

Ad Hoc Group for Medical Research / Coalition for Health Funding

**National Institute on Deafness and
Other Communication Disorders (NIDCD)**

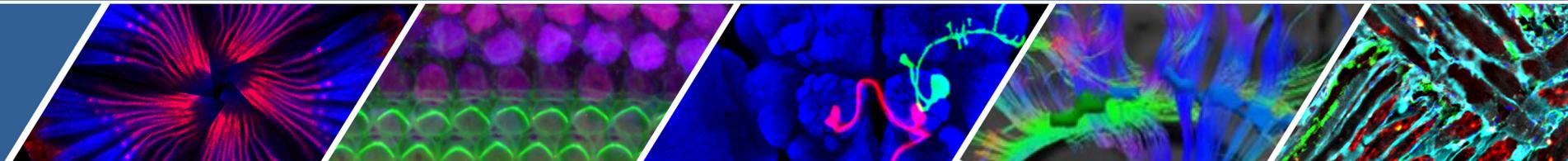
COVID-19 Research

**Debara L. Tucci
NIDCD Director**

May 13, 2021



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Communication Disorders

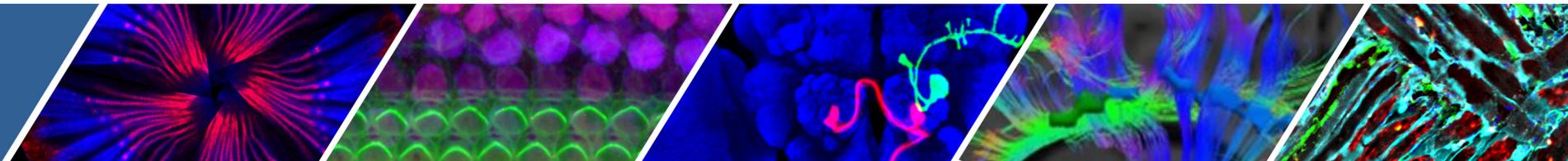


NIDCD Mission and Vision

- **Mission:** To conduct and support research and research training in the normal and disordered processes of **hearing, balance, taste, smell, voice, speech, and language.**
- **Vision:** Advancing the science of communication to improve lives.



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Communication Challenges During the Pandemic

Face coverings obscure facial features and can:

- disrupt speech perception
- hide the emotion conveyed by the speaker
- filter speech, making sounds less clear



8 TIPS FOR IMPROVING COMMUNICATION WHEN WEARING A FACE COVERING



BE AWARE

Is the person you're communicating with having trouble understanding you? Ask and adapt if needed.



BE PATIENT

Face coverings block visual cues and muffle sounds that help us understand speech, which can make interactions frustrating.



BE MINDFUL

Consider how physical distancing might affect your communication. As distance increases, sound levels decrease, and visual cues are more difficult to see.



BE LOUD AND CLEAR

Speak up, but don't shout. Focus on speaking clearly. Consider wearing a clear face covering, if possible. If you're having trouble understanding, ask the person you're talking with to speak louder. If you lip-read, ask those you interact with regularly to wear a clear face covering.



TURN DOWN THE BACKGROUND VOLUME

Background noise can make conversation especially hard. When possible, move to a quieter spot or turn down the sound.



COMMUNICATE ANOTHER WAY

Use a smartphone talk-to-text application or writing tools (paper/pen, whiteboard) to communicate.*



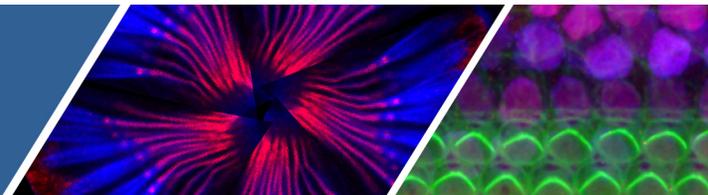
CONFIRM THAT YOUR STATEMENT IS CLEAR

Ask if your message has been understood.

