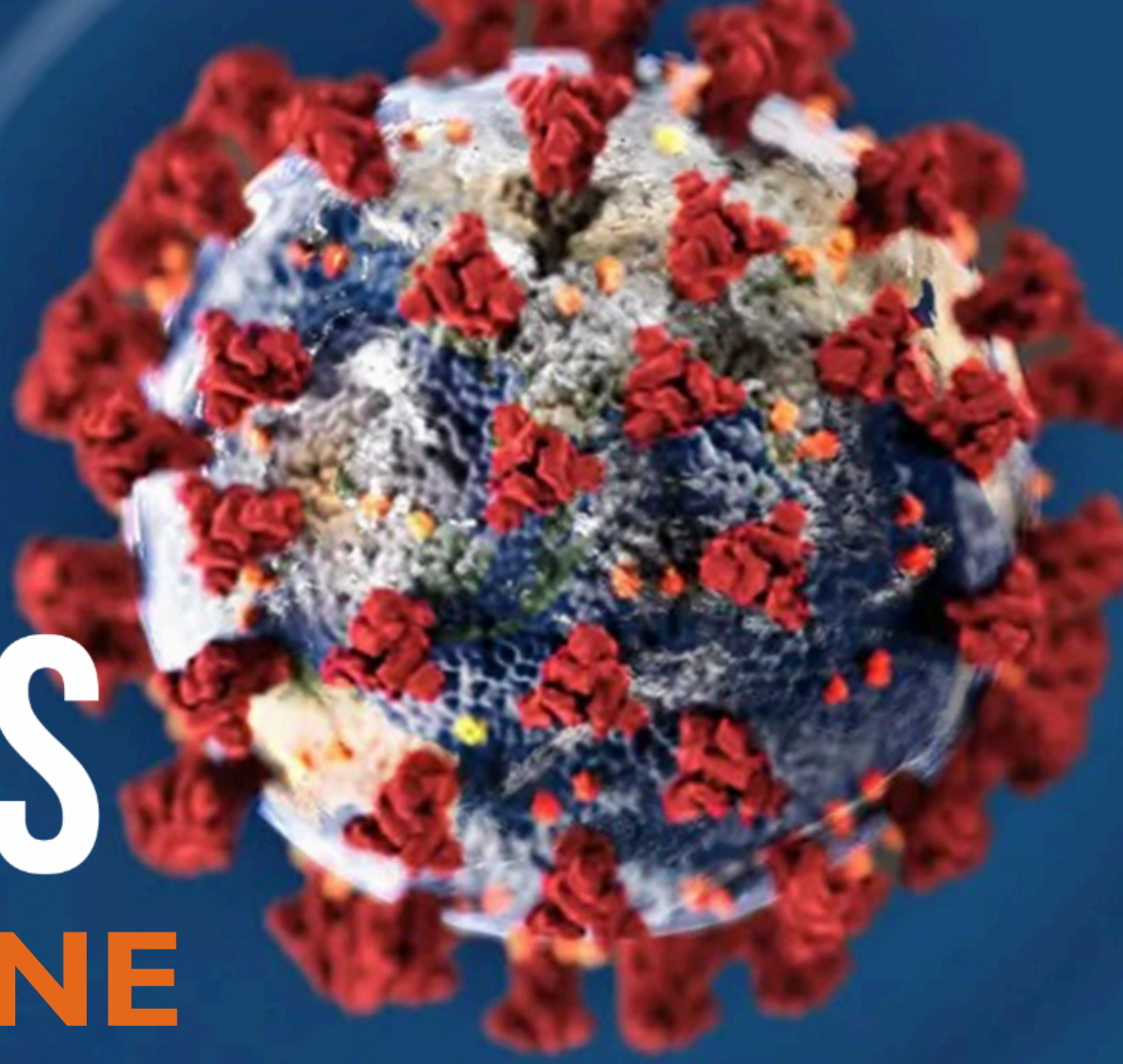
CANCER IN THE TIME OF CORONAVIRUS

COVID-19 VACCINE



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COVID-19 RE-CAP

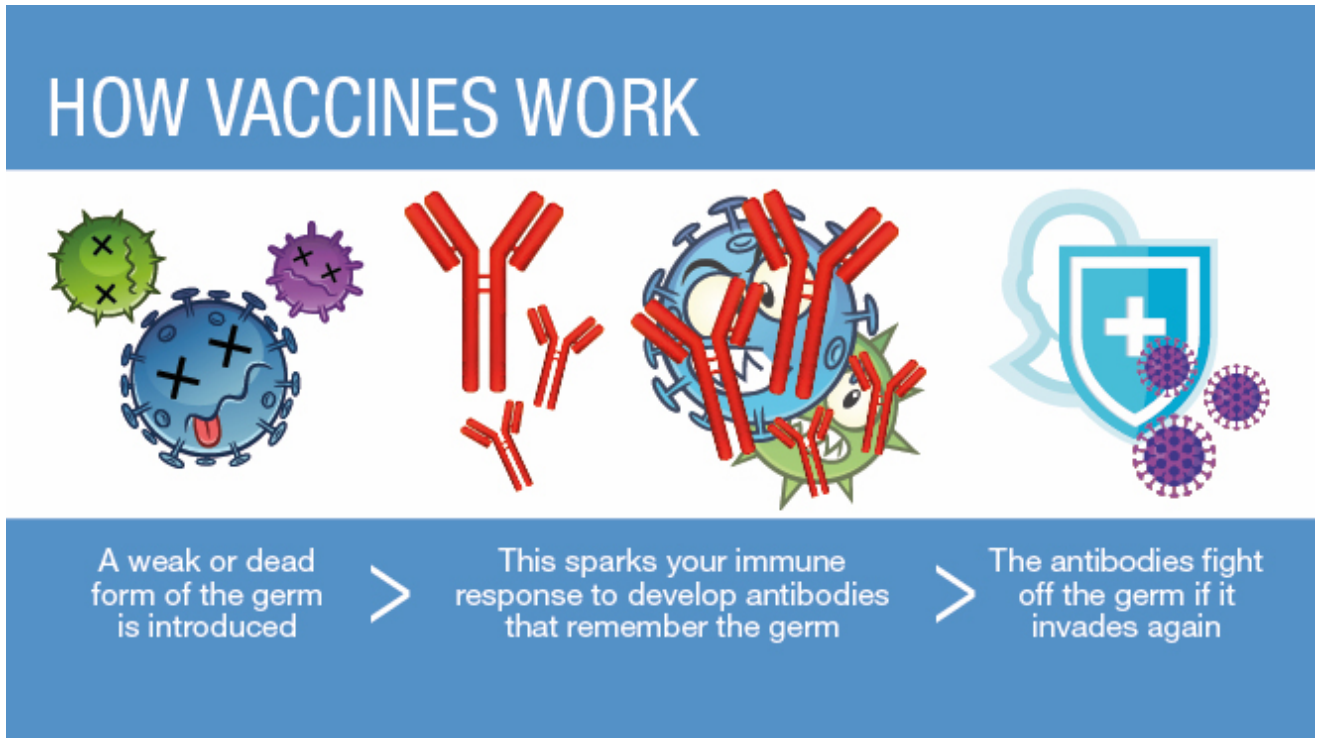
- First cases seen in Wuhan, China in December 2019
- Common symptoms:
  - Fever
  - Cough
  - Shortness of Breath
  - New loss of taste or smell
- Caused by viral infection
