

APRIL 2018

# THE MENTAL HEALTH BENEFITS OF PHYSICAL REHABILITATION





# INTRODUCTION

---

The men and women of America's armed forces regularly put their lives on the line to defend the nation's freedom, liberty and way of life. Combat injuries that would have once been fatal are now survivable because of medical advances and more sophisticated frontline care. In turn, scores of veterans are returning home with severe physical limitations and long-term, complex medical needs.

Addressing the disabilities that are easy to see has long been the focus, but diagnosing and treating the emotional and psychological effects of warfare has only become a priority in recent decades. Yet veterans have more opportunity now than ever before to heal both their physical and psychological injuries because of new treatment methods and innovative technological solutions.



**41% of veterans are diagnosed with a mental health or a behavioral adjustment disorder.<sup>1</sup>**

# PHYSICAL & PSYCHOLOGICAL EFFECTS OF COMBAT

---

Originally dubbed “shell shock” around the time of the First World War, PTSD is one of the most difficult challenges facing returning veterans.<sup>1</sup> An estimated 11-20 out of every 100 veterans who served in Iraq and Afghanistan annually report having PTSD.<sup>2</sup> Common symptoms include recurring memories, nightmares, feelings of unrest or being constantly on guard. While PTSD symptoms may not surface for months or even years after returning from deployment, they often haunt veterans for decades.

Veterans with severe physical injuries such as paralyzation or amputation are even more likely to suffer from mental health issues. Adapting to new physical limitations often exacerbates feelings of anxiety and depression, making it more difficult for veterans to readjust upon their return from combat.

Further, the weight of social stigma—real and perceived—can add stress to veterans’ recovery. One veteran described feeling like a burden and avoiding social situations “because it’s just a pretty miserable experience... people not being able to see me and I just have to bother people just to try to get by them. It just makes me feel like I’m... in the way.”<sup>3</sup>

Social and psychological readjustment strain is evident in veterans’ self-reporting, one saying, “I can’t do the things I used to be able to do and what I do takes three times as much time and three times the effort.”<sup>3</sup> This limited function makes life more physically and emotionally more difficult for veterans.

However, multiple studies have shown that physical activity can help alleviate negative emotions. Improved mobility and physical exercise can enhance the well-being of disabled veterans by reducing PTSD symptoms, improving coping strategies, and encouraging a sense of hope and positive self-identity. Even light activity like yoga can help veterans with cope with negative thinking patterns.<sup>4</sup>



**Between 18 and 22  
soldiers commit  
suicide every day.<sup>1</sup>**

Although there is no simple cure for mental health issues, advances in technology are giving some veterans with serious physical handicaps the opportunity to restore their quality of life, which in turn can improve their psychological health.



# USING NEW TECHNOLOGIES TO REHABILITATE VETERANS

---

New technologies like bionic exoskeletons are restoring the mobility of handicapped veterans, negating their combat-related injuries. One such technology, the “SoldierSuit,” allows patients with limited or no function in their legs to regain the ability to walk independently.

Through exoskeleton suits donated by Soldier Strong, select VA centers are now able to support veterans’ physical rehabilitation efforts in ways that were unimaginable just a decade ago. Veterans are suited into the device and coached into standing mode with the supervision of a physical therapist. The suit senses the wearer’s movement, then moves in conjunction with them, allowing the person to take steps.<sup>5</sup>

Since 2013, more than 25,000 spinal cord injured veterans have had access to the SoldierSuit to aid in recovering their mobility. But the technology’s impact doesn’t stop there.

Preliminary results from a study in Denver, Colorado found using the bionic exoskeletons led to increased confidence, reduced perceived burdensomeness, and facilitated meaningful experiences among veterans with lower extremity paralysis or weakness.<sup>3</sup>

After using the device, one participant described feeling “a healthy high... a healthy adrenaline... the accomplishment to prove to myself that I could still do things.”<sup>3</sup>

This link between physical mobility and emotional wellness deserves ongoing research. The use of bionic exoskeletons to improve injured veterans’ mobility, which can significantly improve their sense of well-being, has the potential to change the life course for thousands of veterans whose physical injuries contribute to psychological distress.

One veteran said, “Well, it’s easy when you’re in the chair to think that you are no longer relevant. And then being back upright kinda restores that a little bit... it’s like you have something to offer people other than just a burden for them.”<sup>3</sup>

Robotic exoskeletons represent a physical victory and give veterans another chance at a normal life. One wearer of a SoldierSuit said, “Once you lose your mobility, it takes something away from you. It feels amazing just to be standing tall and able to have a conversation standing up. It’s seeing the world from six feet tall again.”<sup>3</sup>

# SUPPORTING VETERANS' HEALTH CARE

---

With a requested budget of more than \$198 billion for fiscal year 2019, the VA envisions devoting \$727 million to medical and prosthetic research and more than \$8 billion to mental health services.<sup>6</sup> However, policymakers have the responsibility to allocate the federal funding for these and a host of other competing priorities. It is imperative they recognize funding to continue investigating the positive effects of physical rehabilitation on veterans' mental health is a wise investment.

