

OTICON | **Dynamo**

Power your brain



Speech Rescue™ and Speech Guard E
More speech details than ever before

oticon
PEOPLE FIRST

Power your brain

Working with patients who have severe-to-profound hearing loss means you often encounter a high degree of variability in performance, even if they have similar audiograms. Their auditory and cognitive processing abilities, use of technology and personal preferences can differ greatly.

Oticon has developed technology dedicated to severe-to-profound hearing loss for decades. Combining our experience with our extensive research and insights from hearing care professionals allows us to understand the diverse needs of these particular patients.

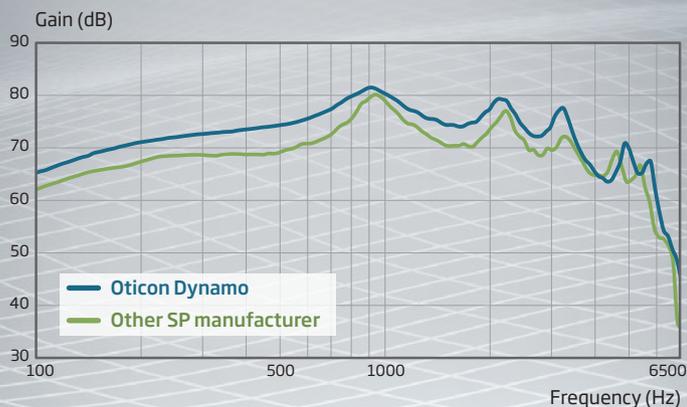
In new Oticon Dynamo, we take hearing to a whole new level by applying our innovative BrainHearing™ technology that gives the brain what it needs to make sense of sound.

The best of two worlds - Rescue and Guard

With Oticon Dynamo, we have developed technology that provides you with the best of two worlds for these patients through a unique approach. This approach allows Oticon's innovative frequency composition, Speech Rescue™, to work in combination with Speech Guard E to preserve vital speech cues. First, Speech Rescue performs precise frequency composition by lowering the high frequencies to ensure full access to inaudible sounds. Then, Speech Guard E's superior adaptive compression preserves the important speech details. This unique "Rescue" and "Guard" approach is designed with one goal in mind: **to increase speech understanding.**

The new ultra-fast Inium Sense platform delivers this and more! Never before has a BTE13 Super Power been so powerful with a 143 dB SPL MPO, 82 dB Full-On Gain and low frequency output. All this power comes in a strikingly small and versatile instrument.

Leading the Super Power category with Oticon BrainHearing™ technology



Full-On Gain measurements performed in technical settings according to IEC-60118 (711 coupler). Oticon Dynamo (blue) and other manufacturer (green). Both super power devices are size 13 battery.

Powerful solutions for every need

Oticon Dynamo is part of a diverse portfolio of powerful instruments. The portfolio includes a wide range of styles ranging from ITE Power, RITE Power and Plus Power in the Performance Line, to dedicated paediatric Super Power instruments and even a 675 Ultra Power instrument.

Dynamo utilises Oticon's proprietary prescriptive rationale, DSE, developed specifically for people with severe-to-profound levels of hearing loss. The rationale has been designed for maximum audibility whilst keeping compression as linear as possible to facilitate speech understanding in noise.

143 dB SPL/82 dB

Highest output ever from a BTE13

+

Speech Rescue™

Innovative access to the inaudible frequencies

+

Speech Rescue™ and Speech Guard E

More speech details than ever before

+

Inium Sense feedback shield^{SP}

Effective feedback control

+

YouMatic for Super Power

Personalisation to meet individual preferences

+

Bimodal fitting protocol

Fitting flow for bimodal balance

= Oticon **Dynamo**



NEW

Innovative access to the inaudible

– lowering sounds with frequency composition

Missing high frequency sounds such as “s” or “th” can negatively impact the flow and understanding of conversation. Dynamo’s new precise frequency composition, Speech Rescue™ increases speech understanding by rescuing speech cues that would otherwise be lost.

