Validation of Alternative Posterior Attachments for Upper Limb Figure-of-Eight Harnessing

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The majority of research performed in upper limb prostheses is aimed at improving myoelectric technology, and there is very little research to improve or validate body-powered prostheses or harness technology, which are still clinically relevant. This study aims to compare the grip force control of two harness attachments. Twenty-one healthy adult subjects with no previous experience of prosthesis harness operation used a mock prosthesis to evaluate grip force control using the BAHA and Sewn Cross Point posterior harness attachments. Grip force control was defined by the grip force variance during a variety of tasks, the Box and Block Test, and subject feedback regarding comfort and ease of use. The BAHA created a significantly smaller strap angle, but this did not create significant differences in any of the tests. The BAHA showed favorable trends at higher forces, in areas above the head, and for endomorph preference.