

## Bedside Reminders - MMT

<u>MUSCLE</u>	<u>INNERVATION</u>	<u>MUSCLE TEST</u>
DELTOID:	Axillary; <u>C5</u> , 6	Patient abducts arm. Examiner pushes arm out of abduction with elbow flexed
BICEPS:	Musculocutaneous; <u>C5</u> , 6	Patient flexes elbow in supination. Examiner pulls/pushes forearm into extension, holding the wrist with one hand while stabilizing the shoulder with the other hand
EXT CARPI RAD	Radial; <u>C6</u> , 7	Patient extends wrist. Examiner forces wrist into flexion, supporting forearm just above the wrist with one hand and applying force with the other hand into the palmar direction
TRICEPS:	Radial; C6, <u>7</u> , 8	Patient extends elbow with forearm in supination. Examiner pushes forearm into flexion holding forearm at wrist stabilizing the shoulder with the other hand
FLEX DIG PROFUNDUS	Median; <u>C8</u> , T1 Ulnar; <u>C8</u> , T1	Examiner stabilizes proximal & middle phalanx with the index & long fingers of one hand & patient flexes distal phalanx. Examiner forces distal phalanx into extension with the thumb of the other hand
ABD POLLICIS BREVIS	Median; C8, <u>T1</u>	Patient places back of hand on thigh, with back of hand parallel to the floor and abducts the thumb toward the opposite shoulder. Examiner forces the thumb toward the radial side of the index finger
1st DORSAL & ABD DIG MIN	Ulnar; C8, <u>T1</u>	The patient abducts the fingers away from the long finger. The examiner forces the fingers into adduction

(Underlined nerve is major innervation)  
GJ Herbison, MD, Department of Rehabilitation Medicine, Jefferson Medical College. 2009

<u>MUSCLE</u>	<u>INNERVATION</u>	<u>MUSCLE TEST</u>
HIP FLEXORS:	Femoral L 2, <u>3</u> , 4	The patient sits with knee bent and flexes the hip. The examiner forces the hip out of the flexed position
KNEE EXTENSORS:	Femoral L2, 3, <u>4</u>	The patient sits with the hip and knee bent 90 degrees. With the knee in 90 degrees of flexion the examiner grasps the patient's ankle and attempts to prevent the patient from extending the knee
TIBIALIS ANTERIOR:	Peroneal L4, <u>5</u>	The patient dorsiflexes the ankle. The examiner places one hand under the patient's heel and forces the foot into plantar flexion with the other hand
EXTENSOR HALLUCIS:	Peroneal <u>L5</u> , S1	The patient dorsiflexes the great toe. The examiner places fingers on the ball of the foot and pushes on the dorsum of the proximal phalanx with the thumb, forcing the great toe into plantar flexion
FLEXOR HALLUCIS:	Tibial; L5, <u>S1</u>	The patient plantar flexes the great toe. The examiner forces the great toe into dorsiflexion
GASTROSOLEUS:	Tibial <u>S1</u> , S2	If the patient is able to stand, have patient rise on the ball of foot 5 – 20 times. If patient is unable to stand, the patient sits with foot on floor. Patient plantar flexes with ball of foot on floor & raises heel 1 inch off the floor. Examiner pushes on the top of the knee forcing the heel toward the floor

(Underlined nerve is major innervation)  
GJ Herbison, MD, Department of Rehabilitation Medicine, Jefferson Medical College. 2011

## Bedside Reminders - Sensation

<u>MUSCLE</u>	<u>INNERVATION</u>	<u>MUSCLE TEST</u>
DELTOID:	Axillary; <u>C5</u> , 6	Patient abducts arm. Examiner pushes arm out of abduction with elbow flexed
BICEPS:	Musculocutaneous; <u>C5</u> , 6	Patient flexes elbow. Examiner pulls/pushes forearm into extension by holding the elbow with one hand and forces the supinated forearm into extension
EXT CARPI RAD	Radial; <u>C6</u> , 7	Patient extends wrist. Examiner forces wrist into flexion and ulnar deviation supporting forearm just above wrist with one hand applying force with the other hand into the palmar ulnar direction
TRICEPS:	Radial; C6, <u>7</u> , 8	Patient extends elbow with forearm in supination. Examiner pushes forearm into flexion holding forearm at wrist
FLEX DIG PROFUNDUS	Median; <u>C8</u> , T1 Ulnar; <u>C8</u> , T1	Patient flexes distal phalanx. Examiner holds proximal & middle phalanx with the index & long fingers of one hand & forces distal phalanx into extension
ABD POLLICIS BREVIS	Median; <u>C8</u> , <u>T1</u>	Patient places back of hand on thigh with back of hand parallel to the floor and abducts the thumb toward her/his opposite nose. Examiner the thumb toward the thumb (radial) side of the index finger
1st DORSAL & ABD DIG MIN	Ulnar; <u>C8</u> , <u>T1</u>	he patient abducts the fingers away from the long finger. The examiner forces the fingers into adduction

