

Axillary Motor Conduction Study- Deltoid Recording

Patient Position: The patient should be sitting up for this study.

Skin Prep: Wipe with alcohol, temperature check.

Settings: Sweep Speed: 2-5 msec/div.
Sensitivity/Gain: 2-5 mV/div.
Filters: 2Hz- 10 kHz

Recording:

Active: The active surface electrode is placed over the most prominent portion of the middle of the deltoid.

Reference: The reference electrode is placed on the lateral epicondyle of the humerus. Placement of the reference electrode 4cm distally over the tendon of deltoid insertion is described in most literature.

Ground: The ground is placed between the stimulating and recording electrodes.

Stimulation:

Surface stimulation is applied above the upper margin of the clavicle, lateral to the clavicular head of the sternocleidomastoid. The anode is superior, medially

Measurements:

Distance between cathode and active recording electrode taking the shortest distance possible rather than following the course of the nerve.

Latency amplitude and duration for CMAP recording

Key Points:

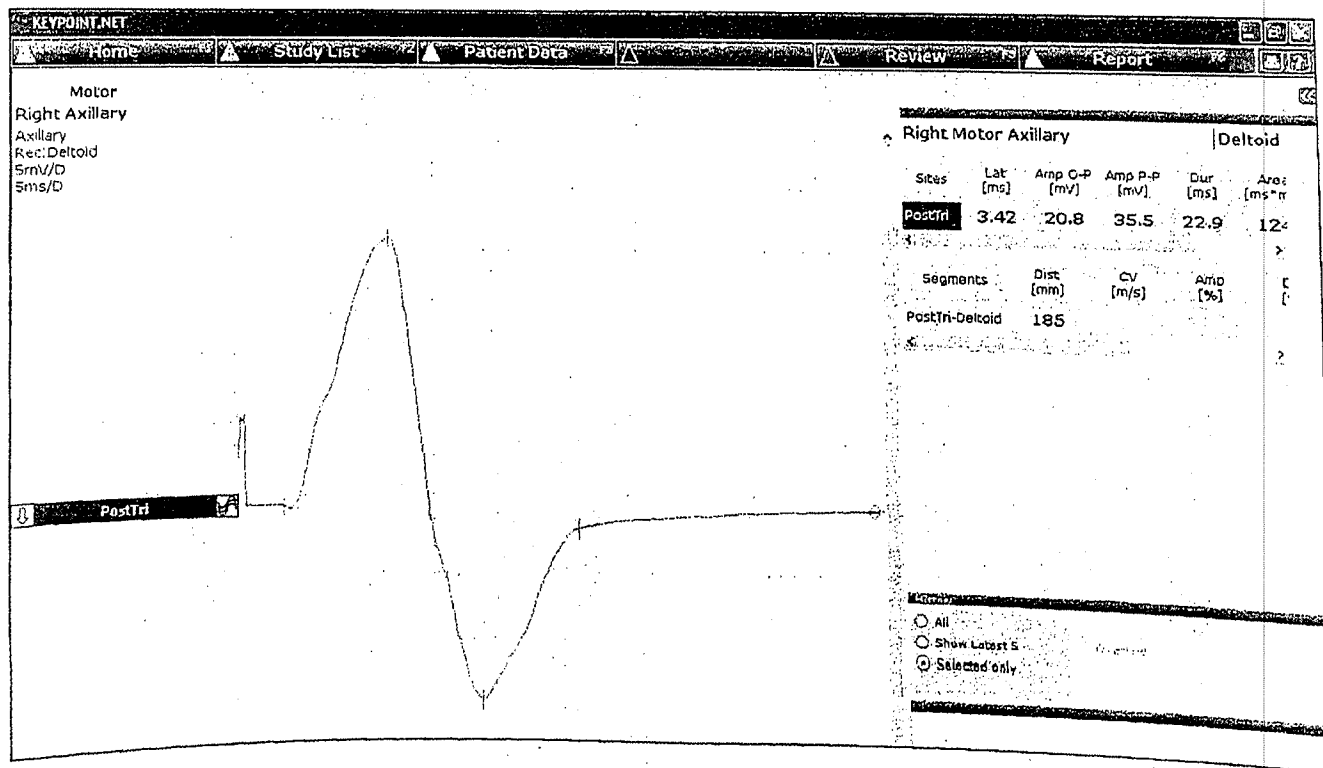
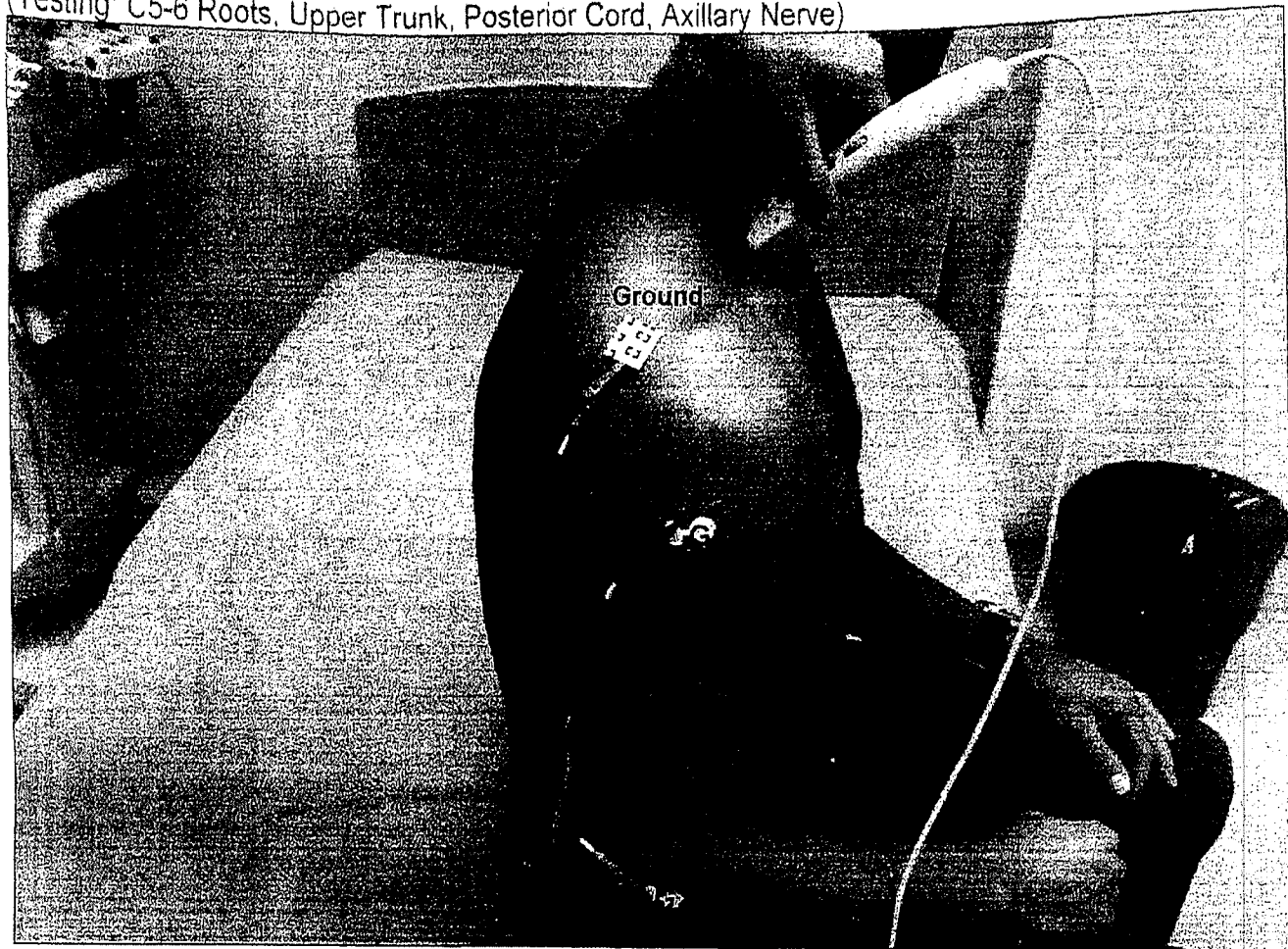
