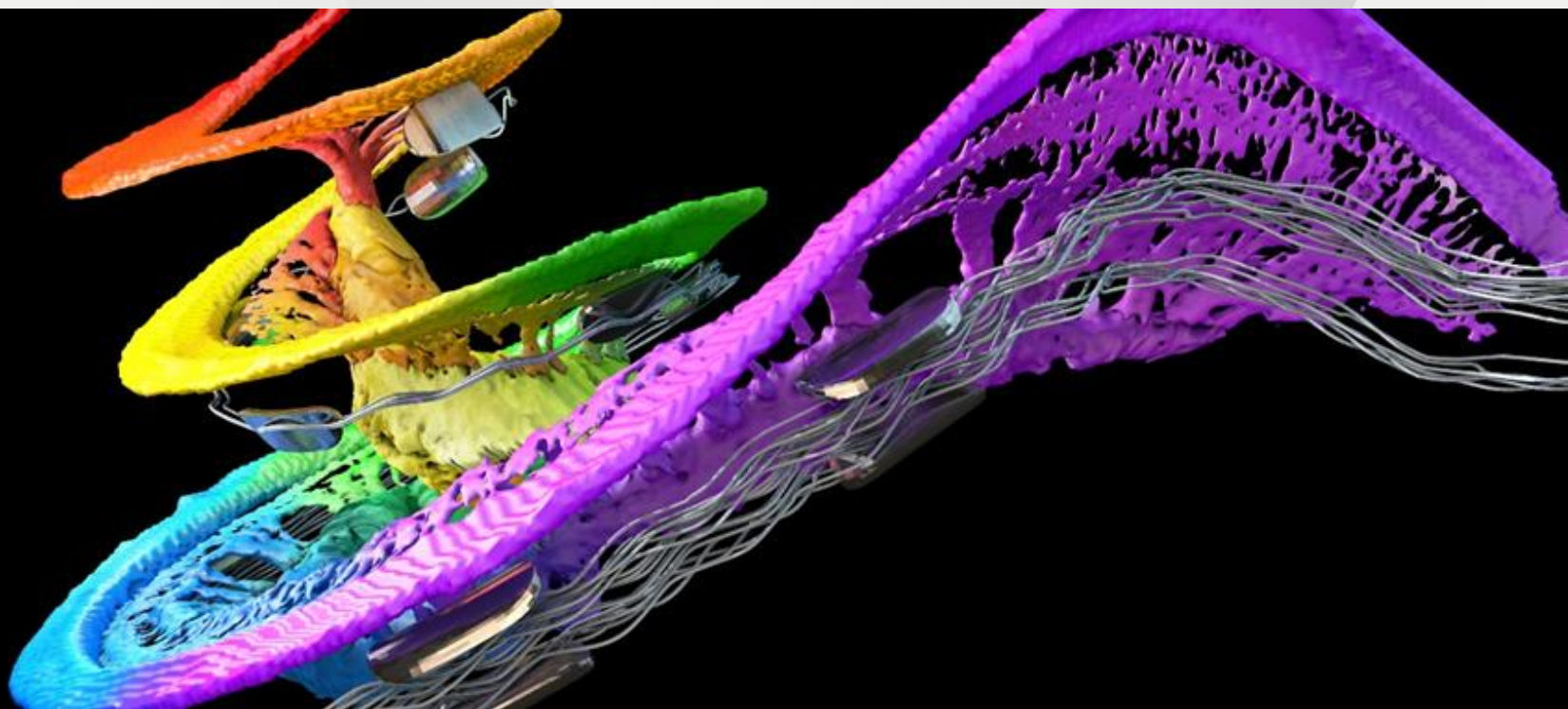


Présentation de l'outil Otoplan & réglages personnalisés (ABF)

MED^oEL

Michel BELIAEFF

GEORRIC - BORDEAUX 10 Avril 2026



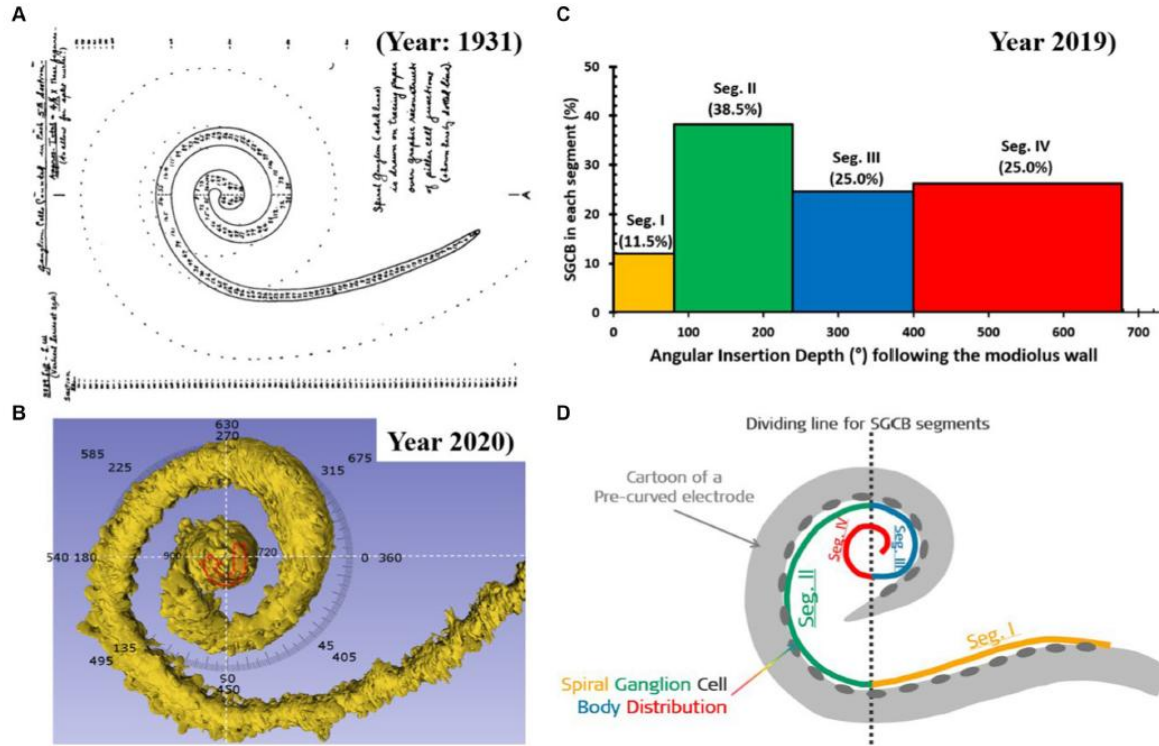
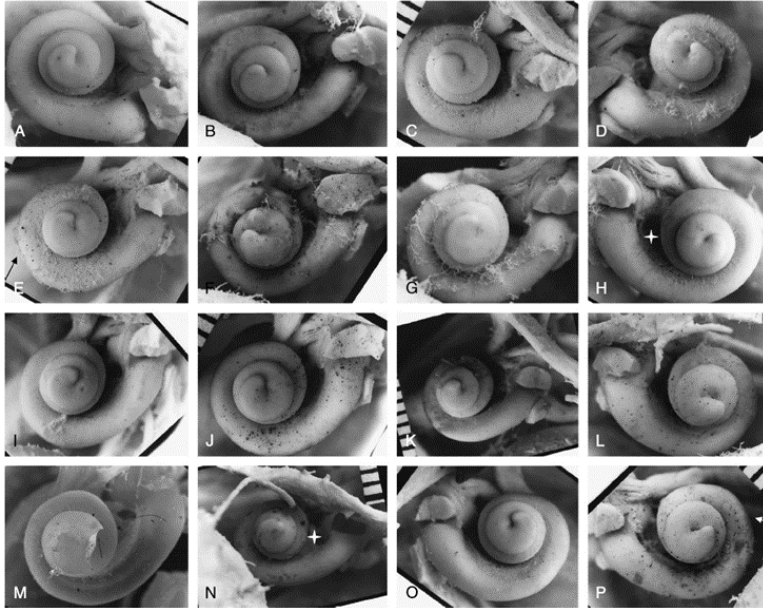


