Nerve Conduction studies

F-wave:

A: APB, ADM as in the nerve conduction study for median, ulnar nerves

R: as in the median , ulnar nerve conduction studies

G: as in the median, ulnar nerve conduction studies

Stim: Wrist as in the nerve conduction studies with supramaximal stimulation

Point of Caution: there is no need to reverse the cathode and anode to obtain the F wave responses. Record at least 20 responses to obtain minimum latencies

Upper limb motor conduction studies

Axillary motor

A: 75 % from acromion to deltoid tuberosity

R: 4 cm distal

G: on the shoulder over trapezius

Stim: Erb's point, straddle C6 transverse process

Point of caution: use maximum stimulus to decrease number of stimulations. Hold the upper limb in adduction. Recording of both sites can be done with single stimulation

Musculocutaneous nerve

A: 60% of distance from acromion to biceps attachment

R: biceps attachment

G: on the shoulder over trapezius

Stim: Erb's point, straddle C6 transverse process

Point of caution: use maximum stimulus to decrease number of stimulations. Hold the upper limb in adduction.

Erb's point: *5 cm above midpoint of clavicle (halfway between sternal notch and acromioclavicular joint) toward mastoid process (at C6 transverse process)*

Radial motor

A: line between ulnar and radial styloid , 2 fb proximal from midline in the extensor surface of the distal forearm

R: extensor area of the wrist over ulnar styloid

G: anterior wrist

Stim D: 8 cm proximal to active electrode in the facial plane between the extensor muscles closer to the ulna

Stim Elbow: Anterior and inferior to lateral epicondyle between brachioradialis and lateral epicondyle

Stim above elbow: 3 fb inferior and just posterior to deltoid tubercle at radial spiral groove

Point of caution: will need a high intensity stimulation to obtain responses

Suprascapular motor

A: monopolar needle electrode in either supraspinatus or infraspinatus muscle or both simultaneously (surface electrode should not be used because covered by M Trapezius)

R: surface reference electrode distal over shoulder joint

Caution: compound muscle action potential and latency are measured. Comparing side to side can give an estimate of the amount of axonal loss present.

Unar motor

A: muscle belly of abductor digiti minimi in medial hypothenar eminence

R: fifth metacarpal-phalangeal joint

Stim: medial wrist , adjacent to the flexor carpi ulnaris tendon; below elbow 4 cm distal to the medial epicondyle; above elbow over the medial humerus, between biceps and triceps muscles at a distance of 10-12 cm from the below-elbow site; in the proximal axilla, medial to the biceps over the axillary pulse

Median motor

A: muscle belly in the lateral thenar eminence of the abductor pollicis brevis

R: first metacarpophalangeal joint

Stim: middle of the wrist between the tendons of the flexor carpi radialis and palmaris longus; in atecubital fossa over the brachial artery pulse

Normal values Motor Nerves

Nerve	DML ms	CMAP mV	CV m/sec	Distance cm
Axillary	3.9 (0.5)	12.7 (10.8 – 14.8) Peak to peak		
Musculocutaneous	4.5 (0,6)	Compare to normal side		
Suprascapular -supraspinatus -infraspinatus	 2.7 (0,5) 3.3 (0.5)	Compare to normal side		
Radial	2.4 (0.5)	Side to side comparison < 50 %	61.6 (5.9)	8
Median	4.4	>4	>49	7
Ulnar	3.3	>6	>49	7
F-wave Consider age, height and limb length	Minimum latency Median 22-30 Ulnar 22-31		Chronodispersion Median 4 ms Ulnar 4 ms	
Median H reflex (FCR) Consider limb length and height	13 -19 side to side comparison < 1			

Ref: C.R. Sridhara MD; Normal values; *Moss rehab Electrodiagnostic center*