laubert A. Resorbierbare Intrakutannaht als Wundverschluss beim Cochlear Implant. Laryngo-Rhino-Otol 1995 Aug; 74 (8): 518
95. Scheich M, Müller J, Helms J. Cochlea Implantation in Lokalanästhesie. Bad Reichenhall: Vortrag Dt. HNO-Kongress 2004
96. Clark GM, Hallworth RJ, Zdanius K. A cochlear implant electrode. J Laryngol Otol 1975 Aug; 89 (8): 787-792
97. Cords SM, Reuter G, Issing PR, Sommer A, Kuzma J, Lenarz T. A silastic positioner for a modiolus-hugging position of intracochlear electrodes: electrophysiologic effects. Am J Otol 2000 Mar; 21 (2): 212-217
98. Brors D, Aletsee C, Schwager K, Mlynski R, Hansen S, Schafers M, Ryan A, Dazert S. Interaction of spiral ganglion neuron processes with alloplastic materials in vitro(1). Hear Res 2002 May; 167 (1 - 2): 110-121
99. De Ceulaer G, Johnson S, Yperman M, Daemers K, Offeciers FE, O'Donoghue GM, Govaerts PJ. Long-term evaluation of the effect of intracochlear steroid deposition on electrode impedance in cochlear implant patients. Otol Neurotol 2003 Sep; 24 (5): 769-774
100. Gstöttner W, Adunka O, Franz B. Perimodiolar electrodes in cochlear implants surgery. Acta Otolaryngologica 2001; 127: 216-219
101. Gstoettner W, Plenk H, Franz P, Hamzavi J, Baumgartner W, Czerny C, Ehrenberger K. Cochlear implant deep electrode insertion: extent of insertional trauma. Acta Otolaryngol 1997 Mar; 117 (2): 274-277
102. Husstedt HW, Aschendorff A, Richter B, Laszig R, Schumacher M. Nondestructive three-dimensional analysis of electrode to modiolus proximity. Otol-Neurotol 2002 Jan; 23 (1): 49-52
103. Czerny C, Gstoettner W, Adunka O, Hamzavi J, Baumgartner WD. Postoperative Darstellung und Erfassung der Lage und Insertionstiefe von multikanalikulären Cochlear-Implantaten durch die hochauflösende Computertomographie und durch das Nativröntgen. Wien Klin Wochenschr 2000 Jun 2; 112 (11): 509-511
104. Aschendorff A, Kubalek R, Hochmuth A, Bink A, Kurtz C, Lohnstein P, Klenzner T, Laszig R. Imaging procedures in cochlear implant patients - evaluation of different radiological techniques. Acta Otolaryngol Suppl 2004 May; (552): 46-49
105. Johnsson LG, House WFJr, Linthicum FH. Otopathological findings in a patient with bilateral cochlear implants. Ann Otol Rhinol Laryngol Suppl 1982 Mar - Apr; 91 (2 Pt 3): 74-89
106. Klenzner T, Franz D, Reinhard A, Aschendorff A, Laszig R. Funktionelle Ergebnisse mit der Nukleus® Contour™ Elektrode. Vortrag Deutsch-Östereichischer HNO-Kongress 2002. HNO-Informationen 2. Demeter Verlag April 2002, p. 147
107. Richter B, Aschendorff A, Lohnstein P, Husstedt H, Nagursky H, Laszig R. Clarion 1.2 standard electrode array with partial space-filling positioner: radiological and histological evaluation in human temporal bones. J Laryngol Otol 2002 Jul; 116 (7): 507-513
108. Richter B, Aschendorff A, Lohnstein P, Husstedt H, Nagursky H, Laszig R. The Nucleus Contour electrode array: a radiological and histological study. Laryngoscope 2001 Mar; 111 (3): 508-514
109. Richter B, Jaekel K, Aschendorff A, Marangos N, Laszig R. Cochlear structures after implantation of a perimodiolar electrode array. Laryngoscope 2001 May; 111 (5): 837-843