FIGURE 5

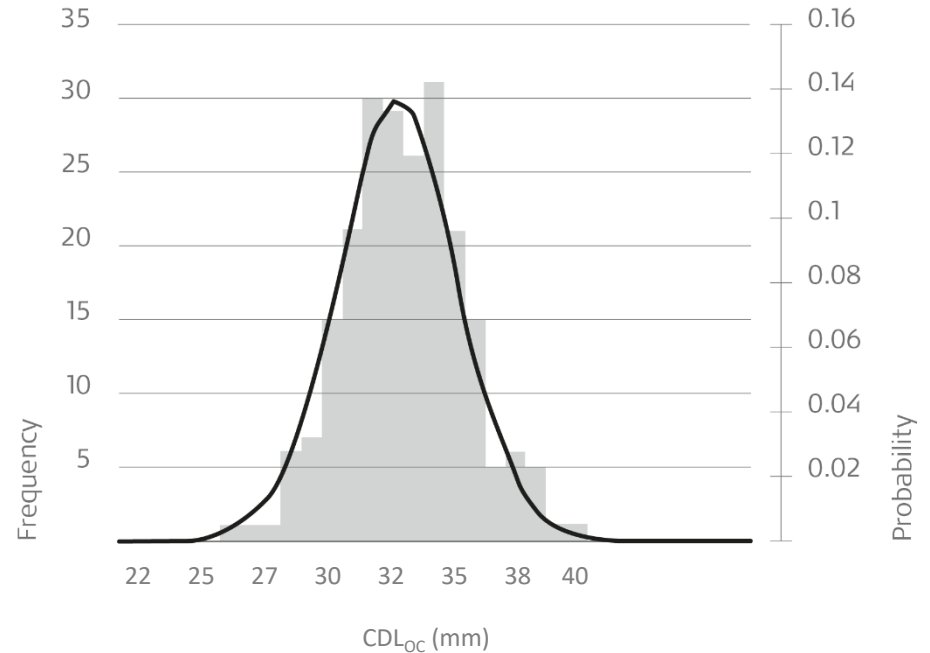
Distribution of spiral ganglion cell bodies (SGCBs) (40). (A) Outline of Rosenthal's canal housing SGCBs; (B) 3D segmentation of SGCBs from the synchrotron phase-contrast image demonstrating its presence up to 680°–720° (Source: Courtesy of Dr. Hao Li and Dr. Helge Rask-Andersen, University Uppsala, Sweden, and Prof. Hanif Ladak and Dr. Sumit Agrawal, Auditory Biophysics Laboratory, Western University, London, in Ontario, Canada); (C) percentage of SGCBs in different segments of the cochlea; and (D) cartoon version of a perimodiolar electrode unable to cover segment 4 with electrical stimulation.

Variations de la longueur de la cochlée (CDL) et de la forme

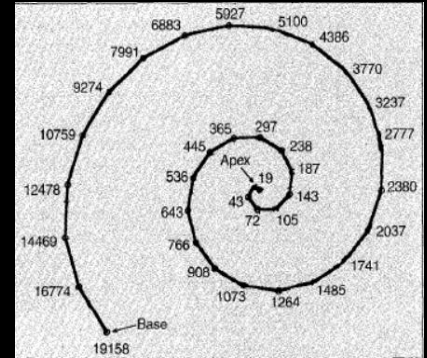
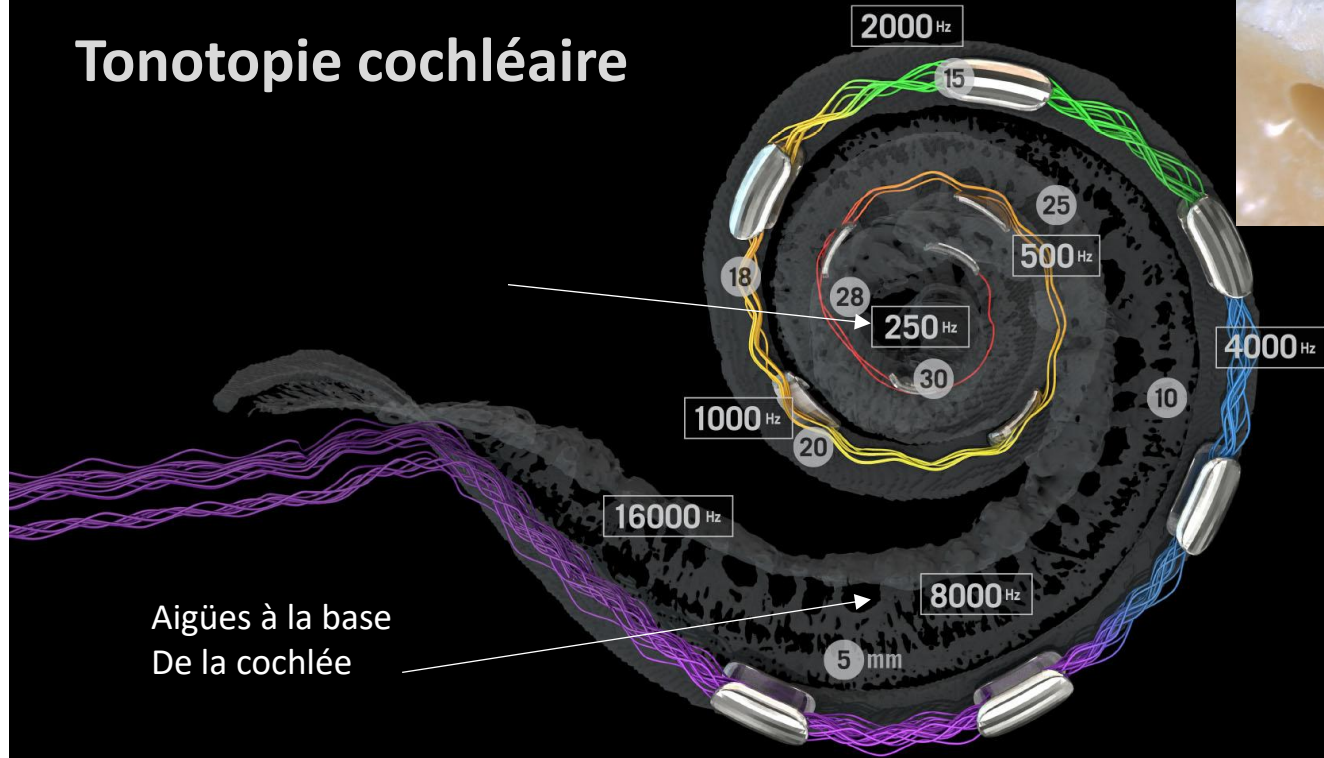


