CLINICAL PEARL

- **Obesity and COVID-19**: Since the pandemic began, several studies have demonstrated that many of the sickest COVID-19 patients have been obese. Several studies that adjusted for age, sex, social class, diabetes, and heart conditions, showed that an **elevated body mass index (BMI)** is a strong independent risk factor for severe COVID-19 illness. The largest descriptive study yet of hospitalized U.S. COVID-19 patients, found that 77% of nearly 17,000 patients hospitalized with COVID-19 were overweight (29%) or obese (48%). Another study captured the rate of COVID-19 hospitalizations among more than 334,000 people in England and showed that although the rate peaked in people with a BMI of 35 or greater, it began to rise as soon as someone tipped into the overweight category.

In recent weeks, the link between obesity and severe COVID-19 illness has come into sharper focus as large new population studies have cemented the association. A recently-published meta-analysis pooled data from multiple peer-reviewed papers capturing 399,000 patients and showed that patients with obesity who contracted SARS-CoV-2 were 113% more likely than people of healthy weight to be hospitalized, 74% more likely to be admitted to an ICU, and 48% more likely to die.

A constellation of physiological and social factors drives those numbers. The biology of obesity includes impaired immunity, chronic inflammation, and a propensity to develop thrombi, all of which can worsen COVID-19. Additionally, because obesity is often stigmatized, people with obesity may avoid medical care. People with obesity are also more likely than normal-weight people to suffer from other diseases that are independent risk factors for severe COVID-19, including heart disease, lung disease, and diabetes. They are also prone to metabolic syndrome. A recent study from Tulane University of 287 hospitalized COVID-19 patients found that metabolic syndrome itself substantially increases the risks of ICU admission, ventilation, and death.

There is scant data on how to treat obese COVID-19 patients. Published evidence supports giving obese patient patients higher doses of anticoagulants, but little is known about whether and how to adjust other treatments such as remdesivir and dexamethasone, partly because patients with obesity are often excluded from clinical trials.

GUIDELINES/GUIDANCE

- BinaxNOWTM COVID-19 Ag Card FDA guidance

RESOURCES

- California Medical Association (CMA) - Monthly COVID-19 Virtual Grand Rounds series
- Stanford Department of Medicine Grand Rounds - The Status of COVID-19 Vaccines webinar
- Stanford Medicine COVID-19 SoundCloud podcasts

ACADEMIC/RESEARCH PAPERS

- Science
  - Why COVID-19 is more deadly in people with obesity—even if they're young
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- **JAMA**
  - Obesity and Hypertension in the Time of COVID-19

- **Obesity Reviews**
  - Individuals with obesity and COVID-19: A global perspective on the epidemiology and biological relationships

- **JAMA Internal Medicine**
  - Regardless of Age, Obesity and Hypertension Increase Risks With COVID-19
  - Clinical Outcomes in Young US Adults Hospitalized With COVID-19

- **New England Journal of Medicine**
  - Facial Masking for Covid-19 — Potential for “Variolation” as We Await a Vaccine
  - “When Will We Have a Vaccine?” — Understanding Questions and Answers about Covid-19 Vaccination
  - Humoral Immune Response to SARS-CoV-2 in Iceland
  - Saliva or Nasopharyngeal Swab Specimens for Detection of SARS-CoV-2

- **Cochrane Database of Systematic Reviews**
  - Rapid, point-of-care antigen and molecular-based tests for diagnosis of SARS-CoV-2 infection

- **Journal of Infectious Diseases**
  - A study of universal SARS-CoV-2 RNA testing of residents and staff in a large group of care homes in South London
  - Environmental and Aerosolized SARS-CoV-2 Among Hospitalized COVID-19 Patients

- **Eurosurveillance**
  - Transmission of SARS-CoV-2 in children aged 0 to 19 years in childcare facilities and schools after their reopening in May 2020, Baden-Württemberg, Germany

- **medRxiv**
  - The timing of COVID-19 transmission

- **bioRxiv**
  - Neuroinvasion of SARS-CoV-2 in human and mouse brain

- **Journal of Medical Virology**
  - Presenting characteristics, smoking versus diabetes and outcome among patients hospitalized with COVID-19

- **PLOS Medicine**
  - Comorbidities associated with mortality in 31,461 adults with COVID-19 in the United States: A federated electronic medical record analysis

- **Nature**
  - Coronavirus reinfections: three questions scientists are asking
  - The coronavirus is mutating — does it matter?