The yearly costs of a paralyzed individual—not including losses in wages, fringe benefits and productivity—amount to over \$70,000 annually.<sup>7</sup> Additionally, the complex, long-lasting psychological issues caused by physical injury exact a heavy cost on individual veterans, their loved ones and society.

To date, Solider Strong has donated SoliderSuits to 12 VA centers around the

country at a cost of approximately \$2.5 million, but that's a small price to pay for the significant gains it provides to a veteran's overall wellbeing for a lifetime. Plans are underway to donate additional suits in 2018; the need remains great. There are more than 170 VA medical centers serving 9 million veterans who could benefit from this innovative technology solution.<sup>8</sup> Aside from the obvious physical benefits, continuing to outfit veterans with this technology will broaden the field of candidates for future clinical studies.

Helping veterans regain their mobility can have a downstream emotional effect with wide-ranging consequences. Yet research in this field is just emerging and the long-term ramifications of bionic exoskeletons to accomplish this feat are promising, but unsubstantiated at present.



# CONCLUSION

---

For decades, the effects of war have been examined and resources have been expended to address veterans' numerous and complex health care needs, yet many hurdles remain for those who are still trying to resume their pre-combat life. Given the physical and psychological challenges facing so many veterans, it is crucial that the VA continue to support new research efforts that will inform how best the nation can support these service men and women in the long term.

In addition to aiding veterans' physical recovery, rehabilitative technology can assist them in overcoming their emotional distress, helping them to foster independence and regain their sense of purpose. It is critical that those who have had their mobility compromised by their service to this nation receive the support they deserve, the care they need and the opportunity they have earned to resume a fulfilling civilian life.

# REFERENCES

---

1. Matthew J. Friedman. "History of PTSD in Veterans: Civil War to DSM-5" U.S. Department of Veterans Affairs. May 31, 2017, accessed March 13 2018, <https://www.ptsd.va.gov/public/PTSD-overview/basics/history-of-ptsd-vets.asp>
2. "How Common is PTSD?" U.S. Department of Veterans Affairs. October 3, 2016, accessed March 3, 2017, <https://www.ptsd.va.gov/public/PTSD-overview/basics/how-common-is-ptsd.asp>
3. Molly E. Penzenik, Daniel A. Hadidi, Brooke A. Dorsey Holliman, Kelly A. Stearns-Yoder, Sarah M. Lange, Lisa A. Brenner. "Exploring the Psychosocial Impact of Ekso Bionics Technology" *Physical Medicine and Rehabilitation*. October 2016, Vol 97, Issue 10, accessed March 1, 2018: [http://www.archives-pmr.org/article/S0003-9993\(16\)30787-0/abstract](http://www.archives-pmr.org/article/S0003-9993(16)30787-0/abstract)
4. Robert T Muller. "Exercising Your Way to PTSD Recovery" *Psychology Today* August 10, 2016 accessed March 21, 2018, <https://www.psychologytoday.com/us/blog/talking-about-trauma/201608/exercising-your-way-ptsd-recovery>
5. Alyssa Cannobbio. "Paralyzed Soldier Demonstrates Ability to Walk with 'SoldierSuit'" *Washington Free Beacon*. October 20, 2015, accessed March 3, 2018 <http://freebeacon.com/issues/paralyzed-soldier-demonstrates-ability-to-walk-with-soldiersuit/>
6. "President Trump Seeks \$12B Increase in FY2019 VA Budget to Support Nation's Veterans" U.S. Department of Veterans Affairs, February 12, 2018, accessed March 16 2018, <https://www.va.gov/budget/docs/summary/fy2019VAsBudgetPressRelease.pdf>
7. "Costs of Living with SCI" Christopher and Dana Reed Foundation, accessed March 28, 2018, <https://www.christopherreeve.org/living-with-paralysis/costs-and-insurance/costs-of-living-with-spinal-cord-injury>
8. "Veterans Health Administration." U.S. Department of Veterans Affairs. January 23, 2018, accessed March 16, 2018, <https://www.va.gov/health/findcare.asp>



### **About SoldierStrong Access**

SoldierStrong Access is a non-profit advocacy organization existing alongside its non-profit charity partner, Soldier Strong. After succeeding in helping dozens of veterans overcome challenges with mobility and launching a scholarship fund to put college within reach of America's returning soldiers, Soldier Strong knew changes in public policies would be necessary to provide access to these opportunities for the veterans community at large.

**To learn more visit [SoldierStrongAccess.org](http://SoldierStrongAccess.org)**



[facebook.com/SoldierStrong](https://facebook.com/SoldierStrong)



[instagram.com/SoldierStrongUSA](https://instagram.com/SoldierStrongUSA)



[twitter.com/SoldierStrong](https://twitter.com/SoldierStrong)