Variational Anatomy of the Human Cochlea: Implications for Cochlear Implantation

Erixon E;Hogstorp H;Wadin K;Rask-Anderson H
Otol Neurotol , **30(1)**, 2008

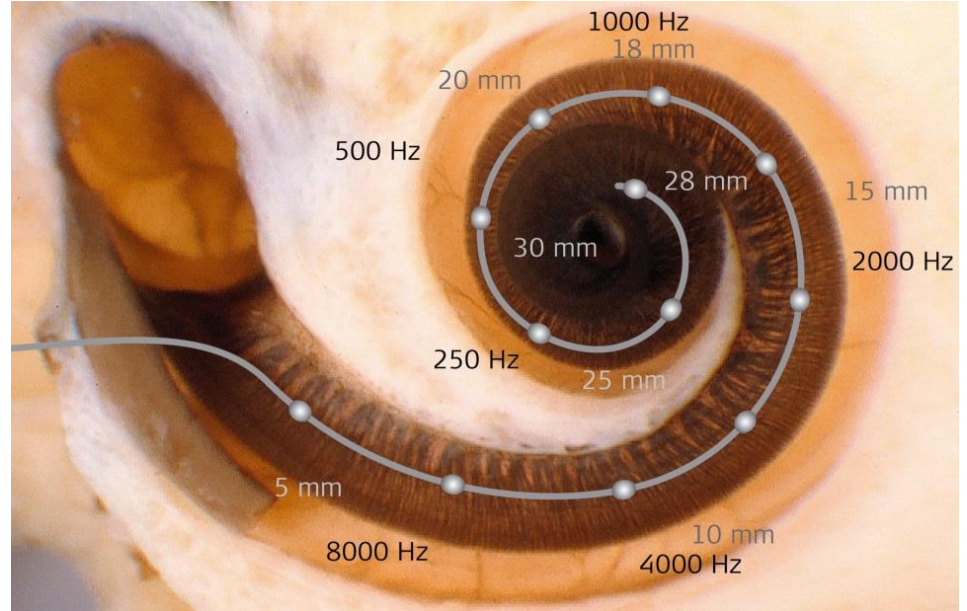
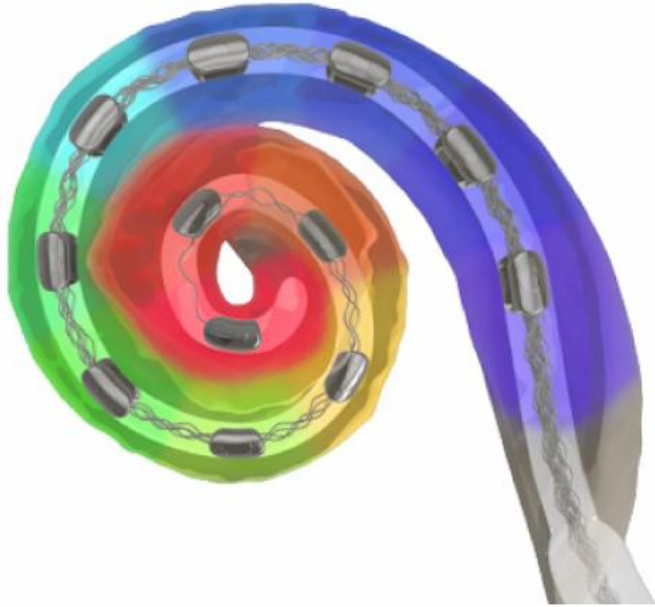


Tonotopie cochléaire



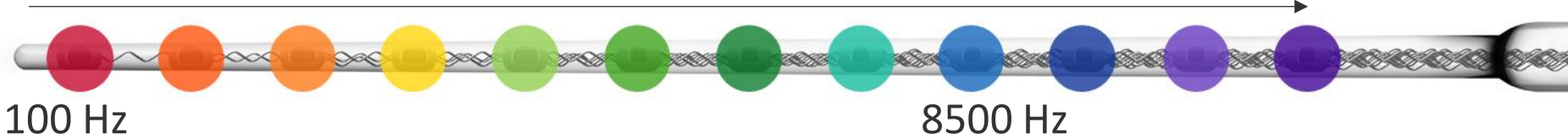
Comme un instrument de musique (par ex piano ou guitare, on va accorder en fréquence et en intensité chaque électrode

Tonotopic / greenwood



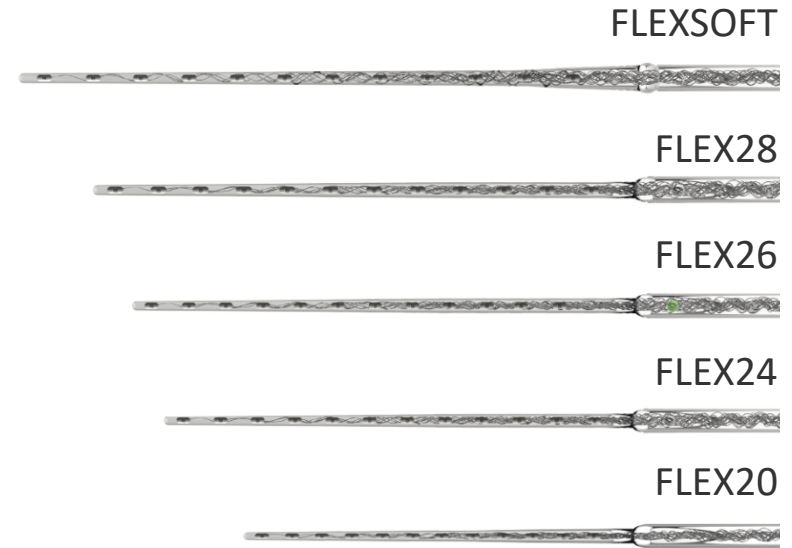
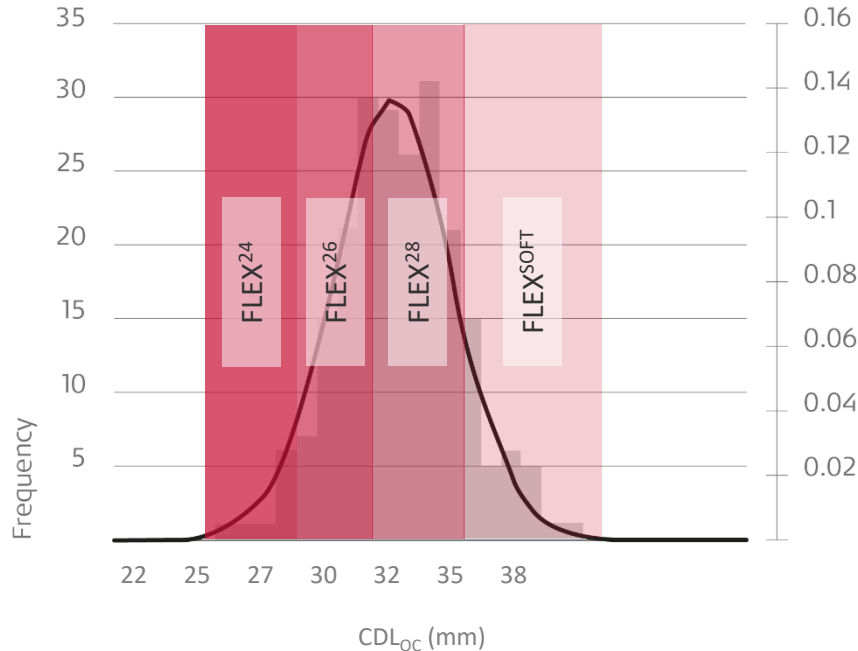
Low Freq

