FLEX Portfolio
The Softest, Most Flexible Electrode Arrays

Introducing FLEX²⁸ NEW
Especially developed for atraumatic surgery supporting stimulation of the entire length of the cochlea.
A FLEX Electrode for Every Cochlear Duct Length (CDL)

For a Variety of Cochlear Duct Lengths (CDLs)\textsuperscript{1,3}
Cochleae may differ significantly in size and shape from one another. Individual cochlear duct lengths (CDL) may vary over a very large range.
Refer to the graph at right.

FLEX Electrode Selection
From the FLEX electrode portfolio, surgeons can select the electrode array that optimally suits the individual anatomy of the patient.
Refer to the graph at right.

Complete Cochlear Coverage (CCC)\textsuperscript{2,5}
Stimulating the entire cochlea from the base to the apex provides for best quality hearing.

CCC is achieved by inserting a particularly long electrode array to stimulate the entire cochlear extent. Alternatively, in cases of partial deafness, CCC can be achieved by combined electric and acoustic stimulation which takes advantage of the patient’s natural residual hearing. The range of active stimulation is crucial because it provides the implant recipient with a complete representation of sound in the broadest possible frequency range.

"Straight, thin, and flexible free-fitting electrodes demonstrated to best fulfill all criteria for atraumatic CI surgery." \textsuperscript{9}
The New FLEX²⁸  
Designed for Atraumatic Implantation  
Providing Superior Hearing Performance

The new FLEX²⁸ is the optimal electrode array for 96% of cochlear anatomic conditions.

Easy to insert with minimal drilling thanks to a small 0.5mm diameter at the tip and 0.8mm diameter at the basal end, the FLEX²⁸ is the ideal choice for cochlear insertion via cochleostomy or the round window.

The exceptionally long 23.1mm active stimulation range provides tonotopic coverage from the base to the apex for best quality hearing.

REduced-diameter soft tip  
The soft tip of the electrode array is designed for atraumatic insertion and protection of the delicate neural structures of the cochlea.

Wave-shaped wires  
Wavy instead of rigid, the wires of the electrode array are particularly soft and flexible.

Ideal contact spacing  
Achieving optimal balance between number of contacts for most efficient stimulation and the appropriate distance between them for signal interference reduction.
A Solution for Every Cochlear Anatomy

**FLEX\textsuperscript{SOFT}**
A 31mm electrode array for Complete Cochlear Coverage (CCC) providing stimulation of the entire available range of frequencies from the base to the apex. Designed for long cochlear ducts.

**FLEX\textsuperscript{28}**
Features an electrode array length that is suitable for 96% of all normal cochlear duct lengths. FLEX\textsuperscript{28} is designed for best possible hearing performance while protecting the delicate neural structures during insertion.

**FLEX\textsuperscript{24}**
A shorter electrode variant that may be suitable for candidates with partial deafness as well as special surgical needs or preferences. CCC can be achieved through combined electric and acoustic stimulation by making use of the recipient’s natural residual hearing.

**FLEX\textsuperscript{20}**
The shortest FLEX electrode array may be used in cases of partial deafness or for other specific needs or surgical preferences. CCC can be achieved through combined electric and acoustic stimulation by making use of the recipient’s natural residual hearing.

FLEX\textsuperscript{24} is identical to the previously named FLEX\textsuperscript{24} electrode array.

The FLEX\textsuperscript{20} is under development.

CDL: Cochlear Duct Length
1. Soft tip for minimal insertion trauma
   Diameter at apical end: 0.5 x 0.4mm
2. 19 platinum electrode contacts
   Optimal spacing over 26.4mm stimulation range
3. Diameter at basal end: 1.3mm

1. Soft tip for minimal insertion trauma
   Diameter at apical end: 0.5 x 0.3mm
2. 19 platinum electrode contacts
   Optimal spacing over 20.9mm stimulation range
3. Diameter at basal end: 0.8mm

1. Soft tip for minimal insertion trauma
   Diameter at apical end: 0.5 x 0.3mm
2. 19 platinum electrode contacts
   Optimal spacing over 16.5mm stimulation range
3. Diameter at basal end: 0.8mm
Facts at a Glance

<table>
<thead>
<tr>
<th>LENGTH OF ARRAY (mm)</th>
<th>ACTIVE STIMULATION RANGE (mm)</th>
<th>CONTACT SPACING (mm)</th>
<th>Ø AT MARKER (mm)</th>
<th>NO. OF CONTACTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLEX&lt;sup&gt;SOFT&lt;/sup&gt;</td>
<td>31.5</td>
<td>26.4</td>
<td>2.4</td>
<td>1.3</td>
</tr>
<tr>
<td>FLEX&lt;sup&gt;28&lt;/sup&gt;</td>
<td>28</td>
<td>23.1</td>
<td>2.1</td>
<td>0.8</td>
</tr>
<tr>
<td>FLEX&lt;sup&gt;24&lt;/sup&gt;</td>
<td>24</td>
<td>20.9</td>
<td>1.9</td>
<td>0.8</td>
</tr>
<tr>
<td>FLEX&lt;sup&gt;20&lt;/sup&gt;</td>
<td>20</td>
<td>16.5</td>
<td>1.5</td>
<td>0.8</td>
</tr>
</tbody>
</table>

CONCERTO Cochlear Implant

CONCERTO, the implantable component of the MAESTRO CI System, is designed for best performance<sup>6</sup> and features particularly small dimensions as well as flexible electrode arrays designed for atraumatic insertion.

The MAESTRO CI System

- Performance
- Ease of use
- Reliability

1. The length of the organ of Corti in man, Hardy M, American Journal of Anatomy, 62(2), 1938, p. 179-311

medel.com