Comfort liner

Silicone liners are used widely throughout the prosthetic field, not only as a way of attaching the prosthesis to the residual limb but also as a method of protecting the skin on the residual limb from damage. The silicone material allows some movement within the material, able to absorb the shear forces which inevitably act though the prosthesis and onto the residual limb during gait. This provides benefits to the users to help protect the skin and soft tissue of the residual limb, maintaining the health and quality of life of the user.

There are two published literature reviews that discuss different aspects of lower limb prosthetic liner technology[1,2].

- The main purpose of prosthetic liners is to cushion the transfer of loads from the prosthetic socket to the residual limb[1].
- Based on load-displacement data from the compressive stiffness tests, silicone was one of three materials that were recommended for situations where it is desirable for the liner to maintain thickness and volume since these materials had the least non-recovered strain[1,3].
- Under cyclic compressive loading, silicone was one of two materials that had the greatest cycles to failure under compressive loading, while the Pedilin and polyurethane samples lasted orders of magnitude less[1,4].
- Prosthetic liners and sockets are highly resistive to heat conduction and could be a major contributor to elevated skin temperatures[1,5].
- There are reduced residual limb pressures with the silicone liner compared to other conditions (no liner; soft inserts) suggesting that silicone has an ability to distribute pressure evenly to the residual limb[1,6].
- In terms of patient outcomes, there was no clear preference between silicone and Pelite liners[1,7].

References

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