HEALTH BASICS

Prosthesis

A prosthesis is an artificial device that replaces all or part of a missing body part.

WHAT IT IS
An artificial replacement for a missing body part

WHERE IT COMES UP
After limb loss, surgery, injury, or congenital body differences

WHY IT MATTERS
It may support movement, function, comfort, or appearance

WHAT IT IS NOT
Not a disease or diagnosis

WHO TO ASK
A prosthetist, rehabilitation team, surgeon, or dentist

HOW IT IS CHECKED
Fit, skin, movement, function, and device condition

Overview

A prosthesis is an artificial replacement for all or part of a body part. The plural is prostheses . A device may also be described as prosthetic .

Some prostheses are worn outside the body. Examples include an artificial arm, leg, eye, breast, ear, or nose. Others are placed inside the body during surgery. These include artificial joints, heart valves, dental implants, and some breast implants.

A prosthesis is not a disease or a diagnosis. It is a type of medical device. People may use one after an injury, an amputation, cancer surgery, joint damage, tooth loss, or a body difference present from birth.

An orthosis is different. An orthosis, such as a brace or splint, supports or changes the position of an existing body part. A prosthesis replaces something that is missing. Some devices combine features of both.

The right device is personal. Choice may be shaped by the body part involved, your health, daily activities, goals, home environment, and ability to care for the device.

How it works

An external limb prosthesis usually has several parts. A socket fits around the remaining limb. Other parts may include joints, feet, hands, straps, liners, and a frame. The socket is especially important because it transfers force between your body and the device.

A body-powered arm may use cables controlled by shoulder or upper-body movement. A myoelectric arm uses electrical signals produced when muscles tighten. Electronic knees and feet may use sensors and small computer processors to adjust movement. These technologies can help with selected tasks, but they do not reproduce every movement or sensation of a natural limb.

Some limb prostheses attach to an implant placed in the bone. This is called osseointegration. It avoids a traditional socket but requires surgery, careful skin care around the attachment, and specialist follow-up.

Internal prostheses work in different ways. An artificial hip replaces damaged parts of the hip joint so the surfaces can move against each other. A dental implant is fixed in the jaw and can support a replacement tooth. An artificial heart valve helps blood move in the correct direction through the heart.

A prosthesis often needs adjustment as your body changes. Swelling, muscle size, weight, skin condition, growth, and activity level can all affect fit. Rehabilitation may include learning how to put on the device, move safely, care for the skin, and use the prosthesis for daily tasks.

Why it matters for your health

A well-fitted prosthesis may make particular activities easier or safer. Depending on the device, it may support walking, balance, grasping, chewing, speaking, joint movement, or physical appearance.

The benefit is not the same for everyone. Some people use a prosthesis throughout the day. Others use one only for certain tasks, or choose not to use one. A person may also have more than one device, such as a daily limb prosthesis and another designed for sport or water activities.

Using a prosthesis can affect other parts of the body. For example, a lower-limb prosthesis changes how forces pass through the remaining limb, hips, back, and opposite leg. Good fit, suitable footwear, rehabilitation, and regular review can help manage these demands.

A prosthesis does not always restore normal sensation. This matters because you may not feel heat, pressure, or skin injury through the device. Visual skin checks can therefore be an important part of care for an external prosthesis.

Internal prostheses also need follow-up. Their condition cannot usually be judged by appearance alone. A clinician may use an examination, imaging, dental X-rays, or device-specific tests when needed.

What can go wrong

Problems related to external prostheses often involve fit, skin, balance, or device damage. They may include:

Internal prostheses have different possible complications. These include infection around an artificial joint, loosening or wear of joint parts, bone fracture near an implant, dental implant failure, blood clots after some operations, or problems specific to an artificial heart valve. These are medical conditions or device-related situations; the prosthesis itself is not an illness.

Arrange routine follow-up for gradual changes in comfort, fit, walking, chewing, or device performance. Skin marks that do not fade after removing an external prosthesis also deserve review. Stop using a damaged device if it could cause a fall or further injury, and contact the service that maintains it.

Seek prompt medical care for spreading redness, increasing warmth or swelling, pus, fever with a wound, an open pressure injury, or sudden new pain around an implanted device. A sudden inability to use a joint or bear weight after a fall also needs urgent assessment.

Call emergency services for chest pain, severe trouble breathing, fainting, signs of a stroke, uncontrolled bleeding, or a serious injury. These are emergencies whether or not you have a prosthesis.

- Pressure injuries, blisters, cuts, or skin ulcers
- Contact dermatitis, meaning an irritated or allergic skin reaction
- Infection in damaged skin
- Pain caused by pressure or altered movement
- Falls or overuse injuries
- Loose, worn, cracked, or misaligned components

What you can do

Know what type of prosthesis you have and who maintains it. For an implanted device, keep the implant card or written record if one was provided. Record the device name, manufacturer,

date of surgery or fitting, and the clinic responsible for follow-up.

For an external prosthesis, follow the cleaning instructions for the socket, liner, and skin. Products that are safe for one material may damage another. Do not make structural repairs or alignment changes yourself.

Check your skin after removing a limb prosthesis, especially in areas you cannot easily feel. A mirror may help. Report recurring redness, rubbing, wounds, or changes in fit to your prosthetist or rehabilitation service.

Useful questions include:

There is no single blood test or scan that checks every prosthesis. External devices are usually assessed through fit, skin condition, movement, function, and inspection of the parts. Internal devices may require examination, imaging, or other tests based on the device and any concerns.

- What activities is this device designed for?
- How should I clean and store it?
- What changes mean that it needs adjustment?
- Who should I contact if it breaks?
- Are there precautions for MRI scans, surgery, dental treatment, or security screening?
- What follow-up is recommended for this specific device?

Common questions

Does everyone with a missing limb need a prosthesis?

No. A prosthesis is one option. Personal preference, comfort, health, function, and daily goals all matter. Wheelchairs, crutches, adapted equipment, or no device may be appropriate choices for some people.

Should a prosthesis hurt?

Learning to use a new device may involve unfamiliar pressure or muscle effort, but persistent pain should not simply be ignored. Remove an external device if it is damaging the skin or feels unsafe, and ask the fitting service to assess it.

How long does a prosthesis last?

There is no single lifespan. It is affected by the type of device, materials, activity, growth, body changes, wear, and whether it is external or implanted. A component may need repair or replacement even when other parts remain usable.

Can I have an MRI scan with a prosthesis?

Some external devices must be removed before scanning. Whether an implant is safe in an MRI scanner depends on its materials and model. Tell the imaging service about every implant and bring your implant information if available.

Can I exercise or play sport?

Many people can, but the suitable activity and equipment are device-specific. Ask whether your prosthesis is designed for impact, running, swimming, lifting, or uneven ground. A rehabilitation professional can also assess movement and fall risk.

Can I travel with one?

Usually, yes. Carry essential supplies and device information. Allow time for security checks, and ask the manufacturer or prosthetic service about exposure to water, sand, extreme temperatures, or changes in air pressure if relevant.

Sources

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