

Edge Mode+

Better Hearing Has Never Been Easier

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Hear better. Live better.

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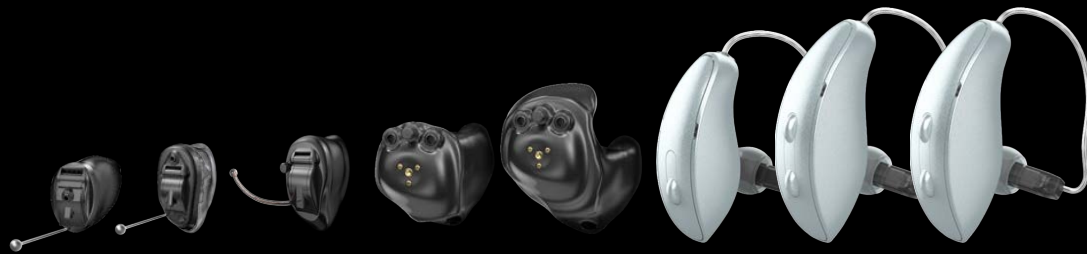
Learner Outcomes

- 1 List the products and technology levels that have Edge Mode+ available.
- 2 Describe the patient benefits of Edge Mode+.
- 3 List the listening intent options available in the My Starkey app.

**Better hearing
has never
been easier**



GENESIS^{AI}



Signature
SERIES



Neuro Sound Technology

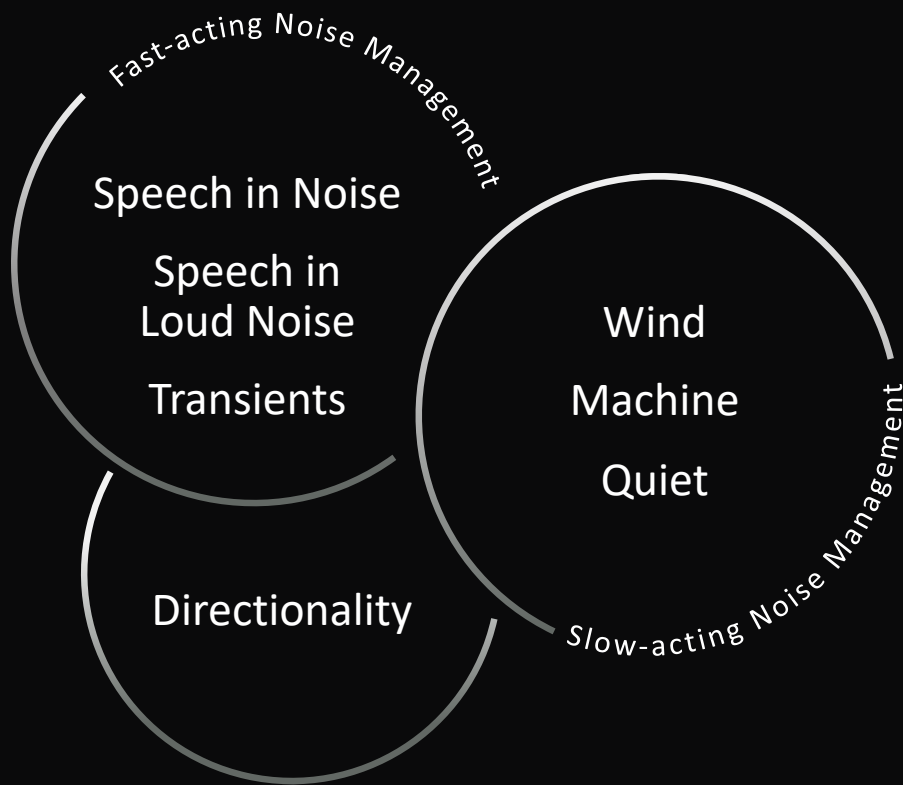
Adapts more quickly to deliver
crystal-clear, transparent sound
quality to patients

80 million

hearing adjustments every hour



Neuro Sound Technology



Artificial Intelligence
Acoustic Classification
Per channel every 6 ms



Real-Time Binaural
Signal Processing



Adaptive Directionality



Adaptive Feedback Cancellation

100+
Sound Quality Patents

Our Best Sound Quality Yet



Additive compressor



**20 dB improvement
in dynamic range**



**e-STAT 2.0
proprietary fitting
formula**



**Improved accuracy
of environmental
sound classification**

Edge Mode+





Edge Mode+

Our first use of Deep Neural Network (DNN) noise reduction algorithms in the hearing aid

