Immunological and Antigenic Signatures Associated with Chronic Illnesses after COVID-19 Vaccination

The "YALE" Study

Joseph Varon, MD,
FACP, FCCP, FCCM, FRSM
President and
Chief Medical Officer,
Independent Medical Alliance

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Bornali Bhattacharjee, Peiwen Lu, Valter Silva Monteiro, Alexandra Tabachnikova, Kexin Wang, William B. Hooper, Victoria Bastos, Kerrie Greene, Mitsuaki Sawano, Christian Guirgis, Tiffany J. Tzeng, Frederick Warner, Pavlina Baevova, Kathy Kamath, Jack Reifert, Danice Hertz, Brianne Dressen, Laura Tabacof, Jamie Wood, Lily Cooke, Mackenzie Doerstling, Shadan Nolasco, Amer Ahmed, Amy Proal, David Putrino, Leying Guan, Harlan M. Krumholz, Akiko Iwasaki

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Visit: geni.us/Yale-Study

PURPOSE

- **Objective:** To explore the immunological and antigenic features associated with Post-Vaccination Syndrome (PVS), a chronic debilitating condition reported by some individuals following COVID-19 vaccination.

- **Participants:** 42 individuals with PVS and 22 healthy controls enrolled in the Yale LISTEN study.

Methods

- Cross-sectional case-control study analyzing immune cell populations, antibody responses, circulating immune modulators, and demographic characteristics.

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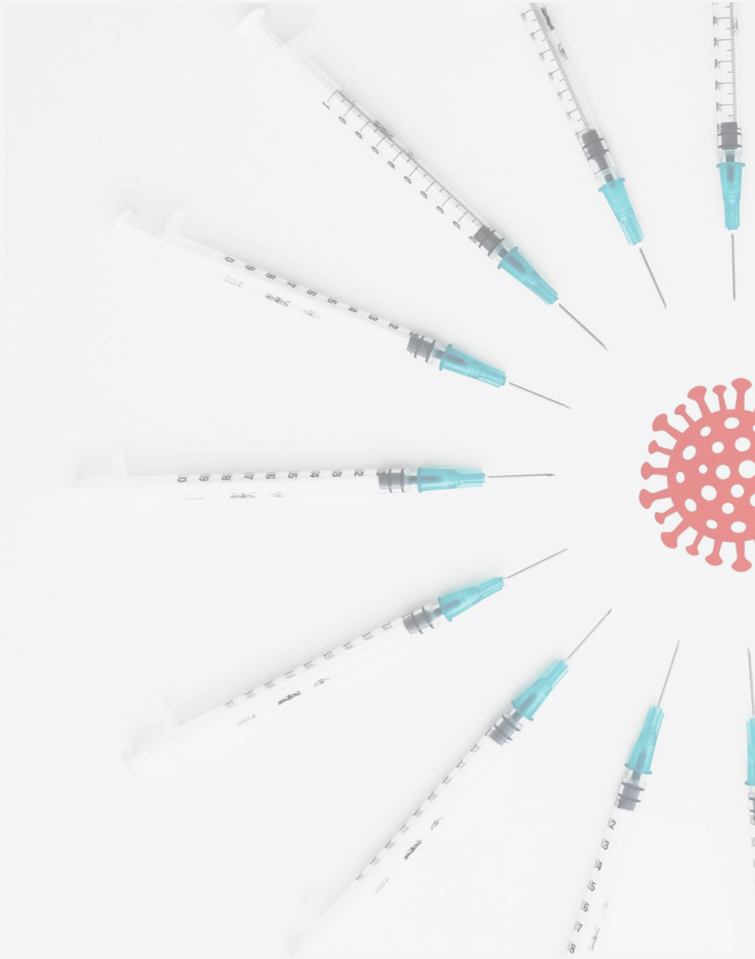
Characteristics of the Post-Vaccination Syndrome

- **Symptoms:** Excessive fatigue (85%), tingling/numbness (80%), exercise intolerance (80%), brain fog (77.5%), difficulty concentrating (72.5%), insomnia (70%), neuropathy (70%), muscle aches (70%), anxiety (65%), tinnitus (60%), burning sensations (57.5%).
- **Onset of Symptoms:** Median onset within 4 days post-vaccination; severe symptoms typically within 10 days.
- **Vaccines Involved:** Pfizer-BioNTech (Comirnaty), Moderna (Spikevax), Johnson & Johnson (Jcovden).