NEW

Why compress, when you can use the naturally vacant spaces in speech?

Speech Rescue takes advantage of the opportunities offered by the dynamics in speech. Speech is dominated by mid frequency energy, but some sounds are high frequency. When these high frequency sounds occur, usually no mid frequency sound is present at the same time. Instead of compressing sounds, Speech Rescue precisely positions the high frequency energy in the available space without disturbing the mid frequencies.

Why cut, when you can copy and keep?

Rather than leaving the high frequency auditory pathway completely without stimulation, the Speech Rescue algorithm selects the relevant high frequency sounds where the inaudible speech cues are located. It then copies them and adds them at the frequency range that the patient can hear. During this process, the high frequency sounds remain untouched at their natural location, to keep a natural broad frequency response available to the patient across all frequencies at all times¹. Speech Rescue promotes speech understanding by rescuing cues that would otherwise be lost.

Frequency lowering should only be purposely introduced in the amplification strategy, when conventional amplification cannot fully restore access to high frequencies. Oticon’s Genie software provides an individualised automatic prescription for easy and quick fitting. Furthermore, with the Speech Rescue fine-tuning tool you have freedom to adjust how much the signal is lowered and how much energy it holds. This makes it possible to fit the frequency composition in Dynamo precisely to the individual patient’s hearing loss.

Some speech sounds are difficult to hear, such as the sound “S”

“_ALAD”

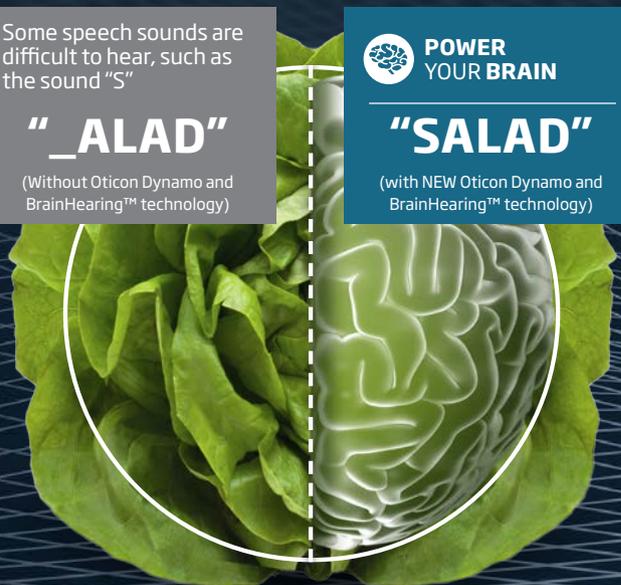
(Without Oticon Dynamo and BrainHearing™ technology)



POWER YOUR BRAIN

“SALAD”

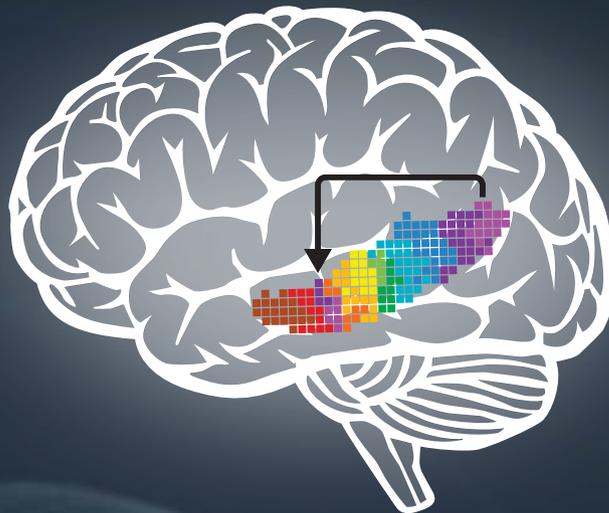
(with NEW Oticon Dynamo and BrainHearing™ technology)



1. The Speech Rescue™ fitting panel in Genie gives you the choice of preserving the complete bandwidth of the device, even when frequency composition is ON, or alternatively turning OFF the high frequency sounds completely.

