

# Hearing development dynamics of the second implantet ear

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# 16<sup>th</sup> Congress of the European Federation of Audiology Societies

**May 3-6, 2023**

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**ABSTRACT  
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[Abstract:0258]

## Hearing development dynamics of the second implanted ear

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Most implanted patients in Croatia are implanted unilaterally. Polyclinic SUVAG provides services to most of them, more than 600 patients with CI, of which 40 are bilateral. SUVAG is an institution dealing with hearing and speech impairments for more than 60 years, and provides preoperative diagnostic treatment, programming, postoperative follow-ups, preoperative and postoperative verbotonal rehabilitation of prelingually and postlingually deaf patients for 26 years, since the beginning of the CI program. The goal of bilateral CI implantation is the development of binaural hearing. Bilateral implantation can be simultaneous or sequential. Bilateral hearing benefits are well known; better hearing in noise, and better localization of sounds. Motivation for the implantation on the other side are expected benefits, but in children with slow hearing progress, very often, there is an additional parental expectation that a second CI will make a significant difference in the overall progress.

The aim of this paper is to analyze the development of bilateral listening skills in sequential implantation, based on audiometric findings, focusing on results in speech audiometry.

The questions we were focusing on:

1. How long does it take for the second implanted ear to reach maximum results in speech audiometry of the first implanted ear?
2. Is there a difference in time needed for the second implanted ear to reach maximum results in speech audiometry of the first implanted ear?
3. Are the expectations of overall significant progress and compensation fulfilled?

Method: Evaluate speech recognition in quiet for a group of 10 children, all of whom underwent sequential bilateral cochlear implantation at various ages (range, 1y, 8m to 7y 8m at the time of the second implant).

The time of auditory experience with a unilaterally implanted CI enables faster development in the hearing pathways receiving stimulation from CI in the second operated ear in all patients, but there were also some differences.

In spite of the diversity, it can be concluded that auditory behavioral performance with the first implanted ear was a better predictor of performance with the second implanted ear than some other relevant factors.

As expected, the development of listening skills with bilateral CI depends on a number of factors. But, as each factor that deviates from the optimal affects the final development individually, the evaluation of results should always be approached individually.

**Keywords:** CI, sequential bilateral cochlear implantation, hearing outcomes