MED-EL Made Simple: A First Fit in 7 Easy Steps

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Med El made simple a first fit in seven easy steps hello and welcome to Med el. This is Andrea Hedley Williams, Med EL Clinical Education Manager. Med EL aims to deliver the closest to natural hearing experience for recipients by stimulating the full cochlear duct length with long electrode arrays, aligning sound pitches to their natural cochlear locations along the basilar membrane using odiplan and anatomy based fitting and preserving crucial timing cues through fine structure or fine hearing sound coding Metal's Maestro software is intuitive and incorporates metal specific fitting philosophies that further provide patients with the best opportunity for closest to natural hearing.

This course focuses on the essential steps to help effectively and efficiently activate the patient's Med El cochlear implant.

Med El made complete a Med El activation with these seven easy steps. Number one Create patient file. Number two Run impedance field telemetry or ift. Number three Create a new fitting map with auto auditory response telemetry or autoart. Number 4 Apply anatomy based fitting or ABF if available.

Number 5 Measure maximum comfortable loudness or or MCL. 6. Create progressive maps. Number 7 Program the processor. Now let's break down the steps.

Maestro Software and the MaxBox interface are used for programming Net EL cochlear implant audio processors. Ensure that the Max interface is plugged into the computer via USB and that the appropriate programming cable is plugged into the Max interface on one end and the metal cochlear implant audio processor on the other. The audio processor coil should be placed over the internal device of the implanted ear.

A green light will appear on the back of the NOCS interface to indicate it is powered on.

The Max icon will be visible in the bottom right hand corner of the MyStar screen to show connection to the Mac's interface.

Open the Maestro software by clicking Login on the red bar. If you are not connected to the Internet, a VPN or active directory, you will be prompted to enter your computer's password to access the software.

Step 1 Once the software is opened, click on the icon with the plus sign and a person to add a new patient. Note the highlighted yellow sections provide guidance on the next steps. Always follow the yellow indicators to navigate to the next step. Follow the yellow brick. Road is an easy way to remember which steps come next during programming.

Enter all required information including first and last name, date of birth, and gender.

Complete the vaccination information questions.

Add a right or left implant according to the implanted ear by clicking the internal device icon and completing the requested data as indicated by the sections highlighted in yellow Surgical date, serial number and electrode array are required. Fields with the coil placed on the head over the receiver stimulator. Click Read to populate the serial number of the internal device. Click Save and all of the data has been entered.

For anatomy based fitting. Click on the Import Anatomy Data tab to access the XML file received from OTAPLAN on demand. Following submission of a post operative CT or X ray imaging, verify that the correct file has been imported.

You can now see where the anatomy data has been saved into the patient file. Click Save.

Click the audio processor icon. The audio processor information will auto populate for the connected processor. Verify the information populated is accurate, or click Read serial number.

For bimodal patients, Add the hearing aid on the contralateral ear using the hearing aid icon.

Enter the hearing aid model and type. Then click the hearing aid delay list to access timing settings for hearing aids.

Enter the appropriate timing delay for the patient's hearing aid in the box marked Hearing Aid Delay.

Click Save and Close in the upper left hand corner. If this icon is grayed out, you have not entered all of the required information. You are now ready to begin programming. Select the patient name in the patient list and select Post operative Session to get started.

Step 2 To measure impedance, field telemetry or IFT, click on the telemetry icon in the session screen. Note this is required for each programming session.

This will take you to a new screen where impedances can be measured. Click Measure on the right hand side of the screen to collect this data.

When the measurement is complete, click Save and Close in the upper left.

Step 3 Run AutoArt and create a new map. Go to New at the top left of the screen and select AutoArt.

Click Measure on the right side of the screen to start the measurement. It typically takes about two minutes to collect this information.

Save and close this measurement when complete. This will return you to the session screen for continued programming of the audio processor.

In the session screen, click the yellow plus sign icon to create a new fitting. Use the drop down menu under Art Fit map to select your autoart measurement.

Step 4 Apply anatomy based Fitting if available.

When the activate created map pop up appears automatically, select no and navigate to the Frequency Bands tab at the bottom of the fitting screen.

Select Anatomy based OC Organ of Coordinating Model to apply anatomy based fitting. This aligns the pre assigned frequency bands with where the electrode contacts fall in the patient's cochlea.

