Rewiring Noise:
Why GRAS Is the GAME-CHANGER for Noise-Sensitive Minds

For some people, the sound of a kettle boiling or a distant conversation isn't just background—it's overwhelming. Scientists now know why.

Research has revealed that noise sensitivity is not "all in the mind," but deeply rooted in the brain's wiring. https://www.bbc.com/future/article/20250804-inside-the-brains-of-noise-sensitive-people

In noise-sensitive individuals, neural pathways respond more intensely to sound—whether it's a sudden car horn or the hum of an air conditioner—activating stress responses and impacting concentration, mood, and even long-term health.

This discovery matters. Because if we can measure, understand, and design for those sensitivities, we can create products, spaces, and policies that make life quieter, healthier, and more inclusive.

Where GRAS Fits In

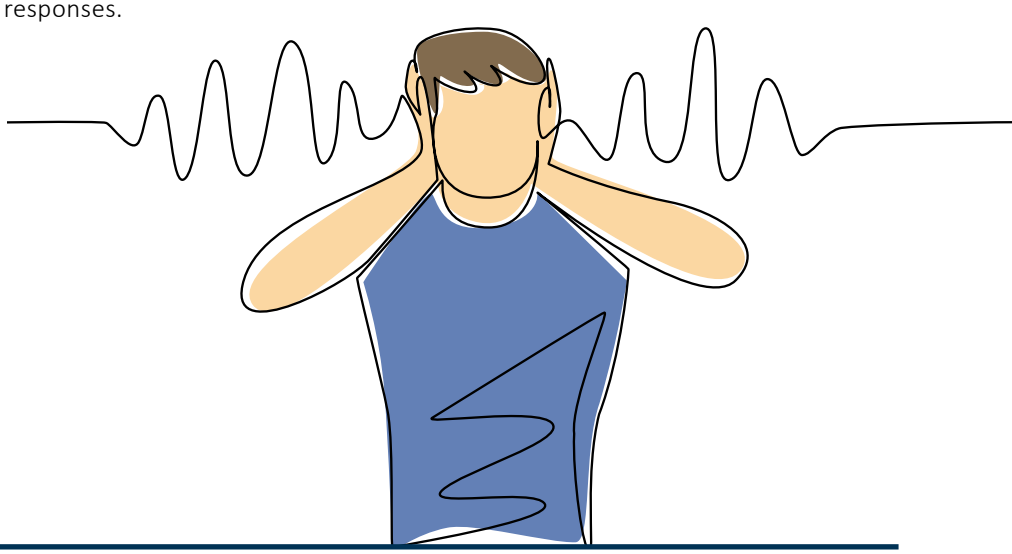
At GRAS Sound & Vibration, precision is more than a promise—it's a science. For over 30 years, GRAS has been at the forefront of acoustic measurement, developing microphones and test systems trusted by researchers, engineers, and product developers worldwide. When the goal is to capture sound exactly as it is experienced—down to the smallest nuance—GRAS delivers.

Noise sensitivity isn't just about loudness; it's about frequency, tone, and context. That's why accurate measurement is critical. Our solutions enable:

Medical and neuroscience research: Measuring the exact acoustic triggers that activate heightened brain responses.

Product design and validation: Helping manufacturers create quieter appliances, vehicles, and devices for sensitive users.

Urban and environmental planning: Providing reliable data for building codes, noise regulations, and soundscape improvements.



How GRAS Supports Different Industries

GRAS microphones are designed for precision in challenging environments—and each industry has unique needs:

Industry	Challenge	GRAS Microphone Solutions	Example Use
Automotive	Measuring in-cabin noise and exterior pass-by sound under real driving conditions.	**GRAS 147AX CCP Rugged Pressure Microphone, GRAS Auto Array PR0003/PR0004, GRAS 146AE.**	Fine-tuning cabin acoustics to improve passenger comfort and reduce fatigue for noise-sensitive drivers.
Consumer Electronics	Capturing headphone, earbud, and speaker performance exactly as a user hears it.	**GRAS 45BB KEMAR Manikin, GRAS 46BL ½" Free-field Microphone.**	Ensuring audio devices reproduce sound without frequencies that can trigger discomfort.
Aerospace	Testing cockpit and cabin noise under extreme conditions.	**GRAS 146AE CCP Free-field Microphone, GRAS 48LA.**	Designing aircraft interiors for reduced noise exposure over long flights.
Healthcare & Research	Studying brain responses and patient sensitivity to different acoustic profiles.	**GRAS 40HL ¼" High-frequency Microphone, GRAS 46AE ½" Free-field Microphone.**	Supporting clinical research into noise sensitivity, tinnitus, and auditory disorders.
Environmental Monitoring	Measuring urban and industrial noise for compliance and public health.	**GRAS 146AE Outdoor Microphone Kit, GRAS 41AC.**	Guiding city planning to reduce noise pollution and improve quality of life.

