

Vaccination Myth Buster

December 17th 2020

healthwatch
Milton Keynes



1. Natural Immune Response

2. Traditional Vaccines

3. Novel Biotech Vaccines

4. Pros & Cons

5. Busting Myths





1988



Source: World Health Organisation/Global Polio Eradication Initiative

2015



Source: World Health Organisation/Global Polio Eradication Initiative

POLIO



1952 Dr Jonas Salk (L) developed the first polio vaccine. In 1961, Albert Sabin (R) developed easier to use oral polio vaccine

13 MILLION



Since 1988 polio vaccine has prevented more than 13 million cases of paralysis.

650,000+ deaths prevented

Since 1988 more than 650,000 deaths from polio have been prevented.

\$40-50 BILLION



The economic benefits of eradicating polio by 2018 are \$40-50 billion through the year 2035.

200,000 per year



If current vaccination efforts were stopped, polio would quickly spread worldwide, paralyzing an estimated 200,000 children every year.

Types of vaccines 1

1. Live attenuated vaccines

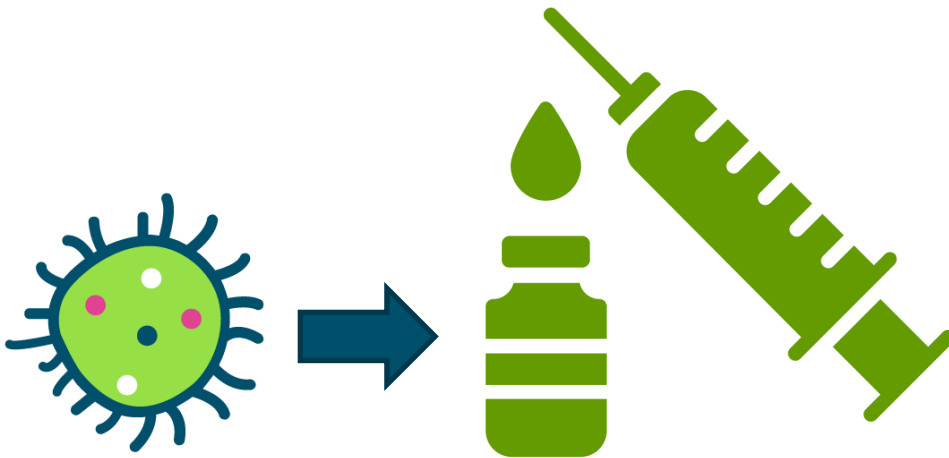
- MMR vaccine
- Nasal flu vaccine
- Shingles vaccine
- Chickenpox vaccine
- BCG vaccine against TB
- Yellow Fever
- Typhoid

PROS

Live vaccines tend to create a strong and lasting immune response and are some of our best vaccines.

CONS

Not suitable for people with weakened immune systems, underlying health conditions. Not suitable if germ has high mortality as very small chance to develop the disease.



Types of vaccines 2

2. Live Killed Whole or part vaccines

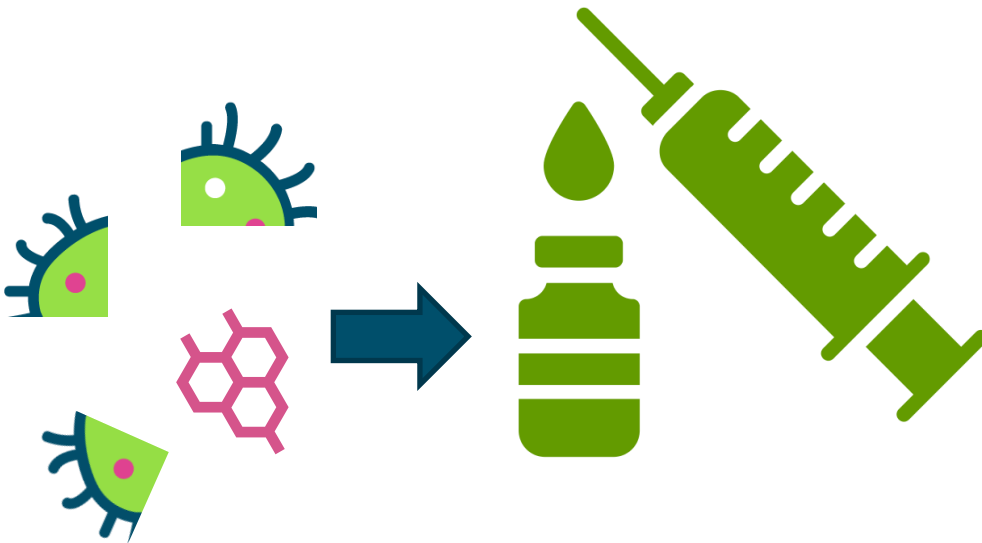
- Some inactivated flu vaccines
- Hepatitis A
- The Polio 6-in-1 vaccine (Polio, diphtheria, tetanus, whooping cough (pertussis), Hib disease, and hepatitis B).
- Rabies vaccine