- >350,000 deaths in the USA due to COVID-19 in 2020
- Potential for asymptomatic spread
- Please see our prior Webinar and Slides for additional background: https://cancer.ufl.edu/2020/04/07/cancer-in-the-time-of-coronavirus/

CDC: Symptoms of Coronavirus

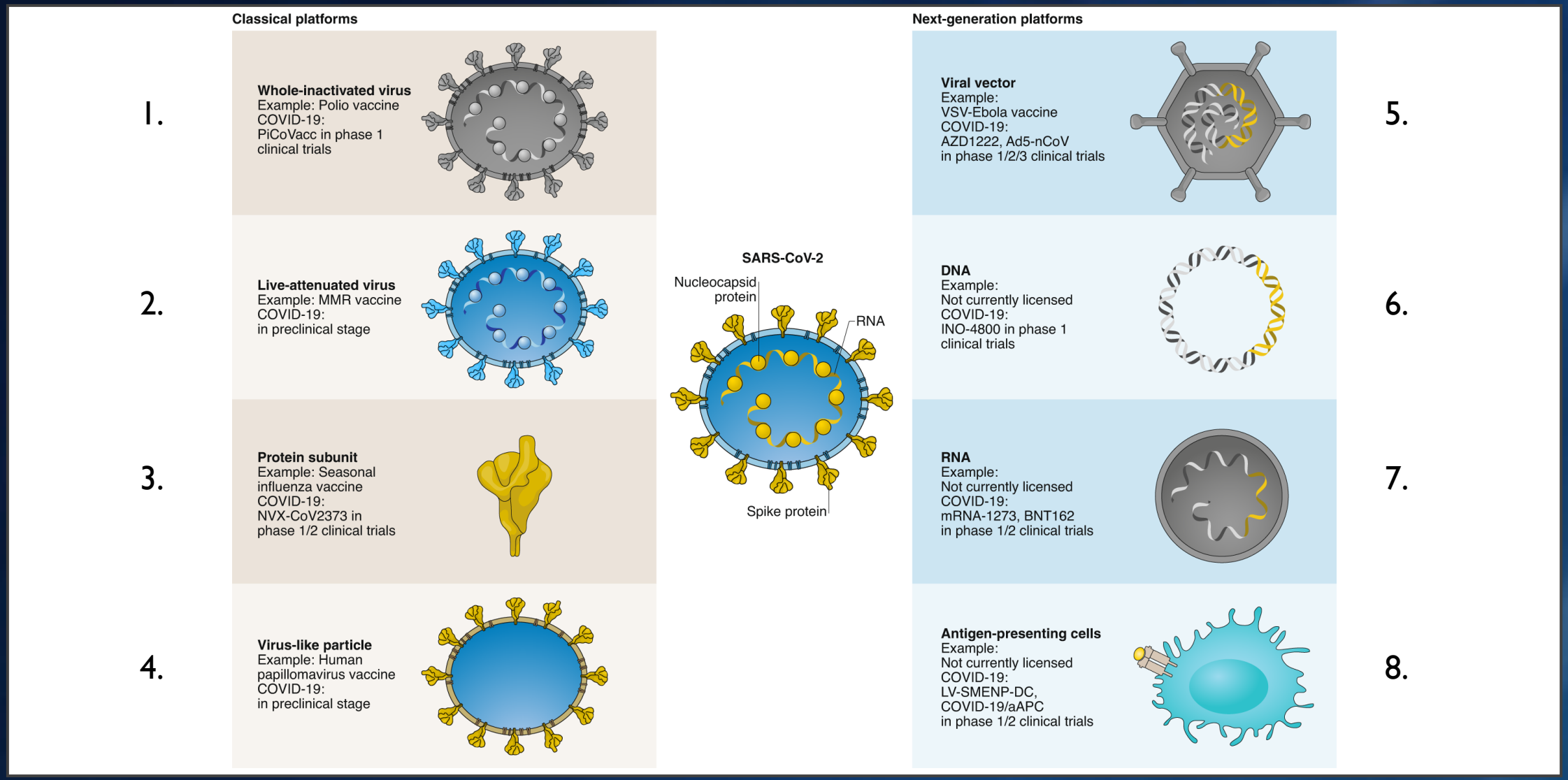
World Health Organization: Q&A on coronaviruses (COVID-19)

HOW DO VACCINES WORK?