EXCLUSIVELY
24, 20 & 16
TECHNOLOGY

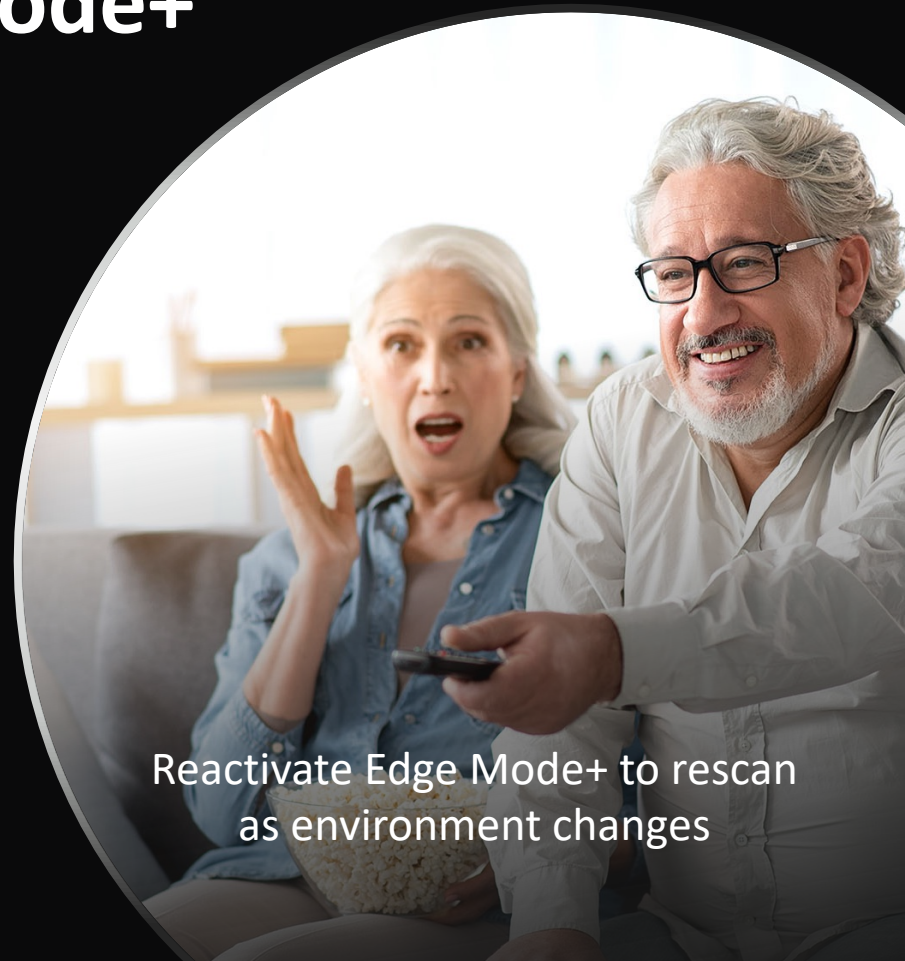
Real-time analysis of environments for advanced level of comfort and clarity

Unique adaptation for any environment when engaged

Settings are fixed once engaged

Disengage and engage to accommodate changes to listening environments

Edge Mode+



GENESIS^{AI}



CIC

ITC R

ITE R

mRIC R

RIC RT

RIC 312

ALL
NEW

Signature
SERIES



CIC R
(NW)



CIC
(NW)



An Extra Edge

Both Starkey Signature Series CICs provide the power of Edge Mode+ via the push button. Giving custom wearers the ability to optimize their environment – wherever they are.



