



SWORD HEALTH

SOLVING THE BURDEN OF MUSCULOSKELETAL DISORDERS IN THE WORKPLACE

Reduce unnecessary surgery costs and tackle opioid dependency while minimizing absenteeism in your company



01

EXECUTIVE SUMMARY



50% of your workforce is affected by chronic back and joint pain (also known as Musculoskeletal Disorders or MSDs)¹



Legacy solutions are **costly for employers and burdensome for employees**. Surgery is the first driver of MSD healthcare costs and prescription drugs are known to foster addiction.



Within working populations, MSDs are responsible for **34% of all lost work days**.²



Recent studies show that combining **physical therapy and behavioral intervention** is the best way to address back and joint pain.³



However, **<10% of people** engage in physical therapy, and there's no scalable way to deliver behavioral intervention to employers.

SWORD Health is a tech-enabled provider of physical therapy addressing musculoskeletal disorders by pairing its digital therapists with human clinical teams to treat chronic back and joint pain more effectively.

Clinical studies have demonstrated that this novel approach can reduce opioid consumption by up to 33%, pain levels by 74% in 8 weeks, and surgeries by up to 75%.^{4,5,6}

By partnering with SWORD Health, employers can greatly reduce pharmacy and medical costs associated with chronic back and joint pain while increasing employee productivity and engagement.

SWORD Health developed the first and only clinically proven digital physical therapy solution that outperforms human therapists achieving faster and better outcomes.

SWORD delivers a 4x ROI by just reducing the need for otherwise inevitable surgeries

FIRST THINGS FIRST: WHAT ARE MUSCULOSKELETAL DISORDERS?

Musculoskeletal disorders (or MSDs) are injuries or disorders that affect the human body's movement or musculoskeletal system, causing recurring pain, stiffness or swelling. The most commonly affected areas of the body include: back, neck, shoulders, knees, and hip.

Work-related MSDs are those **induced or aggravated by work** and the circumstances of its performance. This distinction, while extremely important for insurance purposes, is sometimes very difficult to make, as a number of **non-work related MSDs can be worsened by work**.

In practice, all MSDs, whether work-related or not, translate into employee absence, lack of productivity, and increased medical spend for employers.

On average, an employee with an MSD misses 9 more work days per year than a healthy employee⁷, and costs 2.3 times more in terms of healthcare spend.⁸

On average an employee with an MSD costs **2.3x more** than a healthy employee

WHAT CAUSES CHRONIC BACK AND JOINT PAIN

The working environment plays a very important role at the onset of MSDs and certain types of work are more susceptible to these disorders, such as:



Repetitive work

Such as most assembly-line or factory work



Painful or tiring positions

Sedentary desk jobs



Carrying or moving heavy loads

Construction or factory work



Insufficient recovery time

WHAT IS THE FINANCIAL BURDEN OF MSDs IN MY WORKFORCE?

In the National Health Interview Survey (NHIS) of 2012, more than one in every two adults reported MSDs in the United States. That adds up to 126 million people.¹

The most frequent MSDs:



Low Back

Nearly 66 million adults suffer from low back pain,⁷ of which 26.7 million reports chronic low back pain.⁹

25.7% of the working population reports low back pain.¹⁰



Shoulder

Tendinitis affects 8.7 million people.⁷



Knee

30.5 million adults suffer from knee osteoarthritis.¹¹



Hip

13.4 million people report hip problems.¹²

48%

of those affected with back and joint pain state that they are unable to work, even if temporarily

almost
25%

of the adult population reports at least one bed day/year due to chronic pain (average 9 days/year)⁷

over
752 MILLION

bed days per year due to back and joint pains⁷

Chronic pain places a very real financial load on employers.

