

## Advantages of the SENSUS Pain Management System For Treatment of Painful Diabetic Neuropathy

People with diabetes and painful diabetic neuropathy (PDN) often have abnormal physiology that includes elevated skin resistance<sup>1</sup> and peripheral sensory neuropathy. Many of these patients are also overweight. Effective pain relief may therefore require a higher stimulation current than that needed for non-diabetic patients. Another issue is that PDN affects the feet and lower leg which is an awkward location to place and wire electrodes. Finally, most diabetic patients have complicated treatment programs involving medications and devices such as blood glucose meters. It is difficult for these patients to adopt pain relief technology that requires additional training and expertise. For these reasons, general purpose transcutaneous electrical nerve stimulators may have limited efficacy and utility in treating PDN. The SENSUS Pain Management System has been optimized for patients with diabetes, and includes advanced technology to enhance patient convenience while maximizing pain relief.

### How does SENSUS enhance patient convenience and compliance?

It may be worn and operated under clothing without restricting daily activities. It is controlled by a single push-button and learns patient preferences to reduce the frequency of interactions needed.

### How does SENSUS simplify electrode placement and wiring in the lower leg?

It is specifically designed for pain relief in the foot and lower leg. A single electrode array snaps into the device without wires. Placement is fast and does not require training.

### Does SENSUS monitor patient utilization?

Yes, it automatically monitors utilization and therapy parameters which may be uploaded to a PC. A one-page report is generated that documents patient compliance against recommended targets.<sup>2</sup>

### How does SENSUS assist the patient in determining a therapeutic stimulation intensity?

It has an algorithm that automatically determines an intensity within the recommended therapeutic range.<sup>2</sup>

### How does SENSUS address nerve habituation?

Stimulation intensity must be increased during a therapy session to overcome nerve habituation and maximize pain relief.<sup>3</sup> SENSUS automatically compensates for nerve habituation. Without this feature, patients must manually increase the intensity during the course of a therapy session.

### What battery technology does SENSUS use?

It has a permanent Lithium-ion battery that only requires recharging a few times a month. It also has sophisticated power conservation and battery monitoring technology.

### How does SENSUS address elevated skin resistance and sensory neuropathy in diabetic patients?

It has maximum output current and voltage of 100 milliamperes and 100 volts, respectively.

### What are the advantages of the SENSUS stimulation pulse?

SENSUS stimulates with a current-regulated pulse which provides stable nerve stimulation despite changes in the skin-electrode interface.<sup>4</sup> The pulse waveform is biphasic and symmetrical which is recommended for maximum stimulation efficiency<sup>4-6</sup> and to decrease skin irritation.<sup>7</sup>

### What are the advantages of the SENSUS pulse frequency?

SENSUS stimulates with a randomly varying frequency between 60 Hz and 100 Hz, which has been shown to enhance analgesia.<sup>8,9</sup>

## References

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