110. Paasche G, Gibson P, Averbeck T, Becker H, Lenarz T, Stover T. Technical report: modification of a cochlear implant electrode for drug delivery to the inner ear. Otol Neurotol 2003 Mar; 24 (2): 222-227
111. Adamczyk M, Bachor E, Bagus H, Fischer M. Cochlear Implantation - Zusammenhang zwischen Sprachentwicklung und Insertionstiefe der Elektrode bei Kindern. Laryngo-Rhino-Otol 2001 Mar; 80 (3): 123-126
112. Hodges AV, Villasuso E, Balkany T, Bird PA, Butts S, Lee D, Gomez O. Hearing results with deep insertion of cochlear implant electrodes. Am J Otol 1999 Jan; 20 (1): 53-55
113. Dorman MF, Loizou PC, Rainey D. Speech intelligibility as a function of the number of channels of stimulation for signal processors using sine-wave and noise-band outputs. J Acoust Soc Am 1997 Oct; 102 (4): 2403-2411
114. Dorman MF, Loizou PC, Rainey D. Simulating the effect of cochlear-implant electrode insertion depth on speech understanding. J Acoust-Soc Am 1997 Nov; 102 (5 Pt 1): 2993-2996

115. Marrinan MS, Roland JTJr, Reitzen SD, Waltzman SB, Cohen LT, Cohen NL. Degree of modiolar coiling, electrical thresholds, and speech perception after cochlear implantation. Otol Neurotol 2004 May; 25 (3): 290-294
116. http://www. fda. org
117. Arnold W, Bredberg G, Gstoettner W, Helms J, Hildmann H, Kiratzidis T, Müller J, Ramsden RT, Roland P, Walterspiel JN. Meningitis following cochlear implantation: pathomechanisms, clinical symptoms, conservative and surgical treatments. ORL J Otorhinolaryngol Relat Spec 2002 Nov - Dec; 64 (6): 382-389
118. Callanan V, Poje C. Cochlear implantation and meningitis. Int J Pediatr Otorhinolaryngol 2004 May; 68 (5): 545-550
119. Centers for Disease Control and Prevention - CDC. Advisory Committee on Immunization Practices. Pneumococcal vaccination for cochlear implant candidates and recipients: updated recommendations of the Advisory Committee on Immunization Practices. MMWR Morb Mortal Wkly Rep 2003 Aug 8; 52 (31): 739-740
120. Cohen NL, Roland JTJr, Marrinan M. Meningitis in cochlear implant recipients: the North American experience. Otol Neurotol 2004 May; 25 (3): 275-281
121. Graveriau C, Roman S, Garrigues B, Triglia JM, Stein A. Pneumococcal meningitis in an immunocompetent adult with a cochlear implant. J Infect 2003 May ; 46 (4): 248-249
122. Rose M, Hey C, Kujumdshiev S, Gall V, Schubert R, Zielen S. Immunogenicity of pneumococcal vaccination of patients with cochlear implants. J Infect Dis 2004 Aug 1; 190 (3): 551-557
123. Reefhuis J, Honein MA, Whitney CG, Chamany S, Mann EA, Biernath KR, Broder K, Manning S, Avashia S, Victor M, Costa P, Devine O, Graham A, Boyle C. Risk of bacterial meningitis in children with cochlear implants. N Engl J Med 2003 Jul 31; 349 (5): 435-445
124. Spahr AJ, Dorman MF. Performance of subjects fit with the Advanced Bionics CII and Nucleus 3G cochlear implant devices. Arch Otolaryngol Head Neck Surg 2004 May; 130 (5): 624-628
125. Tykocinski M, Shepherd RK, Clark GM. Reduction in excitability of the auditory nerve following electrical stimulation at high stimulus rates. Hear Res 1995 Aug; 88 (1 - 2): 124-142