- **Introduce** infectious particles into the body
- **Stimulate** immune response to vaccine
- "Memory" immune cells **recognize** a prior exposure
- Immune response to true infection **prevents** severe disease

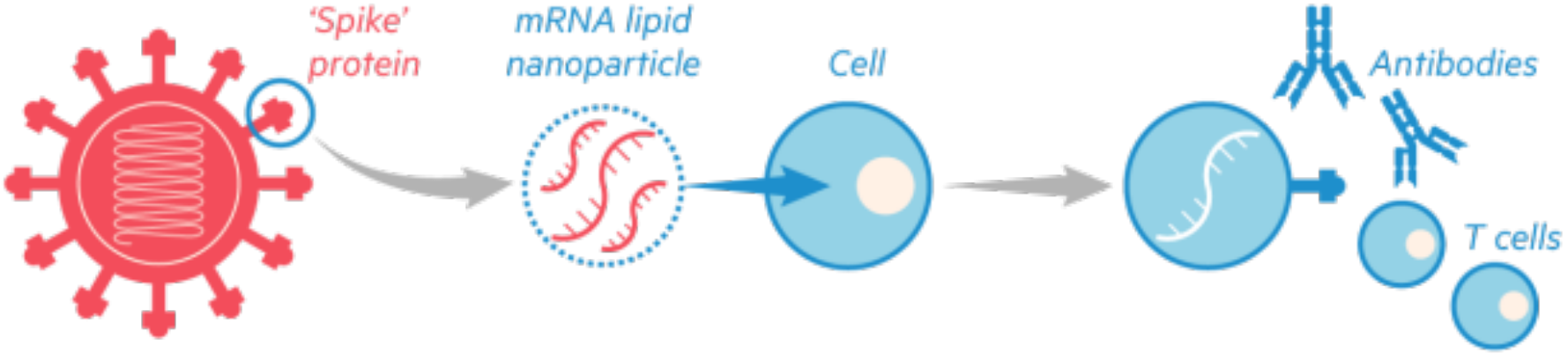


Mayo Clinic Health System: Vaccine safety: 6 common questions answered



van Riel et al. *Nature Materials* 19:810–812(2020).

mRNA vaccines give the immune system genetic instructions to recognise the virus



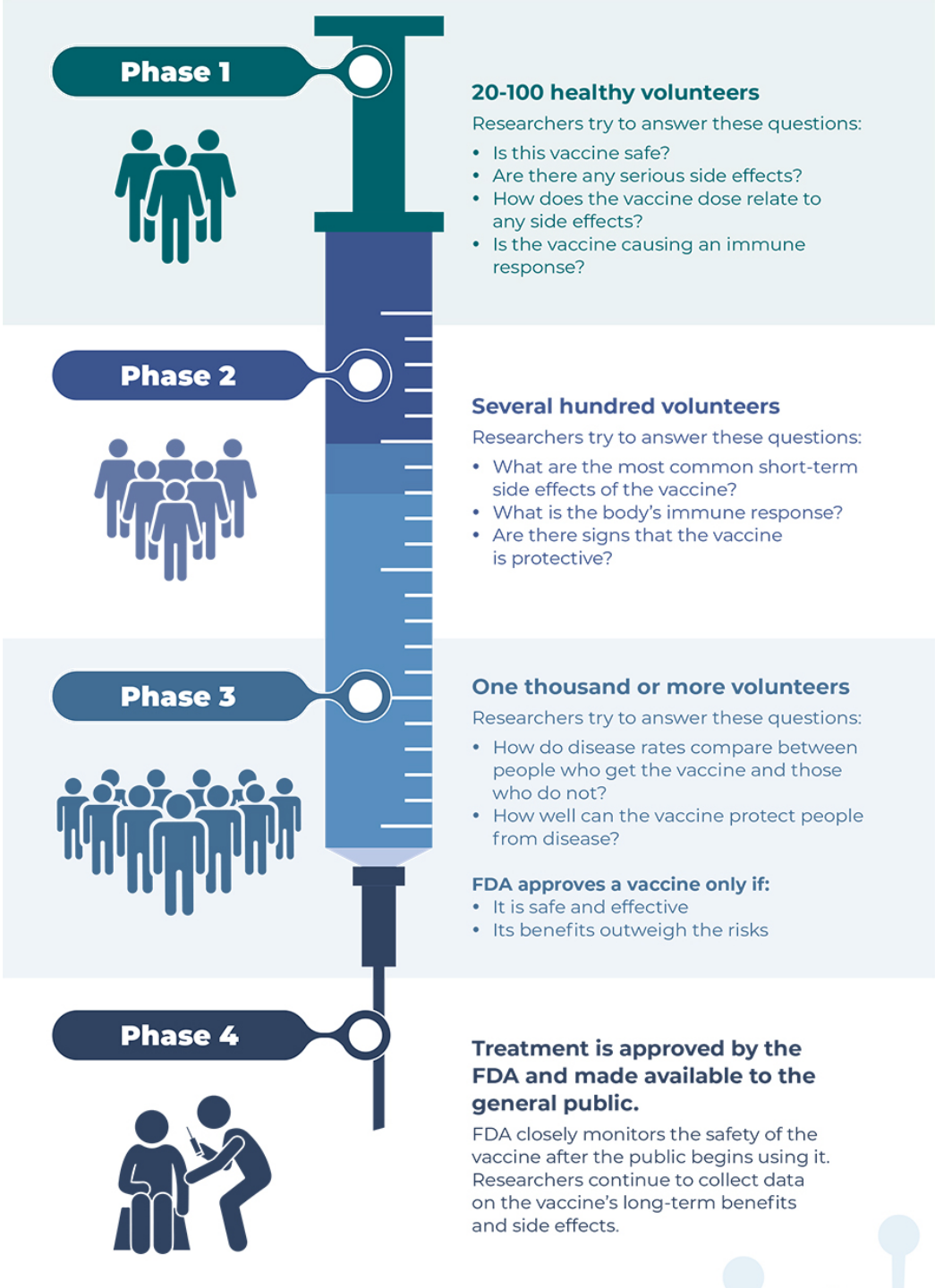
Scientists focus on the genetic sequence for the virus's 'spike' protein. This is used to synthesise an mRNA sequence – instructions that cells can use to make the 'spike' protein

