

Stat-A-Dyne®

by Lantz Medical

NEW Pro/Sup with Radial Based Cuff

“Stretching your range
of Possibilities”



Stat-A-Dyne Pronator/Supinator with Radial Based Cuff

Traditional contracture management devices for Pronation and Supination utilize either a bi-valve or 3/4 circumferential cuff that is based on the ulnar side of the forearm. The NEW Stat-A-Dyne Pro/Sup utilizes a 3/4 circumferential cuff that is based on the radial side of the forearm. A 3/4 circumferential cuff provides better soft tissue capture and eliminates carpal torsion. Radial based cuffs allow for anatomically correct forearm rotation by leveraging the radius instead of the ulna in pronation and supination. A preliminary study also shows that the radial based cuff design more efficiently rotates the forearm in pronation and supination. Two main benefits resulting from the need for less torque are patient comfort and increased compliance.

The Stat-A-Dyne Pronator/Supinator also features:

- Bidirectional Static and/or dynamic stretch from a single ROM brace.
- Custom cuffs for maximum soft tissue capture, facilitating terminal end ROM.
- Infinite ROM in Pronation and Supination eliminates device “bottom out”.
- Reduced pressure on the ulna styloid during forearm rotation.



Exclusive Distributor: Joints In Motion Medical, LLC
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A special Thank You to Chelsea Eckelkamp, OTR/L and Jennifer Hartman, OTR/L, CHT with Georgia Hand, Shoulder, & Elbow for their assistance in the development of this new product.

"A Pilot Study of the Stat-A-Dyne Pronator/Supinator with Radial Supported Cuff"
Human Performance and Biomechanics Laboratory, Indiana University Purdue University Indianapolis
Rafael Bahamonde, Ph.D., Professor of Kinesiology
Jake Streepey, Ph.D., Assistant Professor of Kinesiology

A pilot study was performed to investigate the benefits of a new radially supported cuff Stat-A-Dyne device. The purpose of the investigation was to explore the following two research questions:

1. Does the radially supported cuff Stat-A-Dyne provide the same or better motion than the ulnar supported cuff?
2. Does the radially supported cuff Stat-A-Dyne elicit the same or greater muscle activity than the ulnar cuff?

Three subjects were fitted with Stat-A-Dyne devices with radial and ulnar cuffs. To test the first research question, the subject's forearm rotations with the radial and ulnar cuffs in dynamic mode were computed using motion capture. Surface markers were placed on the dorsal and palmar surfaces of the wrist and on the middle of the upper arm. These markers were used to compute angles relative to the upper arm and to a horizontal axis. There were no differences between the patterns of motions developed by the radial and ulnar cuffs Stat-A-Dyne, which indicated that the radial cuff provided the same motion as the ulnar cuff Stat-A-Dyne.

To test the second research question, electromyography (EMG) was used to record the muscle activation of two primary muscles responsible for pronation and supination, the pronator teres and the biceps brachii muscles. The subjects performed repeated pronation and supination movements in the dynamic mode with the radial and ulnar cuff Stat-A-Dyne device. In addition, the subjects performed pronation/supination in the static mode. The collected EMG data was rectified, smoothed and integrated, and the average of the muscles bursts was calculated for each muscle and subject.

The results of the EMG testing showed that the radial cuff Stat-A-Dyne elicited greater muscular activation in two subjects, which is an indication of larger muscular contraction. The results of the third subject showed no difference in muscle activation between the ulnar and radially mounted cuffs.

Although the results of this pilot study are preliminary, the radial cuff design seems to have several advantages over the ulnar cuff design:

- The Stat-A-Dyne with a radial cuff is more anatomically correct since forearm rotation occurs around the radius and not around the ulna
- The radial cuff is more stable. The patient's thumb is inserted into the cuff, providing the patient with a lever and a direct link to the frame of the Stat-A-Dyne device. This concept is extremely useful during forearm rotation against resistance and it seemed to elicit greater muscle activation in two of the subjects.
- Because the patient's thumb is inserted into the radial cuff, it seems to allow for a greater transfer of torque from the Stat-A-Dyne device to the forearm and vice versa. This could lead to greater gains in tissue elongation in both the static and/or dynamic mode.