126. Tykocinski M, Shepherd RK, Clark GM. Reduction in excitability of the auditory nerve following electrical stimulation at high stimulus rates. II. Comparison of fixed amplitude with amplitude modulated stimuli. Hear Res 1997 Oct; 112 (1 - 2): 147-157
127. Dillier N, Lai WK, Almqvist B, Frohne C, Müller-Deile J, Stecker M, von Wallenberg E. Measurement of the electrically evoked compound action potential via a neural response telemetry system. Ann Otol Rhinol Laryngol 2002 May; 111 (5 Pt 1): 407-414
128. Polak M, Hodges AV, King JE, Balkany TJ. Further prospective findings with compound action potentials from Nucleus 24 cochlear implants. Hear Res 2004 Feb; 188 (1 - 2): 104-116
129. Seyle K, Brown CJ. Speech perception using maps based on neural response telemetry measures. Ear Hear 2002 Feb; 23 (1 Suppl): 72S-79S
130. Thai-Van H, Chanal JM, Coudert C, Veuillet E, Truy E, Collet L. Relationship between NRT measurements and behavioral levels in children with the Nucleus 24 cochlear implant may change over time: preliminary report. Int J Pediatr Otorhinolaryngol 2001 Apr 27; 58 (2): 153-162
131. Blauert J. Räumliches Hören. Stuttgart: S. Hirzel Verlag 1974
132. van Hoesel RJM, Tong YC, Hollow RD, Clark GM. Psychophysical and speech perception studies: A case report on a binaural cochlear implant subject. Journal of the Acoustical Society of America 1992; 94: 3178-3189
133. Schleich P, Nopp P, D'Haese P. Head shadow, squelch, and summation effects in bilateral users of the MED-EL COMBI 40/40+ cochlear implant. Ear Hear 2004 Jun; 25 (3): 197-204
134. Schön F, Müller J, Helms J. Speech reception thresholds obtained in a symmetrical four-loudspeaker arrangement from bilateral users of MED-EL cochlear implants. Otol Neurotol 2002 Sep; 23 (5): 710-714
135. Nopp P, Schleich P, D'Haese P. Sound localization in bilateral users of MED-EL COMBI 40/40+ cochlear implants. Ear Hear 2004 Jun; 25 (3): 205-214
136. Leake PA, Hradek GT, Snyder RL. Chronic electrical stimulation by a cochlear implant promotes survival of spiral ganglion neurons after neonatal deafness. J Comp Neurol 1999 Oct 4; 412 (4): 543-562
137. van Hoesel RJ. Exploring the benefits of bilateral cochlear implants. Audiol Neurootol 2004 Jul - Aug; 9 (4): 234-246
138. Morera C. et al. http://über www.hno.uni-wuerzburg.deConsensus Statement, 2nd Consensus Conference on Auditory Implants. Valencia: Feb 2004
139. http://www.hno-wuerzburg.de
140. Laszig R, Sollmann WP, Marangos N, Charachon R, Ramsden R. Nucleus 20-channel and 21-channel auditory brain stem implants: first European experiences. Ann Otol Rhinol Laryngol 1995; 166 (Suppl): 28-30
141. Rosahl S, Lenarz T, Matthies C, Samii M, Sollmann W, Laszig R. Hirnstammimplantate zur Wiederherstellung des Hörvermögens: Entwicklung und Perspektiven. Deutsches Ärzteblatt 2004; 4: 101
142. Jackson KB, Mark G, Helms J, Mueller J, Behr R. An auditory brainstem implant system. Am J Audiol 2002; 11: 128-133
143. Nevison B, Laszig R, Sollmann WP, Lenarz T, Sterkers O, Ramsden R, Fraysse B, Manrique M, Rask-Andersen H, Garcia-Ibanez E, Colletti V, von

Wallenberg E. Results from a European clinical investigation of the Nucleus multichannel auditory brainstem implant. Ear Hear 2002 Jun; 23 (3): 170-183