PROS

Vaccines are created from killed whole germs or from small parts of the germ (surface protein). So there is no chance to cause the disease. Safer to use.

CONS

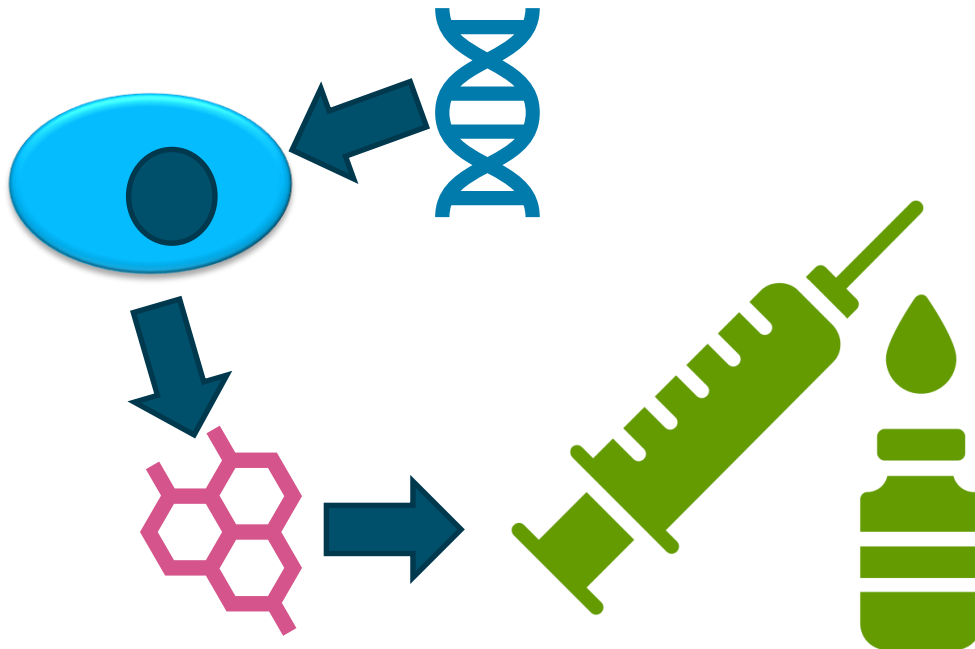
Immune response is weaker and usually require repeated booster doses (months/years apart). Hard & expensive to produce.