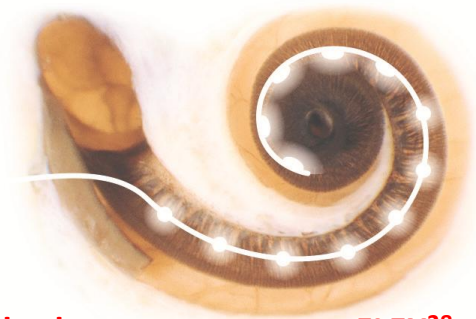
Hi Freq



Portofolio porte-électrodes FLEX

IC individualisé





Standard



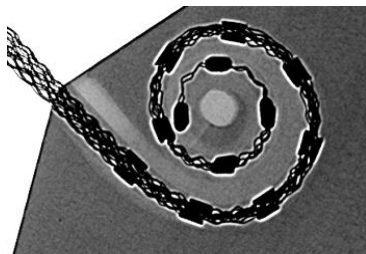
FLEX²⁸



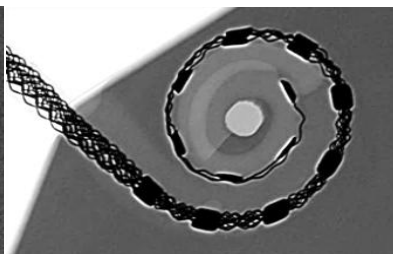
FLEX²⁴



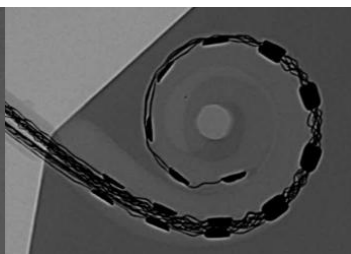
FLEX²⁰



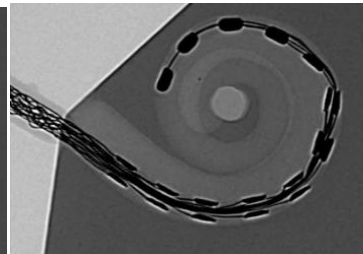
Standard



FLEX²⁸

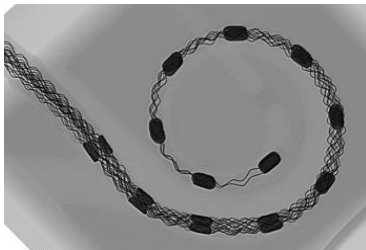


FLEX²⁴

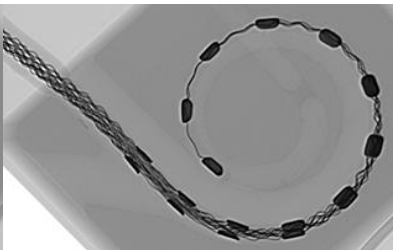


FLEX²⁰

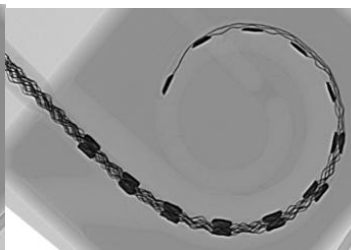
*Petite
cochlée*



Standard



FLEX²⁸



FLEX²⁴



FLEX²⁰

*Grande
cochlée*

Mesurer la cochlée

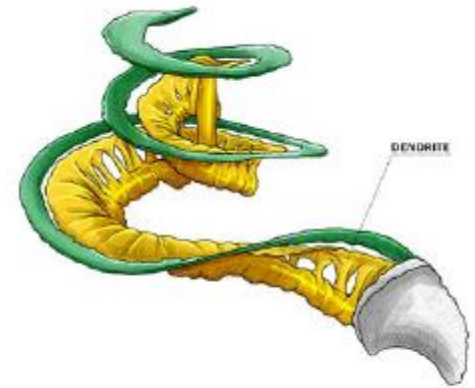
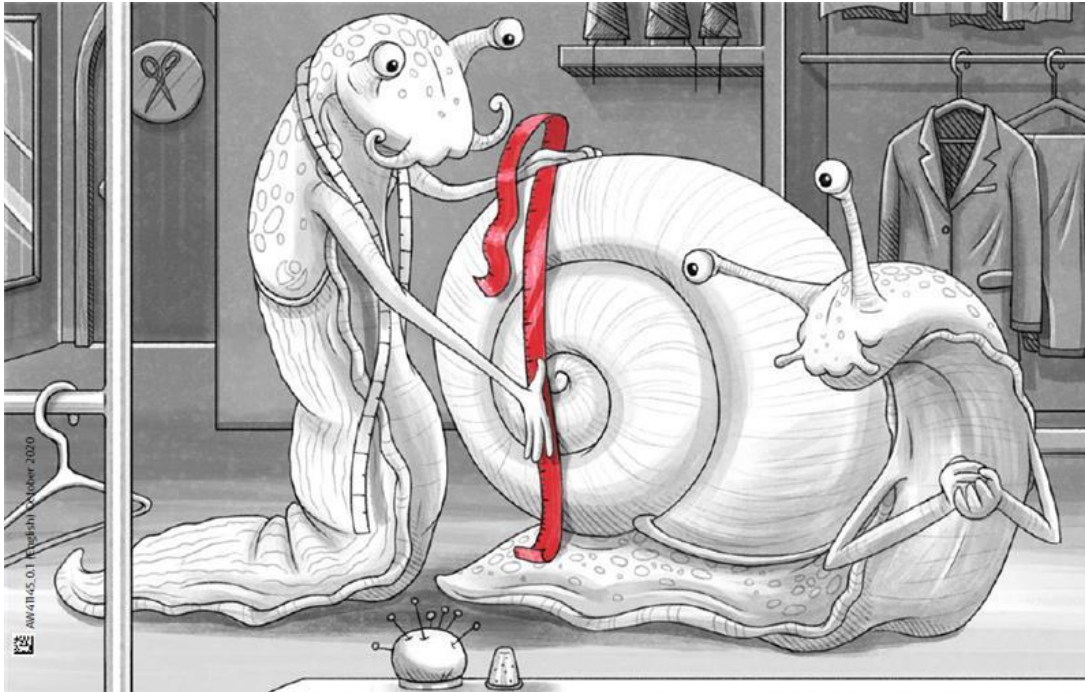
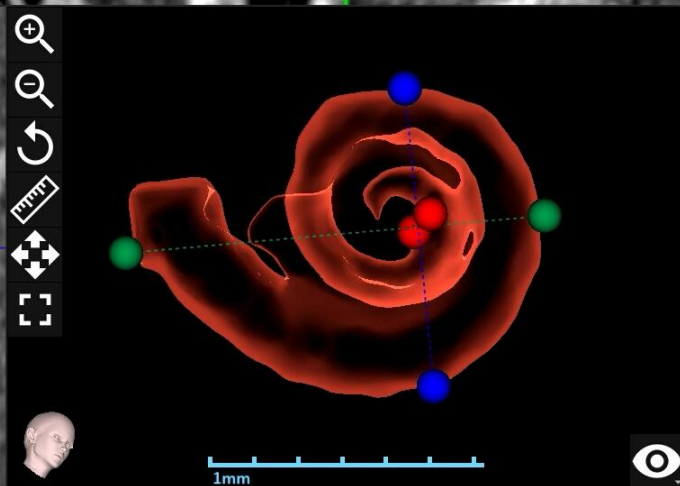
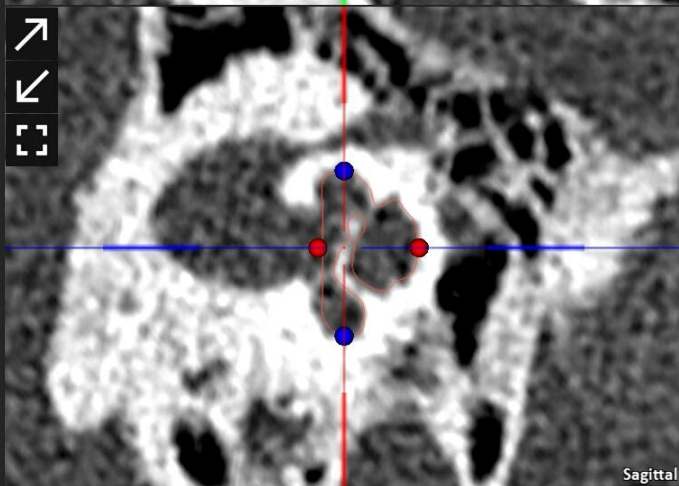
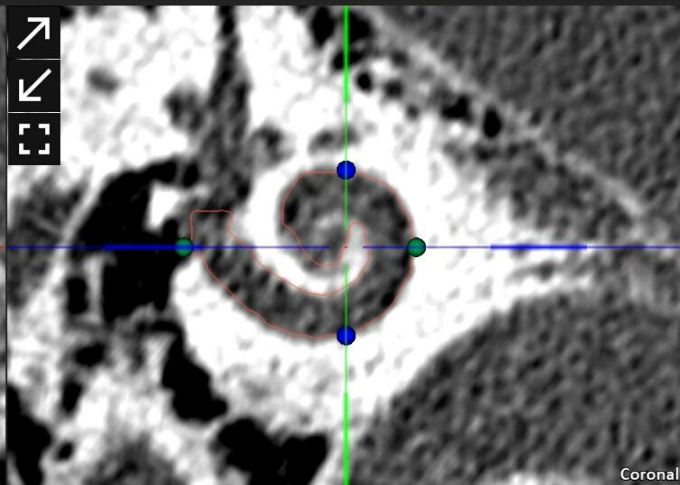
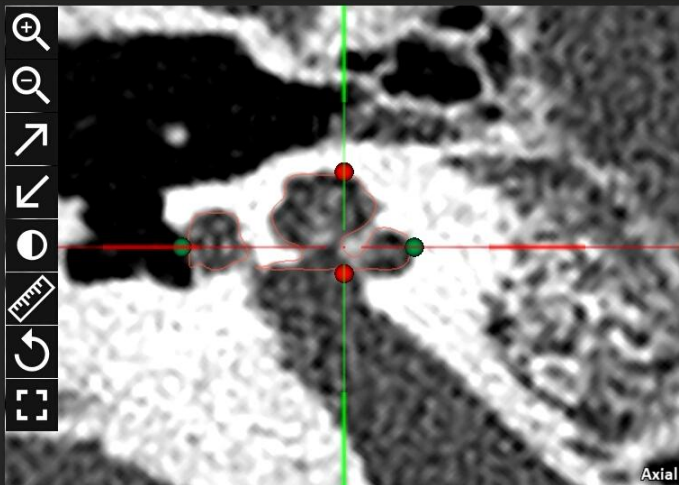