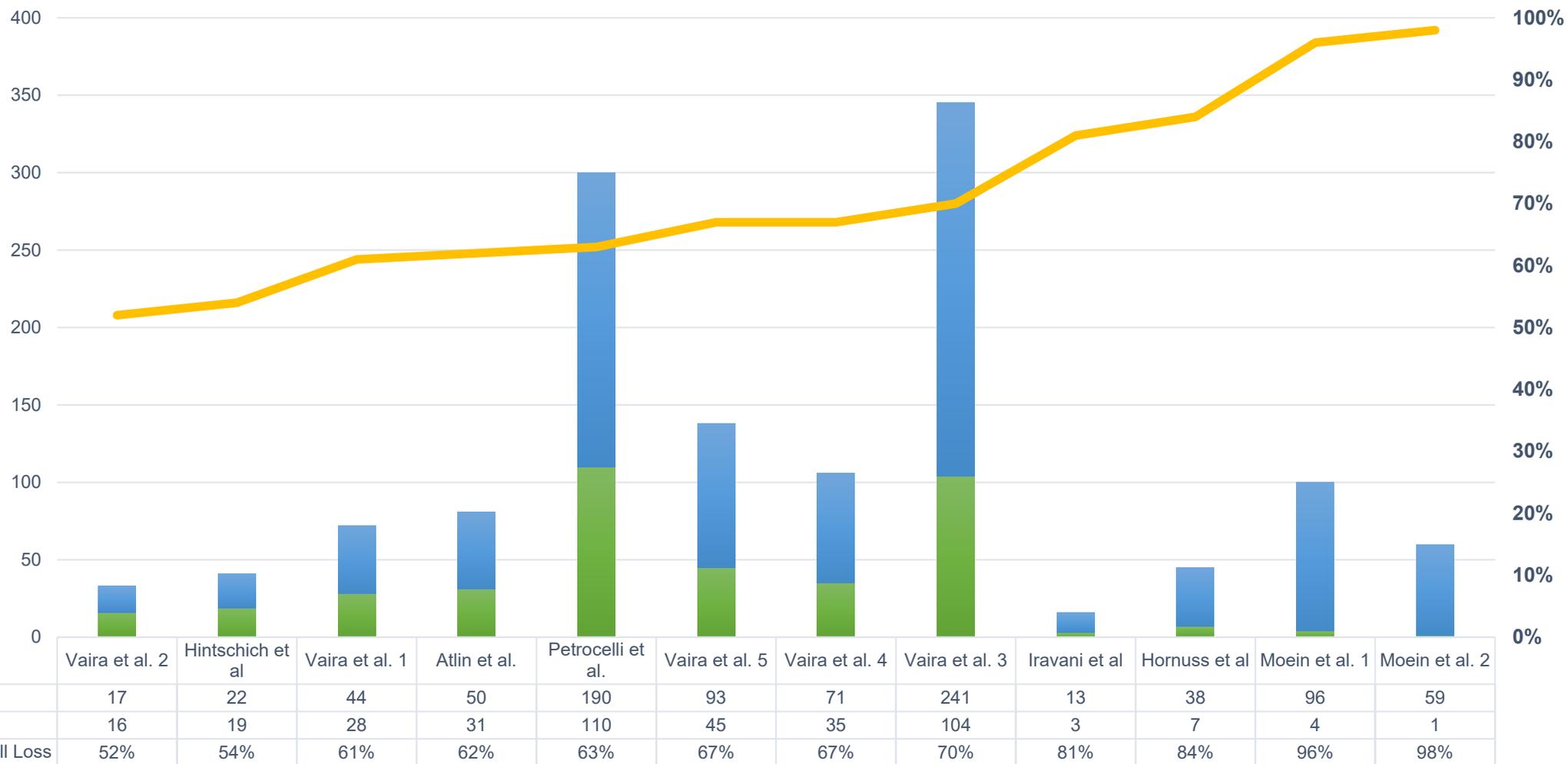


BRING A FRIEND OR BE A FRIEND

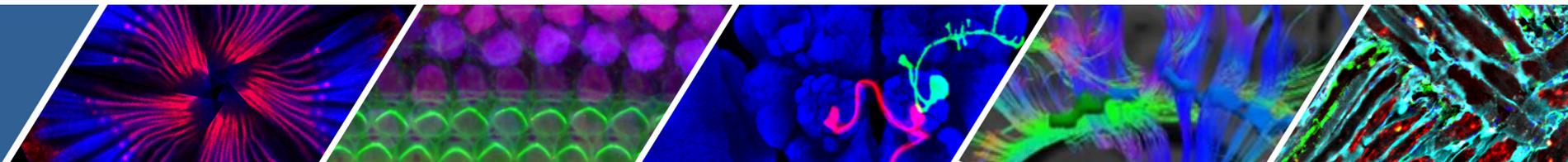
If it's essential that you comprehend important spoken details—during a discussion with a health care provider, for example—consider bringing a friend or family member with you. Or, offer to come along to listen and take notes when a friend has an important appointment or meeting.



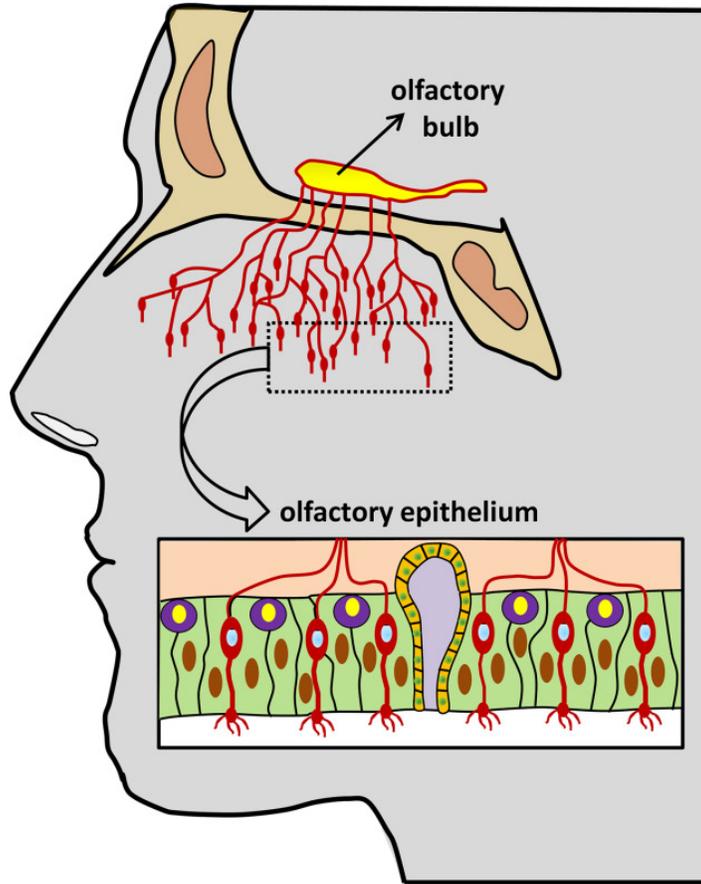
Loss of Smell is a Strong Predictor of COVID-19



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Regeneration and the Peripheral Olfactory System

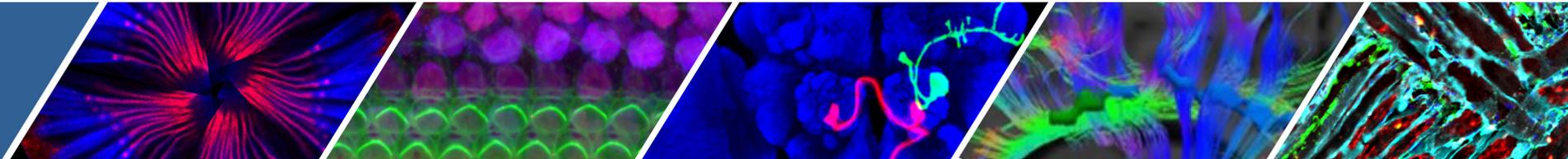


- The olfactory epithelium is renowned for its ability to support life-long neurogenesis and to recover after injury and restore its projection into the central nervous system.
- The olfactory epithelium is composed of three distinct cell types: basal cells, olfactory sensory neurons, and sustentacular (or supporting) cells.