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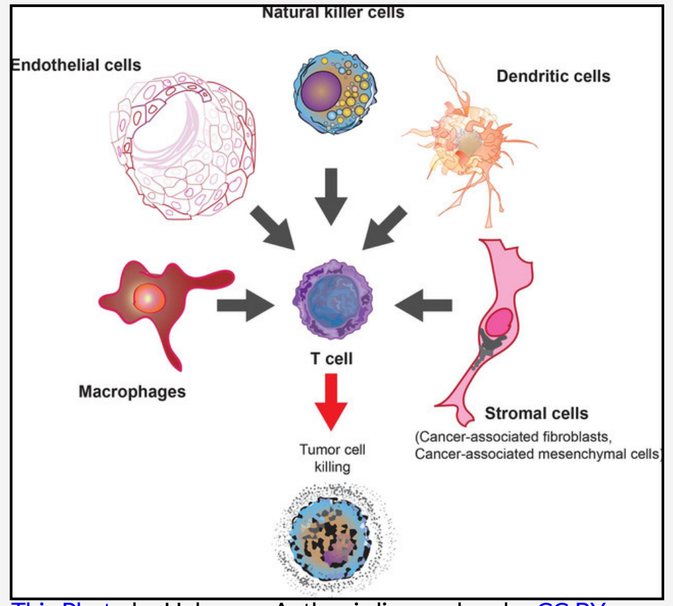
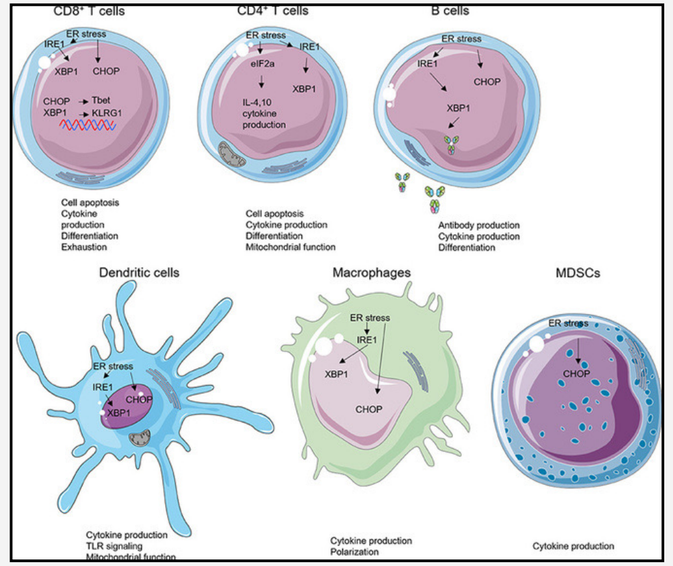
Key Immunological Findings

- **Immune Cell Differences:**
  - Reduced circulating memory and effector CD4 T cells in PVS participants.
  - Increased TNFα-producing CD8 T cells and non-classical monocytes.
  - Lower conventional dendritic cells type 2 (cDC2).
- **Antibody Responses:**
  - Lower anti-spike antibody titers in PVS due to fewer vaccine doses.
  - Elevated levels of circulating SARS-CoV-2 spike protein were detected up to **709 days** post-vaccination in PVS participants.





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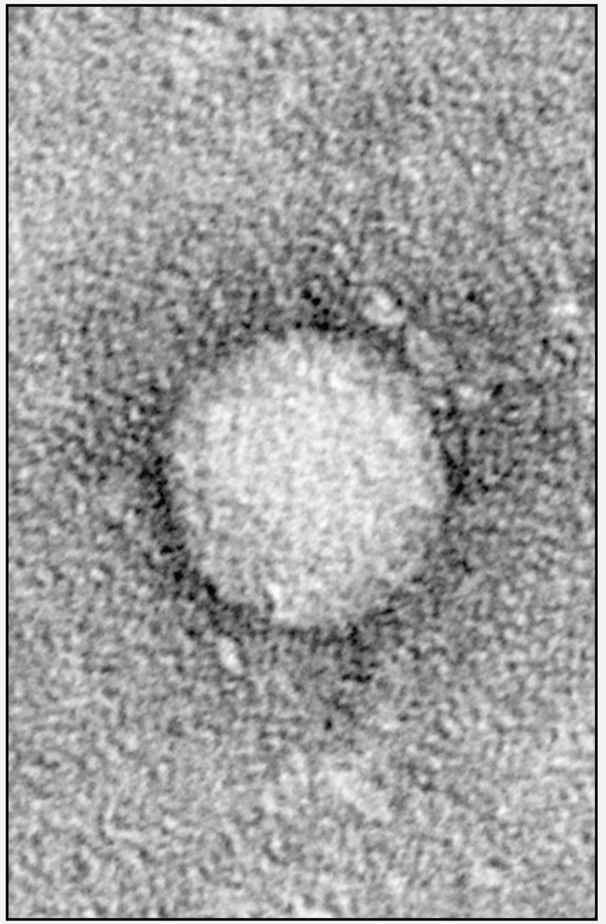
Antigenic and Viral Reactivation Findings