Figure 17. Spiral ganglion (yellow) connected to organ of Corti (green) by dendrites



Cochlear Parameters

Diameter	9.6 mm
Width	6.8 mm
Height	4.2 mm
CDL (at level of OC)	35.8 mm

Surface Generation

EXPORT MODEL

CLEAR

Adjust cochlear parameters

RESTORE

ADJUST

Number of cochlear turns

...

CLEAR

ACCEPT

OTOPLAN (V5)





Electrode Visualization

RESET



1:33

Organ of Corti Spiral Ganglion

Contact No. % Hz Degree mm



Patient Information

Name: Mary Moe
 Date of Birth: 1991-03-12
 Id: A4
 Ear Side: Right

Cochlear Parameters

Diameter: 9.95 mm
 Width: 6.97 mm
 Height: 2.97 mm
 CDL (at level of OC): 37.60 mm

MED-EL

FLEX FORM CLASSIC

FLEX20
 FLEX4
 FLEX26
 FLEX28
 FLEXSOFT

Electrode Visualization Information tables

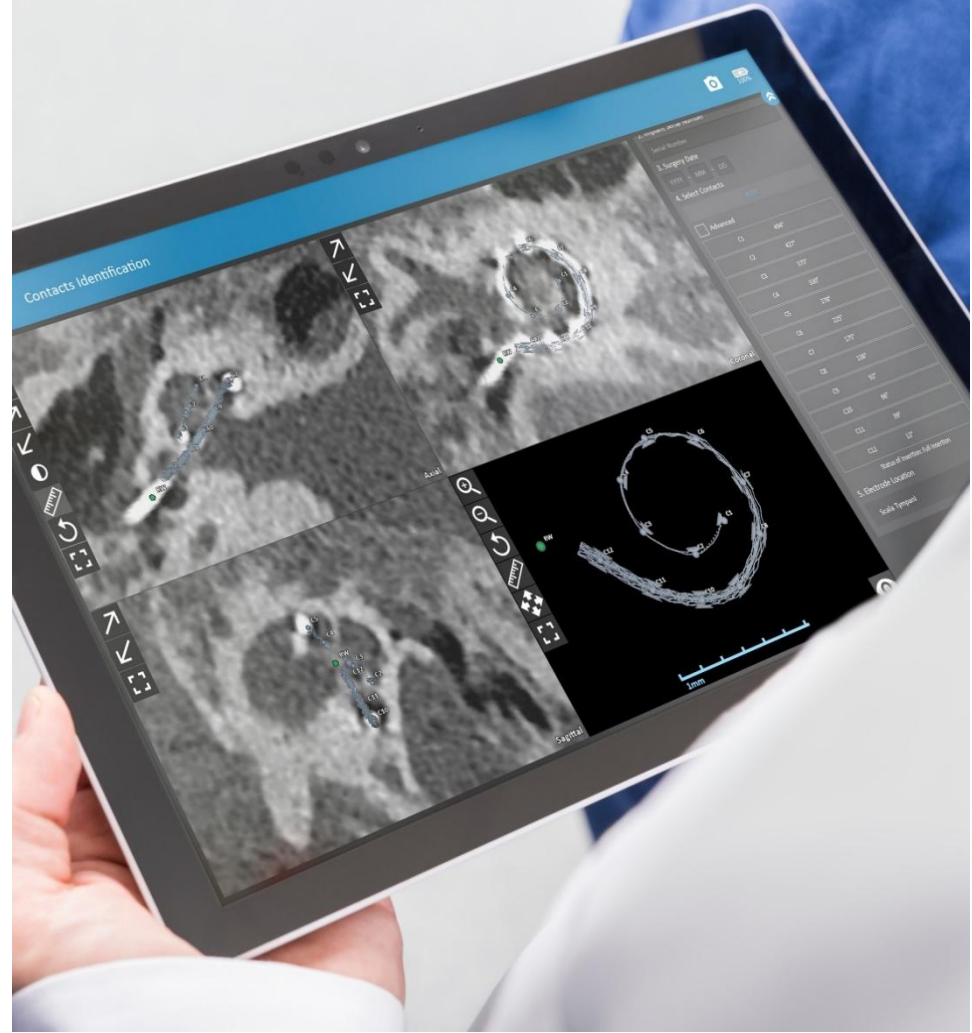
Horizontal Grid Vertical Grid Dynamic Line Preop Electrode Cochlear Turns



