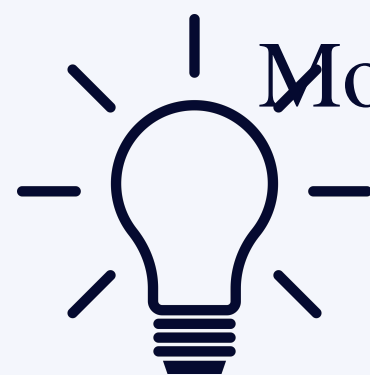


# Introduction

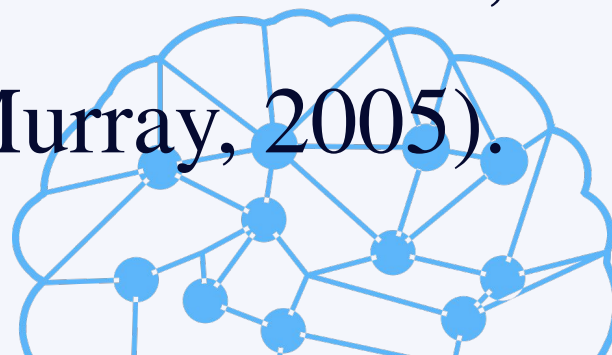


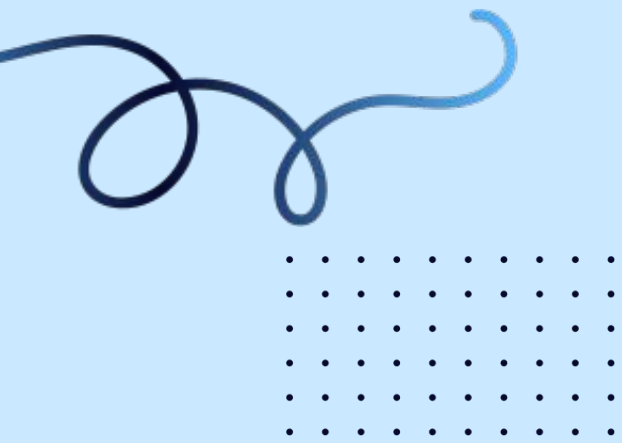
**Prosthetics** are prescribed to improve the lives of people **without limbs**.

A **prosthesis** replaces a frame component that can had been lacking at start or misplaced in an twist of fate or amputation. Many amputees lose their limbs withinside the path of remedy for cancer, diabetes, the opportunity can be a extreme infection.



Modern prostheses for areas such as the hands, feet and face look very natural (Murray, 2005).