New insights into frequency lowering has led Oticon to develop an innovative approach

Sounds of different frequencies activate different regions in the brain in an organised manner. Through Speech Rescue technology, high frequency sounds (shown in purple) are moved to lower frequency regions, which allows the brain to respond to the copied sounds (shown in purple) in a different area.

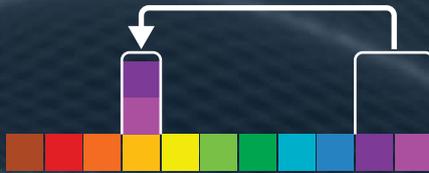


Low frequency

High frequency



The natural signal



Oticon's innovative frequency composition

*Oticon's precise approach to frequency composition **KEEPS** the high frequencies and **COPIES** them to the mid frequency regions.*



Traditional frequency lowering strategy

Some hearing solutions press sound together along the frequency axis, compiling a lot of information into a small area, while leaving the high frequency region unstimulated.

What does it mean for your patient?

- Gives the patient the audibility to hear more speech sounds
- Hearing high frequency sounds, such as "s" and "th", helps to increase speech understanding

More speech details than ever before

Oticon Dynamo offers the best sound experience by using Speech Rescue™ together with Speech Guard E to rescue sound and guard it.

NEW

Unique “Rescue” and “Guard” approach: More speech understanding

Speech Rescue works together with Speech Guard E to preserve every speech cue. First, Speech Rescue precisely remaps the high frequency sounds to a lower audible frequency region. Then, Speech Guard E brings the softest sounds of speech into a narrow listening range while preserving the dynamic contrast of the signal. This approach effectively captures, remaps and amplifies the input signal to provide the patient with vital speech cues.

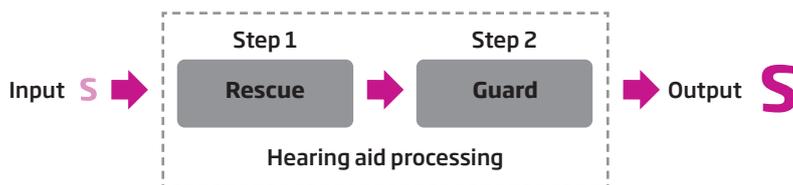
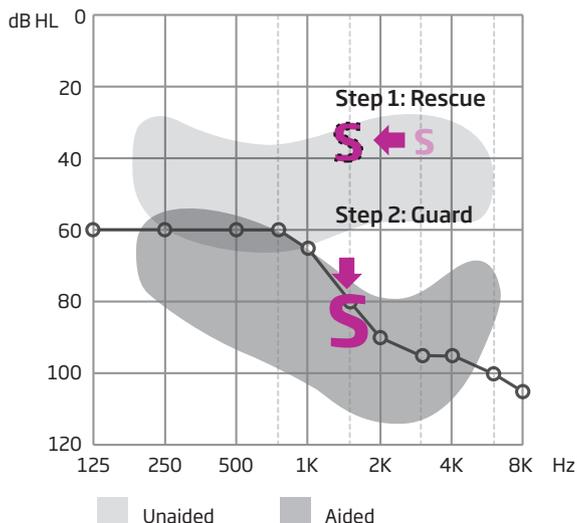
The Rescue and Guard approach ensures that many of the lowered speech cues are preserved during compression, as it is done with as little squeezing and distortion as possible. This gives your patient one of the fullest sound experiences possible. It also offers the opportunity to capture nuances of speech that can increase speech understanding in complex listening environments.

