



COVID-19 Digest Issue 22

September 24, 2020

CLINICAL PEARL

- **COVID-19 and the brain:** Although COVID-19 is considered to be primarily a respiratory disease, SARS-CoV-2 affects multiple organ systems. [A recent study](#) showed that SARS-CoV-2 infection can be associated with neurological and neuropsychiatric illness, ranging from encephalopathy with delirium/psychosis, inflammatory CNS syndromes including encephalitis and acute disseminated encephalomyelitis, to ischemic strokes associated with a pro-thrombotic state and peripheral neurological disorders such as Guillain-Barré syndrome and brachial plexopathy. Some of the cases but not all responded to immunotherapy. [In another study](#), 62% of the patients with complete data sets presented with a cerebrovascular event. Of these, 74% had an ischemic stroke, 12% an intracerebral hemorrhage, and 1% CNS vasculitis. 31% of the patients with complete data sets presented with altered mental status, including encephalopathy or encephalitis as well as neuropsychiatric disorders: i.e. new-onset psychosis, neurocognitive (dementia-like) syndromes and affective disorders.

Researchers in San Diego have shown that [SARS-CoV-2 can infect neurons in organoids](#) (miniaturized clumps of brain tissue, made by coaxing human pluripotent stem cells to differentiate into neurons), killing some and reducing the formation of synapses between them. Using human organoids, mouse brains and some human post-mortem examinations, [work by Yale immunologists](#) seems to confirm that the virus can infect the brain. However, questions remain over how the virus might reach people's brains. Because loss of smell is a common symptom of COVID-19, many think that the olfactory nerve might provide a route of entry but so far, the evidence does not support this theory.

[Another preprint](#) described post mortems in 67 people who had died of COVID-19. While electron microscope studies did reveal the presence of the virus in the brain, virus levels were low and were not consistently detectable. In fact, despite their high sensitivity, RT-PCR tests often do not detect the virus in brain tissue and several studies have failed to find any virus particles in cerebrospinal fluid. One reason might be that the ACE2 receptor, which the virus uses to gain entry, is not expressed much in brain cells. Although other viruses do invade and infect the brain, and while there is clear evidence that SARS-CoV-2 can infect neurons, it is not clear whether SARS-CoV-2 does so to a significant extent. The neurological symptoms exhibited by patients might instead be the result of an overstimulated immune system. Because this may not be true in all cases and because these two scenarios require entirely different treatments, biomarkers that can reliably distinguish between a viral brain infection and immune hyperactivity are clearly needed.

PUBLIC HEALTH UPDATES

- San Mateo County Health Officer, Dr. Scott Morrow, issued a [new statement on September 21st](#).
- [Draft landscape of COVID-19 candidate vaccines document prepared by the WHO.](#)

RESOURCES

- American Public Health Association and National Academy of Medicine COVID-19 Conversations – [Until We Have a COVID-19 Vaccine](#) webinar
- Infectious Disease Society of America (IDSA) Clinician Call and Podcast:
 - [Podcast: COVID-19 Prevention: Why Masking is Our Best Weapon \(Sept. 5, 2020\)](#)
 - [Podcast: CDC/IDSA COVID-19 Clinician Call: COVID-19 & Reinfection \(Sept. 12, 2020\)](#)
 - [Podcast: COVID-19 Saliva Testing \(Sept. 15, 2020\)](#)
 - [Podcast: COVID-19 & Influenza \(Sept. 19, 2020\)](#)





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- Massachusetts General Hospital Department of Medicine [COVID-19 Grand Rounds](#)
- UCSF Medicine [COVID-19 Grand Rounds](#)
- Johns Hopkins Infectious Diseases [COVID-19 Grand Rounds](#)
- CDC [MMWR Weekly COVID-19 Briefing](#) Podcasts

