CLINICAL PEARL

• Sensitivity of home COVID-19 rapid antigen tests

  According to a recent study, the sensitivity of home rapid antigen COVID-19 tests peaks 4 days after symptom onset, suggesting that a negative antigen test should be followed by a second test in 1 or 2 days. The study studied test sensitivity in 225 adults and children from 107 households who tested positive for COVID-19 in San Diego County, California, and metropolitan Denver from January to May 2021. Participants used antigen tests for 15 days and had at least one same-day reverse-transcription (RT) PCR test and viral culture. A total of 3,044 antigen tests and 642 PCR tests were performed. Average participant age was 29 years, 52% were female, and 91% had COVID-19 symptoms. Antigen tests were less sensitive than PCR, but more sensitive than viral culture. During the first few days of illness, antigen test sensitivity was 50% (95% confidence interval [CI], 45% to 55%). Overall antigen test sensitivity was 64% (95% CI, 56% to 70%) and 84% (95% CI, 75% to 90%) compared to PCR and viral culture, respectively.

  Sensitivity of the antigen tests peaked at 77% (95% CI, 69% to 83%) 4 days after symptom onset and was 81% to 85% on a second test 1 or 2 days later. PCR positivity peaked at 95% 3 days after illness onset, while viral cultures peaked at 64% on day 2. Six days after symptom onset, antigen test positivity was 61% (95% CI, 53% to 68%), falling to less than 20% by day 11.

  Of note, the study authors pointed out that antigen test performance may differ in vaccinated and unvaccinated people and among infections with different SARS-CoV-2 variants.

PUBLIC HEALTH UPDATES

• CDC Health Advisory: Updated Information on Availability and Use of Treatments for Outpatients with Mild to Moderate COVID-19 Who are at Increased Risk for Severe Outcomes of COVID-19
• FDA Announces Tentative Advisory Committee Meeting Schedule Regarding COVID-19 Vaccines
• FDA Approves First COVID-19 Treatment for Young Children
• WHO recommends highly successful COVID-19 therapy and calls for wide geographical distribution and transparency from originator

GUIDANCE/GUIDELINES

• CDC Interim Clinical Considerations for COVID-19 Vaccines
• NIH COVID-19 Treatment Guidelines Update: What’s New in the Guidelines

RESOURCES

• IDSA
  o COVID-19 Podcast: The Latest on Long COVID
• Kaiser Family Foundation COVID-19 mortality preventable by vaccines
• Center for Infectious Disease Research and Policy (CIDRAP) Osterholm Update:
  o Episode 100: You Can't Stop the Wind
  o Episode 101: Class in Complicated Times
ACADEMIC/RESEARCH PAPERS

- **Nature**
  - Daily longitudinal sampling of SARS-CoV-2 infection reveals substantial heterogeneity in infectiousness
  - Effectiveness of a second BNT162b2 booster vaccine against hospitalization and death from COVID-19 in adults aged over 60 years
  - Comparative effectiveness over time of the mRNA-1273 (Moderna) vaccine and the BNT162b2 (Pfizer-BioNTech) vaccine
  - Increased Memory B Cell Potency and Breadth After a SARS-CoV-2 mRNA Boost
  - Risk factors for severe COVID-19 differ by age for hospitalized adults

- **bioRxiv**
  - P681 mutations within the polybasic motif of spike dictate fusogenicity and syncytia formation of SARS CoV-2 variants

- **medRxiv**
  - Omicron sub-lineages BA.4/BA.5 escape BA.1 infection elicited neutralizing immunity
  - Determinants of SARS-CoV-2 anti-spike antibody levels following BNT162b2 vaccination: cross-sectional analysis of 6,000 SIREN study participants
  - Continued Emergence and Evolution of Omicron in South Africa: New BA.4 and BA.5 lineages