Speech Guard E is the preferred compression strategy

Speech Guard E gives your patients the audibility they need. Most importantly, it delivers high-quality sound while preserving the differences in intensity and nuances of the speech signal to support your patient’s brain in making sense of sound¹. In severe-to-profound hearing losses, this is even more crucial because every single speech cue counts.

For people with severe-to-profound hearing loss it is often temporal cues that enable them to perceive speech and segregate one sound from another. In Dynamo, Speech Guard E is combined with Oticon’s DSE rationale with very subtle compression, developed specifically for individuals with severe-to-profound hearing loss.

Every speech cue counts



Step 1 “Rescue”: In the signal path of the hearing aid, high frequency components of the incoming sounds are first moved to lower frequencies through Speech Rescue .

Step 2 “Guard”: The high frequency sounds are then amplified with Speech Guard E. This compression system guards the dynamic contrast of the entire signal to let the rescued speech sounds appear clear.

1. Pittman et al. 2014 “Effects of Fast, Slow and Adaptive Amplitude Compression on Children’s and Adult’s Perception of Acoustic Information”, Journal of American Academy of Audiology (JAAA), Vol. 25, No. 9, 2014.

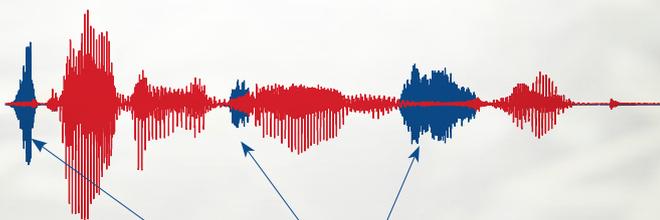


High frequency sounds missing = insufficient information



traw berry a m i weet

High frequency sounds made audible = a more complete speech signal



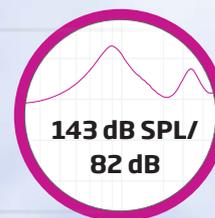
Strawberry jam is sweet

What does it mean for your patient?

- Gives the patient more speech details than ever before
- Helps the patient to perceive speech more clearly to support engagement in conversations
- Supports the patient's brain in making sense of sound for increased speech understanding

Full access to sound - NEW effective feedback control

Oticon Dynamo effectively controls feedback while providing continual access to speech and high-quality sound.



NEW

Inium Sense feedback shield^{SP}

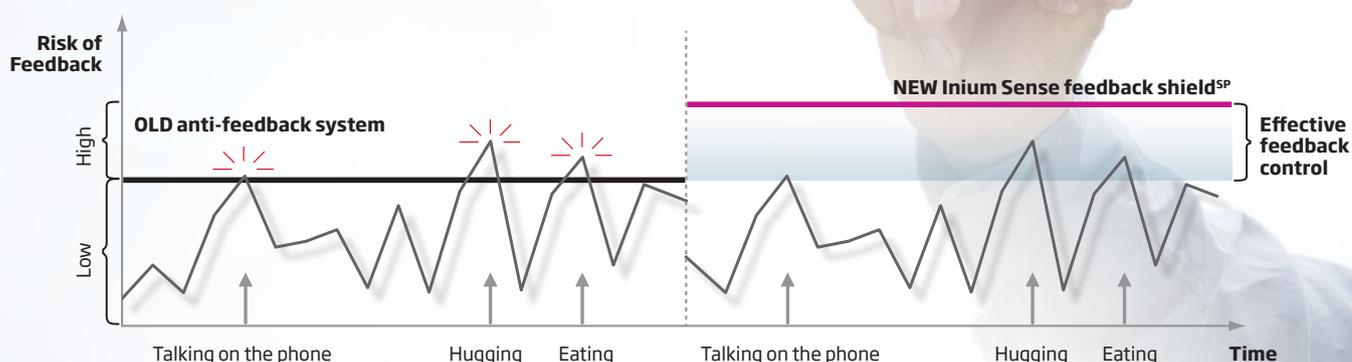
The Inium Sense platform and its new ultra-fast processor deliver a highly efficient feedback management system that has been specifically adapted to super power output levels. We call it the Inium Sense feedback shield^{SP}. This system is capable of **detecting** the risk of feedback much faster, **preventing** it more effectively and **eliminating** it more efficiently if it is about to occur.