Types of vaccines 3

3. Recombinant / Vector vaccines

- Hepatitis B (in 6-in-1)
- HPV vaccine
- MenB vaccine
- Inactivated flu vaccine



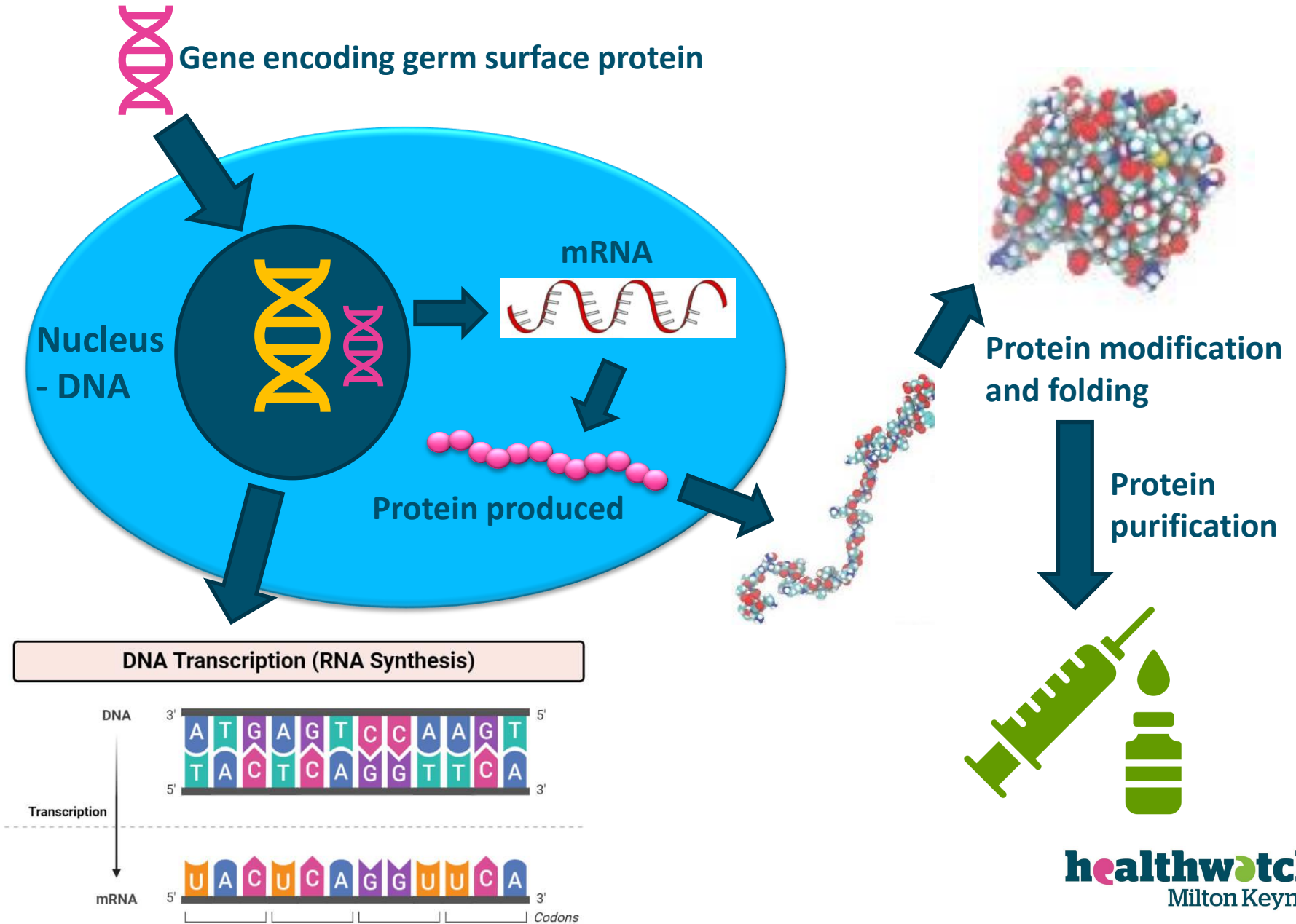
PROS

Other bacteria or cells are instructed to produce small parts of germ (surface protein). Safer to use.