- **Nature Medicine**
  - Ad26 vaccine protects against SARS-CoV-2 severe clinical disease in hamsters

- **Nature Immunology**
  - Broad and strong memory CD4 + and CD8 + T cells induced by SARS-CoV-2 in UK convalescent individuals following COVID-19

- **Nature Communications**
  - An alpaca nanobody neutralizes SARS-CoV-2 by blocking receptor interaction
  - Both Boceprevir and GC376 efficaciously inhibit SARS-CoV-2 by targeting its main protease
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- **Genome Research**
  - Mapping genome variation of SARS-CoV-2 worldwide highlights the impact of COVID-19 super-spreaders

- **BMJ**
  - Temporal profile and determinants of viral shedding and of viral clearance confirmation on nasopharyngeal swabs from SARS-CoV-2-positive subjects: a population-based prospective cohort study in Reggio Emilia, Italy
  - Understanding the US failure on coronavirus—an essay by Drew Altman

- **Annals of Internal Medicine**
  - Salivary Detection of COVID-19
  - Prevalence of Asymptomatic SARS-CoV-2 Infection – A Narrative Review

- **Cleveland Clinic Journal of Medicine**
  - SARS-CoV-2 and myocardial injury: Few answers, many questions

- **Journal of the American College of Cardiology**
  - Anticoagulation, Mortality, Bleeding and Pathology Among Patients Hospitalized with COVID-19: A Single Health System Study

- **European Heart Journal**
  - COVID-19 is, in the end, an endothelial disease

- **Radiology Society of North America**
  - Efficacy of Chest CT for COVID-19 Pneumonia in France

- **AIDS**
  - Coronavirus disease 2019 attack rate in HIV-infected patients and in preexposure prophylaxis users

- **Environmental Research Letters**
  - Hazardous air pollutant exposure as a contributing factor to COVID-19 mortality in the United States

- **Journal of Medical Internet Research**
  - Excess Patient Visits for Cough and Pulmonary Disease at a Large US Health System in the Months Prior to the COVID-19 Pandemic: Time-Series Analysis

**MMWR**

- Prevalence of Underlying Medical Conditions Among Selected Essential Critical Infrastructure Workers — Behavioral Risk Factor Surveillance System, 31 States, 2017–2018
- Delay or Avoidance of Medical Care Because of COVID-19–Related Concerns — United States, June 2020
- Community and Close Contact Exposures Associated with COVID-19 Among Symptomatic Adults ≥18 Years in 11 Outpatient Health Care Facilities — United States, July 2020
- Transmission Dynamics of COVID-19 Outbreaks Associated with Child Care Facilities — Salt Lake City, Utah, April–July 2020
- SARS-CoV-2–Associated Deaths Among Persons Aged <21 Years — United States, February 12–July 31, 2020

**HOT OFF THE (LAY) PRESS**

- **Lily Investors**
  - Baricitinib in Combination with Remdesivir Reduces Time to Recovery in Hospitalized Patients with COVID-19 in NIAID-Sponsored ACTT-2 Trial

- **JAMA Medical News and Perspectives**
  - COVID-19 and mRNA Vaccines—First Large Test for a New Approach
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- **STAT News**
  - Pfizer and BioNTech announce plan to expand Covid-19 vaccine trial
  - AstraZeneca resumes Covid-19 vaccine trials in the U.K.

- **The New York Times**
  - AstraZeneca Partly Resumes Coronavirus Vaccine Trial After Halting It for Safety
  - Drugmaker Pauses Covid-19 Vaccine Trial for Safety Review
  - Nine drugmakers pledge to thoroughly vet any coronavirus vaccine
  - Pharma Companies Plan Joint Pledge on Vaccine Safety
  - Vaccine Makers Keep Safety Details Quiet, Alarming Scientists
  - A push for transparency in clinical trials
  - What if We Have to Wait Years for a Coronavirus Vaccine?
  - The Virus Is a Marathon
  - Fauci Warns Coronavirus Could Disrupt Life Well Into New Year
  - The Coronavirus Is Mutating, and That’s Fine (So Far)
  - The Virus Moves Off Campus
  - Tracking Covid at U.S. Colleges and Universities
  - See How All 50 States Are Reopening (and Closing Again)
  - Monitoring the Coronavirus Outbreak in Metro Areas Across the U.S.
  - Covid World Map: Tracking the Global Outbreak
  - How the Aging Immune System Makes Older People Vulnerable to Covid-19
  - How the Coronavirus Attacks the Brain
  - Coronavirus Tests Are Supposed to Be Free. The Surprise Bills Come Anyway.
  - It’s Not Easy to Get a Coronavirus Test for a Child
  - Is Your State Doing Enough Coronavirus Testing?

