

## **BIAP Recommendation 07/5:**

### **Device fitting and multidisciplinary evaluation of children with cochlear implants: frequency and practical details**

#### **Foreword**

This document presents a Recommendation by the International Bureau for Audiophonology BIAP.

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#### **Introduction**

A cochlear implant is a medical device which requires frequent and regular fitting and evaluation by a multidisciplinary team; these evaluations are based on the expertise and experience of the paediatric cochlear implantation teams.

#### **Recommendation**

The fitting parameters will be modified in line with the patient's progress and level of adaptation. Helping a child adapt to a cochlear implant requires a concerted approach by a multidisciplinary case-management team (TC 07/02). This case-management plan involves a number of different aspects:

##### **1. Fitting**

###### Definition

Fitting means gradually adapting the implant parameters in accordance with the child's responses and progress.

The fitting parameters are: detection threshold, comfort threshold, frequency distribution, sensitivity, stimulation strategy, number of electrodes stimulated and the various possibilities of change which can be controlled by the patient. These are recorded in the speech processor on one or more programmes.

The fitting procedure, which is carried out in close co-operation with the speech therapist, is more than just establishing electrical parameters. It is part of the overall case-management plan, covering use of the implant and the child's progress.

### Frequency or schedule

The first fitting is carried out 15 days to 1 month after implantation and a medical check-up.

Over the next two months, 4 to 5 fittings are generally necessary to calibrate the parameters.

The next fittings take place in the 3rd, 6th, 12th and 18th months.

Two years post-implantation, 1 to 2 fittings per year are necessary, and this will continue throughout the patient's life.

This schedule describes the minimum case-management plan. If necessary, additional fittings should be made.

### The fitting process

The first adjustment is a particularly important time for everyone involved - the professionals as well as the family and the child. It takes into account pre- and perioperative data.

Sufficient time should be set aside for this process – from 1.5 to 2 hours. This step can comprise:

- Carefully administered telemetry tests (NRT, NRI, ART)
- Measuring the impedance of the electrodes
- Measuring detection and comfort thresholds
- Checking the child's reaction in real time
- Storing up-dated programmes in the memory
- Audiometric tests

It is essential to observe the child's behaviour during these different stages.

A clear description must be given of how to operate and maintain the speech processor and other equipment supplied. The instructions for daily use of the speech processor are discussed with the parents. The first fitting is documented by a written report.

Subsequent fittings will take an average of one hour. They start with an exchange of views with the family. After checking the condition of the skin, they can comprise:

- Checking that the various elements of the speech processor are working properly and being properly maintained
- Telemetric tests
- The stapedius reflex
- Adjustment of parameters
- Audiometric tests (Phonemic discrimination tests, audiometry, testing in a noisy environment).

## **2. Speech therapist evaluation**

- a. Evaluation takes place within the framework of close co-operation with the fitting technician, in accordance with the fitting calendar.

- b. It takes at least 2 hours in total, in order to achieve the various objectives:
- Helping to ensure that the adjustment and the various programmes suggested are suitable for the child's needs
  - Verifying the benefit derived from the CI in various configurations (CI alone, CI and contralateral hearing aid, bilateral implant).
  - Verifying how the child's auditory perception changes in quiet and noisy situations:
    - Detection
    - Discrimination
    - Identification of words and phrases in closed and open lists
    - Comprehension (Language tests)

### **3. Informing the child's family and professional helpers**

The fitting and evaluation information is communicated to the family and to the education and rehabilitation professionals who are caring for the child, so that they are aware of expected benefits, possible difficulties, and the handling and maintenance of the device and its accessories.

### **Conclusion**

The fitting and evaluation teams should work in close co-operation. They should also validate their partnership with the child's case-management team via written reports, which should be exchanged between both parties on a regular basis.

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**This recommendation was created and approved in multidisciplinary cooperation between professionals of all audiophonologic disciplines, which are medicine, pedagogy, speech therapy, psychology and hearing instrument audiology.**

**The original language of this document is English.**

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