

Axio
Bionics™

INNOVATIVE LEADER

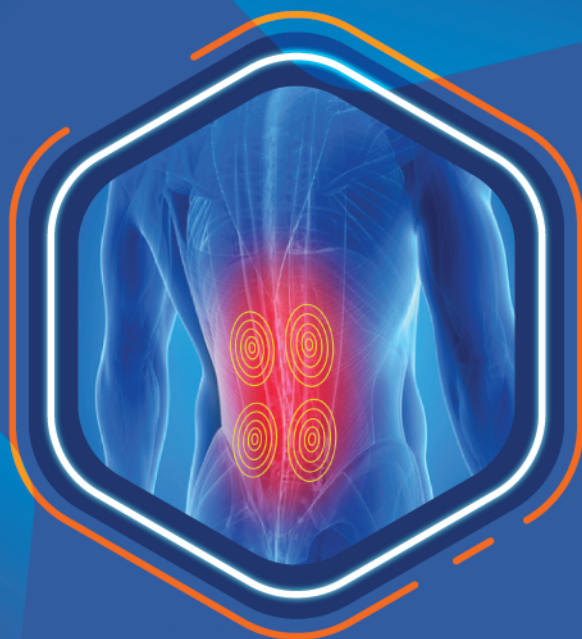
IN NEUROPROSTHETICS
& PAIN MANAGEMENT



**WEARABLE ELECTRICAL STIMULATION
TECHNOLOGY THAT HELPS
THE INJURED WORKER**



PROPOSAL FOR A COLLABORATION WITH AXIOBIONICS™



AXIOBIONICS, THE LEADER AND INNOVATOR
OF **WEARABLE TECHNOLOGY**, BRINGS **NON-INVASIVE**
AND **NON-PHARMACEUTICAL**
PAIN MANAGEMENT TO INJURED WORKERS

Together We Will Dramatically Improve Lives, and Save Healthcare Dollars

THE PROBLEM

Lower Back Pain

POOR
THERAPY
COMPLIANCE

DECREASED
WORK
PRODUCTIVITY

JOB
LOSS

MUSCLE
SPASMS

LOSS OF
SLEEP

MEDICATION
ADDICTION
ABUSE

DEPRESSION

Annual Health Cost
Due to Back Pain

**\$26.1
BILLION**

Reported a
change in doctor

28%

47%

Reporting Limits
to Activity

13%

of Workforce Experienced
a Loss in Productivity

References

National Center for Health Statistics (US). Health, United States, 2006: With Chartbook on Trends in the Health of Americans. National Center for Health Statistics (US); 2006.

Luo X, Pietrobon R, Sun SX, Liu GG, Hey L. Estimates and patterns of direct health care expenditures among individuals with back pain in the United States. Spine (Phila Pa 1976). 2004;29:79-86.

Stewart WF, Ricci JA, Chee E, Morganstein D, Lipton R. Lost productive time and cost due to common pain conditions in the US workforce. JAMA. 2003;290:2443-2454