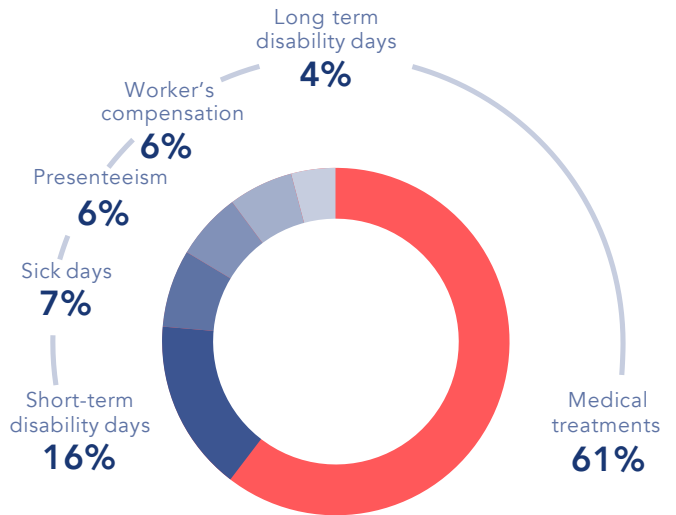
Work-related MSDs have been found to be the leading cause of work disability in the United States.¹³

1 out of 6\$ is spent on MSDs

Estimates from the occupational safety and health administration show that MSDs account for **34% of all lost workdays** reported to the Bureau of Labor Statistics.²

In total, it is estimated that employers spend as much as **\$20 billion a year on direct costs for MSD-related workers' compensation.**²

But if we take indirect costs such as lost wages and productivity into account, the overall cost of work-related chronic pain ranges from \$45 to \$54 billion annually.¹⁴



INDIRECT COSTS OF MSDs ARE UP TO 5X THE DIRECT COSTS

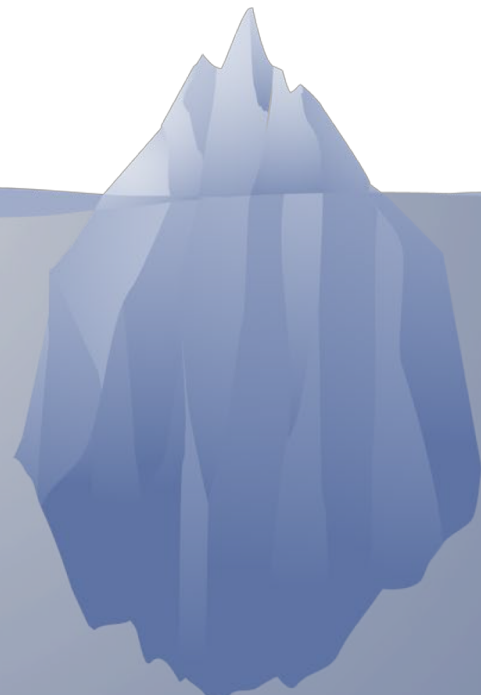
Direct costs are just the tip of the iceberg

Direct Costs

Include surgical costs, imaging, and pain medication

Indirect costs

Include training replacement employees, lost productivity and costs associated with lower employee morale and absenteeism



HOW ARE BACK AND JOINT PAINS BEING TREATED IN THE WORKPLACE RIGHT NOW?

The most common approaches to MSDs are pharmacological treatment, surgeries, and conventional physical therapy.

However, all of these approaches come at a price for both the employee and its employer.

Pharmacological treatment is a short-term solution with damaging effects

Pharmacological treatment is a part of the problem, not the solution. Medication like NSAIDs and opioids have only demonstrated short-term benefits and are associated with potentially severe outcomes.³

In fact, opioid abuse is a growing epidemic in the US. In 2016, drug overdoses killed over 63 thousand Americans, with nearly two-thirds involving a prescription or illicit opioid.¹⁵

"Forty-two percent of workers with back injuries got an opioid prescription in the first year after injury, and one year after the injury, 16 percent of those workers were still getting opioids."

Leonard J. Paulozzi, MD
CDC's National Center for Injury
Prevention & Control

Now, if you take into consideration the **addiction rates of 33% associated with opioids**, you can get a sense of the magnitude of the problem in your workplace.

Furthermore, in back surgery, for example, chances of opioid dependency rise to 50% if opioids are prescribed before and after surgery, which is often the case.

Surgery is costly and recovery takes long

Surgery is another common approach to back and joint pain but it comes at a considerable cost.

