

ANOSMIA NEWS from MONELL



September 2020

Welcome to the latest issue of Anosmia News from Monell.

Research Roadmap for the Future

We know that smelling can be a frustrating topic for many of you, but did you know that over 12% of the U.S. population will experience some type of loss of smell and taste? Even so, long-term, effective treatments are elusive.

Monell, together with the University of Florida Center for Smell and Taste and the Rocky Mountain Taste and Smell Center at the University of Colorado School of Medicine, hosted the "Identifying Treatments for Taste and Smell Disorders" conference in November 2018. [This two-day conference](#) was funded by the National Institute on Deafness and other Communication Disorders, Kerry, and others. This gathering was a first-of-its kind event that included multiple international researchers, patients, and clinicians. The conference's outcomes were summarized in a review paper published in July 2020 in the journal *Chemical Senses* and [available here in full](#).



Suggested next steps from the meeting are focused in three areas:

- Increasing awareness and advocacy
- Developing and enhancing clinical approaches for smell loss
- Supporting new research on cellular aspects of smell loss

On the awareness front, there is now a group of individuals forming the first U.S.-based anosmia awareness advocacy organization, with Monell serving as scientific advisors. More updates on this to come in the next newsletter.

The suggested clinical approaches include mining big data sources such as electronic health records, better communicating with primary care physicians, and finding new ways to evaluate chemosensory disorders, all to bring quicker solutions to solving health issues related to smell loss. The [Changing the Conversation virtual panel discussion](#) in April 2020 started the dialogue between patients and scientists in advancing smell loss research.

Immediate basic research priorities include expanding our understanding of specific responses of chemosensory cells and developing assays to identify and document cell development, regeneration, and function. To that end, Associate Member [Hong Wang, PhD](#), recently began a new study looking for potential treatments for anosmia caused by respiratory viral infection, which was made possible by the support of our generous donors. Other new studies will be added as funds are raised.

Brain and Behavior Changes with Anosmia, with Johan Lundström

Wiring in the brain can be altered by deficits in the ability to smell, but what other physical changes can occur? Associate Member [Johan Lundström, PhD](#), and faculty in Clinical Neuroscience at the Karolinska Institutet in Stockholm, Sweden, [recently demonstrated](#) that a life without smelling any odors (congenital anosmia) does not lead to widespread changes in the structure of brain areas governing smell, only in the orbitofrontal cortex, which is contradictory to what has been seen in similar studies on sight and hearing. Similarly, a follow-up study, [currently in preprint form](#), on the same population of people with congenital anosmia did not find any change in connections between neurons in olfactory areas at rest. Lundström says that these results fly in the face of existing dogma in the field of neuroplasticity, which studies how the brain reorganizes itself by forming new neural connections throughout life.



Dr. Johan Lundström

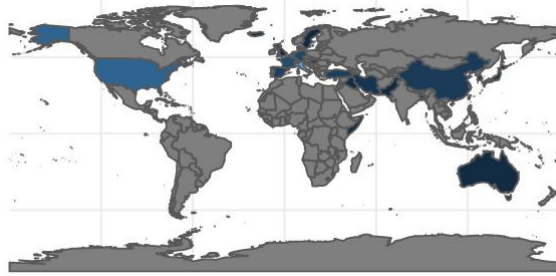
Both studies looked for how cortical areas of the brain that receive inputs from smell pathways might be altered in congenital anosmia. Humans become consciously aware of the sensory world when the cortex is stimulated. Using magnetic resonance imaging, Lundström's team measured the size, shape, and nerve cell connections in olfactory brain areas. The preservation of certain smell-related areas in congenital anosmics may mean that someday the sense of smell could be restored if, for example, an odor-detecting device could directly stimulate the brain.

At Monell, he is examining behavioral and neural approaches to enhance the ability to smell odors with individuals who have lost the sense as adults. In one study, he is testing smell-training protocols in people with nasal polyps to determine which approach is best and most efficient at improving smell. In a second study, he is asking whether non-invasive electrical stimulation of olfactory brain areas enhances the sense of smell and how it contrasts with behavioral approaches such as smell training.

Real-time Resources and Research

- [Click here](#) for a real-time COVID-19 Smell Loss tracker. Created at Monell, this tool allows researchers, and interested individuals such as yourself, who want to learn more about the relationship between smell loss and COVID-19 to stay up-to-date with global investigations

on the pandemic. When the project began to gather information from published studies a few months ago, they were puzzled by the wide range of smell loss reported by others studying the same question, ranging from 5 to 98 percent. As of mid-August, they had catalogued results from 70+ studies of anosmia related to COVID-19. Follow along with us and *please be patient – the page takes a moment to load.*



Studies from highlighted countries are included in the COVID-19 Smell Loss tracker

- Thank you! Last week we asked you to participate in a study. We were heartened that nearly 1,200 people took the eligibility quiz. If you were one of those and received a test kit in the mail, please complete the study no later than September 3rd.

- Please take a look at our [COVID-19 Resources page](#), which is frequently updated.

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Are you having trouble explaining what anosmia is? [This site can help.](#)



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