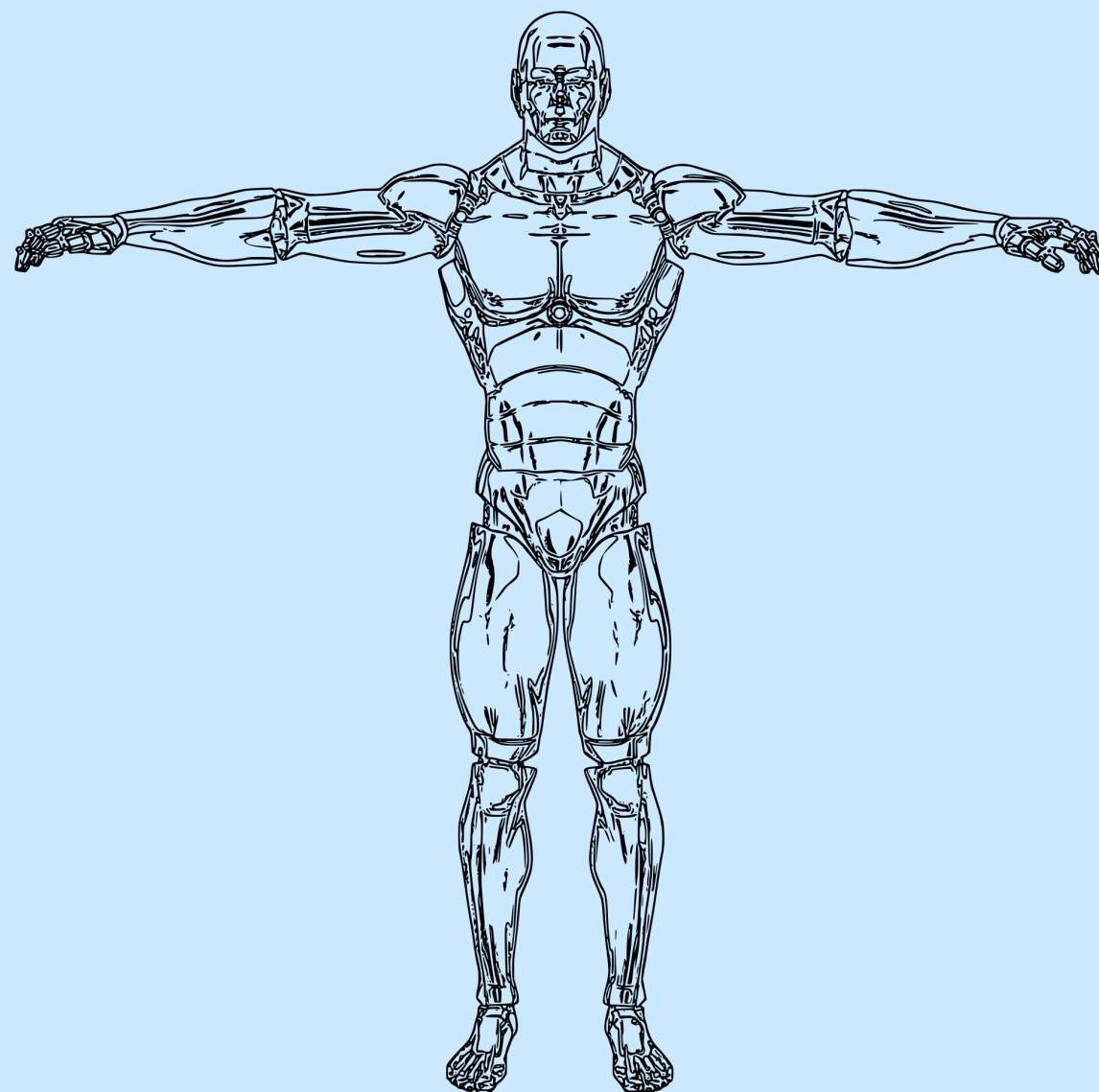




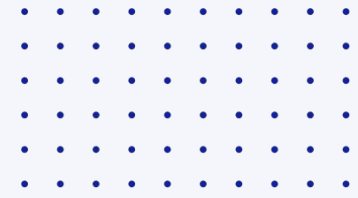
# Types of prosthesis

Limb prostheses include:

- arm prostheses fitted at, above or below the elbow




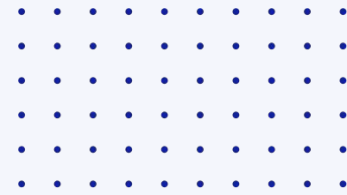



- leg prostheses fitted at, above or below the knee

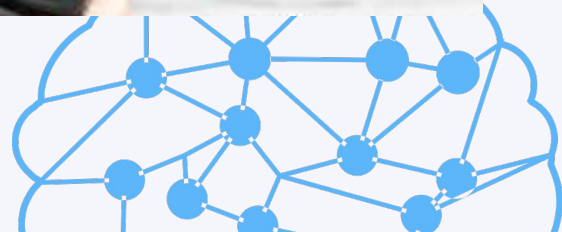


# What is **Bionic leg?**





A **bionic leg** is an electromechanical tool that attaches to the human frame through a socket and tries to copy the capability of a natural leg (Williams, 2021).