THE SOLUTION

AXIOBIONICS™ *BIOBELT™*



- FAST RESULTS
- NON-INVASIVE
- NON-DRUG

SOLUTION TO LOWER BACK PAIN



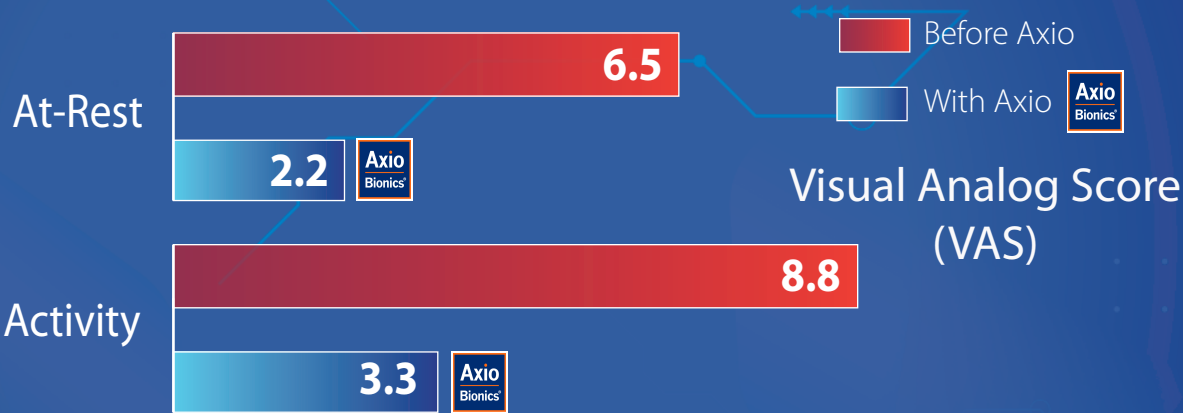
OUR RESEARCH

Therapeutic Effectiveness of AxioBionics Wearable Therapy Pain Management System in Patients with Chronic Lower Back Pain (LBP)

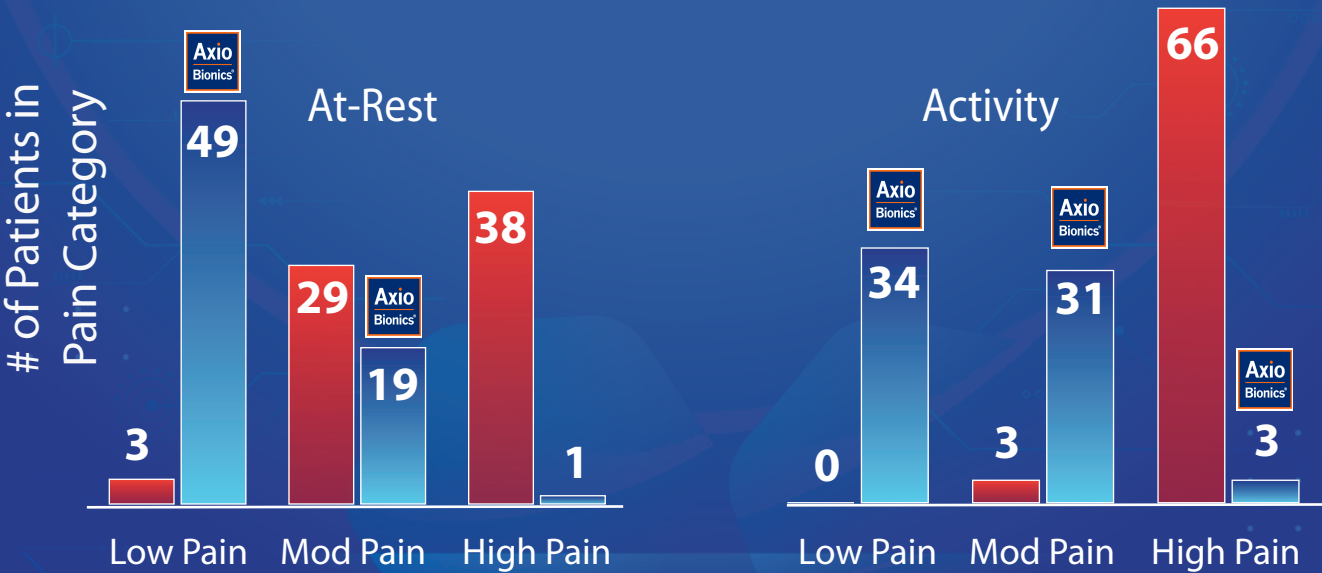
Philip Muccio, CPO , Josh Schueller, PT, Miriam van Emde Boas, PT, Norm Howe, Ph.D., Edward Dabrowski, MD, David Durrant, DC, Ph.D.

[Click Here to Read Our Research Paper](#)

Analysis of At-Rest and Activity-Related Lower Back Pain (LBP)



Change in Average LBP Level



Shift in Pain Category with Axio System

IMPLICATIONS OF OUR RESEARCH

IN THE MANAGEMENT OF LBP IN THE INJURED WORKER

PROBLEM:

Increases in pain with activity is an impediment to work and work productivity.

SOLUTION:

Wearable Therapy™ not only lowers at-rest pain, but keeps activity pain reduced so that injured workers can work without increases in pain.

- *return to work possible*
- *work productivity improved*
- *absenteeism and presenteeism reduced*

PROBLEM:

LBP can lead to a decrease in sleep quality.