- **The Lancet**
  - Durability of BNT162b2 vaccine against hospital and emergency department admissions due to the omicron and delta variants in a large health system in the USA: a test-negative case–control study
  - Severity of omicron variant of concern and effectiveness of vaccine boosters against symptomatic disease in Scotland (EAVE II): a national cohort study with nested test-negative design
  - The displacement of the SARS-CoV-2 variant Delta with Omicron: An investigation of hospital admissions and upper respiratory viral loads
  - Risk of hospitalisation associated with infection with SARS-CoV-2 omicron variant versus delta variant in Denmark: an observational cohort study
  - Sustainability of surveillance systems for SARS-CoV-2
  - An online breathing and wellbeing programme (ENO Breathe) for people with persistent symptoms following COVID-19: a parallel-group, single-blind, randomised controlled trial
  - Multivariate profile and acute-phase correlates of cognitive deficits in a COVID-19 hospitalised cohort
  - Policy stringency and mental health during the COVID-19 pandemic: a longitudinal analysis of data from 15 countries
  - Effect of lockdown on mental health in Australia: evidence from a natural experiment analysing a longitudinal probability sample survey

- **New England Journal of Medicine**
  - Intramuscular AZD7442 (Tixagevimab–Cilgavimab) for Prevention of Covid-19

- **JAMA**
  - Assessment of T-cell Reactivity to the SARS-CoV-2 Omicron Variant by Immunized Individuals
  - Association of SARS-CoV-2 Infection During Pregnancy With Maternal and Perinatal Outcomes
  - SARS-CoV-2 Vaccination and Myocarditis in a Nordic Cohort Study of 23 Million Residents
  - Comparison of Home Antigen Testing With RT-PCR and Viral Culture During the Course of SARS-CoV-2 Infection
  - Effect of Androgen Suppression on Clinical Outcomes in Hospitalized Men With COVID-19 - The HITCH Randomized Clinical Trial
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- Association of Short-term Air Pollution Exposure With SARS-CoV-2 Infection Among Young Adults in Sweden
- COVID-19 Vaccination and Estimated Public Health Impact in California
- Association of Large Financial Incentives With COVID-19 Vaccination Uptake Among Employees of a Large Private Company
- Stress-Related Disorders of Family Members of Patients Admitted to the Intensive Care Unit With COVID-19

**Emerging Infectious Diseases**
- Duration of Infectious Virus Shedding by SARS-CoV-2 Omicron Variant–Infected Vaccinees
- Effectiveness of BNT162b2 Vaccine Booster against SARS-CoV-2 Infection and Breakthrough Complications, Israel
- Disparities in First Dose COVID-19 Vaccination Coverage among Children 5–11 Years of Age, United States
- Estimating Relative Abundance of 2 SARS-CoV-2 Variants through Wastewater Surveillance at 2 Large Metropolitan Sites, United States
- Detection of SARS-CoV-2 B.1.351 (Beta) Variant through Wastewater Surveillance before Case Detection in a Community, Oregon, USA
- Increased COVID-19 Severity among Pregnant Patients Infected with SARS-CoV-2 Delta Variant, France
- Epidemiologic and Genomic Analysis of SARS-CoV-2 Delta Variant Superspreading Event in Nightclub, the Netherlands, June 2021
- High-Dose Convalescent Plasma for Treatment of Severe COVID-19
- Severe Multisystem Inflammatory Symptoms in 2 Adults after Short Interval between COVID-19 and Subsequent Vaccination
- Multisystem Inflammatory Syndrome in Children after SARS-CoV-2 Vaccination
- Guillain-Barré Syndrome Associated with COVID-19 Vaccination
- SARS-CoV-2 Seroprevalence after Third Wave of Infections, South Africa
- SARS-CoV-2 Cross-Reactivity in Prepandemic Serum from Rural Malaria-Infected Persons, Cambodia
- SARS-CoV-2 Antibody Prevalence and Population-Based Death Rates, Greater Omdurman, Sudan
- Mathematical Modeling for Removing Border Entry and Quarantine Requirements for COVID-19, Vanuatu
- Type 1 Diabetes Mellitus Associated with Nivolumab after Second SARS-CoV-2 Vaccination, Japan

**PLOS**
- COVID-19 mortality in the United States: It’s been two Americas from the start

**Clinical Infectious Diseases**
- Reductions in Antibiotic Prescribing in Australia During the SARS-CoV-2 Pandemic: National Prescribing Data