- **Epstein-Barr Virus Reactivation:**
  - Higher serological evidence of recent EBV reactivation in PVS participants.
  - Elevated antibodies against EBV proteins gp42 and gp350.
- **Autoantibodies:**
  - Increased IgM autoantibodies against nucleosomes and IgA autoantibodies against Aquaporin-4 in PVS individuals.



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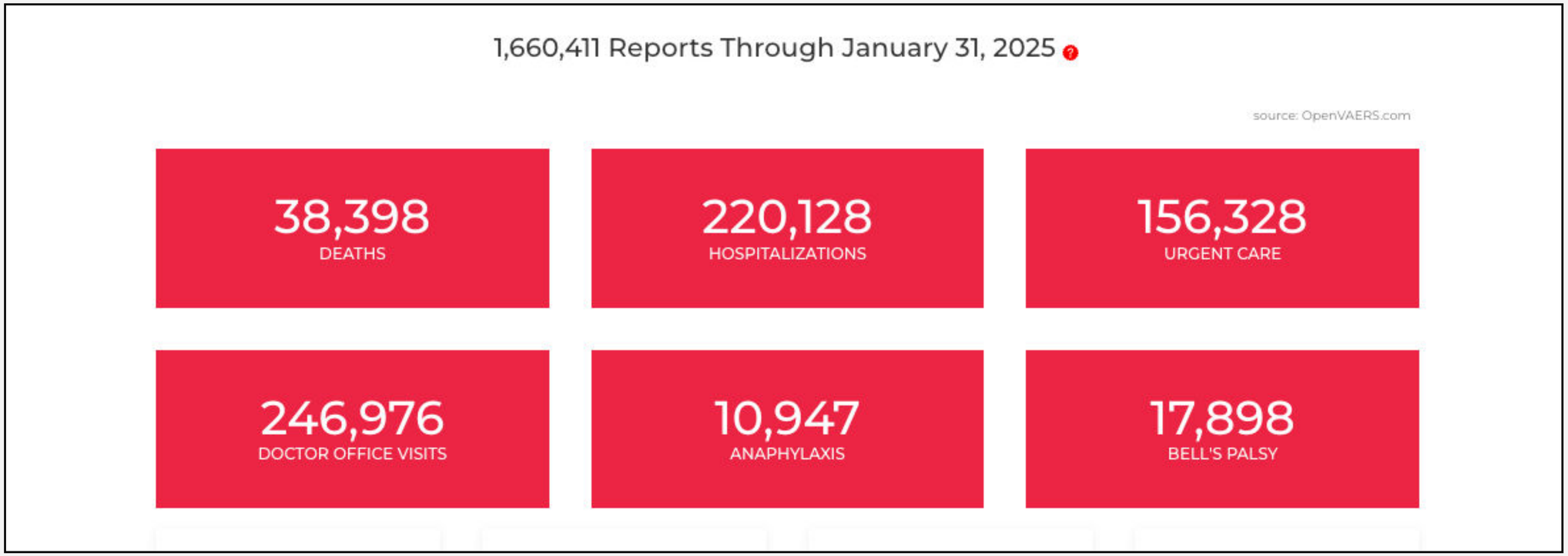
The Reality of Current Vaccine Impacts



Source: OpenVAERS.com

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The Importance of this Study

- **Summary of Findings:**
  - Distinct immunological signatures were identified, including *persistent spike protein* circulation, altered immune cell populations, *EBV reactivation*, and *specific autoantibodies*.
- **Implications for Future Research:**
  - Findings suggest potential immune mechanisms underlying PVS that warrant further investigation.
  - Highlights the need for diagnostic biomarkers and therapeutic strategies for affected individuals.
- **Limitations:**
  - Small sample size; further studies required for validation and generalization.

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