

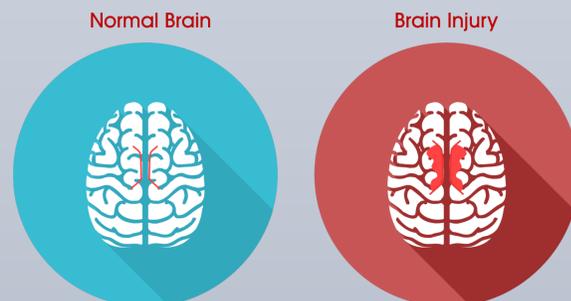
INTRODUCTION

What is Supportive Living Inc.?

- Created in 1991, Supportive Living Inc. is a non-profit organization that offers neuro-fit assisted exercise programs to individuals living with brain injuries. Each participant has an exercise plan tailored to meet their personal goals to improve their overall quality of life.

Traumatic brain injury

- According to the CDC, a traumatic brain injury (TBI) is a bump, blow, jolt, or penetrating injury to the head that affects how the brain functions. (Traumatic Brain Injury / Concussion 2021)
- Brain injuries can be caused by falls, motor vehicle accidents, being struck with or against an object, assaults, sport injuries, etc. (What causes traumatic brain injury (TBI)?)
- Depending on the severity of the injury, survivors may face health problems that could last for the rest of their lives. (Traumatic Brain Injury / Concussion 2021)
- Complications due to brain injuries can include difficulties understanding or thinking clearly, troubles with communication, weakness in arms or legs, problems with balance and coordination, etc. (Traumatic Brain Injury / Concussion 2021)



(Davis, 2019)

PROJECT OBJECTIVES

- To observe and attempt to understand how physical activity can improve strength, agility, and overall quality of life for TBI survivors.

OBSERVATIONS AND METHODS

Observations

- Throughout the program, all four participants have made improvement that will benefit their overall quality of life.
- Some participants were able to gain more movement in their arms and legs.
- I also noticed that speech and communication greatly improved in participants over the course of this program.

Methods

- To better understand how exercise has helped participants, I created a survey that consists of three yes or no questions.
- Each question asks participants if exercising helps their daily life, their mood, and their mental health.

RESULTS

Improves daily life



● Yes ● No

Improves mood



● Yes ● No

Improves mental health



● Yes ● No

- 3 out of 4 of my participants took part in my survey.
- From this survey, it is obvious that exercise has a positive impact and is important for brain injury survivors.
- One participant told me that exercising has a great effect on her life since she is now able to move her arm and leg independently. She also has a sense of accomplishment at the end of each session which brings up her overall mood.

CONCLUSION

- Though physical activity helps participants in different ways, it is clear that exercising has a positive impact on the daily life, mood, and mental health of brain injury survivors.
- After 12 weeks of exercising twice a week, all four of my participants have greatly improved their strength and agility which allowed me to increase aspects of their exercise plans, which in return, allows them to further their abilities.

RELATED LITERATURE

- “Following participation in a supervised vigorous aerobic exercise training program, individuals with TBI showed significant improvements in cognitive function. These improvements were observed in the domains of processing speed, aspects of executive functioning, as well as overall cognitive function” (Chin et al., 2015).
- “Exercise is economical, generally accessible and safe for most individuals. These results suggest that aerobic exercise training could be useful for improving mood in people who have TBI, in addition to the previously identified benefits of improved cardiorespiratory function, cognition, exertional tolerance, fatigue, and health related quality of life” (Weinstein et al., 2017).

ACKNOWLEDGMENTS

- Alexander Gove and Lindsay Weir - Site Supervisors

REFERENCES

- Centers for Disease Control and Prevention. (2021, May 13). *Traumatic Brain Injury / Concussion*. Centers for Disease Control and Prevention. <https://www.cdc.gov/traumaticbraininjury/>.
- U.S. Department of Health and Human Services. (n.d.). *What causes traumatic brain injury (TBI)?* Eunice Kennedy Shriver National Institute of Child Health and Human Development. <https://www.nichd.nih.gov/health/topics/tbi/conditioninfo/causes>.
- Chin, L. M., Keyser, R. E., Dsurney, J., & Chan, L. (2015, April). *Improved cognitive performance following aerobic exercise training in people with traumatic brain injury*. Archives of physical medicine and rehabilitation. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4380661/>.
- Weinstein, A. A., Chin, L. M. K., Collins, J., Goel, D., Keyser, R. E., & Chan, L. (2017). *Effect of Aerobic Exercise Training on Mood in People With Traumatic Brain Injury: A Pilot Study*. The Journal of head trauma rehabilitation. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5339064/>.
- Davis, S. & S. (2019, July 2). *How to recognize a traumatic brain injury: Dss law*, p.c. Davis, Saperstein & Salomon, P.C. <https://www.dsslaw.com/blog/recognizing-a-traumatic-brain-injury/>.