The synthetic mRNA is packaged in a lipid nanoparticle that delivers the instructions to a cell

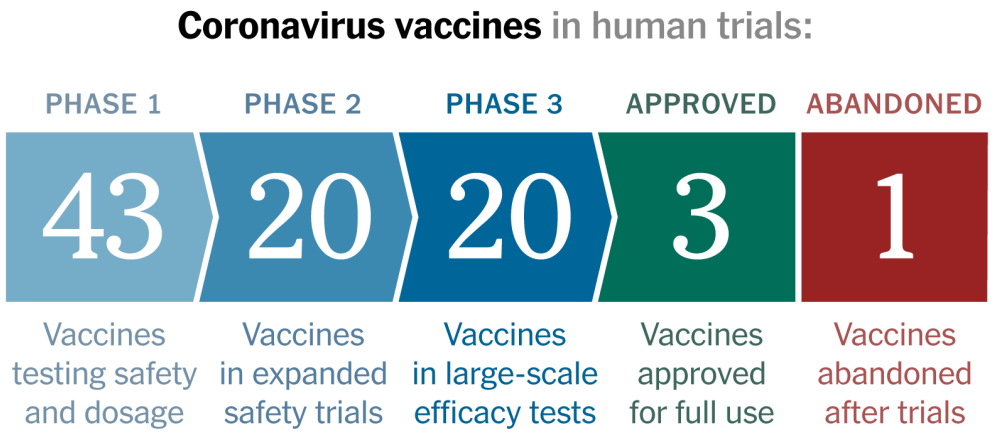
Once inside the cell, its cellular machinery follows the mRNA instructions to produce the viral protein. This is displayed on the surface of the cell and stimulates an immune system response

CDC:Pfizer-BioNTech: COVID-19 Vaccine: What Healthcare Professionals Need to Know

HOW DO WE KNOW VACCINES ARE SAFE AND EFFECTIVE?



CORONAVIRUS VACCINES



- Human trials in US started March 16, 2020.

- In US, two vaccines received Emergency Use Authorization in December 2020.
  - ✓ Pfizer-bioNTech
  - ✓ Moderna
- Additional clinical trials ongoing.

World Health Organization: Landscape of COVID-19 candidate vaccines

NYTimes: Coronavirus Vaccine Tracker

COVID-19 VACCINE SAFETY

- Two shots, 3 weeks apart
- 4% of participants had history of cancer

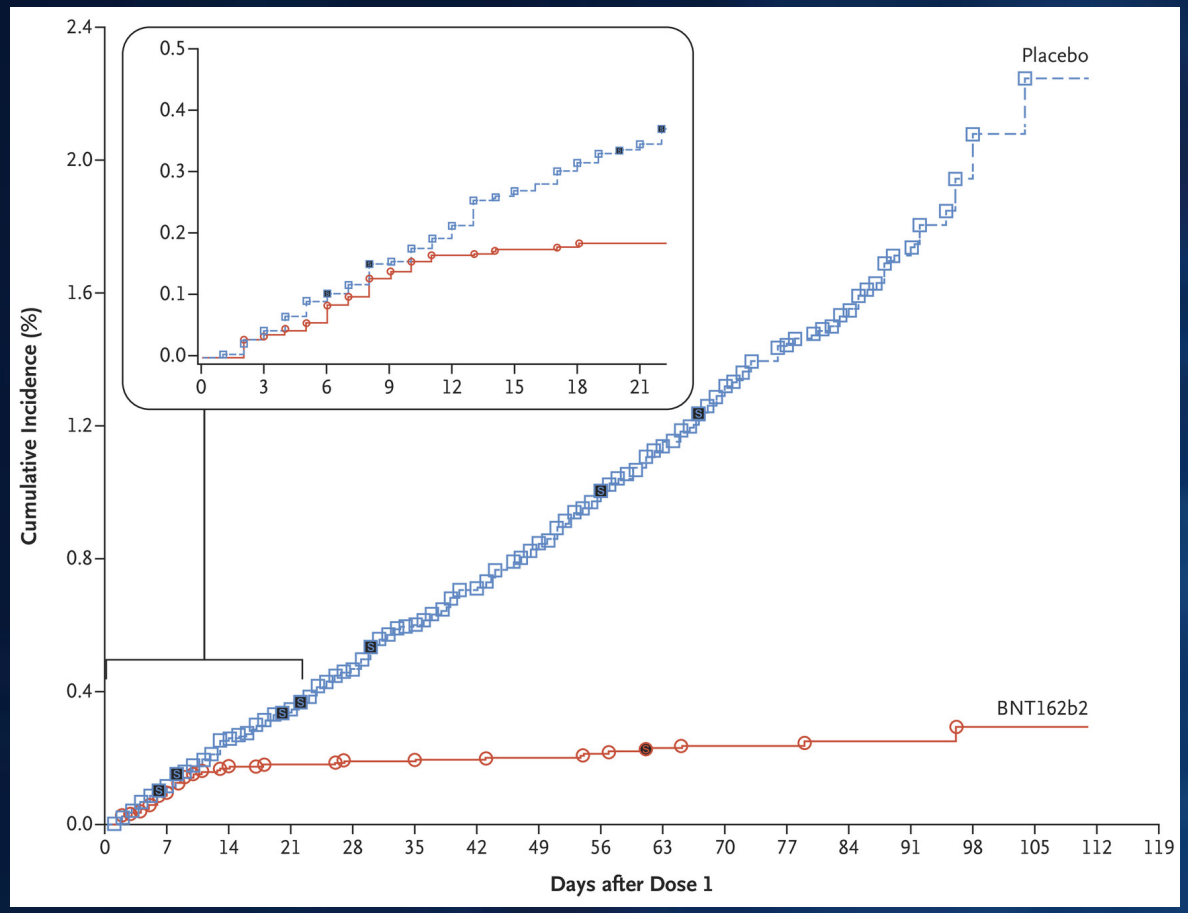
- Vaccine doesn't affect our DNA.
- Vaccine doesn't give us COVID-19.