Higher amplitude CMAP and clearer onset of negative peak is obtained when the reference electrode is placed on the lateral epicondyle of the humerus. When the reference electrode is placed 4cm distally over the tendon of deltoid insertion, the reference electrode picks up CMAPs from biceps, triceps muscles which are activated with the stimulation in Erb's point. Through the differential amplifier these potentials are subtracted from the active electrode potentials resulting generally in lower CMAP amplitude or when deltoid muscle is completely atrophied a response with initial positivity originated from the surrounding muscles is obtained (which may be confused for deltoid CMAP response).

Amplitudes are compared side to side. Conduction times as opposed to conduction velocities are preferred as it is difficult to accurately measure the neural segment.

Reference Values:

Author	Distal distance (cm)	Recording	Amplitude (B-N) (mV)	Distal Latency (ms)	Conduction Velocity (m/s)
Dumitru	15-16	Deltoid	Side-to-side	4.3± 0.11	-
Kraft	15-16	Deltoid	Side-to-side	3.9 ± 0.5	-
Shapiro	15-21	Deltoid	Side-to-side	≤ 4.9	-

Axillary Motor – Deltoid Recording – Erb's Point Stimulation
 (Testing C5-6 Roots, Upper Trunk, Posterior Cord, Axillary Nerve)



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