ACADEMIC/RESEARCH PAPERS

- *Brain*
 - [The emerging spectrum of COVID-19 neurology: clinical, radiological and laboratory findings](#)
- *The Lancet*
 - [Cerebral Micro-Structural Changes in COVID-19 Patients – An MRI-based 3-month Follow-up Study](#)
 - [Neurological and neuropsychiatric complications of COVID-19 in 153 patients: a UK-wide surveillance study](#)
 - [Safety and immunogenicity of an rAd26 and rAd5 vector-based heterologous prime-boost COVID-19 vaccine in two formulations: two open, non-randomised phase 1/2 studies from Russia](#)
 - [Multisystem inflammatory syndrome in children: A systematic review](#)
 - [COVACTA trial raises questions about tocilizumab's benefit in COVID-19](#)
- *medRxiv*
 - [Tocilizumab in Hospitalized Patients With COVID-19 Pneumonia](#)
- *JAMA*
 - [Comparison of Clinical Features of COVID-19 vs Seasonal Influenza A and B in US Children](#)
 - [Clinical Outcomes in Young US Adults Hospitalized With COVID-19](#)
 - [Incidence of Nosocomial COVID-19 in Patients Hospitalized at a Large US Academic Medical Center](#)
 - [Cytokine Levels in Critically Ill Patients With COVID-19 and Other Conditions](#)
- *Open Forum Infectious Diseases*
 - [Fever Patterns, Cytokine Profiles and Outcomes in Covid-19](#)
- *Annals of Internal Medicine*
 - [Characteristics of COVID-19 in Homeless Shelters - A Community-Based Surveillance Study](#)
 - [Masks for Prevention of Respiratory Virus Infections, Including SARS-CoV-2, in Health Care and Community Settings](#)
- *Academic Emergency Medicine*
 - [Return Hospital Admissions Among 1419 Covid-19 Patients Discharged from Five US Emergency Departments](#)
- *Chest*
 - [Post-Intensive Care Unit COVID-19 Outcomes-a Case Series](#)
- *bioRxiv*
 - [SARS-CoV-2 infection of human iPSC-derived cardiac cells predicts novel cytopathic features in hearts of COVID-19 patients](#)
- *JAMA Cardiology*
 - [Cardiovascular Magnetic Resonance Findings in Competitive Athletes Recovering From COVID-19 Infection](#)
- *Mayo Clinic Proceedings*
 - [The Prognostic Value of Electrocardiogram at Presentation to Emergency Department in Patients With COVID-19](#)





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- *Obstetrics & Gynecology*
 - [High Concentrations of Nitric Oxide Inhalation Therapy in Pregnant Patients With Severe Coronavirus Disease 2019 \(COVID-19\)](#)
- *Clinical Gastroenterology and Hepatology*
 - [Increased Internet Search Interest for GI Symptoms May Predict COVID-19 Cases in U.S. Hotspots](#)
- *BMJ Journals*
 - [Depicting SARS-CoV-2 faecal viral activity in association with gut microbiota composition in patients with COVID-19](#)
 - [Risk stratification of patients admitted to hospital with covid-19 using the ISARIC WHO Clinical Characterisation Protocol: development and validation of the 4C Mortality Score](#)
- *Clinical Infectious Diseases*
 - [A national strategy to diagnose COVID-19 associated invasive fungal disease in the ICU](#)
 - [3D Printed Alternative to the Standard Synthetic Flocked Nasopharyngeal Swabs Used for COVID-19 testing](#)
- *Nature*
 - [The lasting misery of coronavirus long-haulers](#)
- *Indiana University School of Medicine*
 - [COVID-19 “Long Hauler” Symptoms Survey Report](#)
- *The Journal of Infectious Diseases*
 - [Post-Mortem Findings in Italian Patients with COVID-19 – a Descriptive Full Autopsy Study of cases with and without co-morbidities](#)
- *Emerging Infectious Diseases*
 - [Impact of Social Distancing Measures on Coronavirus Disease Healthcare Demand, Central Texas, USA](#)
 - [High Proportion of Asymptomatic SARS-CoV-2 Infections in 9 Long-Term Care Facilities, Pasadena, California, USA, April 2020](#)
 - [Coronavirus Disease among Persons with Sickle Cell Disease, United States, March 20–May 21, 2020](#)
 - [Pooling Upper Respiratory Specimens for Rapid Mass Screening of COVID-19 by Real-Time RT-PCR](#)
 - [Antibody Responses to SARS-CoV-2 at 8 Weeks Postinfection in Asymptomatic Patients](#)
 - [Culture-Competent SARS-CoV-2 in Nasopharynx of Symptomatic Neonates, Children, and Adolescents](#)
 - [Retrospective Screening for SARS-CoV-2 RNA in California, USA, Late 2019](#)
 - [Rapid Screening Evaluation of SARS-CoV-2 IgG Assays Using Z-Scores to Standardize Results](#)
 - [Using Virus Sequencing to Determine Source of SARS-CoV-2 Transmission for Healthcare Worker](#)
 - [Effectiveness of Cloth Masks for Protection Against Severe Acute Respiratory Syndrome Coronavirus 2](#)
 - [Rapid, Sensitive, Full-Genome Sequencing of Severe Acute Respiratory Syndrome Coronavirus 2](#)
 - [COVID-19 in Patient with Sarcoidosis Receiving Long-Term Hydroxychloroquine Treatment, France, 2020](#)
 - [Coronavirus Disease Exposure and Spread from Nightclubs, South Korea](#)
 - [Viral RNA Load in Mildly Symptomatic and Asymptomatic Children with COVID-19, Seoul](#)
 - [Disappearance of SARS-CoV-2 Antibodies in Infants Born to Women with COVID-19, Wuhan, China](#)
 - [Clinical Course of Asymptomatic and Mildly Symptomatic Patients with Coronavirus Disease Admitted to Community Treatment Centers, South Korea](#)
 - [Effect of Nonpharmaceutical Interventions on Transmission of Severe Acute Respiratory Syndrome Coronavirus 2, South Korea, 2020](#)





