

Research Study: Multimodal Investigation of Post-Covid-19 in Females

What is the purpose of this study?

Post-Covid-19 syndrome (or Long Covid) is estimated to affect 10-30% of Covid-19 patients, with prolonged symptoms affecting multiple organs. Recent evidence suggests females are disproportionately impacted by Long Covid and may be more likely than males to suffer from neurological symptoms.

The purpose of this study is to investigate the effects of transcutaneous vagus nerve stimulation (t-VNS) on Long Covid symptoms in females, identifying factors influencing susceptibility and recovery—particularly in the cognitive domain, as over 80% of long-haulers experience “brain fog.”



Who is eligible to participate?

- ◆ Must be between 18 and 85 years of age
- ◆ Must be of the female biological sex and experiencing brain fog/cognitive impairment +3 months post-Covid infection.
- ◆ Must own a smartphone (iOS or Android) and have the ability to follow directions.
- ◆ Those with prior neurological conditions or contraindications to MRI or t-VNS (e.g., pacemaker) will be excluded.

What is t-VNS?

The vagus nerve is the longest, most complex of the cranial nerves, running from the brainstem to abdomen. The t-VNS process consists of a non-invasive procedure that sends electrical current stimulation to the vagus nerve from the left tragus of the ear via a handheld device.

What is involved with participation?

If you qualify and decide to participate, you will undergo 10 consecutive days of t-VNS for 60 minutes per day in the comfort of your home while wearing a provided Garmin fitness tracker.

The following assessments will be performed by trained staff within a week before and after you complete treatment:

- ◆ A smell test and behavioral assessments that measure cognition, depression, anxiety, sleep, and fatigue will be performed at Casa Colina (1.5 hours).
- ◆ Electroencephalography (EEG) recording of your brain activity will be taken at Casa Colina (1 hour).
- ◆ Magnetic Resonance Imaging (MRI) of your brain will be imaged at Casa Colina Diagnostic Imaging Center (1 hour).
- ◆ Blood will be collected at the Casa Colina Laboratory (15 minutes).
- ◆ DNA collection will be performed, which requires providing a buccal swab at Casa Colina (done once only).

One month post-assessment, you will be contacted to return for a third behavioral assessment and smell test only (1.5 hours). A stipend of \$100 will be offered at study completion.

For more information, please contact Jamie Wang, Research Associate, Casa Colina Research Institute, at 909/596-7733, ext. 4130 or jjwang@casacolina.org.