	After 1st	After 2nd
Arm pain	71%	66%
Tired	34%	51%
Headache	25%	39%
Muscle ache	14%	29%
Joint ache	9%	19%
Chills	6%	23%
Use of Tylenol or Ibuprofen	20%	38%

Polack, et al. *New England Journal of Medicine*. December 31, 2020.

* ≥ 55 year-olds

COVID-19 Infections After Vaccine or Placebo

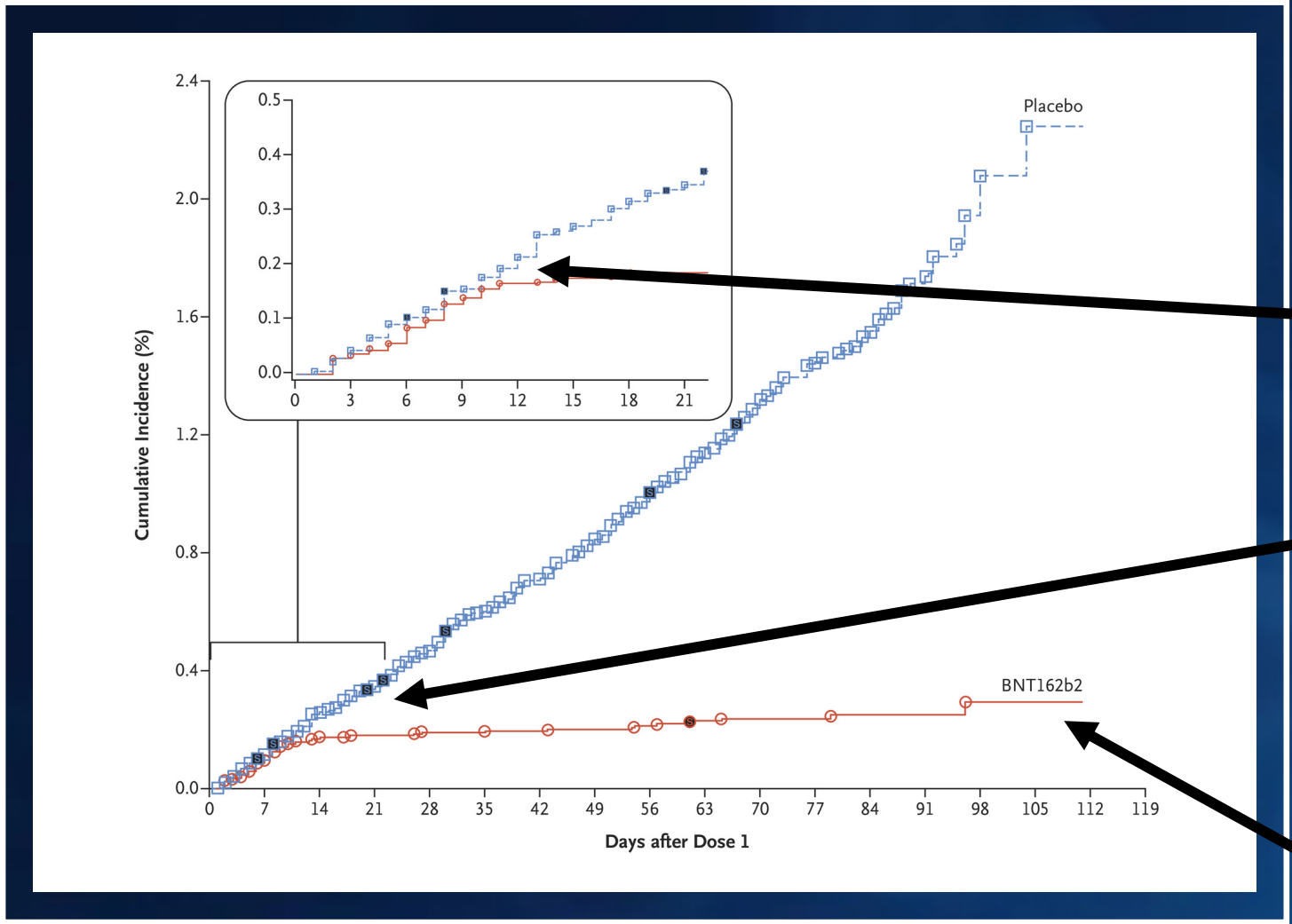


Polack, et al. *New England Journal of Medicine*. December 31, 2020.