From Data to Difference

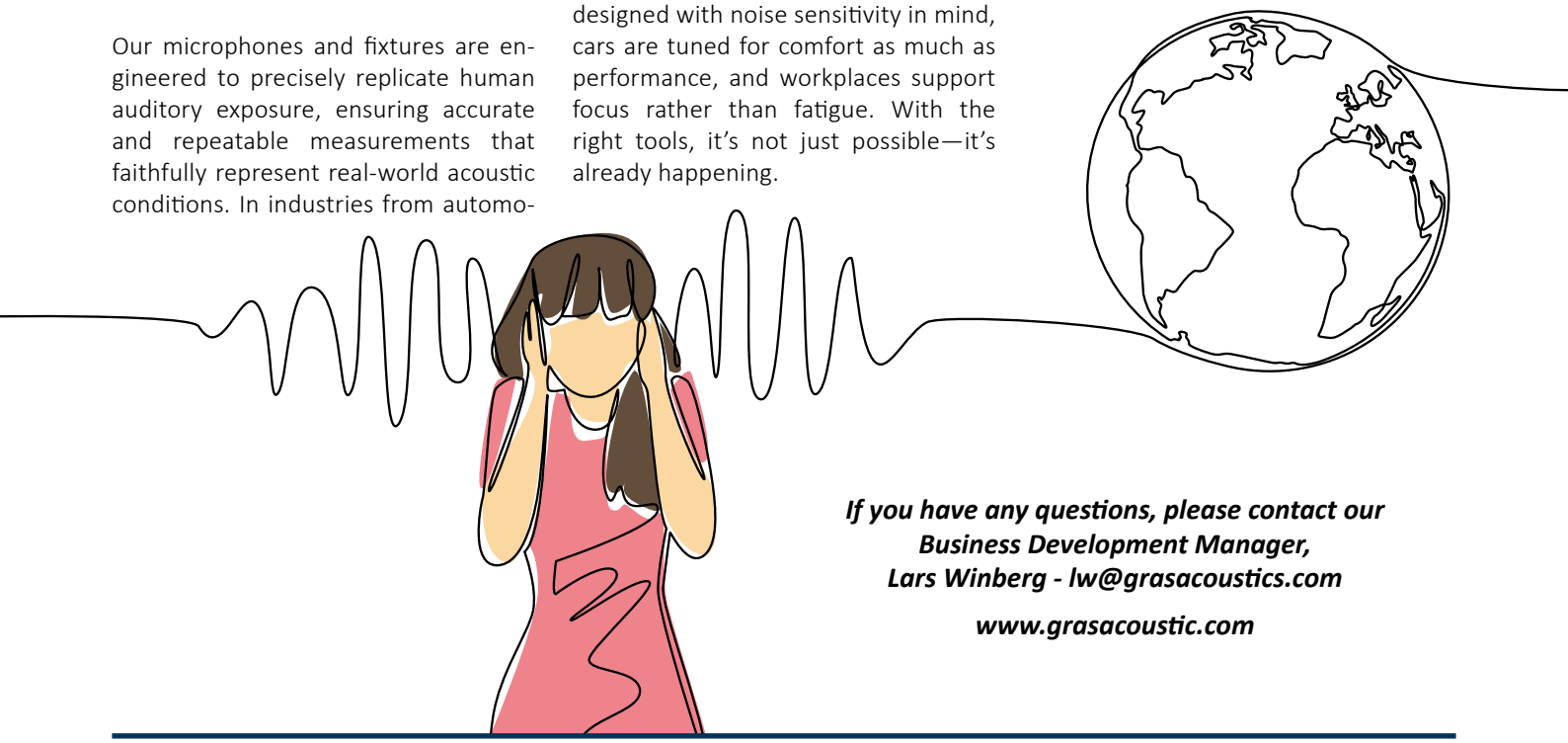
The BBC's recent exploration into the "brains of noise-sensitive people" underscores a shift: sound is no longer just an engineering challenge—it's a human one. GRAS helps bridge that gap between science and real-world impact.

Our microphones and fixtures are engineered to precisely replicate human auditory exposure, ensuring accurate and repeatable measurements that faithfully represent real-world acoustic conditions. In industries from automotive to healthcare, we help innovators build environments and technologies that protect mental well-being.

The Future Is Quieter

Imagine a city where public spaces are designed with noise sensitivity in mind, cars are tuned for comfort as much as performance, and workplaces support focus rather than fatigue. With the right tools, it's not just possible—it's already happening.

By combining cutting-edge neuroscience with GRAS' precision measurement technology, we can help "rewire noise" for a world that listens better—to both sound and people.



If you have any questions, please contact our Business Development Manager, Lars Winberg - lw@grasacoustics.com

www.grasacoustic.com