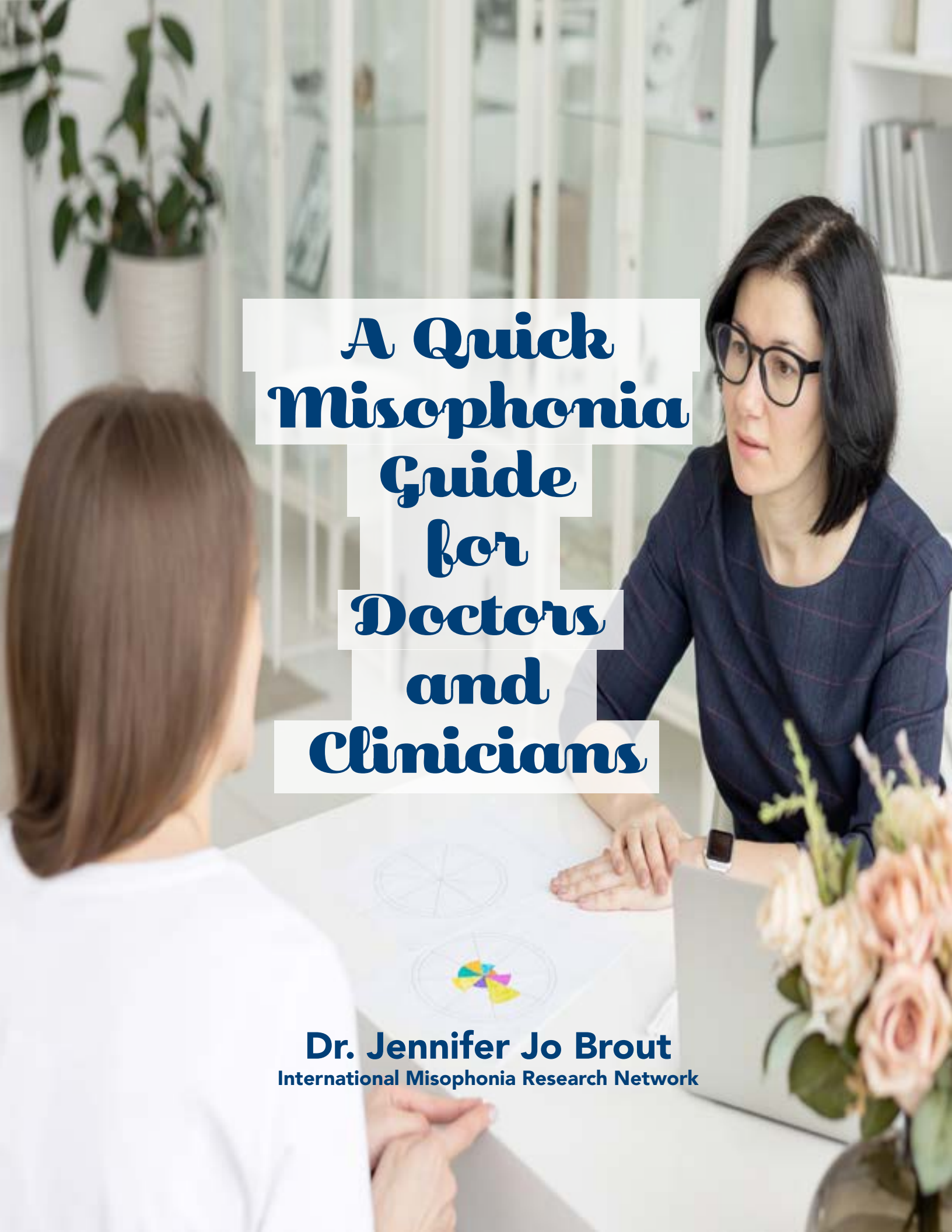

A Quick Misophonia Guide for Doctors and Clinicians

Dr. Jennifer Jo Brout
International Misophonia Research Network

What is Misophonia?

Research on misophonia is in the early stages, and therefore, the prevailing definition of the disorder is subject to change. Misophonia has been described as a neurologically based disorder characterized by heightened nervous system reactivity (e.g., irritation, anger, anxiety) in response to a decreased tolerance for specific sounds (Brout et al., 2018; Cavanna & Seri, 2015).

Early research suggests that the brains of people with misophonia behave differently than others (Kumar et al., 2017; Schröder et al., 2019). Images of neural function demonstrate that when an individual with misophonia is exposed to certain sounds, there is increased activation and connectivity in brain areas associated with fight–flight, emotional processing, and unconsciously mediated auditory and visual attention. This means that an individual with misophonia will experience the physiological symptoms associated with fight–flight such as sweating, increased heartbeat, and hormonal changes, alongside cognitive and emotional changes.

