

Clinical Evidence for Vacuum Assisted Suspension Summary

Vacuum Assisted Suspension (VAS) mechanical and physical properties (1-3)

- Dynamic Form of Suspension.
- Vacuum works constantly through a vacuum pump. The vacuum pump actively draws the residual limb into the socket, fills the air voids to create total contact and better distribute the weight bearing forces and limit movement of the socket on the residual limb.
- Conversely, alternative suspensions assist in drawing the residual limb into the socket, and stops actively drawing once the residual limb is in place.
 - Alternative Suspension:
 - Does not actively compensate for air that can leak into the socket
 - Does not actively compensate for residual limb daily fluid volume loss

Medicare/ CMS factoid (4)

VAS related L codes were created in 2003 by CMS due to scientific and clinical validity:

In the US billed VAS codes: 2003 = 1.4 million, 2011 = 9.1 million

Sharp increase in billings due to:

- increase in scientific credibility and evidence
- sound mechanical and physical principles
- patient preference

Clinical Research/ Evidence

Wound Healing (1,5-13, 21,22)

-VAS has been shown to create a healthier environment for wound healing and overall dermatological health.

Dailey Fluid Volume Control (2,6,7,13,14)

-VAS has been shown to help control daily fluid loss and can help maintain residual limb volume consistency that can lead to a better fitting sockets throughout the day.

Residual Limb Movement (1-3,12-14,16, 20)

-VAS has been shown to limit vertical motion (pistoning) which can cause a loss of control and confidence in amputees. This increase in control and a resultant positive lock created by VAS can allow a prosthetist to lower trim lines and create a more comfortable, hygienic, and increased range of motion in socket design .

Skin Pressure (16,17)

-VAS has been shown to reduce skin pressure

Function (2,16,24)

-VAS has been shown to improve gait symmetry, increase confidence, and be preferred by users when compared to alternative systems.

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