SOLUTION:

BioBelt can be worn anytime, including when sleeping.

PROBLEM:

Pain medications can adversely impact cognition and alertness.

SOLUTION:

BioBelt has no detrimental effect on ability to think clearly.

PROBLEM:

Therapy may incite higher levels of LBP increasing failure rates.

SOLUTION:

BioBelt mitigates pain while allowing movement and exercises.



BioBelt™ Case Study



AxioBionics® implemented the **BioBelt™** technology to achieve unprecedented results that dramatically improved Henry's quality of life.

Henry's Injury

Cause: Fall at work from a distance of 40 ft

Injury: Lumbar and pelvic fx led to a diversion of blood flow from vital organs and digits which resulted in hypoxia and amputation of finger and toes. Severe Lower back pain and spinal fusions led to limitations and inability to perform activities of daily living.

Past Treatments: Physical therapy, occupational therapy, and pain meds (Gabapentin and Norco)

Life Before **BioBelt™**

Functionality

- Needed moderate assistance for bed mobility
- Needed sit to stand transfer assist
- Could only sleep 4 hours a night
- Poor quality of life, with no relief

Pain

- Resting pain levels were 8 out of 10
- Activity pain levels were 10 out of 10
- Pain was so great that Henry could only walk 10 feet at a time



BioBelt™ Timeline

May 3,
2021

Initial evaluation with **AxioBionics™** to determine candidacy of **BioBelt™** in treatment of lower back pain. During evaluation, pain levels decreased from 8/10 to 2/10 with sitting and walking.

May 14,
2021

Delivery of **BioBelt™**
Upon application of **BioBelt™**, lumbar pain levels decreased to 0-2/10, even with sitting, standing, and walking.

June 10,
2021

Less than one month of wearing **BioBelt™** he experienced reduced lower-back pain throughout the entire day. He is wearing it 4 hours a day. He also had improved sleep throughout the night.

August 16,
2021

After Just Three Months



- No pain in the morning
- Ability to sleep 7-8 hours a night vs 4 hours pre-Tx
- Able to ambulate pain free with **BioBelt™** up to a half mile
- Lower back pain no longer limits sit or stand activities

Life-Changing Results

AxioBionics™ was able to achieve unprecedented results with the non-drug **BioBelt™** system. Henry's quality of life has improved significantly. **AxioBionics™** offers a non-invasive, low-risk treatment option that not only reduced pain, but led to significant improvements in functionality.

100% Increase in hours of sleep

75-100% Reduction in pain levels





COLLABORATION BENEFITS

AXIOBIONICS **BIOBELT™**

- **FASTER** RETURN TO WORK
- **CLINICALLY** PROVEN
- **GOALS** MET SOONER
- **COST** EFFECTIVE
- **NON** DRUG ● **LOW** RISK



WHO SHOULD
COLLABORATE
WITH US?

INSURANCE

THERAPISTS

PHYSICIANS

CASE
MANAGERS

SELF INSURED
TPAs

WORK
HARDENING



Philip Muccio

PRESIDENT AND FOUNDER

PHILIP MUCCIO, founder & CEO of AxioBionics™ is one of today's top medical technology innovators whose work helped redefine the way quality of life is improved in traumatic injury patients worldwide. He combined his background in prosthetics and orthotics to develop a new field employing wearable neuro-prosthetics.

As a passionate explorer, Mr. Muccio spent his formative years researching ways of improving the science of neuro-rehabilitation. His work achieved prominent success for the many sufferers of spinal cord and traumatic brain injuries, and other debilitating issues. His first-generation "suit" in 1995 treated the effects of paralysis and then evolved into the management of chronic pain. Since then, his patented concepts of applying controlled and strategically placed electrodes within a garment for long-term exposure became a game-changer for patients suffering from long-term musculoskeletal and neurological disorders.

Mr. Muccio's deep commitment to this emerging field spans decades of research and has brought forth extensive scientific discoveries to benefit individuals with complex medical conditions and disabilities. A testament to his commitment is a major catalog of wearable therapeutic devices to suit some of the most profoundly disabled people to make a true difference in their lives.