The green dots represent the electrode contacts and the red bar show the adjusted frequency bands. Med EL is the only company to offer data based individualized anatomy based fitting to best match electrode contact stimulation to the tonotopic organization of the basilar membrane.

Step 5 med el fits to maximum comfortable loudness for MCL. MCL should be set just below the level of Uncomfortably Loud on a Med EL loudness scale. By default, thresholds are locked to a percentage of MCL and set below the level of audibility. This is an appropriate setting for most patients at initial fitting.

Navigate back to the Levels tab.

Select the Live button in the middle of the right side of the screen to activate the processor. When activated, the Live button will turn green.

The electrodes will change from orange to green to indicate the electrodes are being stimulated at the level of charge stimulation. Ensure your default volume is set to 100% sound stimulation will be at the level of the autoart measurement noted by the principal bars on each electrode. This level will be within the range of audibility for your patient.

Hold Control A to highlight all of the electrodes. Changes to stimulation can now be made in Live Voice.

Increase the level of stimulation by using the up and down arrow keys on your keyboard to make small changes of plus or minus 3%, or the page up and down keys to make larger changes of 15%.

You can also stimulate electrodes individually by pressing the spacebar to stop and start stimulation.

If you increase the stimulation level too quickly, a flashing warning will appear at the bottom of the screen. Acknowledge the warning before proceeding.

Using a Med EL loudness scale. Increase the volume of stimulation on all electrodes to just below the level of Uncomfortably Loud. Ensure that average conversational speech is comfortable.

Average charge units at activation are typically between 8 and 15 charge units and usually fall between 15 to 25 charge units. For a stable map, abnormal anatomy or cochlear ossification may require higher than typical fittings levels.

After you save and close the fitting map, you'll be back in the session screen. Your newly created fitting will be saved. Program Slot 1 Click on an icon under the Program bar to access Adaptive Intelligence. Adaptive Intelligence Med El's Scene classifier continuously analyzes the listening environment and adjusts key parameters in real time so that important sounds remain clear and comfortable.

Default settings are recommended unless the microphone is worn off the head. For example, a Sonnet 3 processor lore in the Babyware configuration.

Step 6 Create progressive maps based on the activation map just created and Save to program slot one.

Click on the Options icon with three lines. Select Progressive Maps 6% to generate maps that are 6% louder than each previous map.

These maps will auto populate into program slots 2, 3, and 4 and will be marked with plus signs 6% plus indicating 6% louder, 6% plus plus indicating 12 louder and 6% indicating 18% louder.

STEP 7. You are now ready to finalize your programming by configuring the processor. Note the green check mark under the contralateral ear indicating that the processing time of the implant and hearing aid will be matched for bimodal patients. This is Med El Bimodal Synchronization.

Click on an icon under the configuration bar to adjust remote control data logging, indicator lights, private alerts, energy management and extended processor options if needed, but default settings are recommended.

Click the processor button to download the settings to the processor. Notice the yellow highlighted button to guide you to this next step. You have now successfully activated your patient's audio processor.

Let's take a look at real time activation in the software. To open the Med Elystro software, navigate to the icon marked with a red M. Click to open the software.

Click the red bar to log in and access the software. For today's purposes, we will be using training mode. Training mode is a great way to practice these fitting parameters that we've reviewed in today's training without the presence of a live patient.

Once you've accessed the software, you're simply going to navigate to the icon with the plus sign in the person to add a new patient.

Remember the yellow brick road? The highlighted yellow fields help you realize what are the next steps that need to be completed as you program your patient. Simply type in the first and last name of your patient as well as their date of birth.

And gender.

Scroll down to access your vet vaccination information, questions and answer.

Next you'll look for the yellow highlighted icon to add the implant or internal device for the implanted ear. Simply click the icon and complete the yellow highlighted field. Add your surgery date and select the electrode array, ensuring that the audio processor is on the patient with the coil over the internal receiver stimulator and that the processor is connected to the Max interface unit. Click Read serial number for anatomy based fittings. You'll now click Import Anatomy Data.

This will take you to the file received from OTAPLAN on demand with the post operative CT or X ray imaging. This is an XML file. Click the file to add to the patient file.

This allows you to verify that the file selected is accurate. Import the data.

You can now see that this anatomy data has been entered into the software as marked here. Now click Save.