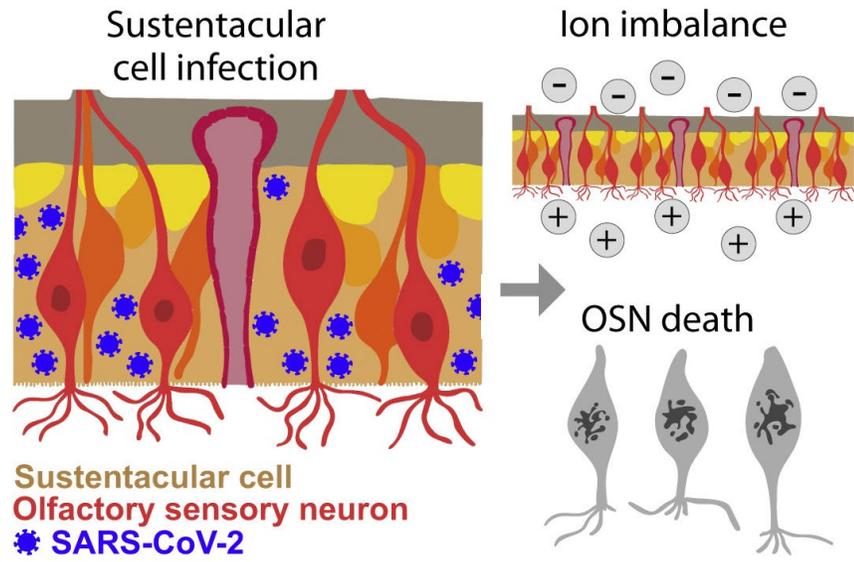
The Anatomical Record, Volume: 302, Issue: 3, Pages: 405-427, First published: 16 April 2018, DOI: (10.1002/ar.23816)



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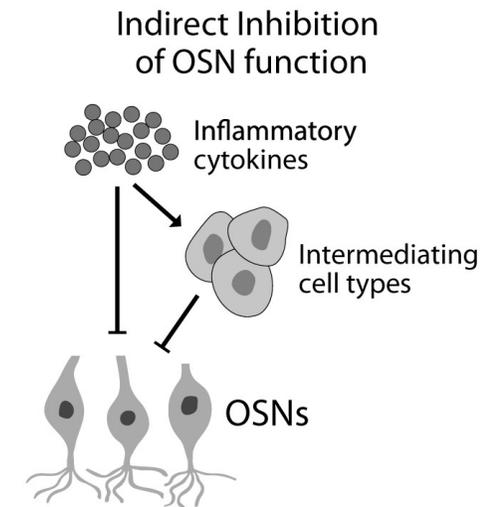


Likely Olfactory System Entry Points for SARS-CoV-2

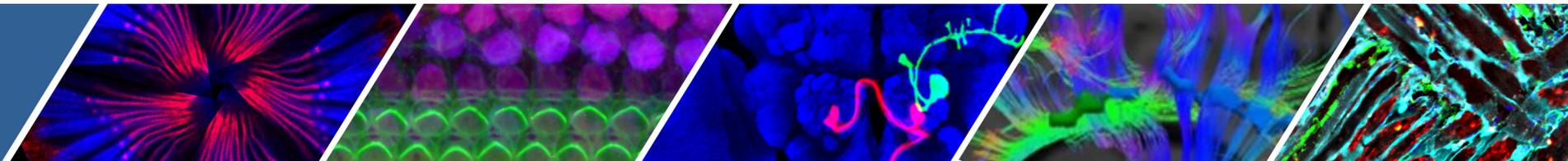


Sustentacular cells, Bowman's gland cells, and microvillar cells in the **olfactory epithelium** may be direct entry points for the virus.

Inflammatory cytokines may also directly or indirectly inhibit olfactory sensory neuron function.