The anti-feedback system in Dynamo is specifically designed for severe-to-profound hearing loss. It ensures feedback is managed at low frequencies without compromising sound quality. This is done by only using the frequency shift when necessary. In this way, feedback is always managed effectively across an extended frequency region while still keeping the carefully preserved speech details.

Triple Feedback protection

Inium Sense feedback shield^{SP} draws on three technologies to manage whistling and system instability close to the feedback limit: phase inversion, frequency shift and gain control. These are carefully applied based on both feedback detection and detection of speech. This provides the patient with high sound quality, while also enabling the targeted gain prescription.

Effective feedback control



Inium Sense feedback shield^{SP} lifts Dynamo out of the area of feedback risk by effective feedback control. When critical acoustic events occur as part of a typical day, effective feedback control ensures continuously high sound quality by eliminating feedback efficiently.





What does it mean for your patient?

- Give hugs without annoying whistling
- Prevents feedback while preserving high sound quality
- Makes phone conversations easier

Making it easier to change to new technology

People with severe-to-profound hearing loss rely heavily on their hearing aid as a trusted partner. This can make them hesitant to change to a new hearing aid. Oticon Dynamo's personalisation tools and fitting trimmers provide the tailor-made starting point to meet individual preferences, thereby easing the transition into new technology and increasing patient satisfaction.

Any new or upgraded technology introduces a period of acclimatisation before a patient understands and masters its full functionality and advantages.

It is a demanding process, regardless of whether the transition involves a new style of hearing aid, platform or manufacturer. Whatever the change, the brain must work harder to adjust from something known and familiar to something new.

Tailor-made power

Personalisation is a powerful tool that promotes patient-centred care. It has been shown that meeting the individual needs of the patient drives optimal hearing aid use.¹

This is particularly true for the severe-to-profound patient group, as they are experts in their own hearing and in what they want from a hearing aid.

Oticon's easy-to-use personalisation tool gives you an opportunity to address hearing experiences that are important to each and every patient. This type of approach can improve both their level of satisfaction and their acceptance of a hearing device.²

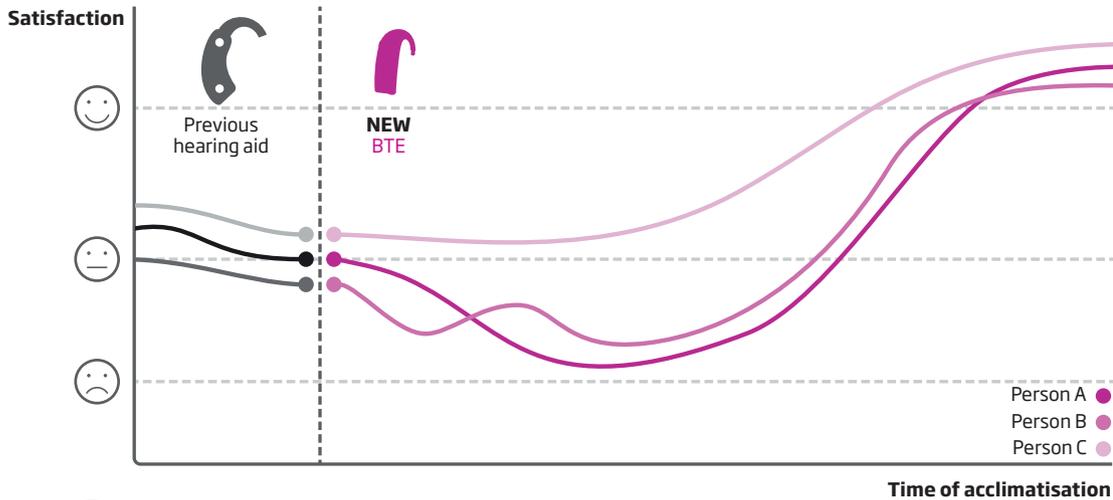
What does it mean for your patient?