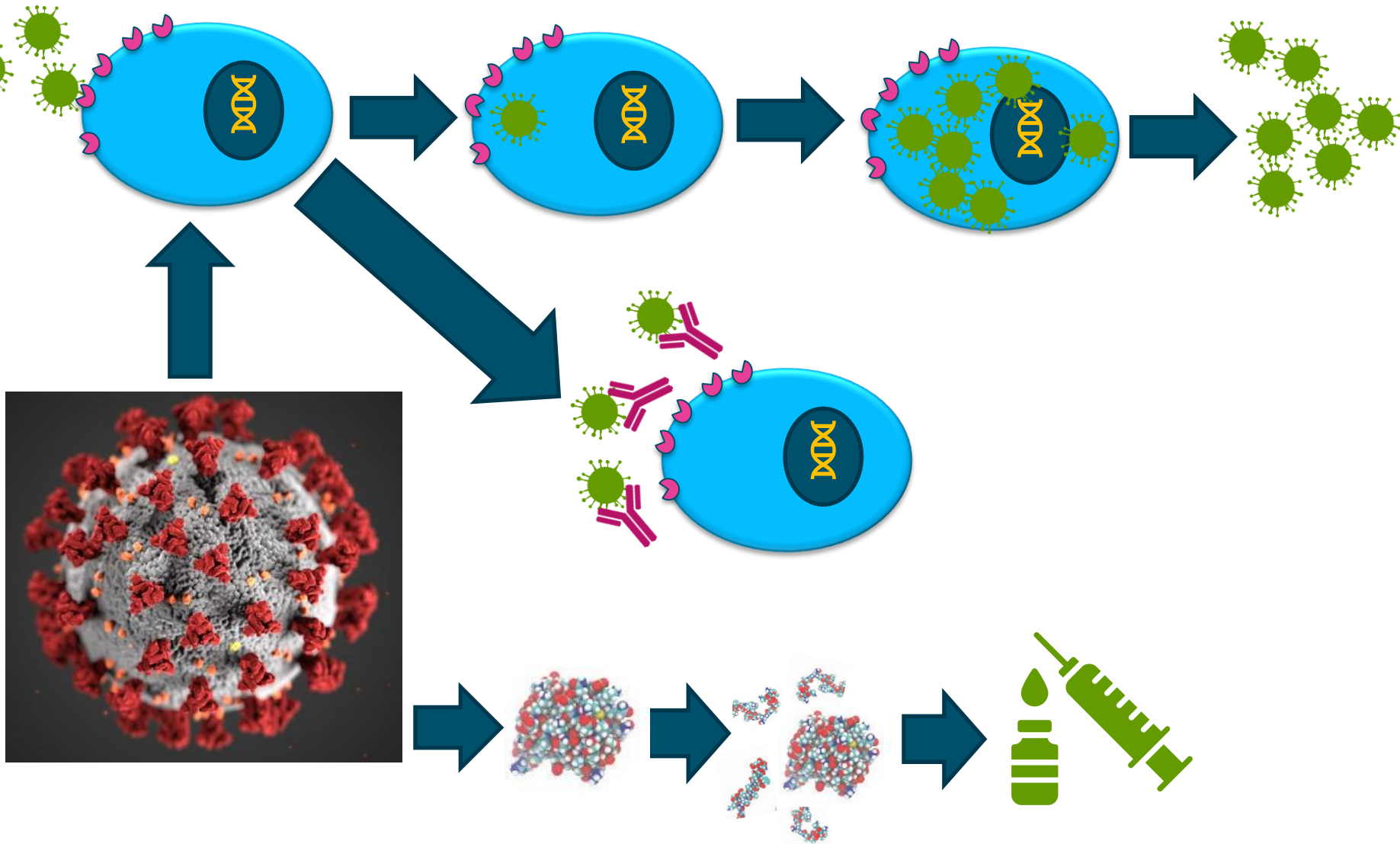
CONS

Immune response is weaker and usually requires repeated booster doses (months/years apart). Longer to develop but easier to produce large amounts, expensive.