COVID-19 VACCINE EFFICACY

- Early protection 12 days after first vaccine dose.
- After first vaccine dose, 52% less COVID-19.
- Seven days after second vaccine dose, 95% less COVID-19.
- Curve plateau suggests extended protection.

COVID-19 Infections After Vaccine or Placebo



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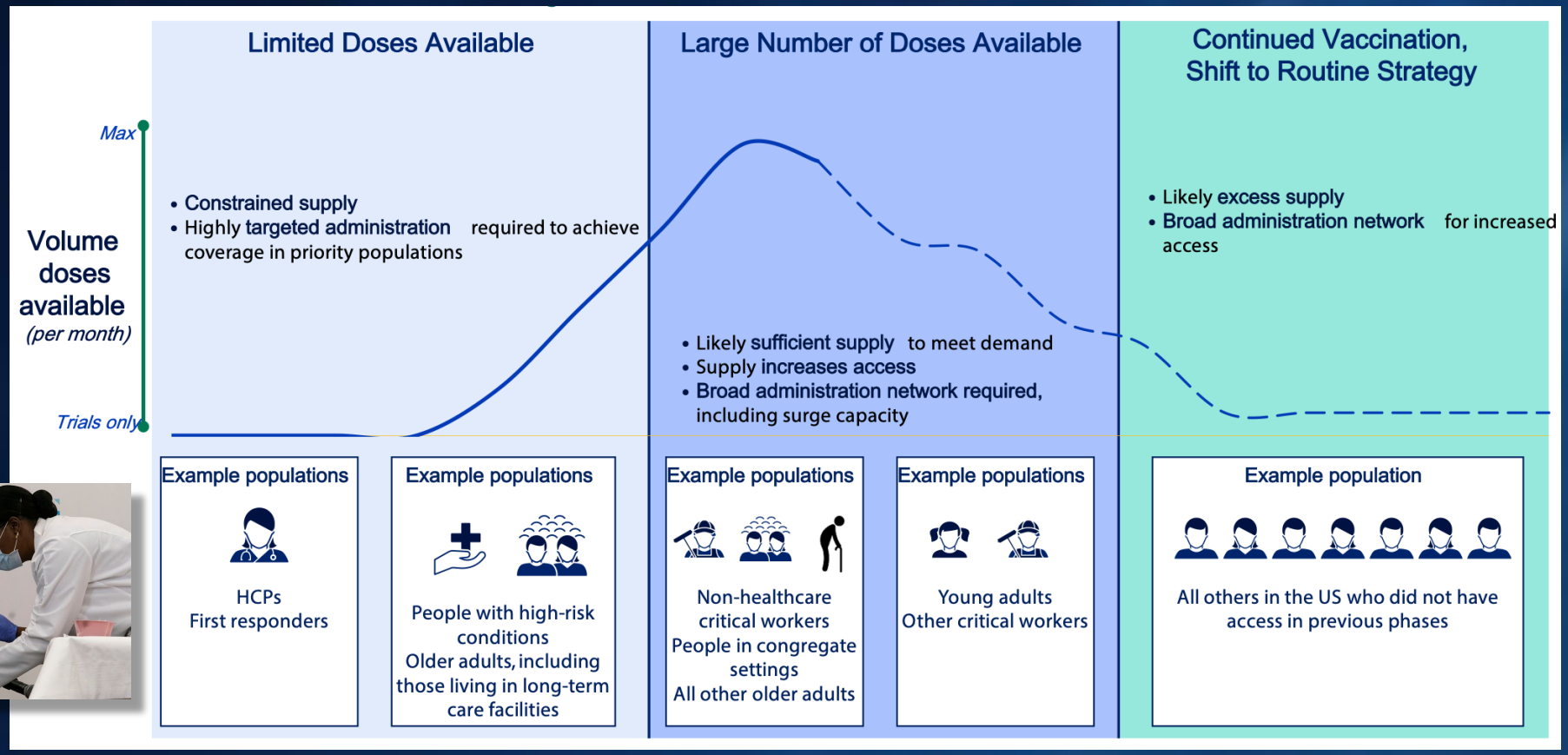
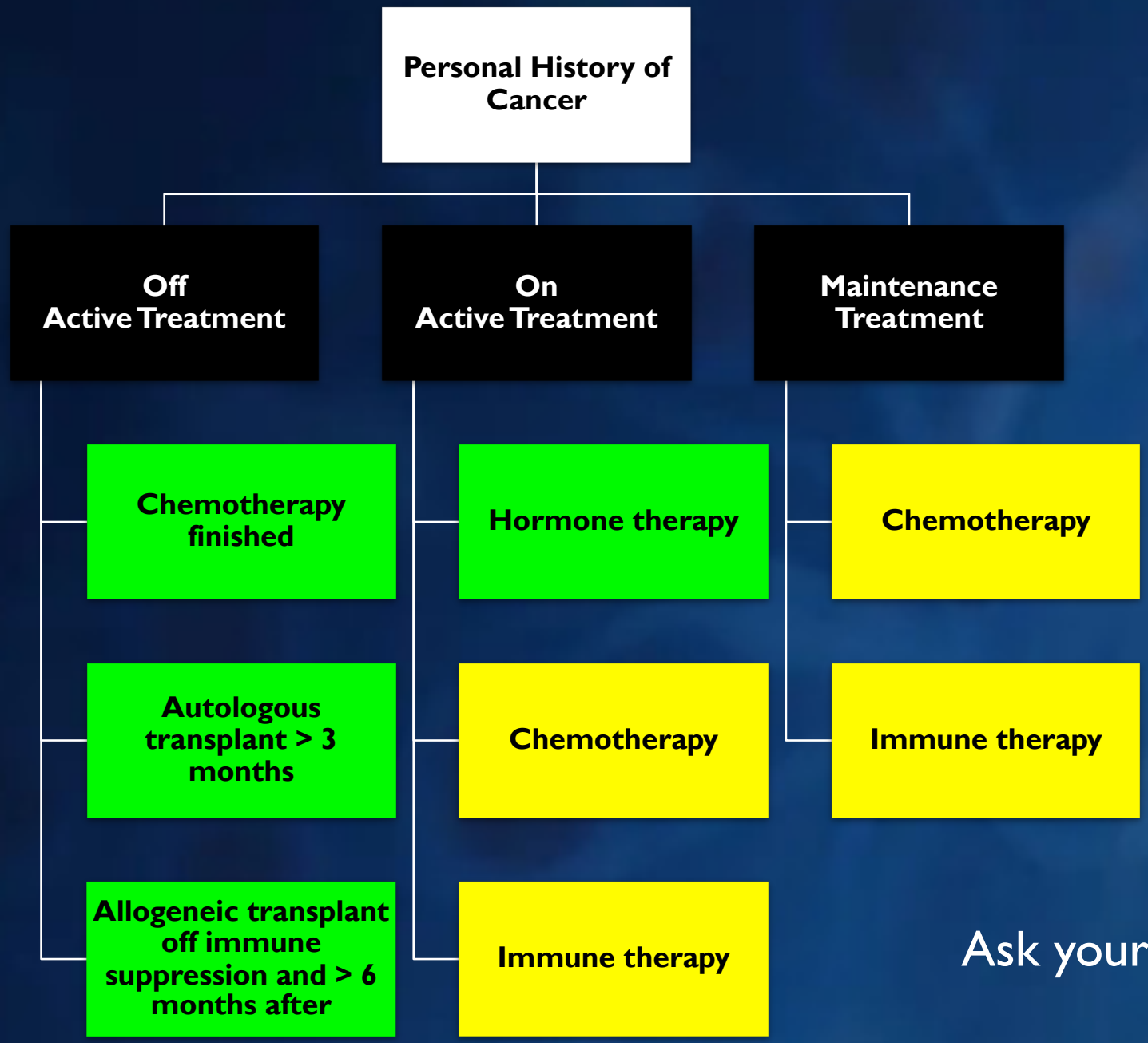
VACCINE DISTRIBUTION



