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BV 2015-25 - *Electrode for Peripheral Nerve Stimulation*

APPLICATION: Peripheral nerve stimulation for modulation of pain conditions

SUMMARY:

The peripheral nervous system comprises the nerves and ganglia that are outside of the central nervous system. The central nervous system, which consists of the brain and spinal cord, is connected to the limbs and organs by the peripheral nerves. In general the peripheral nervous system controls both sensory and motor functions. Because the peripheral nervous system is responsible for processing sensory events, the peripheral nerves are also responsible for processing pain. The peripheral nervous system processes pain associated with syndromes such as scalp pain, extremity pain, migraine, and occipital neuralgia. The peripheral nervous system is also responsible for motor functions. These motor functions include movement of extremities and core.

Neuromodulation has been used to alter the activity of the peripheral nervous system through the delivery of electrical stimulation or chemical agents. In neuromodulation, electrical stimulation of peripheral nerves is used for modulating firing patterns of neurons. This electrical stimulation can be accomplished by subcutaneous placement of electrodes proximate to a peripheral nerve. The implantable electrodes currently used for neuromodulation are designed for epidural use. Because epidural electrodes, being used off-label, are not designed for neuromodulation in a subcutaneous location there are several complications including infection, skin erosion, pain and electrode fracture.

The present invention provides a novel electrode for peripheral nerve stimulation and methods of using the electrode. The design of the electrode allows for easy implantation proximal to a peripheral nerve. Additionally, the electrode is designed to be flexible and limit the complications associated with epidural electrodes.

Patent application pending.