

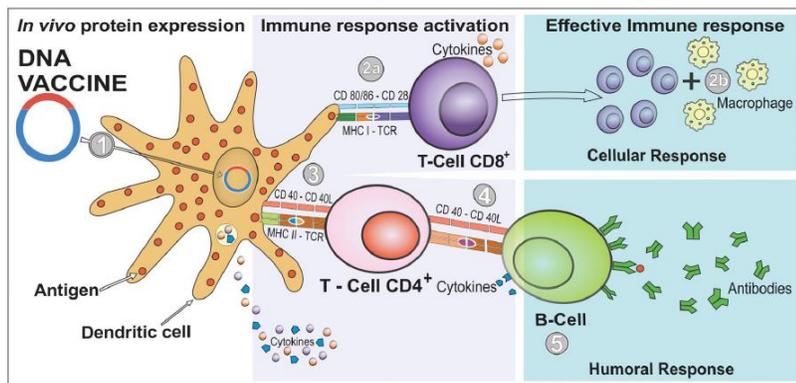


## Reference of the Week

- Silverira MM. DNA vaccines against COVID-19: Perspectives and challenges. Life Sci. 12.19.2020. Review article.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7749647/> pdf

**Summary:** **1.** Typically, 10–15 years are required from conducting preclinical studies to obtaining vaccine licensure. The fastest approval was the Ebola vaccine, which took five years. **2.** Life-threatening infectious disease, influenza (H5N1), Zika, Ebola, and MERS-CoV are driving demand to accomplish vaccine production with the expectation that genome sequencing to clinical trials be reduced to 16 weeks. **3.** The target cells for plasmid antigen DNA are dendritic cells and even myocytes that serve as antigen



presenting cells. **4.** DNA vaccines have only been licensed for use in veterinary medicine due to limited immunogenicity. **5.** DNA vaccines potentially have advantages: induction of T and B cells; antigens for different organisms in a single vaccine; efficient scalability; highly stable with less need of refrigeration. **6.** COVID-19 products in clinical trials: ANGES/Brickell (Japan); Inovio (USA); Genexine (South Korea).

*All the rage is for mRNA vaccines but that may change as the science and scalability of DNA*

*vaccines improve.*

## Other References:

- Parks Taylor S. Awake-Prone Positioning Strategy for Non-Intubated Hypoxic Patients with COVID-19: A Pilot Trial with Embedded Implementation Evaluation. Annals of the American Thoracic Society. 12.23.2020

<https://www.atsjournals.org/doi/abs/10.1513/AnnalsATS.202009-1164OC> pdf

**Premise/Methods:** **1.** Evidence from small observational studies suggests that prone positioning in non-intubated patients is feasible and associated with improved oxygenation in patients with non-COVID-19 respiratory failure. **2.** The adoption, feasibility, and tolerability of prone positioning and the impact on oxygenation in non-intubated COVID-19 patients are unknown. **3.** The aim of the APPS pilot trial was to assess feasibility and important contextual factors for a large RCT comparing the clinical effectiveness of an Awake-Prone Positioning Strategy (APPS) versus usual care alone for hypoxic adults with COVID-19.

**Results:** **1.** 43 patients met inclusion criteria: 13 patients received usual care and 27 patients in the APPS; UC patients appeared to be sicker; 6 patients and 7 clinicians agreed to be interviewed regarding their experience. **2.** 4 of 7 clinicians found randomization to a no-prone group as unacceptable and 4 of 7 encountered logistical barriers to APPS; 4 of 6 patients found the prone position uncomfortable or intolerable. **3.** Although 6 of 7 clinicians (86%) endorsed 12-16 hours as the daily recommended prone time, patients reported that they were only able to lie prone for between 10-120 minutes per day. **4.** Although barriers to prone positioning are significant and must be addressed in a large RCT, oxygenation improved in the APPS group.

- Szilagyi PG. National Trends in the US Public's Likelihood of Getting a COVID-19 Vaccine—April 1 to December 8, 2020. JAMA network. 12.29.2020. Research letter.

<https://jamanetwork.com/journals/jama/fullarticle/2774711#:~:text=In%20this%20nationally%20representative%20survey,pr,or%20to%20Emergency%20Use%20Authorization.> pdf