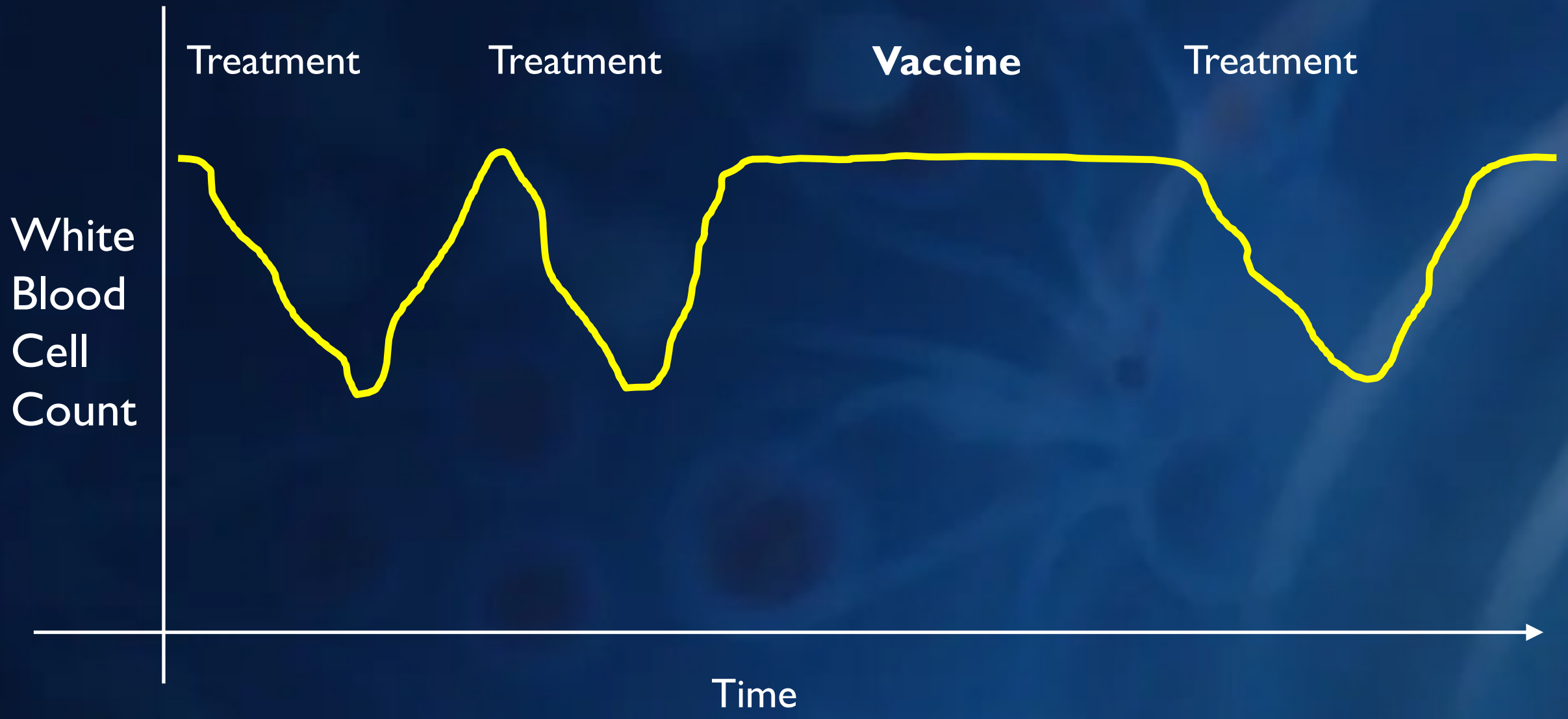
CDC ACIP, http://cdc.gov

SHOULD CANCER PATIENTS GET VACCINATED?