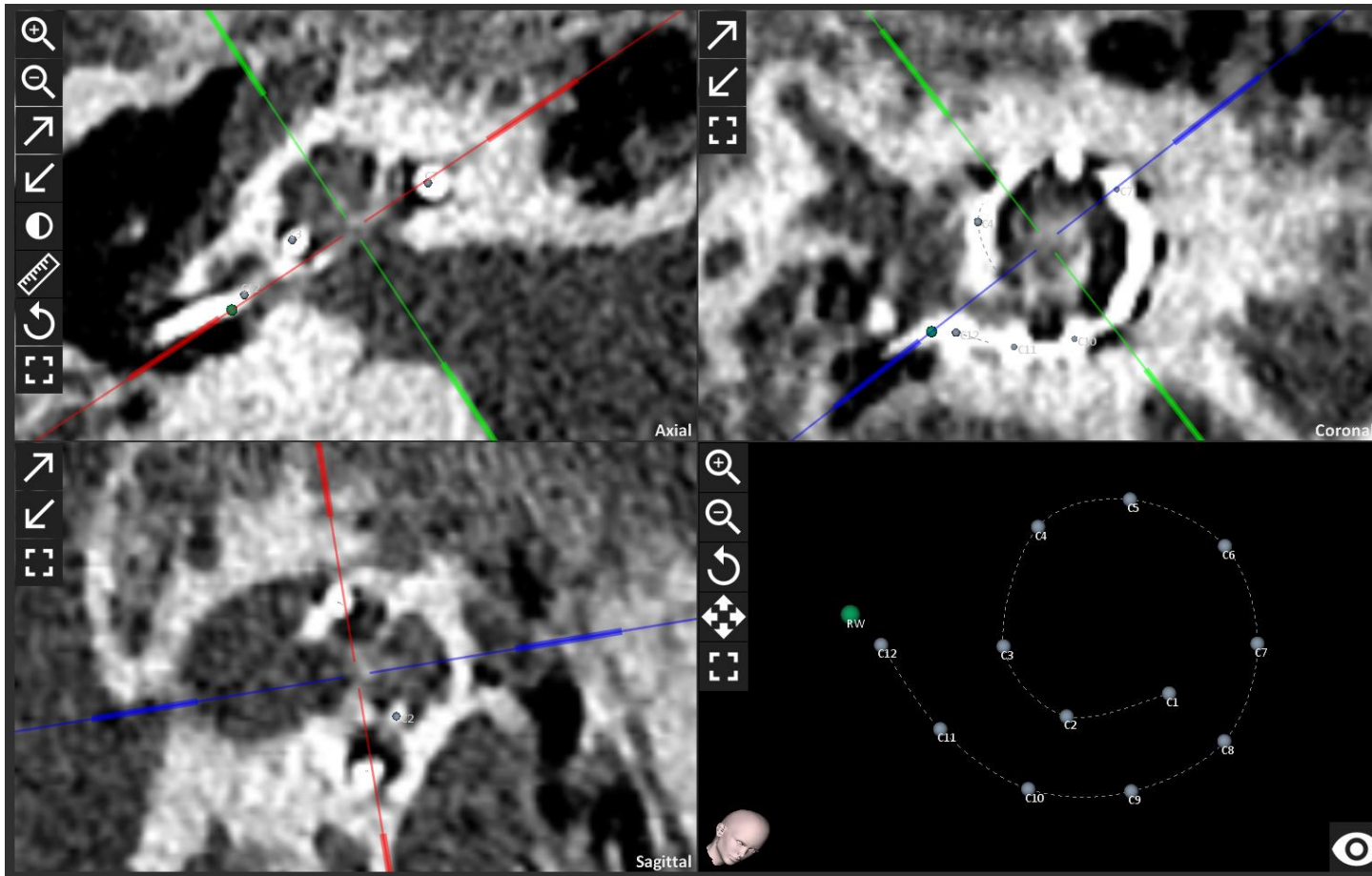
Analyse post-opératoire

Détection automatique des contacts

Identifie automatiquement l'angle d'insertion réel du porte-électrodes, la profondeur d'insertion et la position tonotopique de chaque contact d'électrode en quelques clics.



Analyse Post-Opératoire



1. Choose Inserted Electrode Type

FLEX28

2. Select Contacts

	Contact	Insertion (°)
REMOVE	C12	7
REMOVE	C11	35
REMOVE	C10	68
REMOVE	C9	103
REMOVE	C8	141
REMOVE	C7	179
REMOVE	C6	219
REMOVE	C5	263
REMOVE	C4	306
REMOVE	C3	370
REMOVE	C2	429
REMOVE	C1	504

Status of Insertion: Full Insertion

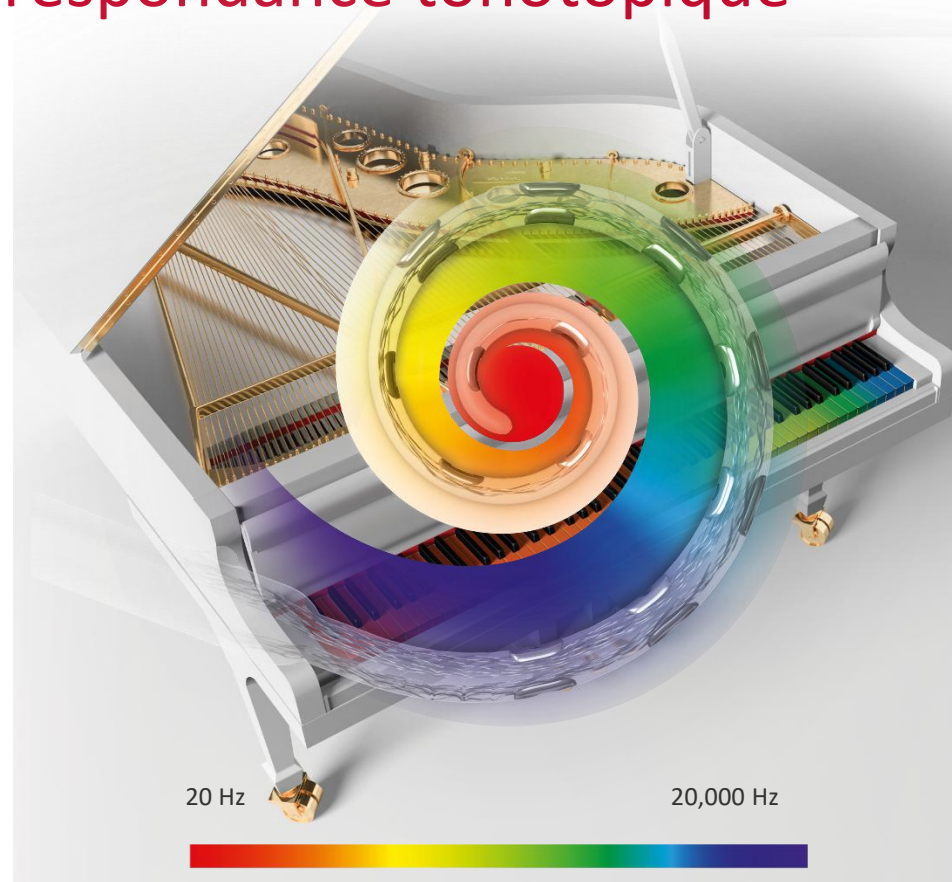
3. Electrode Location

Scala Tympani

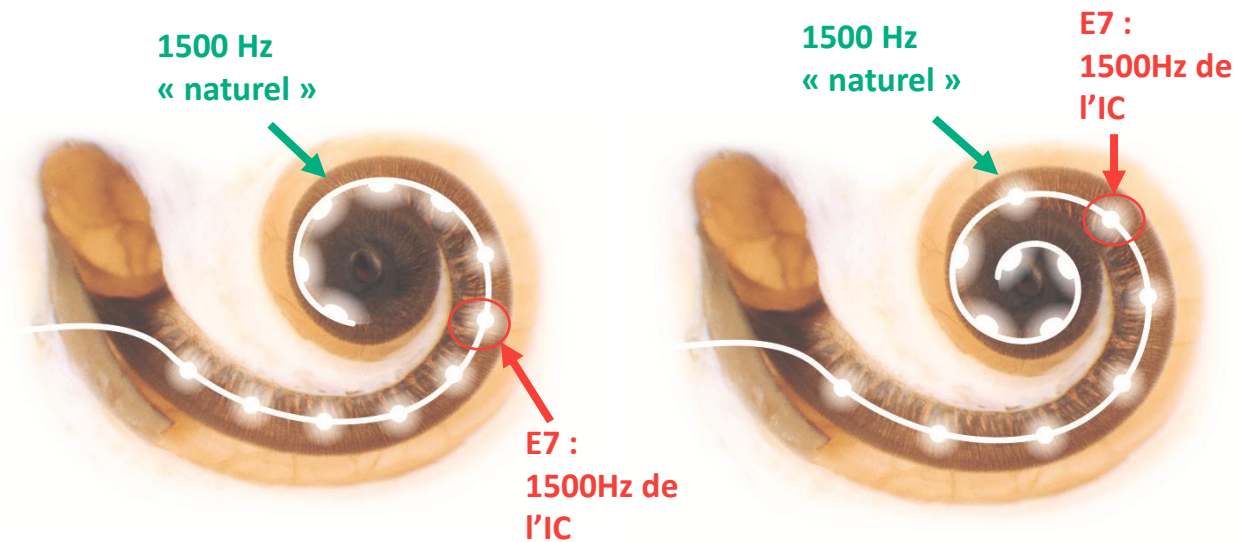


Importance de la bonne correspondance tonotopique

- Chaque position dans la cochlée correspond à une fréquence
- Un décalage avec cette tonotopie (place-mismatch) peut générer des distorsions
- Les porte-électrodes doivent respecter cette tonotopie cochléaire