- A listening experience customised to the patient's personal sound preferences
- Patient involvement for smoother transitioning to new hearing aid and greater satisfaction

1. Laplante-Lévesque A, Jensen LD, Dawes P, Nielsen C (2013) Optimal hearing aid use: Focus groups with hearing aid clients and audiologists. *Ear and Hearing* 34:193-202.
2. Grenness C, Hickson L, Laplante-Lévesque A, Davidson B (2014) Patient-centred care: A review for rehabilitative audiologists. *International Journal of Audiology* 52:1-8.



The journey of changing to new technology



The graph indicates the satisfaction experienced during a period of acclimatisation to a new sound scape for person A, B and C.

Personalisation with Oticon's Genie software

The personalisation process starts with the Preference Manager. By answering questions and listening to sound demos, your patient can define their sound preferences. Oticon's personalised fitting tool, YouMatic, is designed to use this information directly to prescribe the best personal

profile and settings to ease the transitioning to new technology.

As every patient is different, tailor-made prescriptions are needed for the optimal starting point and ultimately, patient satisfaction.



Confidence in **bimodal fittings**

Oticon Dynamo is the perfect choice of hearing aid for bimodal fittings. In Oticon's fitting software Genie, a short and simple flowchart guides you through the steps to program Dynamo to work with any brand of cochlear implant.

NEW

Fitting flow for bimodal balance

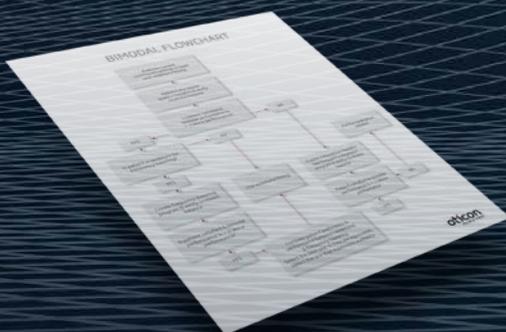
More and more cochlear implant (CI) patients choose to wear a hearing aid in the contralateral ear. This means it is most likely not a case of *if* you will be asked to manage a unilaterally implanted patient, but *when*. Currently, many of the hearing aids fitted together with CIs are poorly balanced¹. To bring bimodal benefits to all patients using Dynamo, Oticon has implemented a bimodal fitting guide in the fitting software, Genie.

Developed by experts at Boys Town National Research Hospital

The bimodal protocol in Genie combines the very latest research with a practical clinical approach. With a few simple steps the flowchart guides you to balance loudness and to shape the frequency response. The purpose is to provide your patient with the best possible acoustic settings to balance with CI mapping when fitting an implanted patient with a Dynamo hearing aid.

The bimodal fitting protocol takes into account the following fitting approaches:

- Wideband fitting
- Restricted bandwidth fitting
- Use of frequency lowering
- Loudness balancing



Oticon Dynamo and a cochlear implant. In a bimodal fitting, one ear is stimulated electrically and the other is stimulated acoustically.

