

Monitoring neuromuscular function can be uncomfortable for the patient. Therefore train-of-four testing should begin after sedation and analgesia are started.

Initial Threshold

To get optimal placement, position the electrodes to test the nerve you have chosen. Stimulate at 5 mA and feel for a muscle twitch. Then move the negative electrode (the black one) over a little and stimulate again. Keep moving and testing until you find the spot with the best response. The initial threshold is the lowest level at which a single twitch is elicited. It is usually 5-10 mA. Now select an alternative site and test for initial threshold on this site. Then start the neuromuscular blockade infusion and test for supramaximal stimulation on both sites.

Supramaximal Stimulation

Current is considered supramaximal when further increases show no increase in force of contraction. In most instances this is between 20 and 30 mA, but it may be as high as 50 mA. The supramaximal stimulus has been estimated to be approximately three times the initial threshold. Wait at least 10 seconds before retesting the nerve.

Conducting a train-of-four (TOF) test

Connect the peripheral nerve stimulator (PNS) to the electrodes.

Set the mA at the supramaximal current.

Place your fingertips on the muscle being tested.

Ulnar nerve: thumb.

Median nerve: fingers.

Peroneal nerve: big toe.

Tibial nerve: toes.

Temporal nerve: eyebrow or eyelid.

Push button marked TOF.

Note response and document the following:

Site tested, time it was tested, amount of mA, number of twitches.

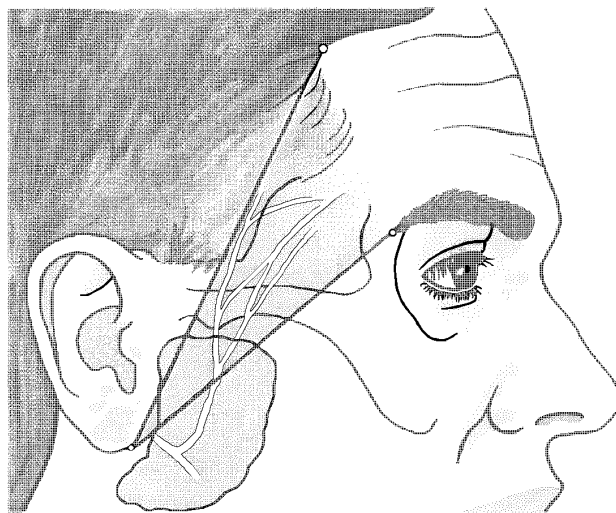
The goal of TOF is a twitch response of 1 to 2 twitches.

Train-of-four is assessed every 15-20 minutes until adequate blockage is established. Then every 4-8 hours.

Allow recovery from blockage every 24 hours for assessment of neuro status, pain and anxiety.

Testing the temporal nerve

Policy dictates that you may use this site if no other sites are available. Direct muscle stimulation is a common problem when the temporal nerve is used. Locate the temporal nerve by drawing an imaginary line from the lobe of the ear to the hairline and a second line from the lobe of the ear to the edge of the eyebrow. The many branches of the temporal nerve will be found in this area. Place the negative or black electrode patch by the ear. Position the positive or red electrode patch 2 cm. from the eyebrow.



Number of twitches	% of receptors occupied by nondepolarizing relaxants	Whole body signs
4	30%	Able to lift head > 5 sec. and has strong hand grasp
2-3	75%	Tidal volume and vital capacity is normal, spontaneous movement
1	90%	Abdominal relaxation
0	>95%	Flaccid