CIC R NW



CIC NW

EXCLUSIVELY
24
TECHNOLOGY



EXCLUSIVE
24, 20, 16
TECHNOLOGY

EXCLUSIVE GENESIS AI
24
TECHNOLOGY



Edge Mode



**Automatic
Edge Mode+**



Automatic Edge Mode+

The industry's first-of-its-kind intelligent, on-demand noise management and comfort feature continues to scan, adapt, and optimize as the wearer changes environments or as the environment they're in changes

**Edge Mode+ will remain for the 20 & 16 technology tiers*

EXCLUSIVE
24
TECHNOLOGY

Automatic Edge Mode+

Continues to scan, adapt and optimize as the acoustic environment changes, ensuring the most appropriate settings are always applied in a dynamic world



Activate Edge Mode+

Automatically rescans as environment changes

GENESIS^{AI}

EXCLUSIVE
24
TECHNOLOGY



CIC

ITC R

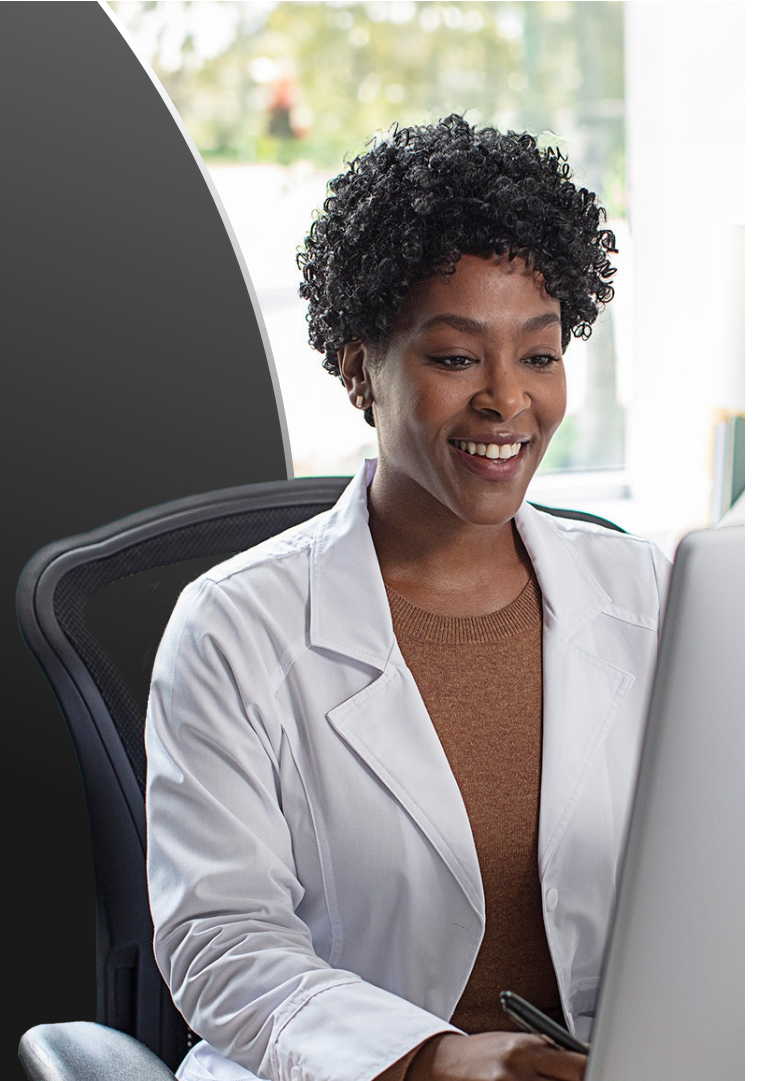
ITE R

mRIC R

RIC RT

RIC 312

Activation



GENESIS AI
24, 20, & 16



Patient Driven Controls

Listening Intent

Best Sound

Automatically optimizes sounds for current environment

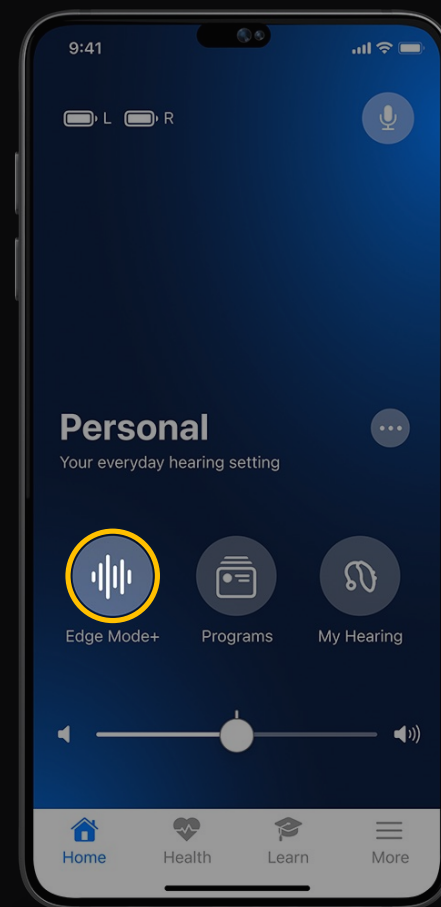
Enhance Speech

Tap to gain clarity and hear others more clearly

Reduce Noise

Tap to gain even more comfort by further reducing background noise

EXCLUSIVELY
24 & 20
TECHNOLOGY



Patient Driven Controls

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EXCLUSIVELY
24 & 20
TECHNOLOGY