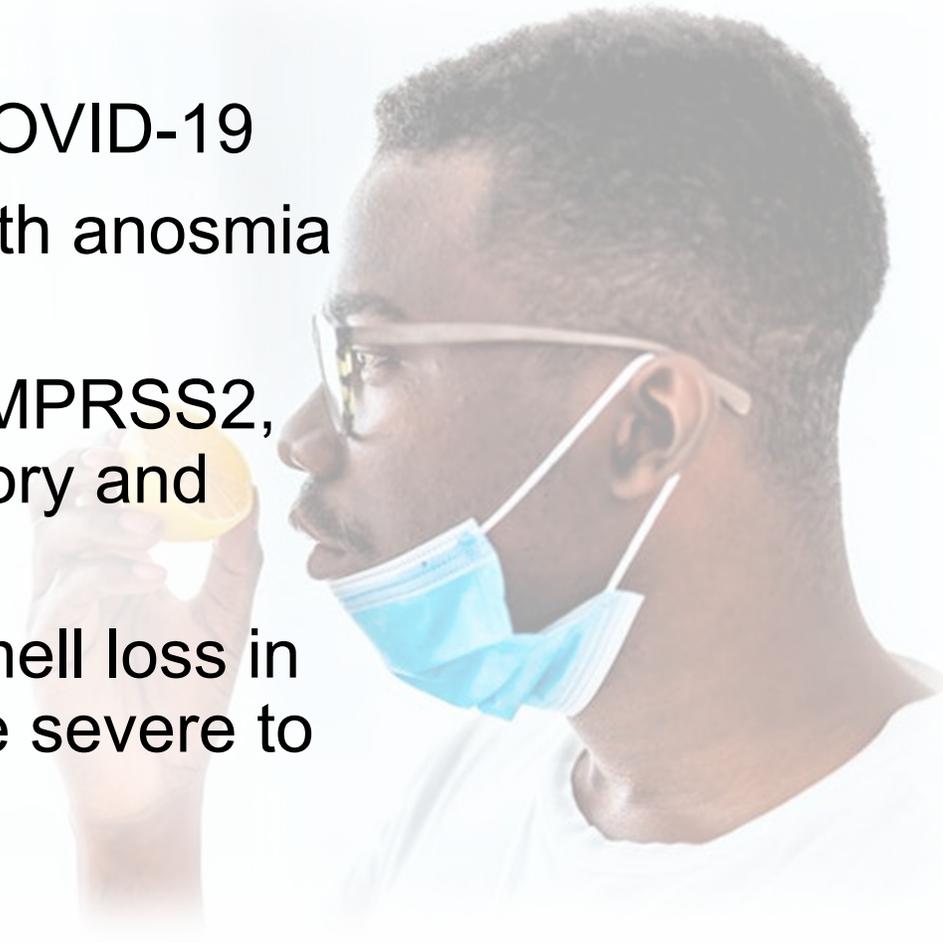


Cooper et al, 2020

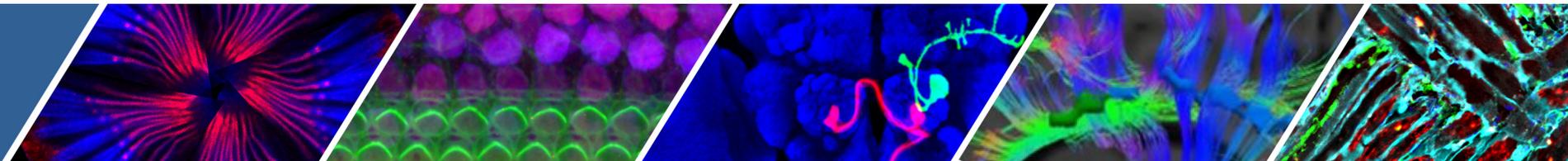


COVID-19 and Chemosensory Research (Administrative Supplements)

- Determine if anosmia is an early indicator of COVID-19
- Identification of genetic variation associated with anosmia in individuals with COVID-19
- Characterization of the expression of ACE2, TMPRSS2, and related SARS-CoV-2 entry genes in olfactory and taste epithelia
- Examine mechanisms underlying persistent smell loss in COVID 'long-haulers' (5-10% patients still have severe to complete smell loss 6 months post infection)



