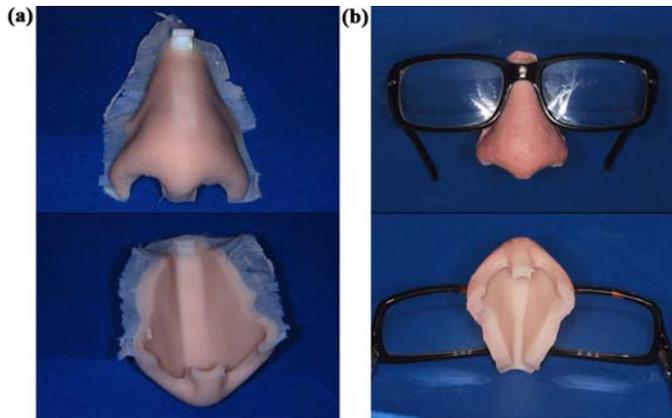


New protocol for construction of eyeglasses-supported provisional nasal prosthesis using CAD/CAM techniques

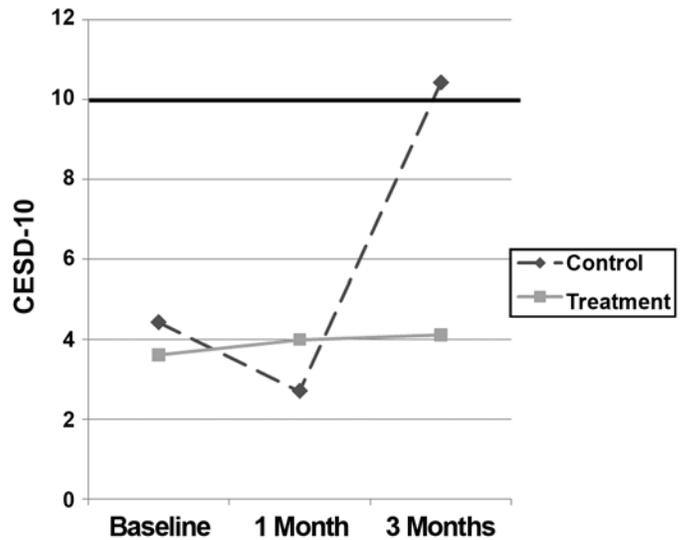
Leonardo Ciocca, DDS, PhD, et al.



Silicone nasal prostheses are sometimes necessary for aesthetic reasons, respiratory function, and social relationship recovery. Because medical adhesives and mechanical support (e.g., eyeglasses) may not function properly, osseointegrated craniofacial implants are the best method for retaining nasal prostheses. However, an implant-supported nasal prosthesis takes a long time to manufacture and patients require an acceptable aesthetic appearance as soon as possible. Therefore, an eyeglasses-supported nasal prosthesis may be a temporary solution and may need to be part of the permanent prosthesis when insufficient bone exists for implant placement. This article discusses a new protocol for making an immediate provisional eyeglasses-supported nasal prosthesis with use of laser scanning, computer-assisted technology, and virtual modeling. This protocol reduces design and manufacturing time and nasal prostheses costs compared with traditional methods.

A culturally sensitive Transition Assistance Program for stroke caregivers: Examining caregiver mental health and stroke rehabilitation

Paul B. Perrin, MS, et al.



Approximately 80% of stroke survivors are discharged home to continue recovery. Caregivers play a key role in supporting recovery at home. Caregivers need help to provide care to veterans after discharge. They may experience strain, burden, and depression. We conducted a pilot study on a telephone support program, the Transition Assistance Program (TAP), that provides education, support, and problem solving to assist caregivers in caring for veterans poststroke. We found that the TAP reduced caregiver strain at the 3-month follow-up and that the TAP may have prevented an effect on depression. We also found that veterans with low functioning at baseline whose caregivers received the TAP improved in functioning more than the veterans whose caregivers did not receive the TAP. Our findings reveal that the TAP warrants further research.