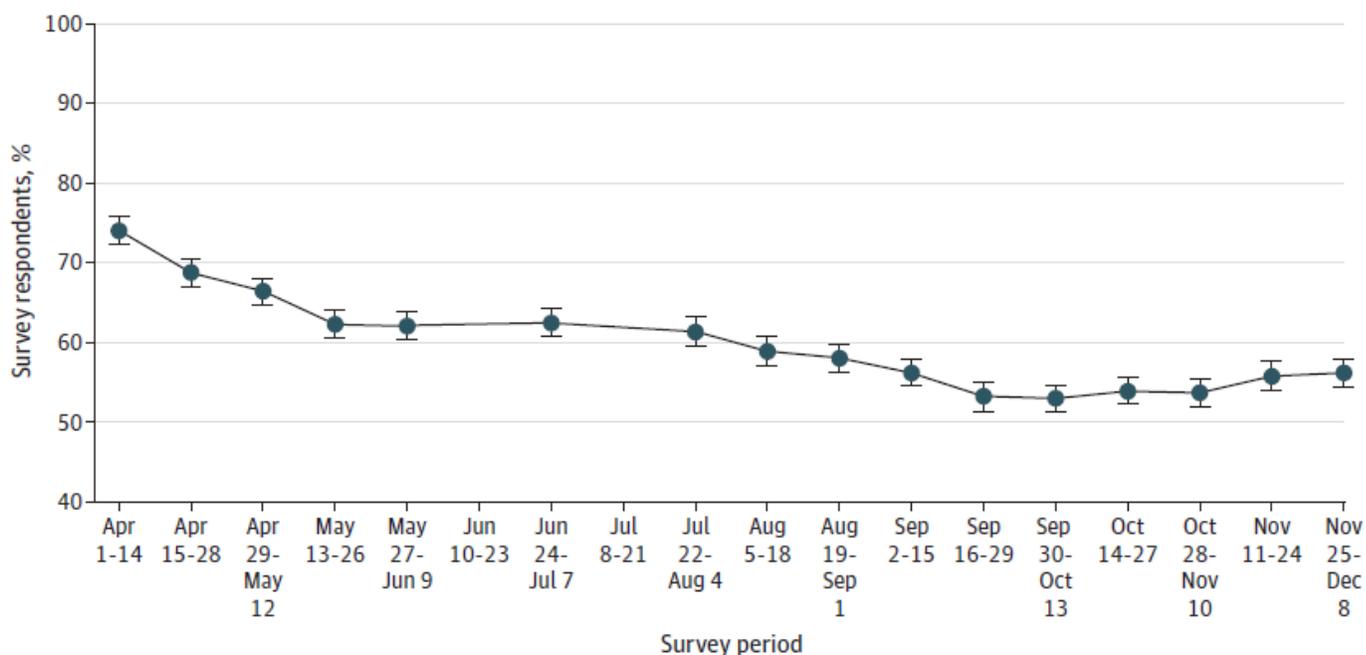
**Premise/Methods:** **1.** Past surveys reveal that 58% to 69% of adults intend to be vaccinated against SARS-CoV-2. This intention may be fluid and serial surveys over time have not assessed individuals longitudinally. **2.** The Understanding America Survey (UAS) tracks the attitudes of 9,000 US adults over time. **3.** Changes in likelihood of getting a COVID-19 vaccine (overall and by demographic subgroups) were analyzed at the respondent level.

**SEE THE ARTICLE CABINET ON THE S: DRIVE, "COVID-19 ARTICLE RESOURCE CABINET" FOR CHILDREN'S FULL COLLECTION**



**Findings:** **1.** 8,167 UAS respondents consented to perform biweekly surveys with completion rate per period being 75% to 97%. **2.** Differences in likelihood to obtain a SARS-CoV-2 vaccine exist across demographic characteristics: Black vs White individuals, 38% vs 59%; high school education or less vs more educated, 48% vs 70%; younger adults (18-49 years) vs older adults ( $\geq$  65 years), 51% vs 69%; and women vs men, 51% vs 62%. **3.** Significant declines over time in the likelihood of seeking vaccination were observed for both women and men and in all age, racial/ethnic, and educational subgroups.

**Figure.** Percentage of US Adults Who Say They Are Likely to Get a COVID-19 Vaccine



*The target of an 85% vaccine rate at this point in time appears overly optimistic. The extraordinary science that is accelerating vaccine development needs a commensurate public health communication strategy.*

- Birgard G. Assessment of Air Contamination by SARS-CoV-2 in Hospital Settings. JAMA Network. 12.23.2020.

<https://jamanetwork.com/journals/jamanetworkopen/article-abstract/2774463> pdf

**Premise/Methods:** **1.** Viral contamination of the air surrounding patients with COVID-19 and health care workers in hospitals may have serious implications for outbreak control strategies. **2.** This article reviews the current evidence on air contamination with SARS-CoV-2 in hospital settings, the viral load, and associated factors to better assess the risk of cross-transmission of COVID-19 among HCPs and patients. **3.** COVID-19 articles on air contamination in hospitals were reviewed by first extracting pertinent investigations from multiple data sets. **4.** The following information was then extracted: (1) setting, (2) clinical context, (3) ventilation system, (4) number of air samples performed, (5) sampling method, (6) location of sampler and distance from patients, (7) duration and air volume sampled, (8) method of SARS-CoV-2 search, (9) positivity rate, (10) viral load (SARS-CoV-2 RNA copies perm<sup>3</sup>), and (11) viral culture results.

**Findings:** **1.** 24 articles met inclusion criteria and they represented investigations from multiple countries. **2.** A total of 893 air samples were performed across the 24 studies reviewed, including 471 (52.7%) in close patient environments, 237 (26.5%) in clinical areas, 122 (13.7%) in staff areas, 42 (4.7%) in public areas, and 21 (2.4%) in toilets and/or bathrooms. **3.** Overall: 82 of 471 air samples (17.4%) from close patient environments were positive for SARS-CoV-2 RNA; ICU rooms were positive at 25.2% vs non-ICU rooms 10.7%; 14 of 42 samples (33.3%) were positive in public areas. **4.** Positive viral cultures were found close to the patient, bathrooms, clinical areas, staff areas, and public areas.

*Wash, mask, and keep your distance in all areas of the hospital. This is not new but serves as a reminder of the vigilance required to keep everyone safe.*