The next step is to find the yellow highlighted icon for processor. Click the icon and ensure that the populated information is accurate and reflects the audio processor that is connected to the Max interface unit. Click Save Now. Navigate to the contralateral ear to add a hearing aid for bimodal patients, you're simply clicking the hearing aid icon and entering the data for the yellow highlighted fields. Hearing Aid model.

And Hearing Aid type.

Now click the Hearing aid delay list. This will access timing settings for hearing aids. Scroll down and enter the manufacturer and select the hearing aid for your patient. Note the timing setting here and navigate back to your software to manually type in that value under the hearing aid delay box.

Now. Now click Save. You've successfully entered all of your patient data Save and Close in the upper left hand corner. Now highlight the patient name and go to Post Operative session.

First you will collect your impedance field telemetry or IFT data. Note the yellow highlighted icon to indicate that this step happens. Next, click Measure on the right side of the screen to collect this information.

IFT data will be collected for all 12 electrodes.

You'll get a green check mark when pieces fall within an acceptable range. Now click Save, Save and Close in the upper left corner.

Navigate to New at the top of the screen and select AutoArt and Measure on the right side of the screen.

AutoArt is an objective ETAP measurement.

ECAP thresholds are measured within the range of audibility and it takes about two minutes to collect the data on all 12 electrodes.

You'll notice as the measurement is running that you will get a green check mark on the left hand side of the screen and a populated ECAP threshold when the measurement for that electrode is complete.

Make sure you observe your patient during this step.

And as the data finishes collecting, you will navigate to the upper left hand corner of the screen to save and close the data that has been collected.

Click the Save and Close icon.

It's now time to create the fitting map. Navigate to the yellow plus sign to create a new fitting. Select the AutoArt measurement just obtained by clicking the plus sign here.

Click no and navigate to your frequency band tabs on the bottom left of your screen.

This will allow you to import your anatomy data for your anatomy based fitting. Simply click Anatomy Based OC or Organ of Quarter Model.

This allows you to better align the pre assigned frequency bands with where the electrode contact falls. I'm going to save this one again.

I think I'm just going to. Sorry about that.

Next you will navigate to the yellow highlighted icon to create a new fitting.

Select the auto Art measurement just obtained by clicking this plus sign.

Click no and navigate to the Frequency band tabs on the bottom left hand side of the screen.

This will allow you to apply your anatomy based fitting. Select Anatomy based OC or Organ of Cordial Model.

This allows for better alignment of the pre assigned frequency bands with where the electrode contacts fall in the patient's cochlea marked by the green dots indicated here.

Navigate back to your Levels tab.

Click the Live button in the middle of the the right hand side of the screen.

The level of stimulation is now at the level of AutoArt marked by the purple bars. Click Control A to highlight all the electrodes and increase the level of stimulation using your up arrow keys to just below the level of Uncomfortably loud for your patient.

This typically falls between 8 and 15 charge units.

This typically falls between eight and 15 charge units on an initial activation.

Once your measurement is complete, click Save and Close in the upper left hand corner corner.

Navigate to the three lines or options icon and select Progressive Maps 6%.

This will auto populate progressively Louder maps. The maps will be 6% louder than each previous map. You are now ready to program your audio processor. Simply select you are now ready to program your audio processor. Simply click the yellow highlighted icon for programming.

You have now successfully completed a first fit for your patient.

Med El strives to provide the best opportunity for a hearing experience that closely resembles natural hearing by using long electrode arrays to stimulate the entire cochlear neck length through OTAPLAN and anatomy based coding. Sound frequencies are matched to their natural positions along tensor membrane while fine structure or fine hearing sound coding helps maintain central temporal cues. As you have seen, you can quickly and accurately activate your patient and their audio processor with MedHelp. MedHelp is simple. Complete a Med EL activation with these seven easy steps.

Number one create patient file. Number two run impedance field telemetry or IFT. Number three create a new fitting map with auto Auditory response telemetry or autoart. Number 4 Apply anatomy based fitting or ABF if available. Number 5 Measure maximum comfortable loudness or MCL.

6. Create progressive maps. Number 7 Program the processor now you know how easy it is to quickly activate your patient with a Med El cochlear implant by following these seven easy steps. Med El made simple to contact Med El, please go to www.medel.com or call 886-333-5524. Thank you.