Between 1997 and 2010, there was a 35% increase in the number of people hospitalized due to MSDs, from **15.2 to 20.5 million**.⁷

To that, we must add that surgeries account for 29% of all MSDs' direct spend, **a total of 5.8 billion dollars**.⁷

In addition to costs, recovery time for this kind of surgery must also be considered:



Low Back

Costs:
\$ 47,000

Recovery time:
12 weeks

Surgery poses a considerable productivity and financial burden on the employer, while the employee faces long and painful recovery times (12 weeks on average).

Traditional Physical Therapy is effective but has a recurring low compliance problem

A recent review on treatment options for chronic back and joint pain reports that exercise therapy and psychosocial interventions are the best approaches for relieving pain and improving function.³

Experts like the American College of Physicians are advocating for exercise programs and education as a first-line treatment option for MSDs.³

Moreover, people who engage with physical therapy (PT) have lower out-of-pocket spend and show an 87% reduction in need of opioids.

Only 9.5% of people who are prescribed physical therapy actually engage. The frustration and time it takes to drive to your physical therapist office and wait in the waiting room lead to 91% of people opting out.

Even among people who enroll in conventional PT, **only 30% complete the therapy sessions that their insurance will cover, so this is not even a cost issue.**

Instead, people are turning to opioids to treat their problem's symptoms and not physical therapy to treat its causes.

WE'VE MADE MUSCULOSKELETAL CARE ACCESSIBLE AND CONVENIENT



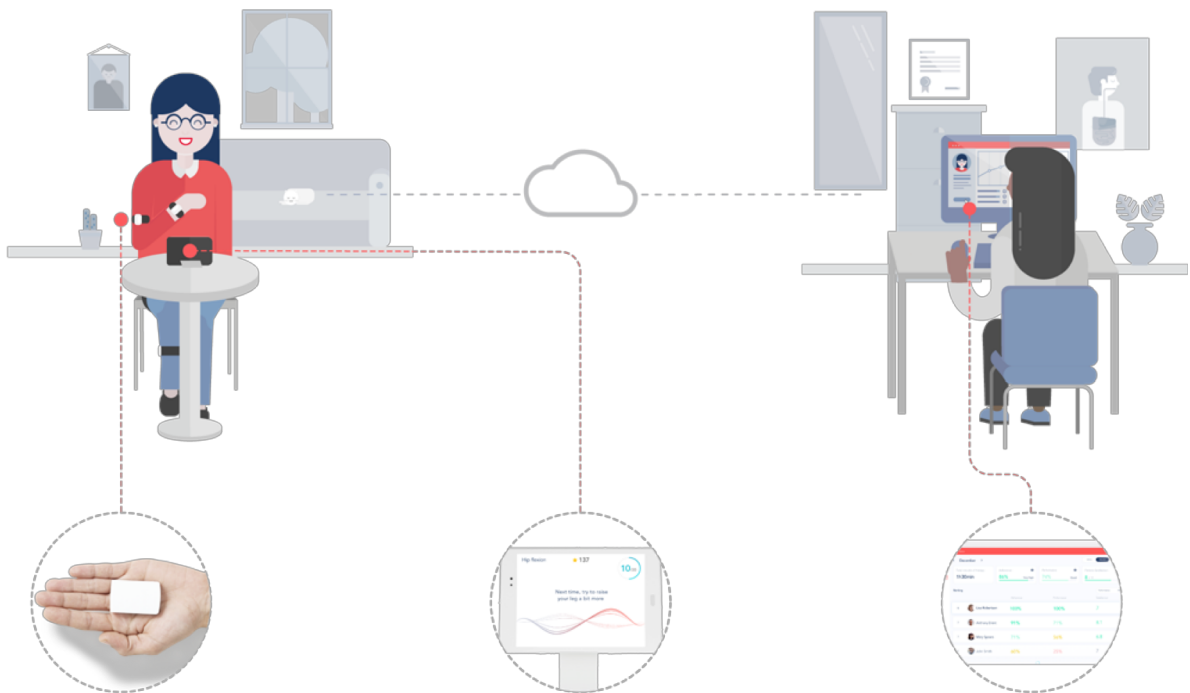
SWORD HEALTH IS THE SOLUTION YOU NEED

SWORD Health developed the first Digital Therapist to allow your employees to perform physical therapy at home, maximizing engagement and clinical outcomes while ensuring full data accountability.