**Influence of gravity compensation on kinematics and muscle activation patterns during reach and retrieval in subjects with cervical spinal cord injury:
An explorative study**

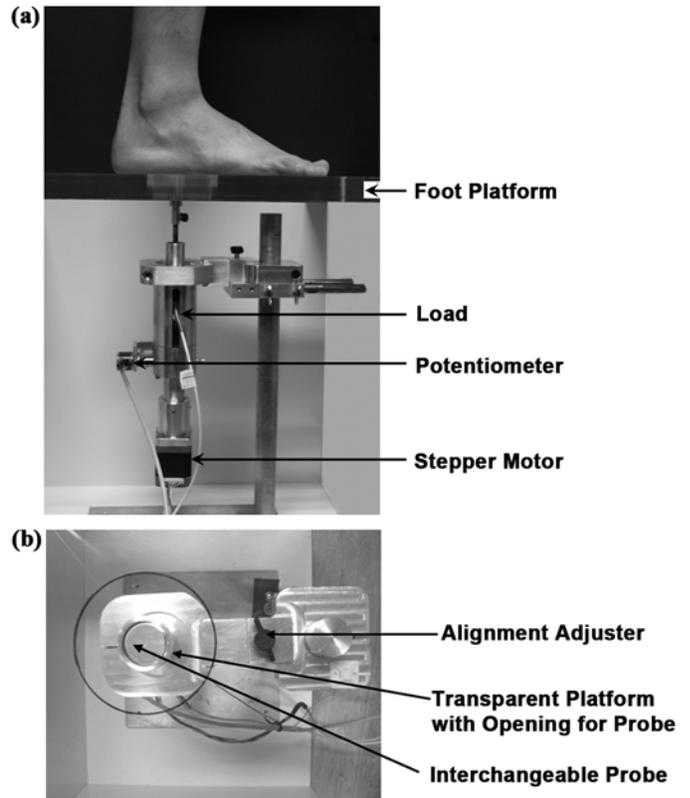
Marieke G. M. Kloosterman, PT, MSc, et al.



After a cervical spinal cord injury, a patient should integrate exercise therapy in an intensive rehabilitation program in optimizing the remaining upper-limb function. During rehabilitation, arm support (gravity compensation) is often used to facilitate goal-directed movement of the upper limb, compensate for lost functions, or train movements. However, the specific effect of gravity compensation on kinematics and muscle activation is largely unknown. In this explorative study, results showed that gravity compensation influenced the kinematics and amplitude of muscle activation of the upper limb; however, the timing of muscle activation remained unaffected.

An indentation apparatus for evaluating discomfort and pain thresholds in conjunction with mechanical properties of foot tissue in vivo

Shuping Xiong, PhD, et al.



This article describes an apparatus for measuring the discomfort and pain thresholds and the mechanical properties of human tissues. The apparatus is automatic, flexible and cost-effective, and test results indicate that it is accurate and reliable. Applications of the apparatus include detecting foot tissue abnormalities, developing orthopedic footwear and accessories, and providing information for building finite element models.

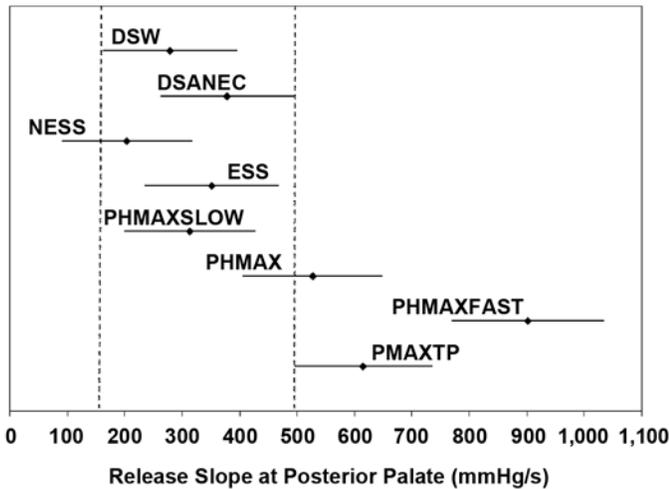
**Long-term use of custom-made orthopedic shoes:
1.5-year follow-up study**

Jaap J. van Netten, MSc, et al.

Many veterans experience problems with their feet and/or ankles for which orthopedic shoes may be prescribed. Our long-term follow-up study investigated whether patients continue to use their orthopedic shoes after 1.5 years. We found that patients who were less satisfied with their shoes in the short term were less likely to use their shoes after 1.5 years. Clinicians and shoe technicians should pay extra attention to those patients who are initially dissatisfied with their orthopedic shoes in order to prevent them from giving up use of their shoes in the long term.

