

The Consensus statements are important in providing an evidence based approach to establishing cochlear implantation as the standard of care for people with severe or profound hearing loss and illustrating what good practice should be in several key areas.

The huge underutilization in health systems of the life changing technology of cochlear implantation across the world results in poorer health and wellbeing for individuals and enormous additional costs for health systems.

## REFERENCES

- <sup>i</sup> All the statements are taken from Craig A. Buchman, et al., Unilateral Cochlear Implants for Severe, Profound, or Moderate Sloping to Profound Bilateral Sensorineural Hearing Loss. A Systematic Review and Consensus Statements. JAMA Otolaryngol Head Neck Surg. doi:10.1001/jamaoto.2020.0998 Published online August 27, 2020. Commentary and suggested implications is the work of the authors of this summary.
- <sup>ii</sup> Chris Raine. Cochlear Implants Int. 2013 Mar; 14 (Suppl 1): S32–S37. doi: 10.1179/1467010013Z.00000000077. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3663289/>
- <sup>iii</sup> See also Brian Lamb and Sue Archbold, Hearing Care, Cognitive Decline and Dementia: A public health challenge for an opportunity for healthy ageing? April 2019. [https://www.researchgate.net/publication/332753002\\_Hearing\\_Care\\_Cognitive\\_Decline\\_and\\_Dementia\\_A\\_public\\_health\\_challenge\\_for\\_an\\_opportunity\\_for\\_healthy\\_ageing](https://www.researchgate.net/publication/332753002_Hearing_Care_Cognitive_Decline_and_Dementia_A_public_health_challenge_for_an_opportunity_for_healthy_ageing) or [www.eurociu.eu](http://www.eurociu.eu)
- <sup>iv</sup> Spend to save: Investing in hearing technology improves lives and saves society money. A Europe Wide Strategy Brian Lamb, Sue Archbold, Ciaran O'Neil. 2018. [https://www.researchgate.net/publication/328761458\\_Spend\\_to\\_save\\_Investing\\_in\\_hearing\\_technology\\_improves\\_lives\\_and\\_saves\\_society\\_money\\_A\\_EUROPE\\_WIDE\\_STRATEGY](https://www.researchgate.net/publication/328761458_Spend_to_save_Investing_in_hearing_technology_improves_lives_and_saves_society_money_A_EUROPE_WIDE_STRATEGY) from [www.eurociu.eu](http://www.eurociu.eu)

*The process of developing the consensus statements received funding support from Advanced Bionics, Cochlear Ltd, MED-EL and Oticon Medical. The process and writing were carried out independently.*

Sue Archbold, Brian Lamb and Leo De Raeve

For further information on the consensus statement see [adultheating.com](http://adultheating.com) and [www.eurociu.eu](http://www.eurociu.eu)

Downloadable in several languages from [www.eurociu.eu](http://www.eurociu.eu)

# GLOBAL GUIDELINES ON STANDARDS OF CARE FOR ADULT COCHLEAR IMPLANTATION

In every country access to cochlear implantation (CI) for adults with severe or profound hearing loss is low. Globally, it is estimated that only one in twenty who could benefit from cochlear implants have one. Most other health treatments have internationally accepted standards of care that inform patients and health care practitioners about when specialist referrals and treatment options should be considered.

This is a gap in the field of adult cochlear implantation that is addressed by a new publication titled "International Consensus Paper on Adult Cochlear Implantation."

They have been developed by an international panel of experts based on examining the latest evidence and consulting with user and advocacy organisations and their goal is to improve access and practice in this proven intervention.

The authors conclude that international guidelines on adult cochlear implantation candidacy are limited, and that guidelines vary from country to country. This leads to both differing levels of access and lack and systematic underuse across the world. The barriers to access they identify include low awareness and understanding of the benefits of cochlear implantation, poor knowledge of surgical candidacy criteria among health care professionals, and a lack of clearly defined care pathways.

There needs to be continued efforts to raise awareness about the benefits of cochlear implants and in many countries update professional guidelines to enable better access to cochlear implants. European CI User organisations are working to raise awareness of the benefits of cochlear implants and advocating for better diagnosis practices, accessible referral pathways, timely access to bi-lateral CI treatment, after care and rehabilitation.

**These International Consensus Statements represent the first step toward the development of international guidelines on best practices for cochlear implantation in adults.**

The Consensus Statements<sup>i</sup> are divided into key areas:

## LEVEL OF AWARENESS OF COCHLEAR IMPLANTATION

**Statement 1:** Awareness of cochlear implants among primary and hearing healthcare providers is inadequate, leading to under-identification of eligible candidates. Clearer referral and candidacy pathways would help increase access to cochlear implants.

*Key insights for policy:* Lack of referral pathways to cochlear implantation leads to a substantial unnecessary burden to the individual with hearing loss, with a poorer quality of life. We know that lack of referral and awareness of the benefits of cochlear implantation are the major reasons for under-identification of the many who could benefit. Estimates suggest that in many countries only 5-10% of potential candidates are implanted<sup>ii</sup>. More awareness in primary health care and audiology of the benefits of CIs needs to be promoted to improve access. More knowledge among health professionals about Standards of Care and best practices in CI diagnosis, earlier referral, treatment and aftercare will help many people live healthier and more fulfilled lives.