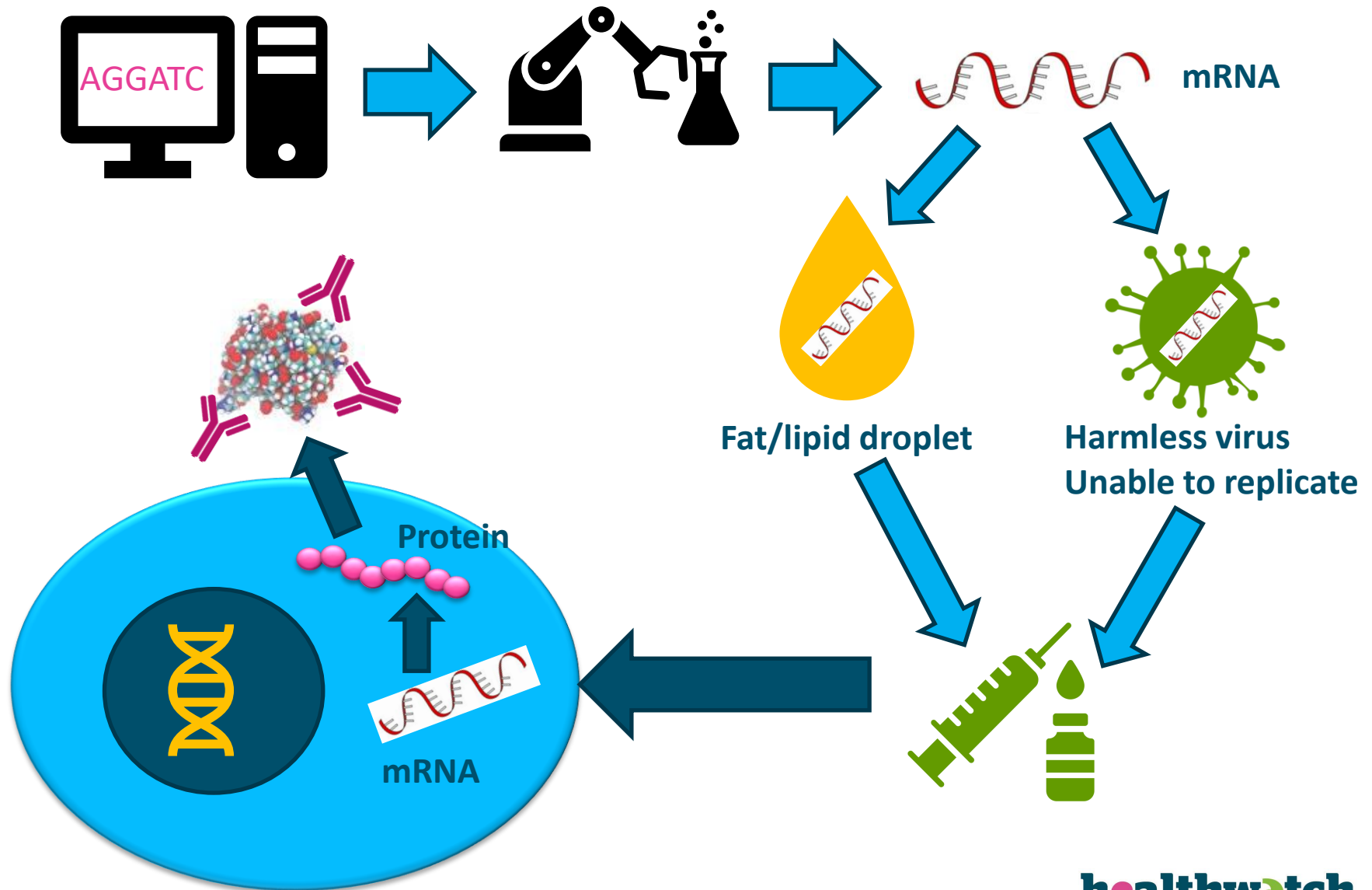
Recombinant Vaccines



How viruses enter cells



New Generation mRNA Vaccines





Pros and Cons of mRNA vaccines



PROS

1. Much easier and cheaper to mass produce mRNA
2. Target protein/antigen more “natural” form – greater specificity.
3. Potentially safer than previous vaccines
4. Able to quickly/easily change code to meet viral changes.

CONS

1. Very new vaccine technology, public concerns (large Phase 3 studies – safe and effective)
2. Vaccine storage and delivery – Pfizer; AstraZeneca/Oxford Uni; Moderna vaccines.
3. Effectiveness – how long does immunity last? Can it also stop transmission of virus?



