



YouMatic is a BrainHearing™ technology powered by the Inium Sense platform that supports how the brain makes sense of sound. This technology is designed to personalize the settings of the hearing instrument based on each patient's unique needs and sound preferences. This ensures patients' devices are finely tuned to match the way each individual perceives sound.

Why personalization matters

No two people experience sound the same way. Even though two people may have the same audiogram, are the same age and are listening to the same sound, the way they hear and process sound is unique. A number of factors influence how we perceive sound, including the acoustic and learned properties of sound, the surrounding context, input from other senses, the relative desire for a "seamless" sound experience and the listener's personality and mood.

Today's modern hearing devices offer a significant amount of flexibility in the setting of advanced signal processing features. Information about how to set the gain and compression is often provided, but figuring out how to set the instrument's other advanced features can be a daunting task. Because of this, many advanced features are often left in the manufacturer's recommended settings. This one-size-fits-all approach goes against Oticon's belief that a hearing solution should be tailored to meet the needs of the user. Oticon's YouMatic system is designed to ensure a patient's personal needs and preferences are taken into account when the instrument's advanced features are set.

Personal Profiles

In order to make the advanced signal processing in our hearing devices better match these individual needs and preferences, we have created personal Profiles. Each of our Personal Profiles (Lively, Exact, Balanced, Gentle and Steady) provides a different listening "scheme" that accounts for different preferences and processing abilities by managing the directionality, noise management, transient management and compression settings of the hearing instrument.

As a listening situation gets more complex, the hearing instrument needs to provide more listening support (the use of advanced signal processing in complex listening environments) for the hearing instrument user. A patient's Personal Profile helps determine when a situation is complex enough to require help and how much listening support is needed. For example, the Steady profile provides support at lower complexity level than the Lively profile. This means that listening support is provided most of the time for the patients with the Steady profile, but less of the time for patients with the Lively profile, depending on the current listening environment.

YouMatic

YouMatic is a control system designed to coordinate the instrument's advanced signal processing features. The level of listening support is based on each user's unique hearing profile and personal sound preferences. YouMatic uses the patient's Personal Profiles to define a group of settings that match the user's needs and processing abilities. The instrument constantly analyzes the acoustic environment by looking at parameters such as:

- Input level
- Type of input signal
- Signal-to-noise ratio of the input level
- Change in the input level (short- and long-term)
- Binaural level differences
- Binaural signal-to-noise ratio differences

Based on this information and the Personal Profile setting, YouMatic determines which individual instrument setting is best for the situation.

► At the initial fitting

The initial Personal Profile is determined by information gathered about the patient through a structured set of questions and sound samples, including:

- Hearing Thresholds
- Age
- Perceptual preferences based on auditory lifestyle
- Sound quality preferences
- Listening style
- General responses to sound and noise

► After the initial fitting

The Personal Profile and YouMatic settings can be further fine-tuned during optimization or follow-up appointments. With YouMatic, you are able to accommodate the individual user's preferences to the response and sound of the hearing instrument in situations encountered throughout the day.

Adjustments can be made based either on:

- the patient's reports of device performance in everyday listening environments
- the use of sound samples to compare alternative Personal Profile settings

► YouMatic performance levels

YouMatic is used in all of our Inium Sense product families and is available at three different performance levels and price points (see tables below).

Feature version	Available in family	Settings in VAC+ rationale	Settings in NAL rationale
YouMatic Premium	Alta	5 main proles; 15 steps	3 main proles; 9 steps
YouMatic Advanced	Nera	3 main proles; 7 steps	3 main proles; 7 steps
YouMatic Essential	Ria	N/A	3 main proles

YouMatic and Personal Profiles

The chart below shows the relationship between Personal Profiles and BrainHearing™ technologies. The Personal Profiles influence how quickly the instrument transitions between settings, and how much help the patient receives from the automatic systems in the instrument.

		LIVELY	EXACT	BALANCED	GENTLE	STEADY
Free Focus Directionality	Omni type (typical HTLs):	OptOmni	OptOmni	OptOmni	SpeechFocused	SpeechFocused
	Omni type (severe HTLs):	OptOmni	OptOmni	OptOmni	OptOmni	OptOmni
	LF compensation (typical HTLs):	Off				
	LF compensation (severe HTLs):	On				
	Polar response change:	Faster				Slower
	Directional mode change:	Faster				Slower
S/N to initiate a mode change:	Lower				Higher	
Tri-State Noise Management	Sensitivity of modulation analysis:	Biased towards "Speech"		Biased towards "Noise"		
	Speed to attenuate noise:	Faster				Slower
	Attenuation- speech + noise:	Less (4-6 dB)				More (4-6 dB)
	Attenuation - noise only:	11-12 dB				
Transitional speed between modes:	Faster				Slower	
Multi-channel Compression	Recovery speed after input drop (Speech Guard E):	Faster				Slower
	Attack time (non-Speech Guard E):	Longer (max. 10ms)				Shorter (max. 5ms)
	Release time (non-Speech Guard E):	Shorter (80 - 160 ms)				Longer (1280 - 2560 ms)
	Low level gain:	Increased				Decreased
Transient Noise Management	Sudden sound extra protection:	Off	Off	Medium	Medium	Medium
Binaural Noise Management	S/N difference between ears to activate	-10dB	-7.5dB	-5dB	-2.5dB	-2.5dB

Key takeaways

- YouMatic enables Oticon hearing instruments to be finely tuned to match each patient's unique hearing profile and personal sound preferences
- Personalization profiles help determine how much extra help the hearing instrument will provide the patient
- Patients experience a more comfortable, familiar sound experience because it's designed to adjust to them rather than them having to adjust to it

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To learn more about Oticon technologies that support BrainHearing™ visit www.pro.oticonusa.com.