## BEST PRACTICE CLINICAL PATHWAY FROM DIAGNOSIS TO SURGERY

**Statement 2:** Detection of hearing loss in adults is important; pure tone audiometry screening methods are considered the most effective. The addition of a questionnaire or interview to the screening can improve the detection of sensorineural hearing loss.

**Statement 3:** Preferred aided speech recognition tests for cochlear implant candidacy in adults include monosyllabic word tests and sentence tests, conducted in quiet and noise. Further standardization of speech recognition tests is needed to facilitate comparison of outcomes across studies and countries.

**Statement 4:** Age alone should not be a limiting factor to cochlear implant candidacy, as positive speech recognition and quality of life outcomes are experienced by older adults as well as younger adults.

*Key insights for policy:* Screening for hearing loss in adults is important for the identification of potential candidates for cochlear implantation. Clearer and appropriate criteria for diagnosis of those who may be a candidate for cochlear implants will help create a clear pathway to implantation and improve understanding of the benefits and appropriateness of CIs by health professionals and the general public. The guidelines and evidence are clear that older age should be no barrier to cochlear implantation.

## BEST PRACTICE GUIDELINES FOR SURGERY

**Statement 5:** Both curved (perimodiolar) and straight electrodes are clinically effective for cochlear implantation, with a low rate of complications.

**Statement 6:** When possible, hearing preservation surgery can be beneficial in individuals with substantial residual hearing.

## CLINICAL EFFECTIVENESS OF COCHLEAR IMPLANTS

**Statement 7:** Cochlear implants significantly improve speech recognition in both quiet and moderate noise in adults with severe, profound, or moderate sloping to profound bilateral sensorineural hearing loss; these gains in speech recognition are likely to remain stable over time.

**Statement 8:** Both word and sentence recognition tests should be used to evaluate speech recognition performance following cochlear implantation.

**Statement 9:** Cochlear implants significantly improve overall and hearing-specific quality of life in adults with severe, profound, or moderate sloping to profound bilateral sensorineural hearing loss.

*Key insights for policy:* CIs are effective in improving quality of life due to improved hearing, and the wider impacts of better communication and connection with the world. CIs are safe with low rates of complications and can also be done while preserving any residual hearing. CIs should be the accepted standard of care for severe and profound deafness in adults.

## FACTORS ASSOCIATED WITH POST IMPLANTATION OUTCOMES

**Statement 10:** Adults who are eligible for cochlear implants should receive the implant as soon as possible to maximize post-implantation speech recognition.

**Statement 11:** Where appropriate, individuals should use hearing aids with their cochlear implant in order to achieve bilateral benefits and the best possible speech recognition and quality of life outcomes.

**Statement 12:** Many factors impact cochlear implant outcomes; further research is needed to understand the magnitude of the effects.

**Statement 13:** Long durations of unaided hearing loss do not rule out potential benefit of cochlear implants: individuals who receive an implant in an ear that was previously unaided for more than 15 years have been shown to experience improvements in speech recognition.

**Statement 14:** Adults who have undergone cochlear implantation should receive programming sessions as needed to optimize outcomes.

*Key insights for policy:* It is important that for those who are identified as being able to benefit from CIs are provided with an implant as soon as possible to ensure the best possible outcomes. Using hearing aids with CIs also delivers positive outcomes for communication and quality of life. Ongoing support to optimise the functioning and use of the implant is necessary.

## ASSOCIATION BETWEEN HEARING LOSS AND DEPRESSION, COGNITION, AND DEMENTIA

**Statement 15:** Adults with hearing loss can be substantially affected by social isolation, loneliness, and depression; evidence suggests that treatment with cochlear implants can lead to improvement in these aspects of well-being and mental health. Longitudinal studies are needed to obtain further knowledge in this area.

**Statement 16:** There is an association between age-related hearing loss and cognitive or memory impairment.

**Statement 17:** Further research is required to confirm the nature of cognitive impairment in individuals with hearing loss, and its potential reversibility with treatment.

**Statement 18:** The use of cochlear implants may improve cognition in older adults with bilateral severe to profound sensorineural hearing loss.

**Statement 19:** Hearing loss is not a symptom of dementia; however, treatment of hearing loss may reduce the risk of dementia.

*Key insights for policy:* Addressing hearing loss is associated with improvements in overall wellbeing including mental health by enabling people to communicate more easily with others. This reduces the social isolation and mental health problems associated with hearing loss. Addressing untreated hearing loss improves cognition and may help reduce the risk of dementia. Further research is needed, and being carried out, on the impact of CIs in addressing cognitive impairment and mitigating the risk of dementia<sup>iii</sup>.

## COST IMPLICATIONS OF COCHLEAR IMPLANTS

**Statement 20:** Unilateral cochlear implantation in adults is cost-effective when compared with no implant or no intervention at all and is associated with increased employment and income.

*Key insights for policy:* Ensuring that people with hearing loss who could benefit from a CI receive one is not only beneficial for the individual's wellbeing but improves their chances of employment. This reduces the cost of social care and welfare budgets. It is a cost effective intervention for health systems and has the potential to save money on other health related costs<sup>iv</sup>.