More recently, research informs us that the motor system is also involved in misophonia. Specifically, Kumar et al. (2021) used fMRI studies to demonstrate that there is connectivity between the auditory and orofacial motor cortices (Kumar et al., 18, 2021). Sounds, from this new perspective, are a 'medium' in which a motor action of the trigger sound or visual is "mirrored onto the listener." In other words, it is as if the individual with misophonia can feel in their own body that which they are hearing/seeing. What we are talking about here are mirror neurons. Kilner & Lemon (2013) explain the significance of motor neurons:

Mirror neurons are a class of neuron that are activated both when an individual executes a specific motor act and an individual observes a motor act performed by another... The discovery of motor neurons prompted the notion that, from a functional viewpoint, action execution and observation are closely-related processes, and indeed that one's ability to interpret the actions of others requires the involvement of one's own motor system.

This research reframes our understanding of misophonia to include motor processing and may also offer understanding as to why misophonia sounds often center around the mouth.

These findings also reveal why exposure and cognitive behavioral therapies alone have not been successful. Kumar et al. (2021) suggests that "effective therapies should target the brains representation of movement" (Kumar et al., 3, 2021). Until there are more specific therapies, this coping skills approach serves to help parents assist their child work within multiple sensory-motor modalities to affect change.

While the Kumar et al. (2021) study tells us that sounds represent the action-oriented motor mirroring, we are still dealing with sounds (and visual stimuli) as the conduit of that action. Similarly, while we don't yet know how the mirror neuron hypothesis will affect treatment, we do know that the key to coping is learning how to de-escalate the nervous system.

2018 Literature Review and Consensus Definition

Please read the entire Literature Review here: https://www.frontiersin.org/articles/10.3389/fnins.2018.00036/full

For Consensus Definition: https://misophonia.duke.edu/events/what-misophonia/consensus-definition-misophonia-here

The International Misophonia Research Network (IMRN)

Dr. Jennifer Jo Brout established The International Misophonia Research Network (IMRN) in order to facilitate cross-disciplinary Misophonia research. Disappointed by her own experiences with the state of the field when seeking help for her own child in 1999, Dr. Brout began efforts to establish better research practice, improved diagnosis, and innovative clinical practice related to individuals with difficulties processing sensory information (with a particular focus on auditory over-responsivity). Dr. Brout established the Sensation and Emotion Network (SENetwork) in 2007 and founded the Sensory Processing and Emotion Regulation Program at Duke University in 2008 (with funds from her family foundation). The Sensory Processing and Emotion Regulation Program was renamed the Misophonia and Emotion Regulation program in 2015 (now Duke CMER)

The International Misophonia Research Network advisory board features professionals from many disciplines, and the advisory board can be found here:

https://misophoniaresearch.net/

Misophonia Treatment

Misophonia treatment has been a source of great confusion for doctors, therapists, and sufferers alike. Currently, we are without a validated treatment for misophonia. Audiologists offer ways to layer and mask sound, which are reliably helpful (as reported by those with misophonia). Various Cognitive and Behavior therapies have also been trialed, yet without consistent results. Graded exposure therapy has proved highly uncomfortable to sufferers and does not result in positive change or a reduction of triggers. In the absence of a treatment, coping skills and lifestyle changes are often helpful, particularly when approached in a multi-disciplinary manner.

Misophonia Provider Network

Providers interested in helping Misophonia patients in their areas can be listed on the Misophonia Provider Network. A short class is offered to providers for listing on the network. The Misophonia Provider Network was formed along with the International Misophonia Research Network (IMRN) in order to connect individuals to a cross-disciplinary network of researchers and professionals. Our provider network does not allow providers to simply list with us. Rather, we try to ensure that the providers associated with our Network understand Misophonia from an interdisciplinary perspective and have a working knowledge of the scope of Misophonia research and clinical practice standards.

Dr. Jennifer Jo Brout formed the IMRN in order to facilitate cross-disciplinary research in Misophonia and conditions related to auditory over-responsivity. The IMRN connects sufferers and researchers to accurate and current information related to the disorder. The IMRN supports science that informs treatment and better practice standards for Misophonia. The IMRN does not accept donations and instead facilitates research through crowd sourcing and other funding strategies. You can find the provider network at:

https://www.misophoniaproviders.com/

An Introduction to Misophonia for Clinicians

This course is for clinicians and misophonia treatment providers. It provides an overview of misophonia, and the basics of misophonia research and coping skills with the most current and to date research available. The format is in video recordings and text. You can work at your own pace with no deadlines. If you have watched some of the presentations in the past, feel free to only watch those you have not yet seen.

Participants of this course are eligible to be listed on the Misophonia Provider Network as a treatment provider. For more information:

Please contact jb@drjenniferbrout.com

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Misophonia Links and Resources

https://misophoniaresearch.net/
International Misophonia Research Network.

http://www.psychologytoday.com/blog/noises
Blog by Dr. Brout on Misophonia research and coping.

https://www.misophonia.duke.edu/

The Duke Center for Misophonia and Emotion Regulation (CMER) is actively conducting clinical research on misophonia, providing education to the public, and evaluating patients with treatment and management recommendations about misophonia.