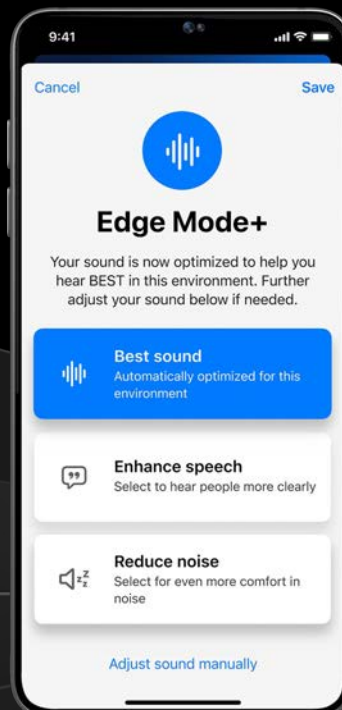


Tech Tier Differences

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24, 20, & 16

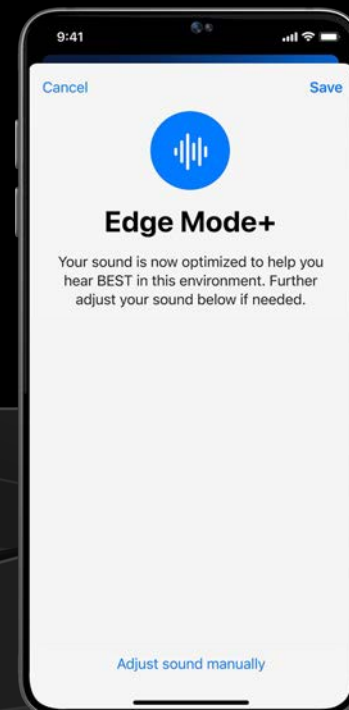


GENESIS AI
24 & 20



GENESIS AI
16

Edge Mode+ on/off only



GENESIS AI **24**
SIGNATURE SERIES **24**

GENESIS AI
24, 20, & 16

GENESIS AI
24, 20, & 16

*Short Press or Double Tap
user control**



*Technology dependent



Patient Benefits

On-demand adjustments
made for the listener

More adjustments than can
be achieved through
My Starkey or Pro Fit

Eliminates the need for
hearing aid programs

Speech Understanding in Noise

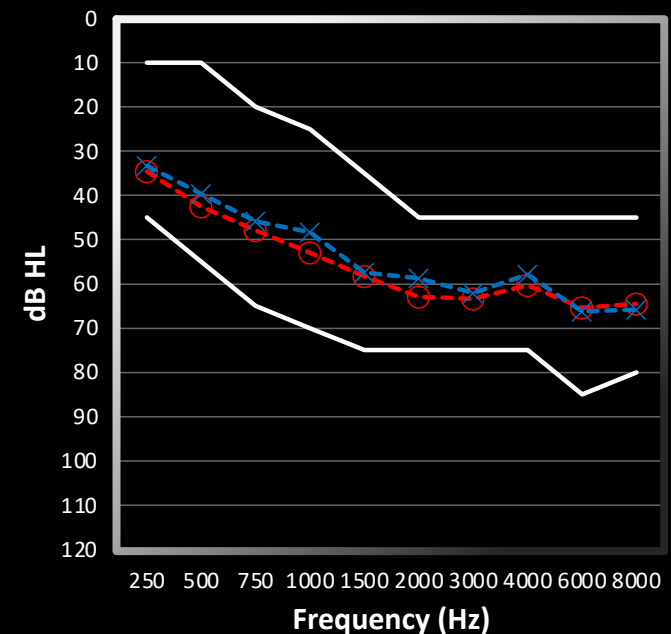
Participants

- 12 Experienced hearing aid users
- 5 females, 7 males
- 42-84 years (mean 71.1 years)

