

Myoelectrics



Description

Myoelectric systems use muscle contractions in the residual limb to generate switching signals. Small sensors (electrodes) within the prosthetic socket pick up the muscle contraction and magnify it. The signals are relayed to the motors and servos which perform the different functions of the prosthesis.

Myoelectric systems use batteries to power motors which cause movements. The number of electrodes magnifies the number of different actions the prosthesis can perform.

Batteries and motors add significant extra weight when compared to body powered systems. They also need frequent charging.

Advantages

- Offer multiple function, movements and grips.
- Extend function over other types of upper extremity prosthesis.

Disadvantages

- Not tolerant of immersion in water or exposure to corrosive environments.

- Very expensive.
- Practitioners require a high level of training to fabricate myoelectric systems.
- Heavy.
- Requires frequent (daily) charging.
- Steep initial learning curve.
- Can be slow to operate.
- Unable to be repaired by the end user.
- Prone to break down.