External sleeves

Description

An external sleeve is a simple and effective solution for sealing air out of a transtibial prosthetic system.

A flexible sleeve fits tightly over the prosthetic socket and extends up onto the amputee's thigh. Contact between the non porous socket and the skin of the thigh forms an airtight seal. The lack of air ingress reduces pistoning within the prosthetic socket.

Sleeves are made from materials like neoprene, silicon or copolymer gel (TPE). These materials make the sleeve flexible and durable. They are often covered externally with a textile or fabric to improve durability and make them easier to don.

Sleeves can be use with or without an expulsion valve in the socket.

External sleeves are most commonly paired with transtibial prostheses though they are sometimes used to augment supracondular suspension in transradial prostheses.

Advantages

- Simple
- Provides secure suspension through optimal adherence to the socket and skin

- Reliable
- Maximizes the knee's freedom of movement (especially ribbed or wave designs)
- Reasonably cosmetic
- Relatively inexpensive

Disadvantages

- Straight sleeves can cause peak pressure over the patella when the knee is flexed
- Severe skin irritation can occur if incorrectly applied
- Requires some dexterity and strength to don
- Wear reduces the sleeves effectiveness