- YES … MAYBE!



Ask your oncologist now.


Treatment
Treatment
Vaccine
Treatment
White Blood Cell Count
Time

WHERE CAN I GET VACCINATED?

Population	Place
Health Care Personnel	✓ Health System
Long-Term Care Resident	✓ Facility
65 year olds and older	✓ Health System ✓ County Health Department
High Risk Patients	✓ Health System ✓ County Health Department

Vaccine Updates from State of Florida: Text FLCOVID19 to 888777

WHAT DO I DO AFTER GETTING THE VACCINE?

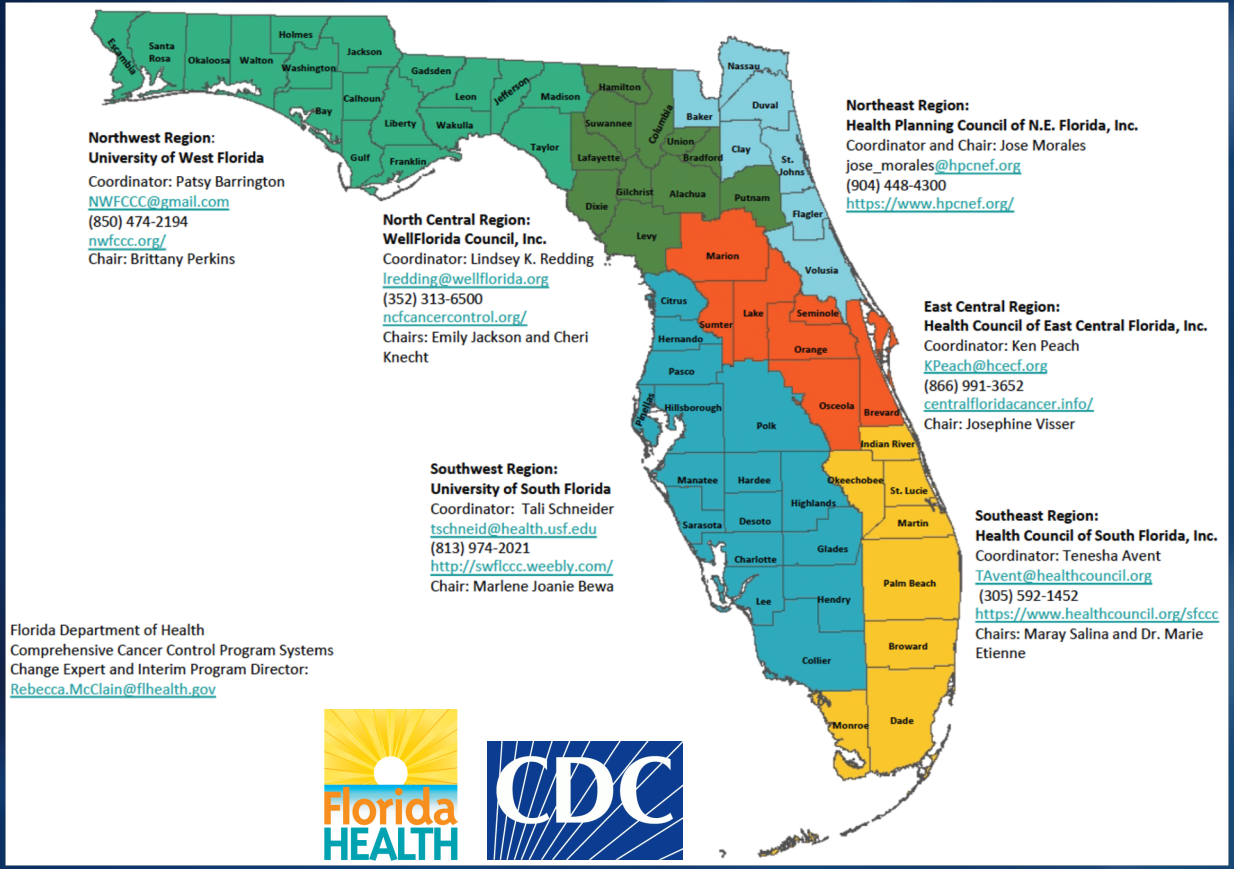
- Tyenol or Ibuprofen?
- Continue prevention:
  - Masking
  - Social distancing
  - Hand-washing frequently

COMMON QUESTIONS

- Should I get a vaccine if I had COVID-19 in the past?
- Should I get a vaccine if I have an autoimmune condition?
- Should I get a vaccine if I have HIV?
- If I get a COVID-19 vaccine will I test positive on a coronavirus swab test?
- Will the vaccine prevent infection from the new, highly transmissable variants?

THANK YOU

- North Central Florida Regional Cancer Control Collaborative
- UF Health Cancer Center
- Florida Cancer Control and Research Advisory Council (CCRAB)



AFTER WEBINAR SURVEY

http://bit.ly/3q1uUbQ