A proprietary high-precision motion capture technology combined with our Digital Therapist allows users to perform

independent home-based physical therapy under constant remote monitoring from our clinical teams.

Our engaging digital therapist keeps people motivated throughout the treatment, with an **82% compliance rate and a market-leading Net Promoter Score of 91.**



MOTION TRACKERS

Small and lightweight, they digitize motion with clinical precision

DIGITAL THERAPIST

The core of SWORD Therapy, it guides the user through its sessions with live feedback on performance

SWORD PORTAL

This is where our clinical team manages and evaluates the progress of each participant

SWORD Health is the only tech-enabled physical therapy provider impacting both preventive and post-acute therapy.

All our treatment plans are designed by our medical doctors and in-house physical therapists (PTs) and approved by our medical board.

Treatment plans are then implemented by qualified PTs who build a close relationship with their patients, supporting them throughout the programs, thus maximizing results.

We are FDA-approved and also approved in Europe, Canada and Australia.



“SWORD Digital Therapist is a sophisticated physical therapy technology, based on the major principles of evidence-based medicine. Through SWORD Digital Therapist, patients have access to a high-quality therapy, ensuring active participant involvement”

Jorge Lains, MD

President of the International Society for Physical & Rehabilitation Medicine

**SWORD HEALTH
PREVENTS AND TREATS**



Low Back Pain



Shoulder Pain



Hip Disorders



Neck Pain



Knee Disorders

OUR RESULTS

SWORD Health is the result of 10 years of research, thousands of fieldtesting hours and five clinical studies published in top-tier, peer-reviewed publications.

SWORD Health is the only tech-enabled physical therapy provider operating in the USA with a clinical procedure approval.

CLINICAL OUTCOMES

Clinical trials for chronic low back pain, knee and hip osteoarthritis proved an approach combining **therapeutic exercise and behavioral intervention** shows:

up to
75%
reduction in surgeries

33%
reduction in opioid use

"The best part is the ability to recover from your own home, more than once a day. I could even do therapy while on vacations."

Walter Richards

Low back pain program

Our clinical studies show that SWORD Therapy is able to deliver:

OVER 74% REDUCTION IN PAIN after only 8 weeks, massively impacting opioid consumption

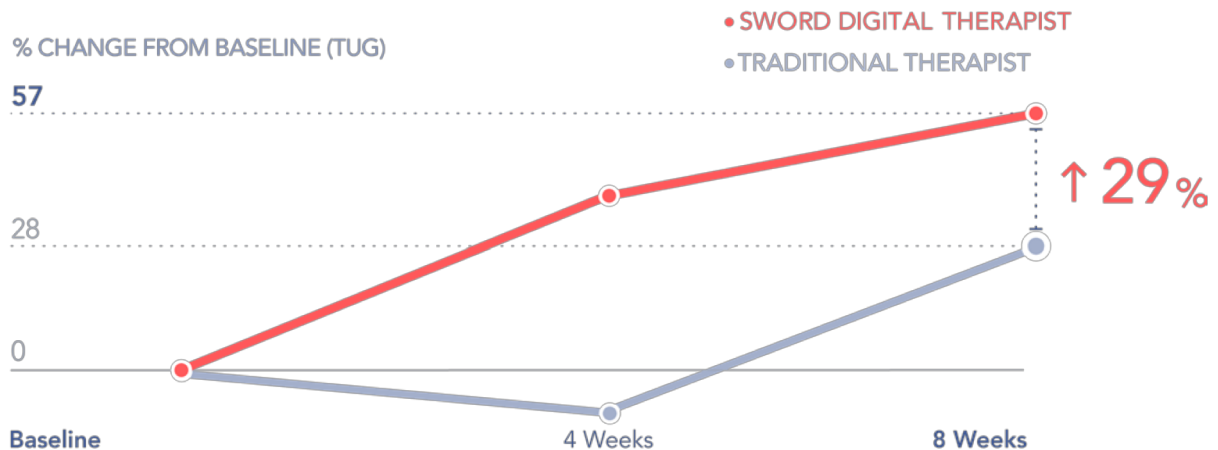
"The latest research published in Nature Scientific Reports shows that people recover twice as effectively when we pair digital therapist and our human clinical teams than in traditional patient-to-therapist intervention alone."