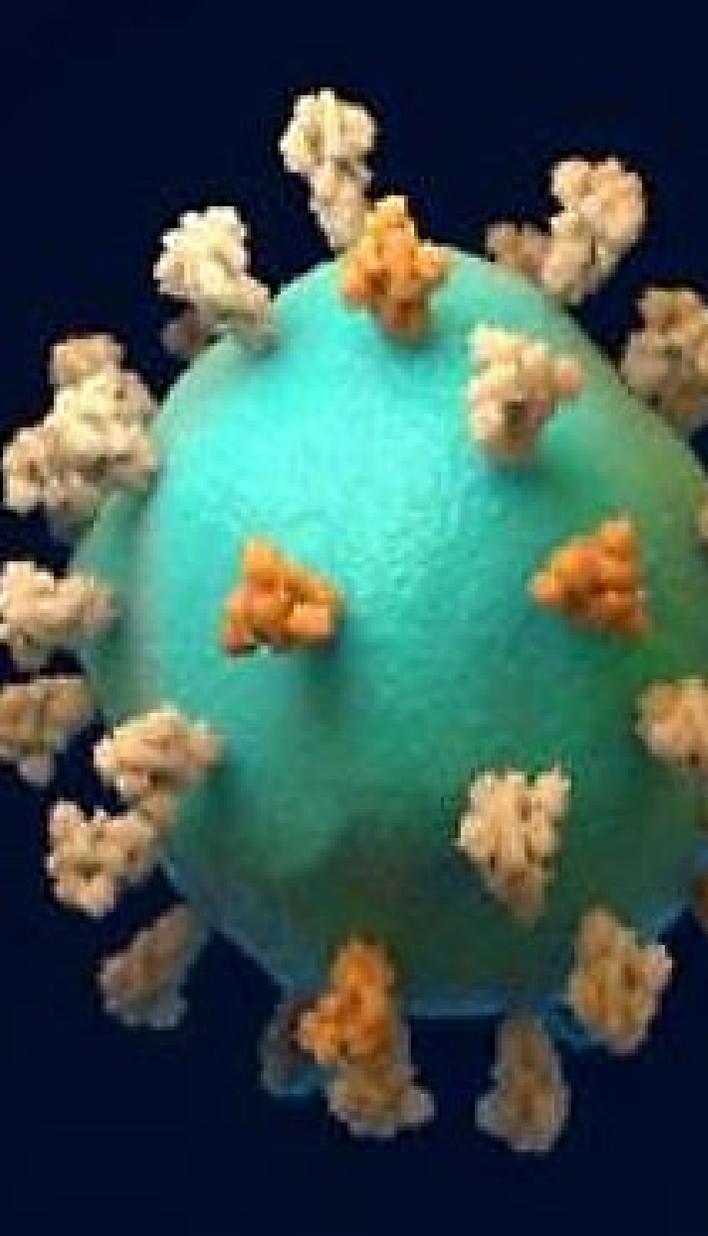
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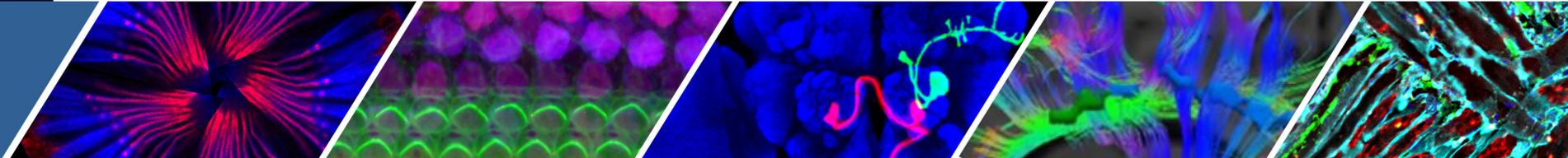
COVID-19 and Chemosensory Research (Administrative Supplement)

Analysis of postmortem tissue from patients who died due to COVID-19 to determine if virus is neuro-invasive. This work will:

- evaluate the olfactory periphery and olfactory bulb for COVID-related changes in histology, cell morphology, tissue degeneration, immune responses, vasculature, and gene expression
- elucidate possible morphological and molecular changes in taste epithelium associated with SARS-CoV-2 infection



