PROCEDURE

Vaccines - immunizations

Vaccination gives your immune system a safe way to build protection against specific infections.

PURPOSE
Build protection against specific infections and their complications

PROCEDURE TYPE
Therapeutic preventive; minimally invasive injection, oral, or nasal

WHERE IT IS DONE
Outpatient clinic, pharmacy, school, workplace, or bedside

ANAESTHESIA
None

HOW LONG IT TAKES
1-5 minutes per vaccine

PREPARATION
Bring records; follow facility instructions about food or medicines

RECOVERY
Same day; driving usually allowed after observation

MAIN RISKS
Soreness, fever, fainting, severe allergic reaction

RESULTS
Protection develops over days to weeks; no routine test

Overview

Vaccination is a procedure that prepares your immune system to recognize and respond to a specific infection. Most vaccines are given by injection. Some are given by mouth or sprayed into the nose.

Vaccines contain an antigen, which is a harmless form or piece of a germ, or instructions that help your cells make an antigen briefly. This trains your immune system without exposing you to the full risks of the infection.

"Vaccination" means receiving a vaccine. "Immunization" describes the process of developing protection. Protection is not always complete, but vaccination can lower the chance of infection, serious illness, or complications.

Some vaccines require several doses. Protection may also decrease over time, so booster doses may be recommended.

Why the procedure is performed

Vaccines are given to protect you from infections and their complications. The vaccine offered to you may be part of a routine schedule based on your age.

Vaccination may also be recommended because of:

The expected benefit is specific to each vaccine. Ask which infection the vaccine covers, how many doses you need, and what protection it is expected to provide.

- A missed or incomplete vaccine series
- Pregnancy or a long-term health condition
- Work involving infection exposure
- Travel to an area where certain infections occur
- Close contact with a vulnerable person
- An outbreak or recent exposure
- Reduced protection since an earlier dose

Who should and should not have it

Vaccination schedules consider age, previous doses, health conditions, pregnancy, work, travel, and infection risk. Your healthcare team should check your vaccination history and screen for reasons to delay or avoid the particular vaccine.

A vaccine may not be appropriate if you had a severe allergic reaction, called anaphylaxis, after an earlier dose or to one of its ingredients. A different formulation may sometimes be available.

Some live vaccines contain a weakened form of a virus or bacterium. They are generally avoided during pregnancy and in people with severely weakened immune systems. Other vaccine types may still be suitable.

Vaccination may be delayed if you have a moderate or severe acute illness, especially with fever. A minor illness, such as a mild cold, does not usually prevent vaccination.

Tell the vaccinator if you:

These factors do not always mean that you cannot be vaccinated. They may affect the vaccine,

timing, injection technique, or observation period.

- Have allergies or previously reacted to a vaccine
- Are pregnant or could be pregnant
- Have a weakened immune system
- Take medicines that affect immunity
- Have a bleeding disorder or take a blood thinner like warfarin or apixaban
- Have fainted during injections
- Recently received another vaccine, blood product, or immune treatment

How to prepare

The treating facility's own instructions take priority because preparation can differ by vaccine and setting.

Bring your vaccination record if you have one. Wear clothing that allows easy access to your upper arm or thigh. Tell the facility beforehand if you need accessibility support, privacy, or help managing a fear of needles.

Fasting is not normally required. Eating and drinking as usual may help if you tend to feel faint. Do not stop a blood thinner, immune treatment, or other prescribed medicine unless your treating team specifically tells you to.

Before consenting, ask for information about the vaccine's benefits, common reactions, important risks, ingredients, and any further doses.

What happens during the procedure

A healthcare professional checks your identity, the vaccine being given, your previous doses, allergies, and relevant health information. You should have an opportunity to ask questions and agree before proceeding.

Most vaccines are injected into a muscle in the upper arm. Babies and some young children may receive an injection in the thigh. Certain vaccines are injected under the skin, swallowed, or sprayed into the nose.

The skin may be exposed and cleaned according to local practice. The needle is inserted briefly, and the vaccine is delivered. A small dressing may be applied if there is bleeding.

You may receive more than one vaccine during the same visit. Different injections are usually

placed at separate sites.

Afterward, you may be asked to remain for observation, often for about 15 minutes. Longer observation may be used if your history suggests a greater risk of an immediate reaction.

Recovery and what to expect afterward

Pain: The injection site may feel sore, tender, red, or mildly swollen. Moving the arm gently can help. Follow the vaccine information and your healthcare team's advice before taking pain medicine.

Eating: You can usually eat and drink normally immediately afterward. Drink enough fluid, particularly if you develop a mild fever.