Réduire le Frequency Mismatch



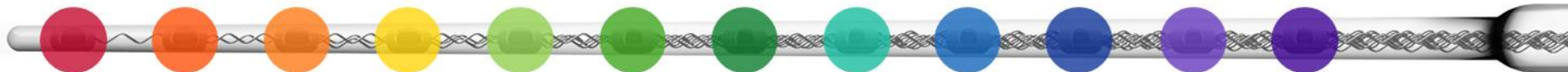
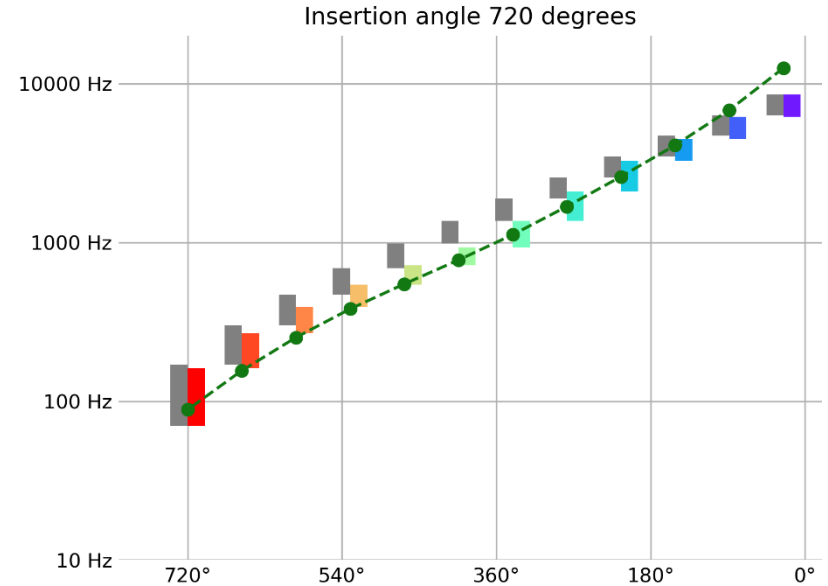
Anatomy-Based Fitting

Réglage basé sur l'anatomie

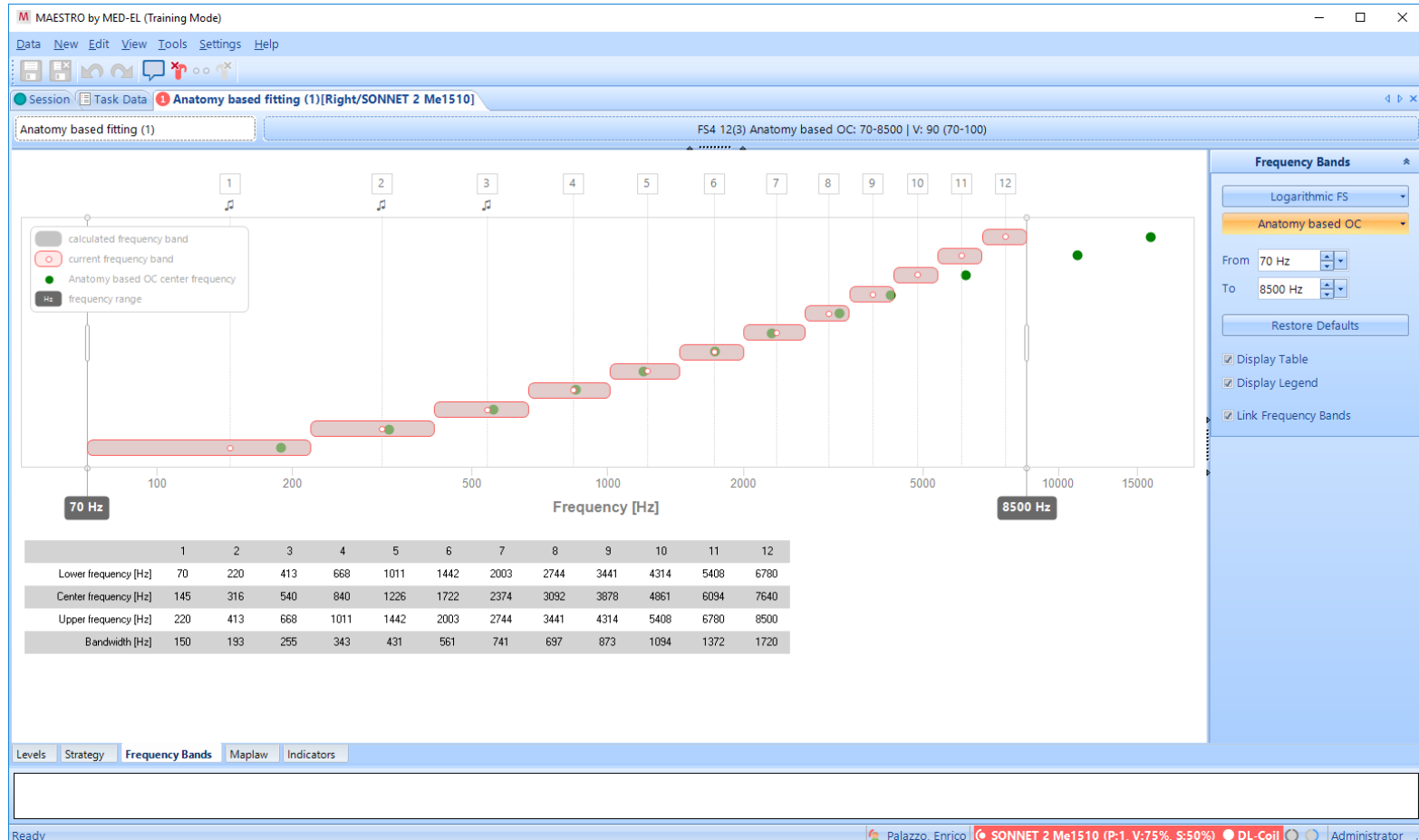
MAESTRO 11.0 :