144. Otto SR, Brackmann DE, Hitselberger WE, Shannon RV, Kuchta J. Multichannel auditory brainstem implant: update on performance in 61 patients. J Neurosurg 2002; 96: 1063-1071
145. Laszig R. European auditory brain stem prosthesis. Ann Otol Rhinol Laryngol 1997; 106: 884-885
146. Colletti V, Fiorino F, Sacchetto L, Miorelli V, Carner M. Hearing habilitation with auditory brainstem implantation in two children with cochlear nerve aplasia. Int J Pediatr Otorhinolaryngol 2001 Aug 20; 60 (2): 99-111
147. de Balthasar C, Boex C, Cosendai G, Valentini G, Sigrist A, Pelizzone M. Channel interactions with high-rate biphasic electrical stimulation in cochlear implant subjects. Hear Res 2003 Aug; 182 (1 - 2): 77-87
148. Bierer JA, Middlebrooks JC. Cortical responses to cochlear implant stimulation: channel interactions. J Assoc Res Otolaryngol 2004 Mar; 5 (1): 32-48
149. Braunschweig T, Schelhorn-Neise P, Biedermann F, Weisser P. Untersuchungen zu Möglichkeiten einer physiologischen Anpassung von Cochlea-Implantaten. Laryngo-Rhino-Otol 2004 Jun; 83 (6): 387-390
150. Chatelin V, Kim EJ, Driscoll C, Larky J, Polite C, Price L, Lalwani AK. Cochlear implant outcomes in the elderly. Otol Neurotol 2004 May; 25 (3): 298-301
151. Cunningham CD3rd, Slattery WH3rd, Luxford WM. Postoperative infection in cochlear implant patients. Otolaryngol Head Neck Surg 2004 Jul; 131 (1): 109-14
152. Dahm MC, Shepherd RK, Clark GM. The postnatal growth of the temporal bone and its implications for cochlear implantation in children. Acta Otolaryngol Suppl 1993; 505: 1-39
153. Dettman SJ, D'Costa WA, Dowell RC, Winton EJ, Hill KL, Williams SS. Cochlear implants for children with significant residual hearing. Arch Otolaryngol Head Neck Surg 2004 May; 130 (5): 612-618
154. Fraysse B, Dillier N, Klenzner T, Laszig R, Manrique M, Morera-Perez C, Morgon AH, Müller-Deile J, Ramos-Macias A. Cochlear implants for adults obtaining marginal benefit from acoustic amplification: a European study. Am J Otol 1998 Sep; 19 (5): 591-597
155. Frijns JH, Klop WM, Bonnet RM, Briaire JJ. Optimizing the number of electrodes with high-rate stimulation of the clarion CII cochlear implant. Acta Otolaryngol 2003 Jan; 123 (2): 138-142
156. Gomaa NA, Rubinstein JT, Lowder MW, Tyler RS, Gantz BJ. Residual speech perception and cochlear implant performance in postlingually deafened adults. Ear Hear 2003 Dec; 24 (6): 539-544
157. Graham JM. Graham Fraser Memorial Lecture 2002. From frogs' legs to pieds-noirs and beyond: some aspects of cochlear implantation. J Laryngol Otol 2003 Sep; 117 (9): 675-85
158. Herzog M, Schön F, Müller J, Knaus C, Scholtz L, Helms J. Langzeitergebnisse nach Cochlear-Implant-Versorgung älterer Patienten. Laryngo-Rhino-Otol 2003 Jul; 82 (7): 490-493
159. House WF, Berliner KI, Eisenberg LS. Experiences with the cochlear implant in preschool children. Ann Otol Rhinol Laryngol 1983 Nov-Dec; 92 (6 Pt 1): 587-592
160. Ketten DR, Skinner MW, Wang G, Vannier MW, Gates GA, Neely JG. In vivo measures of cochlear length and insertion depth of nucleus cochlear implant electrode arrays. Ann Otol Rhinol Laryngol Suppl 1998 Nov; 175: 1-16