**Pressure profile similarities between tongue
resistance training tasks and liquid swallows**

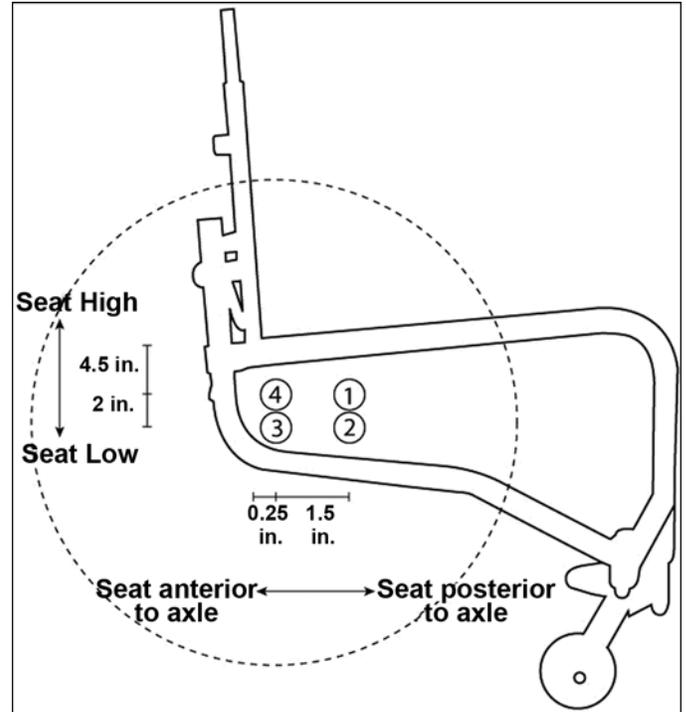
Catriona M. Steele, PhD, et al.



Swallowing problems are a serious concern for many veterans, elderly people, and individuals with strokes or brain injuries. Tongue function is critical for swallowing. Research suggests that tongue resistance exercises can improve strength but not whether they improve swallowing. This study explored how nondisabled people apply tongue pressure to liquids during swallowing and compared these pressure patterns with those seen during different tongue resistance exercises. We identified tongue resistance exercise tasks with similar pressure profiles to nondisabled swallowing. We suggest that treatment should focus on these tasks to have the best chance of improving swallowing.

**Wheelchair axle position effect on start-up propulsion
performance of persons with tetraplegia**

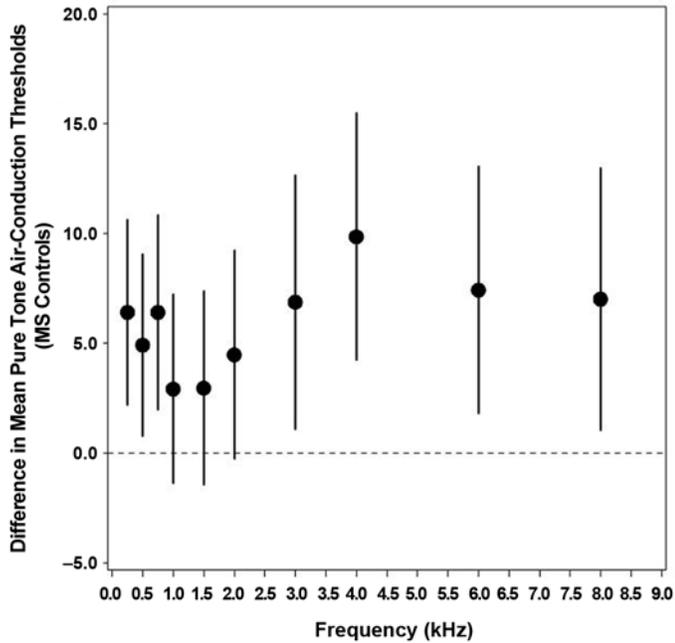
Orestes Freixes, PT, et al.



People with tetraplegia have weakness in their arms that can cause difficulties with wheelchair propulsion. Because of their poor muscular performance, maximizing their propulsion efficiency is important. We studied wheelchair propulsion at four different axle positions in people with chronic cervical 6 tetraplegia. The wheelchair axle position affects speed, acceleration, stroke frequency, and shoulder range of motion. We found that the up and forward axle position resulted in a more conducive position to stroke frequency than the other positions we analyzed.

Audiometric hearing status of individuals with and without multiple sclerosis

M. Samantha Lewis, PhD, et al.



We wanted to answer whether people with multiple sclerosis (MS) have more or less hearing loss than people without MS and whether people with relapsing-remitting MS (RRMS) have more or less hearing loss than people with secondary progressive MS (SPMS). We tested the hearing of 47 people with MS, 26 with RRMS and 21 with SPMS, and 49 people without MS. Our study showed that people with MS have more hearing loss than people without MS and that people with SPMS have more hearing loss than those with RRMS.