Fernando Correia, MD

Chief Medical Officer

BETTER CLINICAL OUTCOMES

Compared to conventional physical therapy



USER ENGAGEMENT

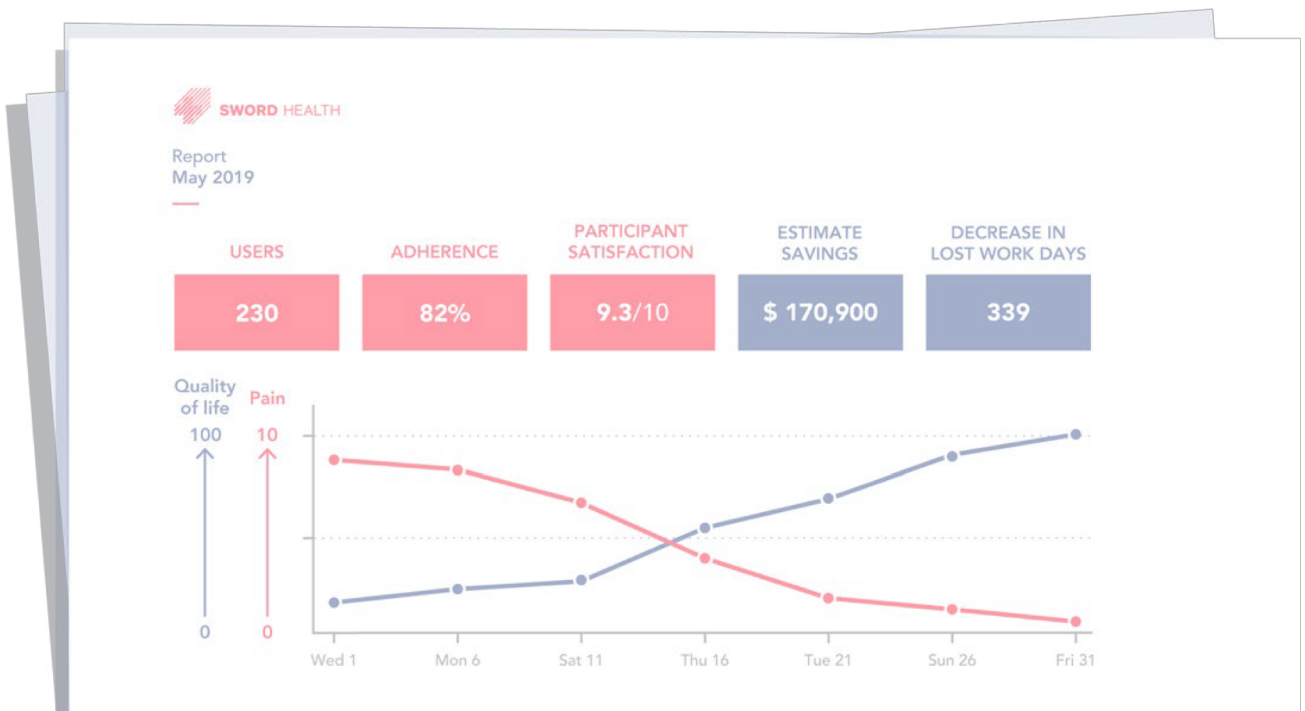
SWORD Therapy maximizes engagement and adherence

In our clinical studies, we got:



ACCOUNTABILITY

SWORD Health provides objective and auditable data on progress that enables better management of workers' wellbeing and its correlation with productivity. Our periodic reports help you keep track of employees' health improvements and cost reductions.



Reach out to our Strategic Business Development team
business@swordhealth.com

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