**Vaccine**
- Readability of COVID-19 Vaccine Information for the General Public

**MMWR**
- Provisional COVID-19 Age-Adjusted Death Rates, by Race and Ethnicity — United States, 2020–2021
- Seroprevalence of Infection-Induced SARS-CoV-2 Antibodies — United States, September 2021–February 2022
- Hospitalizations of Children Aged 5–11 Years with Laboratory-Confirmed COVID-19 — COVID-NET, 14 States, March 2020–February 2022
HOT OFF THE (LAY) PRESS

- **New York Times**
  - Loss of Pandemic Aid Stresses Hospitals That Treat the Uninsured
  - Vaccines for Young Children
  - Vaccines for young children are being delayed by incomplete data, a top F.D.A. official suggests.
  - Moderna said it had asked the F.D.A. to authorize its coronavirus vaccine for children under 6, making it the first manufacturer to do so.
  - Should You Still Wear a Mask? Experts weigh in on where, and when, you can safely take one off.
  - Where You Still Have to Wear a Mask in California

- **The Hill**
  - Moderna expects ‘large amounts’ of omicron booster available by fall

- ** Politico**
  - Waiting for a Covid vaccine for your under-5 kid? It may take a bit longer.

- **CNBC**
  - At least a dozen U.S. universities reinstate mask mandates as Covid cases rise

- **AP News**
  - Boston officials recommend wearing masks indoors again
  - Biden admin to promote availability of COVID antiviral pill
  - Racial split on COVID-19 endures as restrictions ease in US
  - Most people in US want masks for travelers: AP-NORC poll

- **The Washington Post**
  - Virus mutations aren’t slowing down. New omicron subvariant proves it.
  - Covid deaths no longer overwhelmingly among the unvaccinated as toll on elderly grows

- **Bloomberg**
  - U.S. Seeks Data on Post-Paxlovid Rebound

- **Scientific American**
  - Nose Spray Vaccines Could Quash COVID Virus Variants

- **EurekaAlert!**
  - Six in ten people with COVID-19 still have a least one symptom a year later, long Covid study reveals
  - Long COVID associated with different clinical trajectories and characteristics depending on severity of initial SARS-CoV-2 infection
  - Long Covid fatigue eased by four-week occupational therapy program, Irish study finds
  - Pregnant women with COVID-19 face greater risk of hospitalisation and ICU admission, strengthening case for vaccination
  - Patients hospitalized with COVID-19 were three times as likely to die than those with seasonal influenza
  - Longer interval between COVID-19 vaccines generates up to nine times as many antibodies
  - Omicron infection just 20 days after Delta – the shortest known gap between infections

- **European Commission Press Releases**
  - COVID-19: Commission calls on Member States to step up preparedness for the next pandemic phase

- **Moderna News**
  - MODERNA FILES FOR AUTHORIZATION OF ITS COVID-19 VACCINE IN YOUNG CHILDREN SIX MONTHS TO UNDER SIX YEARS OF AGE
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- **Pfizer Press Releases**
  - Pfizer and BioNTech Submit Application for U.S. Emergency Use Authorization for a COVID-19 Vaccine Booster Dose in Children 5 Through 11 Years of Age
  - Pfizer Shares Top-Line Results from Phase 2/3 EPIC-PEP Study of PAXLOVID™ for Post-Exposure Prophylactic Use

- **Los Angeles Times**
  - Here we go again: California coronavirus cases rising. Is a new wave coming soon?
  - CDC restates recommendation for masks on planes, trains despite court ruling

- **San Francisco Chronicle**
  - Bay Area COVID cases and hospitalizations rise again as new infections swell in April
  - Why aren’t more Californians getting second COVID booster shots? It’s complicated
  - As COVID cases ‘swell’ in the Bay Area, this time it’s on you to weigh the risks

**Epidemiology Updates**

- CDC COVID-19 Community Levels
- CDC COVID Data Tracker
  - Variant Proportions
  - Wastewater Surveillance
  - COVID-19 Vaccinations in the United States
- 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 May 5, 2022
- 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
- Covid-WEB (Wastewater Epidemiology for the Bay Area)
- 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
- CDC Interactive Serology Dashboard for Commercial Laboratory Surveys
- HHS Coronavirus Data Hub
- COVID-19 Nursing Home Data