Myth Busters



1. “It tampers with your DNA. 75% of vaccine trial volunteers have experienced side effects. Beware.”

No, it doesn't and virtually impossible.

2. “The vaccine came out so quickly so they must have cut corners on safety”

The science and technology behind mRNA vaccines has been around for many, many years. Huge funding support.

3. “We can't believe something this new and that claims 90-96% effectiveness”

Scientists across the world have been working for years to improve vaccine effectiveness and safety.



Myth Busters



4. “I’m going to sit back and let others take the risk of the vaccination.”

Very selfish, because not everyone can get vaccinated. Need population level immunisation to protect everyone.

5. “the vaccines contain the cells of aborted fetuses”

Not true, none of the vaccines contain cells or tissues from humans or aborted fetuses.

6. “The vaccine contains pork/animal products (gelatin)”

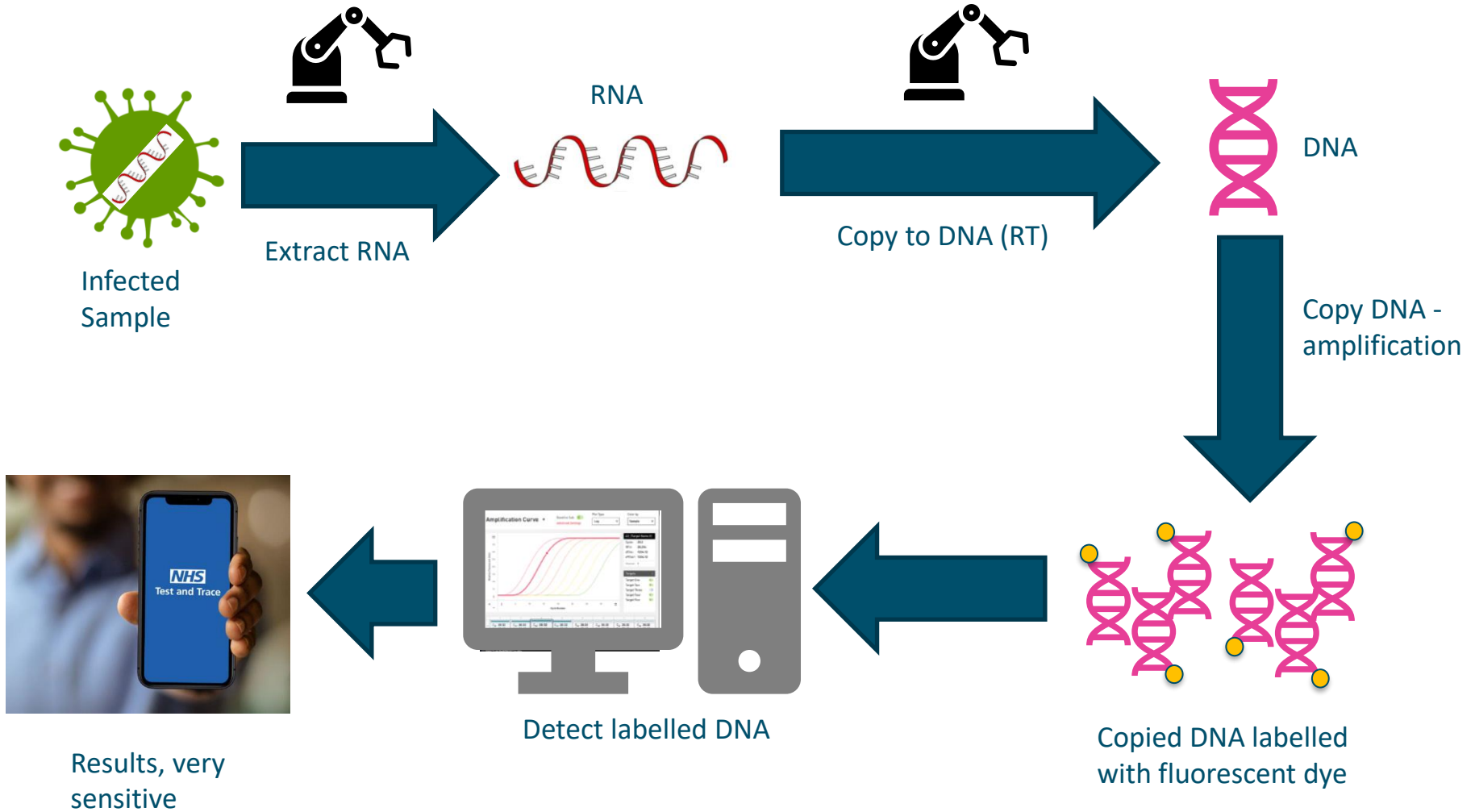
As far as is known, the Pfizer/BioNTech and AstraZeneca/Oxford RNA vaccines do NOT contain any pork or gelatin products.