## How does Bionic Leg work?

■ Bionic prosthetic legs are controlled by the nervous system and can therefore guess the intention to turn right or climb a step (Williams, 2021).

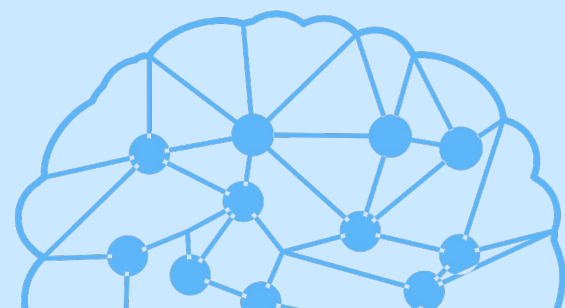




# The main purpose of prosthesis

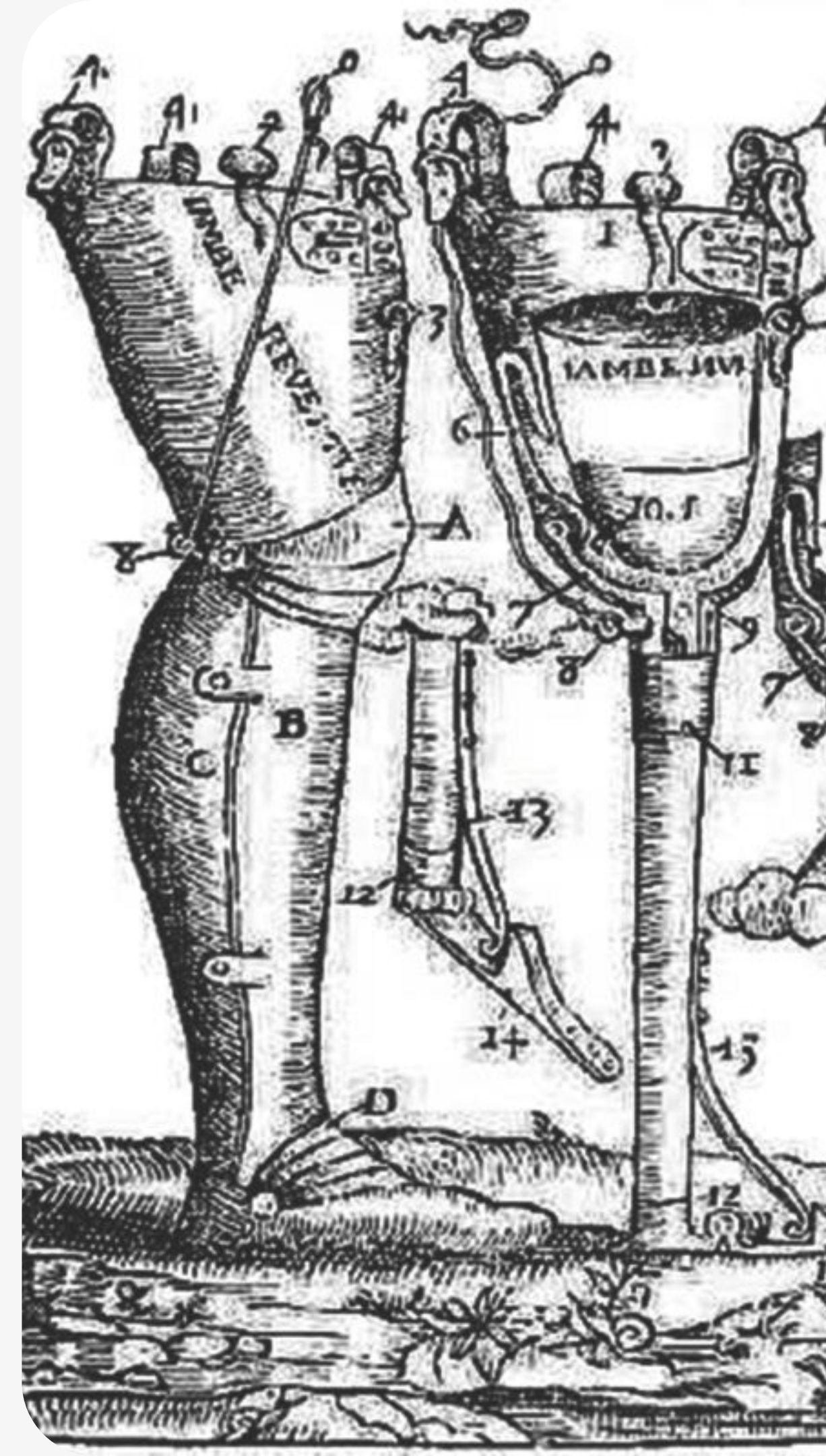


The ideal prosthesis ought to mimic the alignment and gait characteristics of the everyday limb throughout every of the stages of the gait cycle and need to offer safety, stability, dependable assist when standing, easy managed movement whilst walking, and permit unrestricted motion for sitting, bending and kneeling (Seid, 2015).



# What is the history of prosthetic limbs?