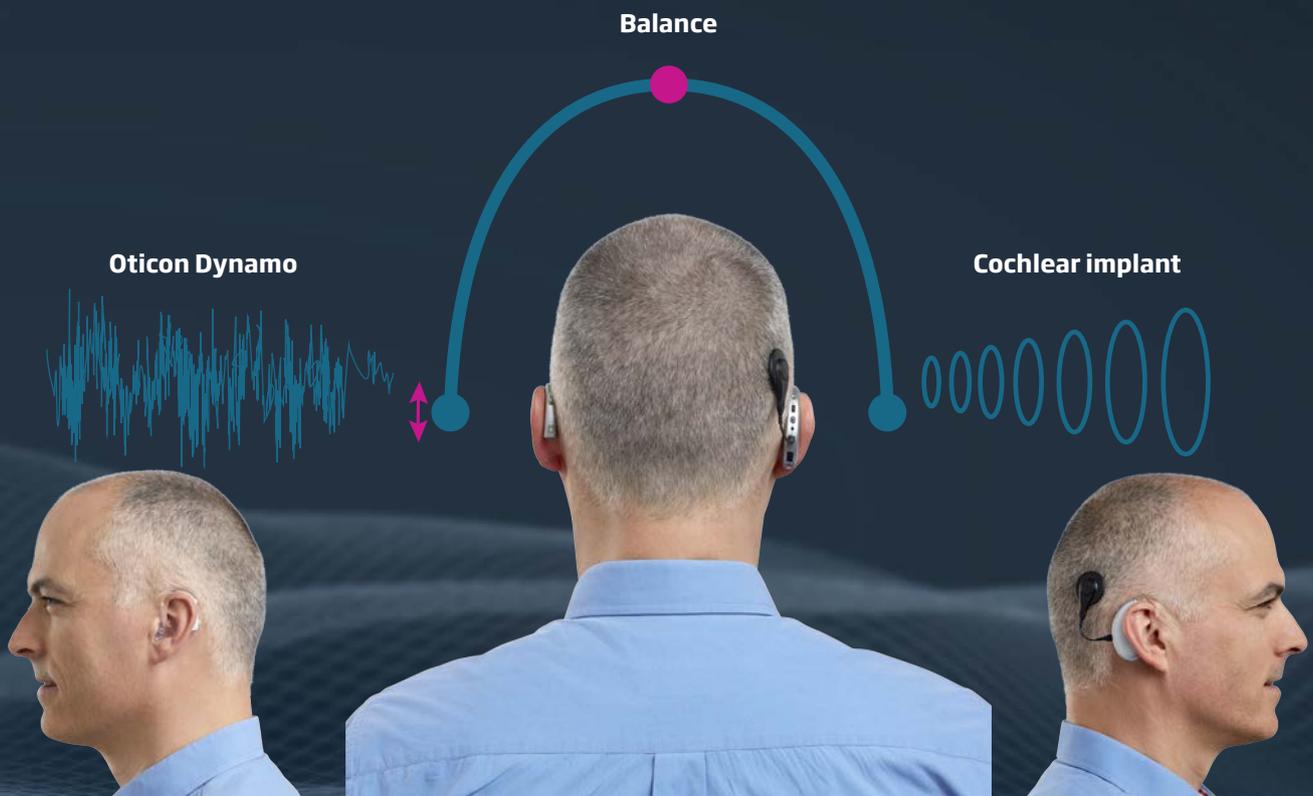
What does it mean for your patient?

- Optimised sound and music experience with both acoustic and electric sound^{1a, b}
- Higher quality of life in social activities²
- Improved ability to hear speech in noise³
- Better sound localisation skills⁴

- 1a. Sammeth et al. (2011). Bimodal Hearing or Bilateral Cochlear Implants: A Review of the Research Literature. *Semin Hear*, 32(01), 003-031.
- 1b. Ching et al. (2007). Binaural-bimodal fitting or bilateral implantation for managing severe to profound deafness: a review. *Trends Amplif*, 11(3), 161-192.
2. Farinetti et al. (2014). Quality of life in bimodal hearing users (unilateral cochlear implants and contralateral hearing aids). *Eur Arch Otorhinolaryngol*. Nov 6.
3. Schafer et al. (2011). A meta-analysis to compare speech recognition in noise with bilateral cochlear implants and bimodal stimulation. *Int J Audiol*, 50(12), 871-880.
4. Potts et al. (2009). Recognition and localization of speech by adult cochlear implant recipients wearing a digital hearing aid in the non-implanted ear (bimodal hearing). *J Am Acad Audiol*, 20(6), 353-373.