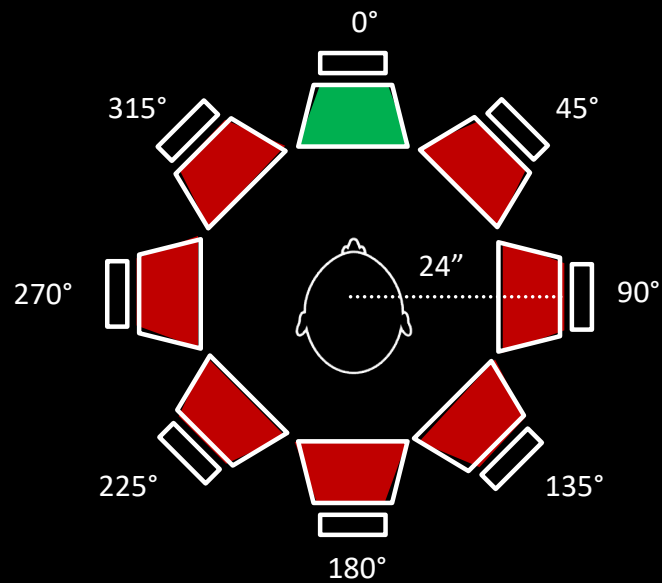
Hearing Aid Fitting

- Starkey Genesis AI 24 RIC Devices
- Audiometrically appropriate coupling
- e-STAT 2.0 Fitting Formula

Mean and Range of Audiometric Thresholds



Speech Understanding in Noise



Conditions

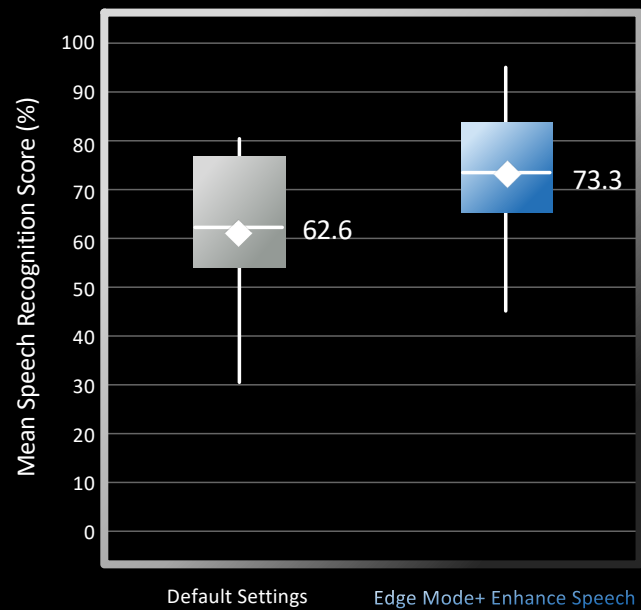
- Default Hearing Aid Processing
- Edge Mode+ Enhance Speech

Speech

- IEEE Sentences
- Presented at individualized level to achieve ~70% speech understanding with default hearing aid processing

Noise

- Restaurant Noise at 63 dB A



Speech Understanding in Noise

Edge Mode+ resulted in **significantly better speech recognition in noise** than default hearing aid settings

Good to Know





ALL PRODUCTS

Edge Mode+ is available in all
acoustic programs

Pro Fit feature settings do not
impact the adjustment capability
provided by Edge Mode+

Works on a CROS Receiver



ALL PRODUCTS

Not available during

iPhone/Android Streaming
2.4 GHz Accessory Streaming
E2E Phone Streaming
Telecoil Memories
(Telecoil or Loop)

Turns OFF when

Program Changes
An E2E phone stream
(e.g.: Right Send Signal to Left)
Sleep Mode
Auto Sleep

FAQs

Can my patients remain in Edge Mode+ all day?

Yes, but it doesn't mean they should.

FAQs

How is Edge Mode+ different from a regular hearing aid program?

Edge Mode+ is able to provide more aggressive changes to gain, directionality, and noise reduction than regular hearing aid processing.



Uncompromising Sound.
Unrivalled Ease.