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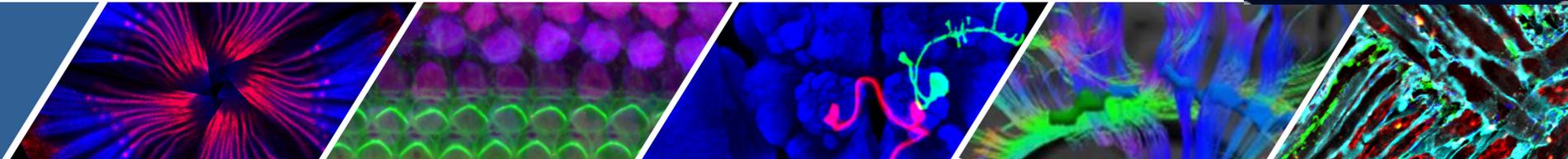


COVID-19 Research in Other NIDCD Mission Areas (Administrative Supplements)

- Evaluate if calcitonin gene-related peptide blockers (for treating migraines) may reduce COVID-19 severity
- Assess the effects of COVID-19 on access to hearing healthcare for deaf/hard of hearing children/families
- Determine the optimal level of tele-practice treatment platforms for children with language impairment
- Develop interventions to reduce the incidence and impact of post-intubation laryngeal injury



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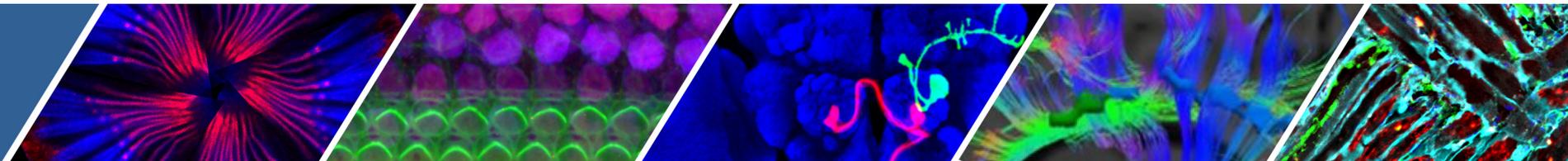
NIDCD Notice of Special Interest: COVID-19

Research on the Impact of COVID-19 on Mission Specific Sensory and Communication Disorders

- [NOT-DC-20-008](#) (NIDCD contact: Bracie Watson)
- Applications for research on COVID-19 in relation to NIDCD's mission areas
 - Various eligible funding mechanisms (R01, R21, with or without clinical trials), SBIR/STTR (small business grants)
 - Encourages multi-disciplinary approaches to move the research beyond *in vitro* and animal models



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NIH Rapid Acceleration of Diagnostics (RADx): Initiatives and Goals



“Now is the time for that unmatched American ingenuity to bring the best and most innovative technologies forward to make testing for COVID-19 widely available.”

— NIH Director Francis S. Collins, M.D., Ph.D.

RADx-Tech

speed up development of point-of-care and home-based testing for COVID-19
(‘Shark Tank’ competition)

RADx-ATP (Advanced Tech Platforms)

supports rapid scale-up of existing advanced testing platforms

RADx-UP (Underserved Populations)

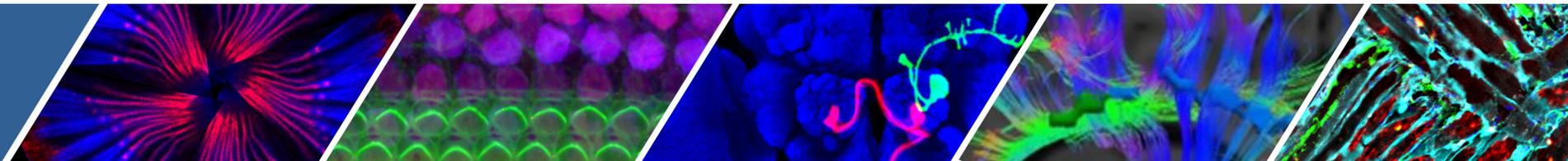
addresses disparities in COVID-19 morbidity and mortality

RADx-Radical (rad)

supports new non-traditional approaches to address gaps in COVID-19 testing

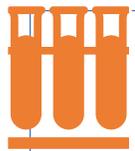


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RADx-rad Initiative: Chemosensory Testing as a COVID-19 Screening Tool