1. Yehudai et al. 2013. Functional status of hearing aids in bilateral-bimodal users. *Otol neurotol*; 34(4): 675-81.

Dynamo is the perfect choice of hearing aid for bimodal fittings



In a bimodal fitting, one ear is stimulated electrically and the other is stimulated acoustically. With Oticon bimodal fitting protocol you can provide each patient with the best possible acoustic settings to balance with CI mapping when fitting an implanted patient with a Dynamo hearing aid.

Powerful Solutions for every need

Oticon Dynamo is part of a diverse portfolio of powerful instruments. The portfolio includes a wide range of styles ranging from ITE Power, RITE Power and Plus Power in the Performance line, to dedicated paediatric SP instruments and even a 675 Ultra Power instrument.



Alta2/Nera2/Ria2

Plus Power

Plus Power is the world's smallest BTE13 with a MPO of 138 dB SPL. It will offer your patients with severe-to-profound hearing loss a long-awaited discreet fit. Plus Power offers up to 138 dB SPL output and 73 dB Full-On Gain.



Rite Power

miniRITE and RITE power solutions offer the most discreet fit and the well-known RITE sound quality. Your patients will benefit from a comfortable fit with a custom mould or a power dome. RITE and miniRITE power solutions offer up to 135 dB SPL output and 72 dB Full-On Gain.



ITE Power

With a full line of in-the-ear styles to choose from, your patients should be able to find precisely the style to suit their hearing needs and personal taste to feel confident all day long. ITE Power solutions offer up to 135 dB SPL output and 71 dB Full-On Gain.



Dynamo

Dynamo is Oticon's new Super Power hearing aid for patients with severe-to-profound hearing loss. This powerful instrument features a maximum power output of up to 143 dB SPL output and 82 dB Full-On Gain and fitting range up to 110 dB HL.



Sensei SP

Slim and robust, Sensei Super Power is built on the ultra-fast Inium Sense platform and is a powerful solution for your paediatric SP patients. Sensei SP features a maximum power output of up to 143 dB SPL and 82 dB Full-On Gain.



Sumo DM

Many people with severe-to-profound hearing loss can only hear low frequency sounds, so that's where Sumo provides more power. Sumo DM offers up to 144 dB SPL output and 85 dB Full-On Gain.

Dynamo Product Offering

		SP10 Premium	SP8 Advanced	SP6 Essential	SP4 Basic
Accessing speech details					
Speech Guard E		•	•		
Speech Rescue™		•	•	•	•
Inium Sense feedback shield ^{SP}		•	•	•	•
Personalising to individual preferences					
Maximal fine tuning options	YouMatic	•			
Calm		•			
Lively		•			
Gentle		•	•	•	
Exact		•	•	•	
Balanced		•	•	•	•
Comfort in noisy situations					
Spatial Noise Management		•			
Transient Noise Management		•			
TriState Noise Management		•	•		
Binaural Synchronisation		•	•		
Binaural Coordination		•	•	•	•
Basic Noise Management		•	•	•	•
Focus on speech understanding in noise					
Speech Omni mode		•			
Multiband adaptive Dir		•	•		
Tri Mode		•	•		
Back Dir		•	•	•	
Dual Mode		•	•	•	
Omni/split/full dir		•	•	•	•
Connecting to the world					
Power Bass		•			
Music Widening		•			
Special Purpose programmes		•	•	•	
Voice Priority <i>i</i> ™		•	•	•	
Wireless connectivity		•	•	•	•
Optimising fitting					
EasyRECD™		•	•	•	
Fitting Channels		9	8	6	4
In-Situ Audiometry		•	•	•	•
Overall loudness trimmer		•	•	•	•
Data logging memory		•	•	•	•

Dynamo instrument colours





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