

Immunization (Vaccines)

Overview:

- Vaccines are given to introduce the immune system to the microbe and stimulate the production of antibodies.
- There are several types of vaccines that work in various ways to fight diseases.
- Vaccines not only protect the vaccinated individuals but entire communities as well.
- The immunity obtained through vaccination during pregnancy is transferred to the baby.
- Delaying vaccination might expose the child to the risk of incurring the targeted diseases.

Immunization:

Immunization is the cornerstone of public health. It is a way to protect people from infectious diseases.

Vaccines:

A vaccine contains dead or weakened bacteria or viruses (they are not capable of causing a disease) that are administered to individuals to encourage the immune system to recognize them and to consequently produce antibodies that can identify the germ early on. This allows the individual to fight the germ if it encounters it again, therefore preventing disease.

Vaccines are an easy and safe way to protect everyone since they are subject to safety tests before they are approved, and their outcomes are continuously monitored.



Target segments:

- Infants
- Children
- Pregnant women
- The elderly
- People with weakened immune systems due to cancer treatments
- People with chronic illnesses
- Pilgrims
- Travelers heading to infected areas

Other names:

Shots

Types of vaccines:

There are several types of vaccines and each type helps the immune system fight a certain type of germs and the diseases they cause. They include:

- **Live-attenuated vaccines:**

The use of an attenuated (or weakened) form of the germ that causes a disease. These vaccines are very similar to the natural infection and therefore help protect against the infection by creating a strong and long-lasting immune response. Just 1 or 2 doses (of most live vaccines) can provide a lifetime of protection against a germ and the disease it causes.

E.g.: MMR combined vaccine (measles, mumps, rubella), Rotavirus, Smallpox, Chickenpox, Yellow fever, Shingles, oral polio

- **Inactivated vaccines**

They use the dead version of the germ that causes a disease. The immunity (protection) they provide is usually not as strong as that provided by live vaccines. Therefore, several doses may be needed over time to gain ongoing immunity against diseases.

E.g.: Hepatitis A, Influenza, Polio, Rabies



- **Subunit/conjugate vaccines**

They use specific parts of the germ (e.g. protein, sugar, or the casing around the germ). Since these vaccines use only specific parts of the germ, they provide a very strong immune response that targets key parts of the germ. This type of vaccine can be used on almost everyone who needs it, including people with weakened immune systems and chronic health problems.

However, one of their disadvantages is that booster shots may be necessary to get ongoing protection against diseases.

E.g.: Hib (Haemophilus influenzae type b) disease, Hepatitis B, HPV (Human papillomavirus), Whooping cough, Pneumococcal disease, Meningococcal disease

- **Toxoid vaccines**

They use the harmful product (toxin) made by the germ that causes a disease so that the immune system can fight this toxin rather than the germ. Like other vaccines, booster shots may be necessary to get ongoing protection against diseases.

E.g.: Diphtheria, Tetanus

Why are vaccines important?

- They give newborns a chance to grow healthily and to have a better life.
- They eliminate infectious diseases that were once widespread or that can cause severe complications or death.
- Vaccines not only protect the vaccinated individuals but entire communities as well.
- They help reduce mortality rates.
- They help prevent infectious diseases.
- They stop the development of antibiotic resistance by reducing the use of antibiotics.
- They help you travel safely and comfortably.
- They provide economic benefit by saving on the costs of treating diseases.



What to expect when giving a child his/her first vaccine?

You can help the child by making the vaccination experience more positive and explaining to the child what is about to happen.

Before vaccination:

Remember to take the child's immunization record card when visiting the doctor or the public health office. If your child doesn't have a record, make sure to enquire about it at your healthcare provider.

During vaccination:

The doctor or nurse may ask you some questions about the child's health such as if he/she suffers from allergies or health problems. Here are some tips to help the child during vaccination:

- **Relaxation:** Children interact to their parents' emotions and will be happier and more positive when the parents are relaxed.
- **Affection:** It is advised to hold the child and speak to him/her during the administration of the vaccine. Studies have found that children who are hugged and held scream less during an injection.
- **Breastfeeding:** Breastfeeding a child before, during or after vaccination helps him/her stay comfortable.
- **Distraction:** A sweet voice or a calming touch can help calm a child. You can also hand the child his/her favorite toy or read him/her a story.