Develop objective chemosensory tests to screen for COVID-19



Develop objective chemosensory tests to screen for COVID-19



Fast, instantaneous results



Disposable, self-administered



Highly scalable



Validated using diverse populations and across the lifespan

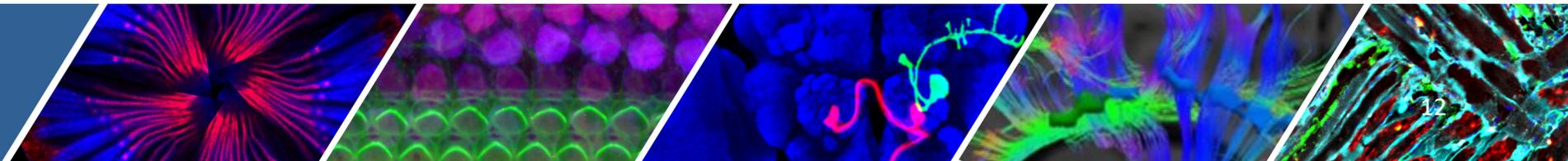


Stable and suitable for global deployment



Multiple versions to allow for repeat testing with the same person over time

- Determine if chemosensory loss is an early indicator of COVID-19 and predictive of disease severity, disease persistence, or other neurological manifestations.
- NIDCD funded 4 awards at a total cost of \$3.7 million



Ensuring Support for Investigators during the COVID-19 Pandemic

Delayed the start dates of some awards to accommodate lab closures

Approved generous no-cost extensions as well as modifications of existing protocols to allow telehealth/virtual intervention approaches

Encouraged grantees to **shift research focus** to other activities or convert in-person activities to virtual, when appropriate to focus on safe conduct of research

Extended eligibility period of some early career applicants

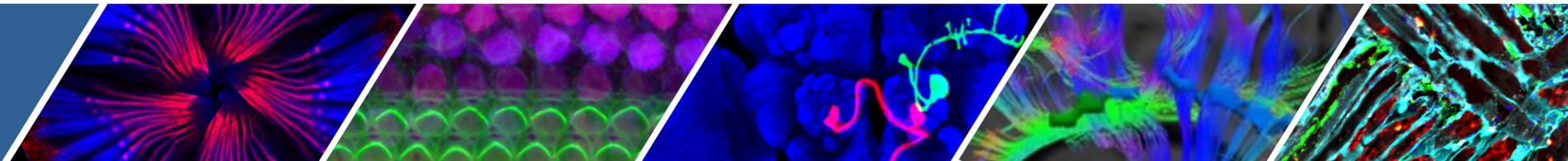
Permitted **continued payment of salaries** on research grants despite lab closures and increased clinical responsibilities during pandemic

Allowed a one-page update with preliminary data as post-submission materials for applications

Allowed early career scientists whose career trajectories have been significantly impacted by COVID-19 to request **grant extensions** – F, K, and ECR (R21) grantees



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<https://www.nidcd.nih.gov>



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	NIDCD seeks candidates for institute director position.
	NIDCD research finds therapy to partially restore hearing in mice.
	NIDCD hosts EARssentials training course July 16-20.

News >

Exhausting tumor cells makes them more vulnerable to immunotherapy - I am Intramural, the NIH Intramural Research Program blog (7/17/2018)

In memoriam: David Lim, M.D., first NIDCD scientific director (7/17/2018)

See, hear, speak: Are kids' senses ready for school? - NIH News in Health (7/16/2018)

Eating well may slow hearing loss in women - NIH News in Health (7/13/2018)

Novel drug therapy partially restores hearing in mice (6/28/2018)

[More News](#)

Health Information >



Hearing



Balance



Taste and Smell



Voice, Speech, and Language



Health Statistics

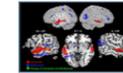


It's a Noisy Planet

[More Health](#)

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Extramural Research (Grantee Programs)
Intramural Research (NIDCD Labs)
Clinical Studies



Funding >

Types of Funding
How to Apply
Find Funding Opportunities



Training >

Career Development Awards
Training Centers
Intramural Training



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