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HEALTHCARE

Insights

GETTING BETTER *FASTER*

Advances in technologies such as bone growth stimulators are helping patients heal faster.



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In 2015, American workers suffered nearly

100,000 FRACTURES

These fractures

cost **40 days** *roughly two months*
for recuperation time

GET BETTER FASTER

Anyone who has ever broken a bone knows that healing can be a lengthy process. That amount of time carries with it increased medical costs, but it can also be painful, affecting overall quality of life. Unfortunately, in the workplace, bone fractures are relatively common. In 2015, American workers suffered nearly 100,000 fractures. These fractures cost each worker an average of 40 work days, roughly two months, in recuperation time (1).

Bone fractures in the workplace carry a hefty toll, resulting in both lost worker productivity as well as lost wages. This is why Workers' Compensation adjusters and nurse case managers are concerned with helping patients to heal as quickly as possible. Fortunately, advances in technologies such as bone growth stimulators are helping patients heal faster, allowing workers to return to work sooner and reducing overall medical costs.

What is a bone growth stimulator?

A bone growth stimulator (BGS) is a medical device that helps to heal broken bones. They can be either internal (implanted during a surgical procedure)

or external (worn over a cast or brace and used at home). A BGS stimulates new bone growth by transmitting either low level electrical, magnetic, or ultrasound signals to the fracture.

Which patients need a bone stimulator?

Using risk factors that predict poor fracture healing, physicians are generally able to identify patients who might have difficulty healing new bone fractures.

Such risk factors include the severity of the injury and which bone is affected. For example, patients who suffer a severe fracture, as is common in a motor vehicle accident, can expect poor fracture healing. Open fractures—meaning that the bone emerges from the skin—and multiple fractures can also heal poorly. Certain bones are also more prone to heal poorly, including the scaphoid, femur, and lower leg (tibia and fibula, fractured together).

Certain medications and health conditions also play key roles in determining how well a fracture will heal. Medications that can impact healing include insulin, anti-coagulants, anticonvulsants, and use or abuse of analgesics (especially

opioids). Health conditions such as obesity are also associated with poor fracture healing, as is excessive tobacco or alcohol consumption (2).



exogen[®]

ultrasound bone healing system

Why use a bone growth stimulator?

The main reason for a patient to use a bone growth stimulator is to heal faster. Fast fracture healing provides an obvious benefit to Workers' Compensation adjusters and nurse case managers because the patient can get back to work more quickly. A faster return to work means the overall cost of managing the claim will decrease dramatically. In addition, the patient can avoid loss of expected earnings, and the company can avoid long-term loss of a key employee.

In the case of a fracture nonunion (a fracture that fails to heal), low-intensity pulsed ultrasound (LIPUS) has been shown to be quite effective (3). Nonunions will rarely heal without intervention, but revision surgery is currently the most common intervention. However, LIPUS devices have been shown to enhance heal rates even in chronic nonunion fractures, where the fracture had failed to heal after a year.

Compared to surgery for fracture nonunion, bone growth stimulators can often be significantly more cost-effective (4). Analysis of an administrative claims database that included approximately 80 million patients with fracture nonunion showed that after comparing "surgery-only" patients to "LIPUS-only" patients, the surgery-only patients needed more health care services. In the year following treatment, surgery-only patients also had total medical costs that were \$6,289 more than LIPUS-only patients ($p < 0.0001$). Treatment with LIPUS-only for fracture nonunion could thus potentially result in cost savings of \$4 billion annually in the United States (4).

BGS devices have the potential to save billions of dollars in other areas of health care, as well. Orthopedic surgery is a potent risk factor for opioid addiction (5). Overall, 49.2% of opioid-naïve patients receive an opioid prescription for post-operative pain control at hospital discharge after major surgery (6). Over the next three years, it's estimated the United States may spend in excess of \$500 billion on the current opioid crisis (7).

Stimulating bone growth and reduced costs

Any patient who might have difficulty healing a new bone fracture should potentially receive a prescription for a BGS. The research shows that these devices are effective in reducing healing time, leading to a faster return-to-work, and they have the potential to reduce costs significantly. Use of a BGS greatly benefits Workers' Compensation adjusters, nurse case managers, and patients themselves.

References

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EXOGEN is a registered trademark of Bioventus LLC.

Summary of Indications for Use: The EXOGEN Ultrasound Bone Healing System is indicated for the non-invasive treatment of established nonunions† excluding skull and vertebra. In addition, EXOGEN is indicated for accelerating the time to a healed fracture for fresh, closed, posteriorly displaced distal radius fractures and fresh, closed or Grade I open tibial diaphysis fractures in skeletally mature individuals when these fractures are orthopaedically managed by closed reduction and cast immobilization.

†A nonunion is considered to be established when the fracture site shows no visibly progressive signs of healing.

There are no known contraindications for the EXOGEN device. Safety and effectiveness have not been established for individuals lacking skeletal maturity, pregnant or nursing women, patients with cardiac pacemakers, on fractures due to bone cancer, or on patients with poor blood circulation or clotting problems. Some patients may be sensitive to the ultrasound gel.

Full prescribing information can be found in product labeling, at www.exogen.com, or by calling Customer Service at 1-800-836-4080.



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C-71818-001-000-WC