Learn More

Starkey: No Rest for the Best

Neuro Sound Technology:
Breaking the Sound Barrier

Resources

Edge Mode+

Giving patients control of what they want to hear when it matters most

How it helps

Edge Mode+ is Starkey's second generation intelligent, on-demand feature that enables instant, powerful speech audibility and noise management adjustments when patients need it most. Edge Mode+ gives patients the ability to automatically select when they need more help, eliminating the need for manual programs.

How it works

Once activated, Edge Mode+ instantly conducts an acoustic analysis of the listener's environment and harnesses Deep Neural Network computing to make automatic adjustments to gain, noise management, and directionality. With Genesis AI, patients can now select their listening intent—enhance speech or reduce noise—to further personalize their Edge Mode+ setting. When the patient moves out of that environment, they simply deselect Edge Mode+ and enjoy the automatic noise management adjustments that the hearing aids provide.

Perceived Benefit

Category	Benefit
Overall	91%
Satisfying Listening Intent	91%

0% 20% 40% 60% 80% 100%

Figure 2: Clinical testing responses that indicated a benefit of Edge Mode+ (overall and satisfying listening intent) in 91%.

Where to find it

Genesis AI
24 20 16 12
User Control Personalization App Control

Figure 1: Edge Mode+ control appears in the My Starkey mobile app.

Patient Feedback

“Edge Mode+ is impressive. It worked so good. It was almost unsettling at first because I felt like I wasn't hearing well, and then what I realized is I wasn't hearing the noise well, but I was understanding voices perfectly.”

Source: Starkey clinical testing data. Clinical testing conducted in a controlled hearing room. All participants were hearing aid users. All participants were given a 30-day trial of Edge Mode+ and then completed a survey. Data collected from 100 participants. © 2023 Starkey Hearing Technologies. All rights reserved. 100% Satisfaction Guarantee.




Feature Summary

On-demand processing improves speech recognition and listening effort in hearing-aid users

Brittany N. Jaskel, M.S. Ph.D., Jingjing Xu, Ph.D.

Introduction

Understanding speech in noise remains difficult for hearing aid users.¹ For the Marketrak 2022 survey, hearing aid users were least satisfied with their ability to hear in the following listening situations: in a classroom or movie theater (70% satisfaction), conversations in noise or conversations with large groups (75% satisfaction), and in a lecture hall (75% satisfaction) – that is, environments that may be more difficult to hear in and contain many talkers.² While hearing aids have sophisticated noise reduction strategies, the Marketrak 2022 survey also found that the noise reduction capability of hearing aids was an area of least satisfaction among hearing aid users queried about the sound quality of their devices (i.e., 21% of respondents reported being dissatisfied or neutral on this metric).³

Beyond noise reduction strategies, acoustic environmental classification (AEC) is a feature of modern hearing aids that identifies and classifies the current listening environment, and then automatically applies environment-specific changes to the hearing aid's gain, microphone settings, and compression, in addition to noise reduction settings.⁴ These environment-specific changes aim to improve speech intelligibility in a variety of listening situations; however, the classifier may sometimes be inaccurate, or the adjustments made by AEC may not be strong enough to combat noise in particularly challenging edge cases, resulting in unsatisfactory outcomes.

In order to address these unmet needs, implementing an on-demand option for hearing aid users is highly desirable. One tool aiming to help Starkey hearing aid users in the aforementioned challenges is called Edge Mode+, which is an on-demand processing feature guided by artificial intelligence (AI).

How Edge Mode+ Works

Edge Mode+, when activated by the hearing aid user, prompts the hearing aid to classify the current acoustic environment and then apply additional specialized setting changes to noise reduction, directional microphone, gain, etc., over and above those supplied by AEC. These specialized setting changes are specific to the listener's current environment as well as the listener's goal, thus optimizing the user's listening experience. For example, a listener wanting to hear people more clearly might select Edge Mode+ Enhance Speech, while a listener wanting more comfort in noise might select Edge Mode+ Reduce Noise. These classification and adaptation schemes were derived via machine learning, in which models were trained on a large number of real-life sound recordings, and further refined via input from both practitioners and listeners.

One goal of Edge Mode+ is to improve user outcomes – like speech understanding and listening effort – in the most difficult listening scenarios, while also adjusting for the user's intent for the listening interaction. In this article, results from two lab-based studies demonstrate the benefits of the Edge Mode+ feature in Starkey's Genesis AI hearing aids.

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White Paper



Thank You