After vaccination:

- Before you go home, remember to schedule the next appointment.
- The first dose of immunization may be administered at birth with another dose given after two months. The child's immunization record (vaccination card) should be received at the first appointment.
- Remind the healthcare provider if they forget to hand you the record.
- Record the date of the next appointment in your mobile phone or calendar as soon as possible before you forget it.
- Keep the child's immunization record in a safe place to find it when necessary.
- Bring the immunization record with you to every appointment to update it every time the child receives a vaccine.



Vaccines are a routine part of childcare. Their dates should be respected to protect your child's health.

Side effects after vaccination:

Most children feel fine after vaccination and may not exhibit any reaction at all. Some may exhibit some side effects based on the type of vaccine. However, the benefits of vaccines far outweigh these mild and temporary side effects that often don't require treatment. Side effects include:

- Fever
- Pain, redness or swelling around the injection area
- Sleeping more than usual
- Itchiness around the injection area
- Mild rash
- Headache
- Nausea
- In rare cases, a severe allergic reaction may occur within a few minutes after vaccination.

All of these reactions are considered normal and usually last 12 to 24 hours.

Consequences of delayed vaccination:

Any delay in vaccination may put the child at risk of developing the targeted diseases. The effect of a vaccine is optimal when it is taken on time and the timely administration of vaccines is one of the parents' key responsibilities. Vaccines provide children with lifelong protection from dangerous diseases.

Postponing vaccination:

Vaccination can be postponed in the following cases:

- Fever
- Severe illness
- For children receiving immunosuppressive drugs or treatments (chemotherapy, radiotherapy)



However, a child can be vaccinated if he/she is suffering from a mild illness, has a mild fever, or is taking antibiotics. It is advised to speak to the child's doctor if you have any questions.

If vaccination is forgotten:

Sometimes, you may forget to schedule a vaccination appointment. It is essential to check the immunization record and schedule an appointment with a healthcare provider as soon as possible. The healthcare provider will help you know which vaccines the child has had and which he/she still needs. Children depend on their parents to be immunized.

When to consult a doctor:

- **Before vaccination**
 - Severe allergic reaction to a previous vaccination
 - Severe allergic reaction to one of the vaccine's components
 - Individuals with immunodeficiency problems cannot be vaccinated before consulting with a doctor
 - Neurological disorders such as spasms or epilepsy
- **After vaccination:**
 - If the side effects are severe
 - If the side effects don't disappear
 - If the child has spasms due to a fever
 - If the child continues to cry for more than 3 hours
 - If the child shivers or trembles
 - If the child's activity level significantly decreases
 - If the swelling and redness in the injection area lasts more than 24 hours

Immunization when traveling:

When traveling to another country, everyone is at risk of contracting diseases that can be prevented with vaccines. These could include diseases for which vaccines are not routinely administered. Therefore, it's important to consult with a healthcare provider or to visit a travel health clinic six weeks before traveling.



Certain vaccines may be recommended based on age, destination and travel plans.

Immunization for pregnant women:

Vaccines can help protect both mother and baby from preventable diseases. The immunity gained by a mother who is vaccinated during pregnancy is passed on to the fetus and consequently protects the infant against certain diseases during the first months of his/her life before any vaccines can be administered. They also help protect the mother throughout the pregnancy. All vaccines recommended to pregnant women are also safe for breastfeeding women.

Before pregnancy, it is important for all members of the household to receive their vaccines on time because the newborn can easily catch infections. Infections can also be severe during the first few months of an infant's life, especially because some vaccines can only be administered between 9-12 months of age (e.g. measles). Vaccines protect mother and baby from some diseases that may cause:

- miscarriages
- Preterm births
- Birth defects
- Death

Necessary vaccines for pregnant women:

The necessary vaccines should be taken before pregnancy as long as they are suitable and administered at the right time after consulting with a doctor, as they can help protect mother and baby.



