This study was designed to compare the use of insulated and uninsulated needles with a peripheral nerve stimulator for locating a peripheral nerve in an anesthetized cat. The needles were mounted on a one-dimensional manipulator and both the saphenous and sciatic nerves were located. The tip of the insulated needle was consistently placed on the sciatic nerve. The tip of the uninsulated needle was placed 0.1-0.9 cm past the sciatic nerve. Injecting saline to assess the position of the tip of the needle relative to the sciatic nerve did not detect the needle being past the nerve. With the saphenous nerve preparation, both the needle and nerve were visible through the tissue. Using an insulated needle, the minimum current required to stimulate the nerve occurred when the tip of the needle touched the saphenous nerve. Using an uninsulated needle, the minimum current occurred when the tip was 0.1-0.8 cm past the nerve. The conclusion is that insulated needles more precisely locate the peripheral nerve than uninsulated needles [1)].

1)
Ford DJ, Pither C, Raj PP. Comparison of insulated and uninsulated needles for locating peripheral nerves with a peripheral nerve stimulator. Anesth Analg. 1984 Oct;63(10):925-8. PubMed PMID: 6486492.