(Underlined nerve is major innervation)  
GJ Herbison, MD, Department of Rehabilitation Medicine, Jefferson Medical College. 2007

<u>MUSCLE</u>	<u>INNERVATION</u>	<u>MUSCLE TEST</u>
HIP FLEXORS:	L <u>2</u> , <u>3</u> , 4	The patient sits with knee bent and flexes the hip. The examiner forces the hip out of the flexed position
KNEE EXTENSORS:	Femoral L2, <u>3</u> , <u>4</u>	The patient sits with the hip and knee bent 90 degrees. With the knee in 90 degrees of flexion the examiner grasps the patient's ankle and attempts to prevent the patient from extending the knee
TIBIALIS ANTERIOR:	Peroneal L4, <u>5</u>	The patient dorsiflexes the ankle. The examiner places one hand under the patient's heel and forces the foot into plantar flexion with the other hand
EXTENSOR HALLUCIS:	Peroneal <u>L5</u> , S1	The patient dorsiflexes the great toe. The examiner places fingers on the ball of the foot and pushes on the dorsum of the proximal phalanx with the thumb, forcing the great toe into plantar flexion
FLEXOR HALLUCIS:	Tibial; L5, <u>S1</u>	The patient plantar flexes the great toe. The examiner forces the great toe into dorsiflexion
GASTROSOLEUS:	Tibial <u>S1</u> , S2	If the patient is able to stand, have patient rise on her/his ball of foot 5 times. If patient unable to walk: Patient sits with foot on floor. Have patient plantar flex with ball of foot on floor and heel 1 inch off the floor. Examiner pushes forcefully on top of knee forcing the foot into plantar flexion

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GJ Herbison, MD, Department of Rehabilitation Medicine, Jefferson Medical College. 2007

## Bedside Reminders - Reflexes

DERMATOME: Touch & Pin	TEST LOCATION
C5.....	Halfway between biceps and lateral epicondyle
C6	
Median.....	Palmar distal thumb
Radial.....	Dorsal MP joint of thumb
C7	
Median.....	Palmar distal long finger
Radial.....	Dorsal MP joint of long finger
C8	
Ulnar.....	Palmar distal little finger
Medial antebrachial.....	5 inches proximal to the ulnar side of the wrist
T1.....	Medial epicondyle of elbow
L2.....	Halfway between inguinal ligament and patella
L3.....	Medial condyle of knee
L4.....	Medial malleolus
L5.....	Base of second toe
S1.....	Little toe
GJ Herbison, MD, Department of Rehabilitation Medicine, Jefferson Medical College. 2007	

REFLEXES	TEST PROCEDURE
C5.....	Firmly compress the biceps tendon with your thumb and briskly tap your thumb with the hammer. Observe for elbow flexion or contraction of the biceps tendon under the thumb
C6.....	Briskly tap the extensor carpi radialis muscle at the proximal forearm. Observe for dorsiflexion & some radial deviation of the hand
C7.....	Briskly tap the triceps tendon. Observe for elbow extension or contraction of the triceps muscle
C8.....	Ask the patient to gently contract fingers against your fingers & briskly tap your fingers with the hammer. Observe for finger flexion of the patient's fingers against your fingers
L4.....	Briskly tap the patellar tendon between the patella & the tibial tubercle. Observe for knee extension or contraction of the quadriceps
L5.....	Firmly compress the medial hamstring tendon with your fingers & briskly tap the hammer. Observe for contraction of the medial hamstring tendon under the fingers
S1.....	Briskly tap the Achilles tendon. If supine support the ball of the foot. Be sure patient does not contract the tibialis anterior muscle. Observe for plantar flexion or contraction of the gastrocnemius
GJ Herbison, MD, Department of Rehabilitation Medicine, Jefferson Medical College. 2007	