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MMWR

- [Characteristics and Maternal and Birth Outcomes of Hospitalized Pregnant Women with Laboratory-Confirmed COVID-19 — COVID-NET, 13 States, March 1–August 22, 2020](#)
- [SARS-CoV-2 Infection Among Hospitalized Pregnant Women: Reasons for Admission and Pregnancy Characteristics — Eight U.S. Health Care Centers, March 1–May 30, 2020](#)
- [Decreased Influenza Activity During the COVID-19 Pandemic — United States, Australia, Chile, and South Africa, 2020](#)
- [COVID-19 Contact Tracing in Two Counties — North Carolina, June–July 2020](#)
- [Changing Age Distribution of the COVID-19 Pandemic — United States, May–August 2020](#)
- [Serial Testing for SARS-CoV-2 and Virus Whole Genome Sequencing Inform Infection Risk at Two Skilled Nursing Facilities with COVID-19 Outbreaks — Minnesota, April–June 2020](#)
- [Preventing COVID-19 Outbreaks in Long-Term Care Facilities Through Preemptive Testing of Residents and Staff Members — Fulton County, Georgia, March–May 2020](#)

HOT OFF THE (LAY) PRESS

- **FDA**
 - [The FDA’s Scientific and Regulatory Oversight of Vaccines is Vital to Public Health.](#)
- **The New York Times**
 - [The fall surge is here](#)
 - [Housekeepers Face a Disaster Generations in the Making](#)
 - [How to Ship a Vaccine at –80°C, and Other Obstacles in the Covid Fight](#)
 - [Johnson & Johnson began the final stage of clinical trials for its coronavirus vaccine, which may only require one shot instead of two.](#)
 - [Johnson & Johnson’s Vaccine Advances, Sparking Optimism in Race](#)
 - [F.D.A. to Release Stricter Guidelines for Emergency Vaccine Authorization](#)
 - [‘Warp Speed’ Officials Debut Plan for Distributing Free Vaccines](#)
 - [How One District Got Its Students Back Into Classrooms](#)
 - [As Schools Go Remote, Finding ‘Lost’ Students Gets Harder](#)
 - [President Trump rebuked the C.D.C. chief for praising masks and for saying that a virus vaccine was unlikely to be widely available before mid-2021.](#)
 - [C.D.C. scientists didn’t write the virus testing guidance on its website last month, and it was published against their objections, officials said.](#)
 - [C.D.C. Testing Guidance Was Published Against Scientists’ Objections](#)
 - [The C.D.C. reversed its heavily criticized guidance that symptom-free people who’ve had close contact with an infected person do not need a test.](#)
 - [Advice on Airborne Virus Transmission Vanishes From C.D.C. Website](#)
- **The Washington Post**
 - [How the Trump’s team has meddled in health officials’ coronavirus work](#)
 - [Robot cleaners are coming, this time to wipe up your coronavirus germs](#)
 - [At least 201,000 people have died from coronavirus in the U.S.](#)
 - [These countries crushed COVID-19 – but are now reporting higher infection rates than the U.S.](#)
 - [A Massachusetts teenager tested positive for the coronavirus. His parents sent him to school anyway.](#)
 - [Around the world, health officials face death threats amid pandemic](#)