There are various vaccines recommended during pregnancy:

Vaccine	Before pregnancy	During pregnancy	After pregnancy	Comments
MMR combined vaccine (measles, mumps, rubella)	√		√	Pregnancy should be delayed at least one month after vaccination
Chickenpox	√		√	Pregnancy should be delayed at least 3 months after vaccination
Hepatitis B	√	√	√	Pregnant women can receive this vaccine when needed
Influenza	√	√	√	It is a safe vaccine for pregnant women at all stages of pregnancy
DTP (tetanus, diphtheria, whooping cough)	√	√	√	Adult vaccines can be used in the third trimester
HPV (Human papillomavirus)	√		√	Avoid during pregnancy

Guidelines after vaccination:

- Some side effects such as loss of appetite or trouble sleeping don't need treatment and disappear within 1 or 2 days.
- Some children may need to rest more after vaccination.
- Paracetamol drugs may be used (e.g. Fevadol or Panadol) if a fever is detected. Instructions must be followed when administering the drug.
- Avoid giving aspirin to children.
- Regularly move the arm or leg (where the injection are is).
- Consume lots of fluids and wear light and baggy clothes in case of a fever.
- Avoid bathing the child in cold water.
- Place cold, damp and clean compresses on the injection area to reduce swelling and redness.



Frequently Asked Questions:

- **Are vaccines safe?**

The WHO has confirmed that vaccines are accurately tested to check their safety and are continuously monitored even after production.

- **If these diseases are rare, why does the child need to be vaccinated?**

Diseases that were once common have now become rare thanks to vaccines, but they still exist. Even one case of measles can spread quickly if vaccines aren't given. It is difficult to identify who is carrying the germ and if a child is at risk.

Many of the diseases that can be prevented with vaccines have no cure. In some cases, children may die as a result of complications from the disease. The best protection is to immunize a child at the right time.

- **How are vaccines approved?**

Like all medicines, vaccines undergo a series of tests before they can be used in the Kingdom of Saudi Arabia. Several regulations have been established to monitor the supply, use and safety of vaccines. Side effects are reported by health care providers to public health officers at the Ministry of Health to streamline the handling of any unusual or unexpected side effects.

- **Are vaccines safer than the actual disease?**

- Yes. A child's natural immune system can handle the weakened or dead germs contained in vaccines.
- A child can experience a mild fever or some pain in the arm after vaccination but these side effects only last a few days and do not hinder daily activities.
- However, if an unvaccinated child contracts the actual disease, the result could be dangerous or even deadly because active germs multiply rapidly and the child's immune system is not prepared to defend against them.
- Children need to receive vaccines at the specified time.



- Vaccines work best when they are given at the specified times starting from birth. Routine vaccination is provided free of charge across the Kingdom.
 - A person needs to make sure that their vaccination is regularly up to date. This is a life-long process.
- **Why should children be vaccinated at such a young age?**
Vaccination schedules were designed to protect children from preventable diseases. They are given to children at a young age because it is during this early stage in their lives that they are vulnerable to diseases with potentially dangerous consequences. However, if the vaccines are given on time, the child will benefit from the best protection as quickly as possible.
 - **When should children be vaccinated?**
Children need to be vaccinated at different stages to provide them with complete protection. Some vaccines should be given more than once to build-up the child's immunity.
 - **Can a child receive more than one vaccine at the same time?**
Yes. Some vaccines are administered together to protect the child from several diseases at the same time. A child's immune system is fascinating and can easily, safely and effectively, handle more than one vaccine at the same time.
The healthcare provider will provide parents with information on the vaccines their child needs at every visit.
 - **Where can someone get vaccinated?**
Vaccines are available at all health centers affiliated with the Ministry of Health and with the private sector.



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- **What is the benefit of keeping a child's vaccination up to date?**
Up to date vaccination is required by schools. Children should have all of the required vaccines before starting school or kindergarten. This is important to help stop the spread of dangerous diseases.
A child's immunization record is also useful when visiting a new doctor or when traveling.

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