

Колеги, след като се запознахме с коронавируса ,логично е да прочетем и за ваксините.Тема ,която вълнува всички. Прочетете текста и направете работен фиш с ключови думи и основна информация.

Това е задача за 10-та седмица .Срок : 26.04.

Лека работа и бъдете здрави.

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Vaccine Types

There are several different types of vaccines. Each type is designed to teach your immune system how to fight off certain kinds of germs — and the serious diseases they cause.

When scientists create vaccines, they consider:

- How your immune system responds to the germ
- Who needs to be vaccinated against the germ
- The best technology or approach to create the vaccine

Based on a number of these factors, scientists decide which type of vaccine they will make. There are 4 main types of vaccines:

- Live-attenuated vaccines
- Inactivated vaccines
- Subunit, recombinant, polysaccharide, and conjugate vaccines
- Toxoid vaccines

Live-attenuated vaccines

Live vaccines use a weakened (or attenuated) form of the germ that causes a disease.

Because these vaccines are so similar to the natural infection that they help prevent, they create a strong and long-lasting immune response. Just 1 or 2 doses of most live vaccines can give you a lifetime of protection against a germ and the disease it causes.

But live vaccines also have some limitations. For example:

- Because they contain a small amount of the weakened live virus, some people should talk to their health care provider before receiving

them, such as people with weakened immune systems, long-term health problems, or people who've had an organ transplant.

- They need to be kept cool, so they don't travel well. That means they can't be used in countries with limited access to refrigerators.

Live vaccines are used to protect against:

- [Measles, mumps, rubella](#) (MMR combined vaccine)
- [Rotavirus](#)
- [Smallpox](#)
- [Chickenpox](#)
- [Yellow fever](#)

Inactivated vaccines

Inactivated vaccines use the killed version of the germ that causes a disease.

Inactivated vaccines usually don't provide immunity (protection) that's as strong as live vaccines. So you may need several doses over time (booster shots) in order to get ongoing immunity against diseases.

Inactivated vaccines are used to protect against:

- [Hepatitis A](#)
- [Flu](#) (shot only)
- [Polio](#) (shot only)
- [Rabies](#)

Subunit, recombinant, polysaccharide, and conjugate vaccines

Subunit, recombinant, polysaccharide, and conjugate vaccines use specific pieces of the germ — like its protein, sugar, or capsid (a casing around the germ).

Because these vaccines use only specific pieces of the germ, they give a very strong immune response that's targeted to key parts of the germ. They can also be used on almost everyone who needs them, including people with weakened immune systems and long-term health problems.

One limitation of these vaccines is that you may need booster shots to get ongoing protection against diseases.

These vaccines are used to protect against:

- [Hib \(*Haemophilus influenzae* type b\) disease](#)
- [Hepatitis B](#)
- [HPV \(Human papillomavirus\)](#)
- [Whooping cough](#) (part of the DTaP combined vaccine)
- [Pneumococcal disease](#)
- [Meningococcal disease](#)
- [Shingles](#)

Toxoid vaccines

Toxoid vaccines use a toxin (harmful product) made by the germ that causes a disease. They create immunity to the parts of the germ that cause a disease instead of the germ itself. That means the immune response is targeted to the toxin instead of the whole germ.

Like some other types of vaccines, you may need booster shots to get ongoing protection against diseases.

Toxoid vaccines are used to protect against:

- [Diphtheria](#)
- [Tetanus](#)

The future of vaccines

Did you know that scientists are still working to create new types of vaccines? Here are 2 exciting examples:

- **DNA vaccines** are easy and inexpensive to make — and they produce strong, long-term immunity.

Recombinant vector vaccines (platform-based vaccines) act like a natural infection, so they're especially good at teaching the immune system how to fight germs.

Vaccine Ingredients

Today's vaccines use only the ingredients they need to be safe and effective.

A note on vaccine safety

Vaccines go through many years of safety and effectiveness testing. The Food and Drug Administration (FDA) looks at the results of these tests to decide whether to license the vaccine for use in the United States. [Learn more about vaccine safety.](#)

Each ingredient in a vaccine serves a specific purpose. For example, vaccine ingredients may:

- Help provide immunity (protection) against a specific disease
- Help keep the vaccine safe and long lasting

Be used during the production of the vaccine

Ingredients provide immunity

Vaccines include ingredients to help your immune system respond and build immunity to a specific disease. For example:

- **Antigens** are very small amounts of weak or dead germs that can cause diseases. They help your immune system learn how to fight off infections faster and more effectively. The flu virus is an example of an antigen.
- **Adjuvants**, which are in some vaccines, are substances that help your immune system respond more strongly to a vaccine. This increases your immunity against the disease. Aluminum is an example of an adjuvant.

Ingredients keep vaccines safe and long lasting

Some ingredients help make sure a vaccine continues to work like it's supposed to and that it stays free of outside germs and bacteria. For example:

- **Preservatives**, like thimerosal, protect the vaccine from outside bacteria or fungus. Today, preservatives are usually only used in vials (containers) of vaccines that have more than 1 dose. That's because every time an individual dose is taken from the vial, it's possible for harmful germs to get inside. Most vaccines are also available in single-dose vials and do not have preservatives in them.
- **Stabilizers**, like sugar or gelatin, help the active ingredients in vaccines continue to work while the vaccine is made, stored, and moved. Stabilizers keep the active ingredients in vaccines from changing because of something like a shift in temperature where the vaccine is being stored.

Ingredients are used during the production of vaccines

Some ingredients that are needed to produce the vaccine are no longer needed for the vaccine to work in a person.

These ingredients are taken out after production so only tiny amounts are left in the final product. The very small amounts of these ingredients that remain in the final product aren't harmful.

Examples of ingredients used in some vaccines include:

- **Cell culture (growth) material**, like eggs, to help grow the vaccine antigens.

- **Inactivating (germ-killing) ingredients**, like formaldehyde, to weaken or kill viruses, bacteria, or toxins in the vaccine.
- **Antibiotics**, like neomycin, to help keep outside germs and bacteria from growing in the vaccine.
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