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- *Amnesty International*
 - [Global: Amnesty analysis reveals over 7,000 health workers have died from COVID-19](#)
- *The New Yorker*
 - [Why a Negative Test Doesn't Guarantee You Don't Have the Coronavirus](#)
- *Bloomberg*
 - [Covid-19 May Cause Prolonged Gut Infection, Scientists Say](#)
 - [Oxford to Resume Trial of AstraZeneca Vaccine](#)
- *Reuters*
 - [AstraZeneca's trial illnesses may not be due to COVID-19 shot, Oxford University says](#)
 - [Pfizer, BioNTech propose expanding COVID-19 vaccine trial to 44,000 volunteers](#)
- *Imperial College London*
 - [Landmark coronavirus study to trial inhaled Imperial and Oxford vaccines](#)
- *AP News*
 - [Anti-inflammatory drug may shorten COVID-19 recovery time](#)
- *Medpage Today*
 - [Long-Term Lung, Health Issues Common in COVID-19— European ski resort cases suggest recovery is often slow](#)
- *Medscape*
 - [Unexpected Results in New COVID-19 'Cytokine Storm' Data](#)
 - [NIH Launches Two Trials to Test Blood Thinners in COVID-19 Patients](#)
 - [Experts: Crackdowns on COVID Rule Breakers Harmful](#)
- *STAT News*
 - ['Carnage' in a lab dish shows how the coronavirus may damage the heart](#)
- *CNN*
 - [How it all went wrong \(again\) in Europe as second wave grips continent](#)
- *Slate*
 - [The Sturgis Biker Rally Did Not Cause 266,796 Cases of COVID-19](#)
- *IZA Institute of Labor Economics*
 - [The Contagion Externality of a Superspreading Event: The Sturgis Motorcycle Rally and COVID-19](#)
- *NPR/KQED*
 - [With Limited COVID-19 Vaccine Doses, Who Would Get Them First?](#)
 - [How 1 Maine Wedding Caused Hundreds Of Coronavirus Cases And 7 Deaths](#)
 - [How Many Coronavirus Cases Are Happening In Schools? This Tracker Keeps Count](#)
 - [New Dashboard Tracks Coronavirus Cases In Schools Across 47 States](#)
- *USA Today*
 - [As football returns, here's where COVID-19 outbreaks stand in each Big Ten campus, community](#)
- *Houston Chronicle*
 - [Double lung transplant, one of the nation's first, saves Houston-area COVID patient](#)
- *The Seattle Times*
 - [COVID-19 outbreak at Bremerton hospital possibly traced to aerosol-generating procedures, report says](#)
- *The Mercury News*
 - [Coronavirus: As deaths tick up in California, other metrics continue to improve](#)





SAN MATEO COUNTY HEALTH

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- *San Francisco Chronicle*
 - [It's been six months since the Bay Area sheltered in place: What have we learned?](#)
 - [Charts show Bay Area's coronavirus spikes vs. biggest hot spots of pandemic](#)
 - [Coronavirus reopening in the Bay Area: Here's what each county does and doesn't allow](#)
 - [Outbreak in Sonoma County: Virus hits 13 child care centers, schools](#)
 - [CDC removes new guidance on airborne coronavirus transmission, alarming Bay Area experts](#)

EPIDEMIOLOGY UPDATES

- **US Leads the World in Confirmed COVID-19 Cases** per [Johns Hopkins University Center for Systems Science and Engineering Dashboard Website](#)
- [Johns Hopkins COVID-19 in the USA](#) – daily summary of key data on COVID-19 in the U.S.
- **California COVID-19 by the numbers** are available on the [CDPH Website](#) and the [NYT Map and Table](#) (includes data by county)
 - **California [COVID-19 Statewide Update](#) as of September 24, 2020**
- [San Mateo County COVID-19 Dashboard](#)
- [Santa Clara County COVID-19 Dashboard](#)

ADDITIONAL COVID-19 RESOURCES

- [San Mateo County COVID-19 Guidance and Resources for Clinicians and Facilities – COVID-19 Digests](#)
- [Palo Alto Online tracking the coronavirus in San Mateo and Santa Clara counties](#)
- [California COVID-19 Data and Tools](#)
- [CDPH COVID-19 Assessment and Modeling Tool](#)
- [California Department of Corrections and Rehabilitations Population COVID-19 Tracking Dashboards](#)
- [COVID-19 Nursing Home Data](#)
- [CDC Interactive Serology Dashboard for Commercial Laboratory Surveys](#)
- [CDC COVID-19 Forecasts: Deaths](#)
- [HHS Coronavirus Data Hub](#)