- **Reuters**
  - U.S. to send millions of rapid COVID-19 tests to states to support school reopening, other tasks

- **StarTribune**
  - Minnesota's broad COVID-19 testing under microscope

- **Health Affairs**
  - Screening To Prevent SARS-CoV-2 Outbreaks: Saliva-Based Antigen Testing Is Better Than The PCR Swab

- **The Atlantic**
  - America Is Trapped in a Pandemic Spiral
  - What Young, Healthy People Have to Fear From COVID-19

- **Propublica**
  - New Research Shows Disproportionate Rate of Coronavirus Deaths in Polluted Areas

- **Bloomberg**
  - Covid Is Clobbering America’s Farm Workers

- **NPR/KQED**
  - Farm Workers Face Double Threat: Wildfire Smoke And COVID-19
  - NPR Poll: Financial Pain From Coronavirus Pandemic 'Much, Much Worse' Than Expected
  - Pandemic Financially Imperils Nearly Half Of American Households, Poll Finds
  - Los Angeles County Issues Guidance Discouraging Trick Or Treating This Halloween
  - The Pandemic Has Researchers Worried About Teen Suicide
  - CSU Campuses to Keep Classes Online Next Term
  - Some Hospitals Fail To Set COVID-19 Patients Apart, Putting Others At Risk
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- **The Wall Street Journal**
  - Hospitals Failed to Fully Contain Covid-19 Inside Their Walls
- **MDLinx**
  - How risky is dining out right now? Here’s the research
- **UCLA Newsroom**
  - Dashboard reveals COVID-19’s impact on Californians’ jobs, mental health
- **Nature News**
  - The lasting misery of coronavirus long-haulers
- **WBUR**
  - 'They're Not Actually Getting Better,' Says Founder Of COVID-19 Long-Haulers Support Group
- **Medpage Today**
  - New Recovery Programs Target COVID Long-Haulers
- **The Mercury News**
  - Coronavirus: California has cut three key metrics by half or more
- **San Francisco Chronicle**
  - Latinos make up 71% of coronavirus cases in largely white Marin County. Will new equity efforts help?
  - Bay Area coronavirus cases drop significantly from peak of summer surge
  - Bay Area counties are poised to reopen again. Have they learned from past mistakes?
  - Here is the reopening status for Bay Area counties under California’s color-coded coronavirus system
  - Here’s how many coronavirus cases have been linked with Bay Area child care centers
  - Kids and teachers showed up for first Bay Area school reopening, but class was canceled
  - How Bay Area schools plan to conduct coronavirus testing for students and staff

**EPIDEMIOLOGY UPDATES**

- **US Leads the World in Confirmed COVID-19 Cases** per [Johns Hopkins University Center for Systems Science and Engineering Dashboard Website](https://covid19.jhu.edu/)
- **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](https://www.cdph.ca.gov/Programs/Covid-19/COVID19TrackingDashboards/index.htm) and the [NYT Map and Table](https://www.nytimes.com/interactive/2020/03/24/us/coronavirus-tracker-live-updates.html) (includes data by county)
  - [California COVID-19 Statewide Update](https://www.cdph.ca.gov/Programs/Covid-19/COVID19TrackingDashboards/index.htm) as of September 16, 2020
- **San Mateo County COVID-19 Dashboard**
- **Santa Clara County COVID-19 Dashboard**

**ADDITIONAL COVID-19 RESOURCES**

- [California COVID-19 Data and Tools](https://covid19.ca.gov/)
- [CDPH COVID-19 Assessment and Modeling Tool](https://covid19.cdph.ca.gov/)
- [California Department of Corrections and Rehabilitation Population COVID-19 Tracking Dashboards](https://cdpr.ca.gov/corrections/dr/cyber/dashboards/)
- [COVID-19 Nursing Home Data](https://covid19.ca.gov/)