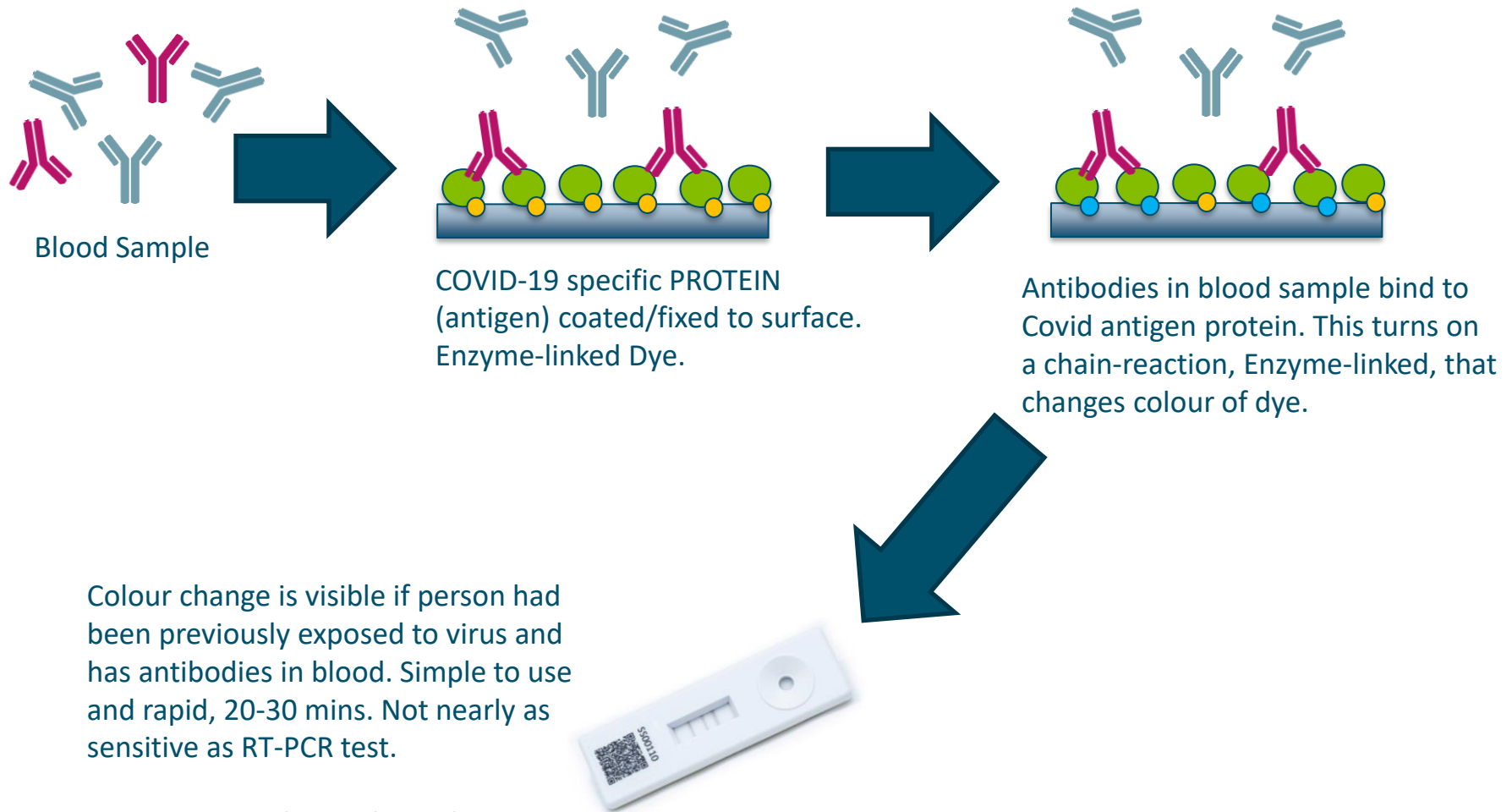
Q&A



COVID-19 Testing: RT-PCR (Test & Trace)



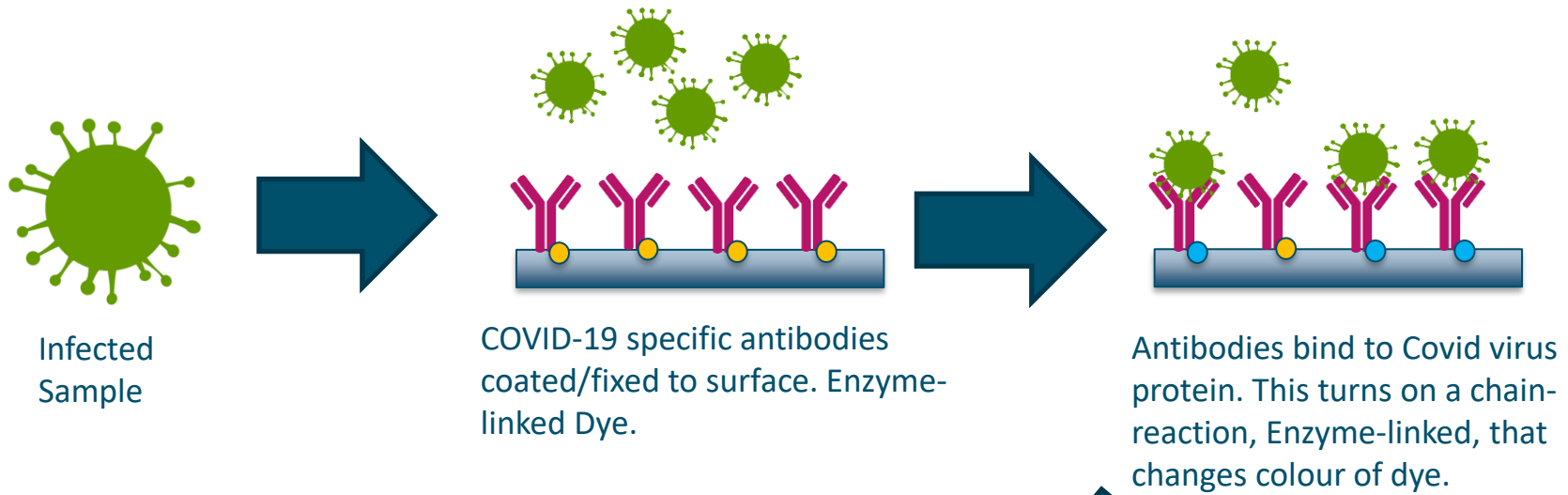
COVID-19 Testing: Antibody Test (lateral flow)



Colour change is visible if person had been previously exposed to virus and has antibodies in blood. Simple to use and rapid, 20-30 mins. Not nearly as sensitive as RT-PCR test.

Person may no longer have the virus. May take 4-6 weeks for antibodies to appear in blood to detect.

COVID-19 Testing: Antigen Test (lateral flow)



Colour change is visible if sample contained viral protein, positive test.

Simple to use and fast, 20-30 mins. Can detect people currently infected with virus.

Not nearly as sensitive as RT-PCR test.