In 1579, a book was found in France that mentioned one of the earliest information about prostheses. In that year, the French surgeon Ambroise Paré (1510-1590) published his complete works, part of which described some of the prostheses he had fitted to his amputated patients. As a military surgeon, Paré removed many soldiers' broken arms or legs, and he eventually began to design and make





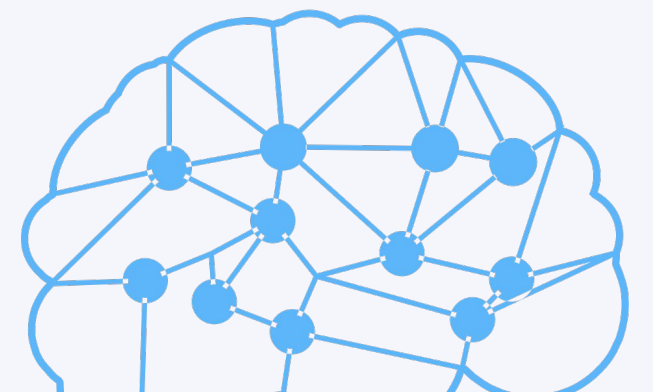
# How has prosthesis changed over time?



- Prosthetics have changed a lot over time, thanks to advances in technology like robotics, brain-computer interfaces and 3-D printing.

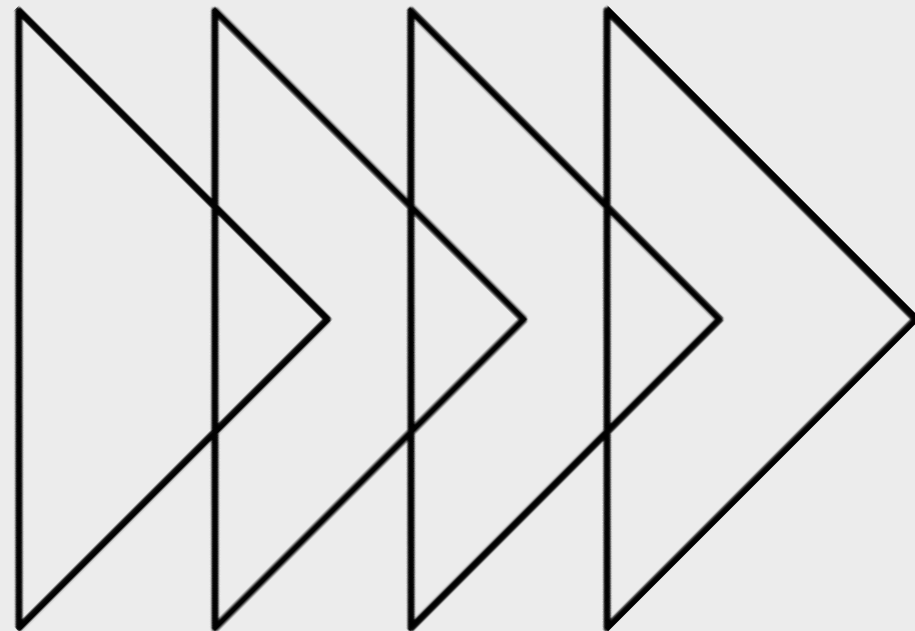
2. Until the 20th century, many people could not afford professionally made prostheses, so they created their own from the materials they had, such as a wooden chair or table leg.