Activity: Most people can continue normal activities. You may prefer lighter exercise if your arm is sore or you feel tired. Avoid rubbing or repeatedly pressing the injection site.

Driving: Vaccination itself does not usually prevent driving. Do not drive if you feel faint, dizzy, unusually tired, or unwell after the procedure.

Work: Most people can return to work or school the same day. Fatigue, headache, muscle aches, or fever may make a short period of rest helpful.

Common reactions usually begin within a day or two and improve over several days. The timing can differ for some vaccines, especially live vaccines.

Risks and possible complications

Expected reactions include injection-site pain, redness, swelling, tiredness, headache, muscle aches, chills, or fever. These are usually temporary.

Some people faint during or shortly after an injection. Sitting or lying down for vaccination and remaining for observation can reduce the chance of injury from a fall.

A severe allergic reaction is uncommon but can happen after any vaccine. Vaccination sites should have staff and equipment to recognize and treat it promptly.

Each vaccine has its own risk profile. Rare complications linked to one vaccine may not apply to another. Review the vaccine-specific information provided to you rather than assuming that all vaccines have the same risks.

No vaccine offers complete protection. You may still develop the infection, although vaccination may reduce the chance of severe illness.

Results and follow up

There is usually no immediate test result after vaccination. Your immune system develops protection over the following days or weeks. A vaccine series may not provide its intended protection until all required doses have been received.

You should receive a record showing the vaccine, date, and dose. Keep it with your health records. Ask when the next dose is due and whether future boosters may be needed.

Routine blood tests to check immunity are not needed after most vaccines. Antibody testing may be used in selected medical or workplace situations, but available tests do not measure protection reliably for every infection.

Contact the vaccination service routinely if your record is incorrect, you missed a planned dose, or you are unsure what dose comes next. A delayed dose does not always mean that the whole series must be restarted.

Alternatives

For many vaccine-preventable infections, there is no alternative that provides the same type of lasting immune protection.

Handwashing, ventilation, masks, avoiding exposure, safer sex, and food or water precautions can reduce infection risk. Their usefulness depends on how the infection spreads, and they do not replace immunity from vaccination.

Medicines may prevent infection after certain exposures. Examples include immune globulin, which provides temporary ready-made antibodies, and infection-specific antiviral or antibiotic treatment. These options are available only in selected situations and usually protect for a shorter time.

A different vaccine brand, formulation, route, or schedule may sometimes be possible. This may help when an ingredient, age restriction, supply issue, or medical condition affects the first option.

Choosing not to be vaccinated avoids the injection and its side effects, but leaves you without the protection that dose was intended to provide. Your healthcare team can explain your individual infection risk and the consequences of delaying or declining it.

When to call your healthcare team

Mild soreness, tiredness, headache, or a low fever can usually be managed with rest and observation. Contact your healthcare team during routine hours if these reactions are not improving, last longer than expected, or concern you.

Seek urgent medical advice if you develop a high or persistent fever, worsening swelling, unusual weakness, or another symptom identified in the vaccine-specific information you received.

Call emergency services immediately for signs of a severe allergic reaction, such as:

Report any serious or unexpected reaction to your healthcare team. They can assess it and explain the local vaccine safety reporting process.

- Difficulty breathing or wheezing
- Swelling of the face, lips, tongue, or throat
- Widespread hives with breathing problems, dizziness, or vomiting
- Collapse, severe weakness, or loss of consciousness

Common questions

Will I be asleep?

No. Vaccination does not require sedation or anaesthesia. The injection itself usually takes only a few seconds.

Can I drive home?

Usually, yes. Complete the requested observation period first. Do not drive if you feel faint, dizzy, or unwell.

How painful is it?

Most people feel a brief sharp scratch or pressure. The area may ache afterward for a few days. Tell the vaccinator if you fear needles or have fainted before.

When will I know it worked?

There is usually no immediate result. Protection develops over days or weeks and may require more than one dose. Routine antibody testing is not useful for most vaccines.

Can I have more than one vaccine at the same visit?

Often, yes. Many vaccines can be given together at different injection sites. The answer may differ for certain live vaccines or individual medical situations.

Can a vaccine give me the infection it prevents?

Most vaccines cannot cause the infection they prevent. Some contain weakened live germs and have special restrictions. Ask what type of vaccine you are receiving.

Sources

- Centers for Disease Control and Prevention. General Best Practice Guidelines for Immunization
- Centers for Disease Control and Prevention. Vaccine Administration
- Centers for Disease Control and Prevention. Vaccine Information Statements
- World Health Organization. Vaccines and immunization: Vaccine safety
- Australian Government Department of Health. Australian Immunisation Handbook: Vaccination procedures
- UK Health Security Agency. Immunisation procedures: The Green Book, chapter 4