161. Klinke R, Hartmann R. Basic neurophysiology of cochlear-implants. Am J Otol 1997 Nov; 18 (6 Suppl): S7-10
162. Klinke R, Hartmann R, Heid S, Tillein J, Kral A. Plastic changes in the auditory cortex of congenitally deaf cats following cochlear implantation. Audiol Neurootol 2001 Jul - Aug; 6 (4): 203-206
163. Koelsch S, Wittfoth M, Wolf A, Müller J, Hahne A. Music perception in cochlear implant users: an event-related potential study. Clin Neurophysiol 2004 Apr; 115 (4): 966-972
164. Kreft HA, Donaldson GS, Nelson DA. Effects of pulse rate on threshold and dynamic range in Clarion cochlear-implant users. J Acoust Soc Am 2004 May; 115 (5 Pt 1): 1885-1888
165. Kubo T, Yamamoto K, Iwaki T, Matsukawa M, Doi K, Tamura M. Significance of auditory evoked responses (EABR and P300) in cochlear implant subjects. Acta Otolaryngol 2001 Jan; 121 (2): 257-261
166. Loizou PC, Dorman MF, Tu Z, Fitzke J. Recognition of sentences in noise by normal-hearing listeners using simulations of speak-type cochlear implant signal processors. Ann Otol Rhinol Laryngol Suppl 2000 Dec; 185: 67-68
167. Nadol JBJr, Shiao JY, Burgess BJ, Ketten DR, Eddington DK, Gantz BJ, Kos I, Montandon P, Coker NJ, Roland JTJr, Shallop JK. Histopathology of cochlear implants in humans. Ann Otol Rhinol Laryngol 2001 Sep; 110 (9): 883-891
168. Nadol JBJr, Eddington DK. Histologic evaluation of the tissue seal and biologic response around cochlear implant electrodes in the human. Otol Neurotol 2004 May; 25 (3): 257-262
169. Pasanisi E, Bacciu A, Vincenti V, Guida M, Barbot A, Berghenti MT, Bacciu S. Speech recognition in elderly cochlear implant recipients. Clin Otolaryngol 2003 Apr; 28 (2): 154-157
170. Rubinstein JT, Hong R. Signal coding in cochlear implants: exploiting stochastic effects of electrical stimulation. Ann Otol Rhinol Laryngol Suppl 2003 Sep; 191: 14-19
171. Ruh S, Battmer RD, Strauss-Schier A, Lenarz T. Cochlear Implant bei resthörigen Patienten. Laryngo-Rhino-Otol 1997 Jun; 76 (6): 347-350

172. Skinner MW. Optimizing cochlear implant speech performance. Ann Otol Rhinol Laryngol Suppl 2003 Sep; 191: 4-13
173. Tykocinski M, Cohen LT, Pyman BC, Roland TJr, Treaba C, Palamara J, Dahm MC, Shepherd RK, Xu J, Cowan RS, Cohen NL, Clark GM. Comparison of electrode position in the human cochlea using various perimodiolar electrode arrays. Am J Otol 2000 Mar; 21 (2): 205-211
174. Vlahovic S, Sindija B. The influence of potentially limiting factors on paediatric outcomes following cochlear implantation. Int J Pediatr Otorhinolaryngol 2004 Sep; 68 (9): 1167-1174
175. http://www.fda.ord
176. http://www.cochlear.com
177. http://www.medel.com
178. http://www.cochlearimplants.com
179. Wilson BS, Finley CC, Lawson DT, Zerbi M. Temporal representations with cochlear implants. Am J Otol 1997 Nov; 18 (6 Suppl): S30-34
180. Wilson BS. pers. Mitteilung. Würzburg: Wullstein Symposium 2001
181. Witte RJ, Lane JI, Driscoll CL, Lundy LB, Bernstein MA, Kotsenas AL, Kocharian A. Pediatric and adult cochlear implantation. Radiographics 2003 Sep - Oct ; 23 (5): 1185-1200
182. Zeng FG. Trends in cochlear implants. Trends Amplif 2004; 8 (1): 1-34