3. As for the new bionic system, it senses the signals transmitted by the nerve endings in the leg and works with the information received and processed.





# Advantages of Bionic leg



Prosthetic legs can have a positive impact on people's lives, as they improve mobility and the ability to cope with everyday activities, as well as providing a means of maintaining independence (Frossard & Lloyd, 2021).

# What is IT invention's social effect?

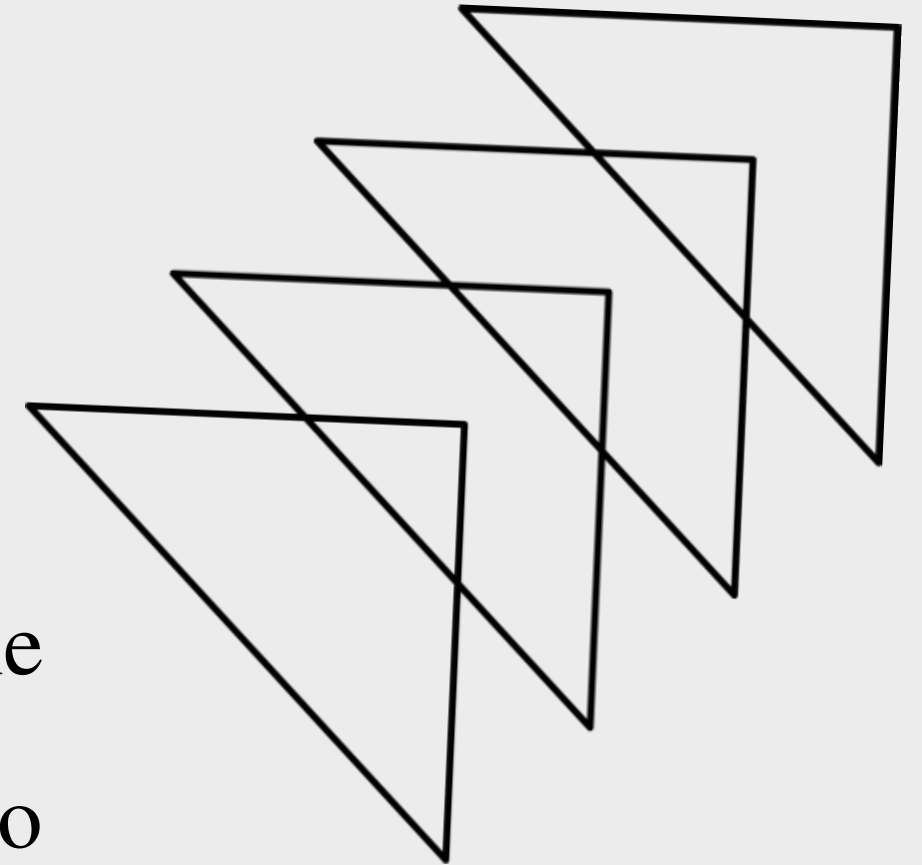
The use of prostheses plays an important social role in the lives of people with limb loss. Being able to conceal it has enabled people to avoid social discrimination, which in turn has helped them to adapt socially and reduce the emotional problems associated with such disabilities.



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## What sparked my passion for bionic limbs?

I have always been fascinated by the world of technology and the mystery of the human body. Bionics is a way to combine these two passions. I strongly believe that people suffering from limb loss can finally change their lives thanks to bionic prostheses.



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