Alignement des bandes de fréquence sur la fréquence tonotopique des électrodes

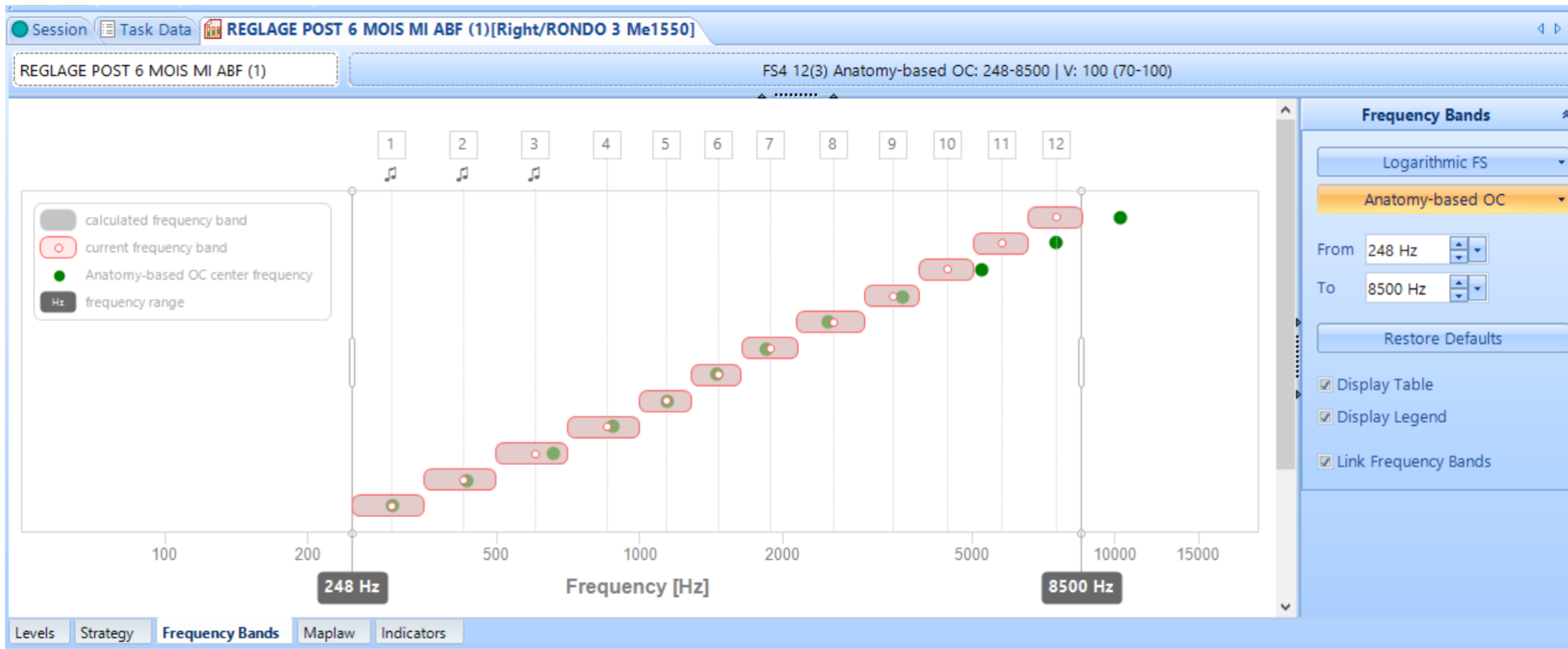
- Maintien de la bande de fréquence totale (70-8500Hz)
- Toutes les électrodes restent actives
- Maintien de la résolution spectrale



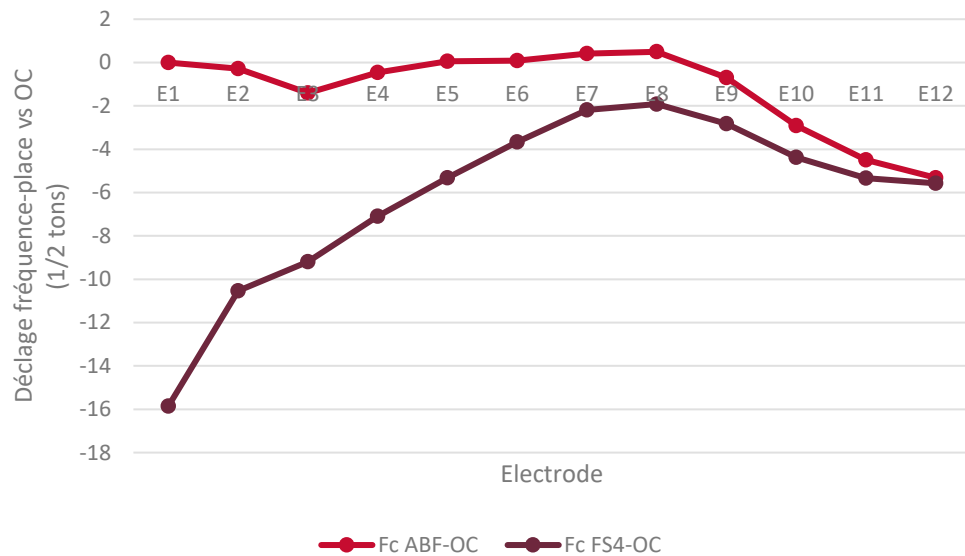
Anatomy-based fitting / Répartition fréquentielle (ABF)

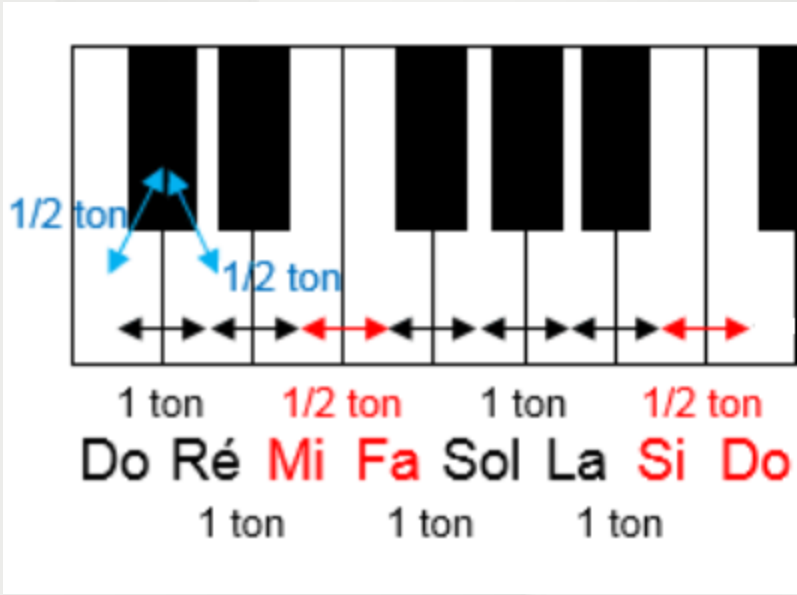


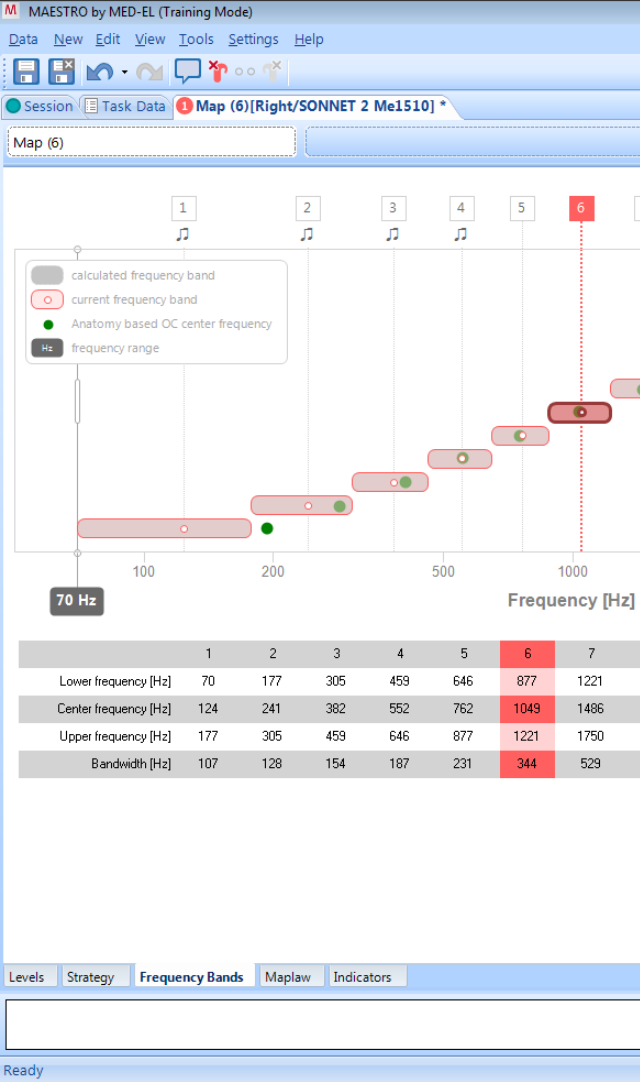
Patient N°2 BE TO



Sujet 2 : Décalage fréquence-place (vs OC)











Anatomy-Based Fitting

Listen!

- Original: 
- Flex24, Standard fitting: 
- FlexSoft, Standard fitting: 
- Flexsoft, Anatomy-based fitting: 

0°

