

Physical Therapy and Proper Sleep Positions Lead to Improved Hamstring Flexibility

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Research Question

How effectively can physical therapy and correct sleep positioning improve hamstring flexibility and reduce pain, based on age and everyday activity?

Hypothesis and Quote

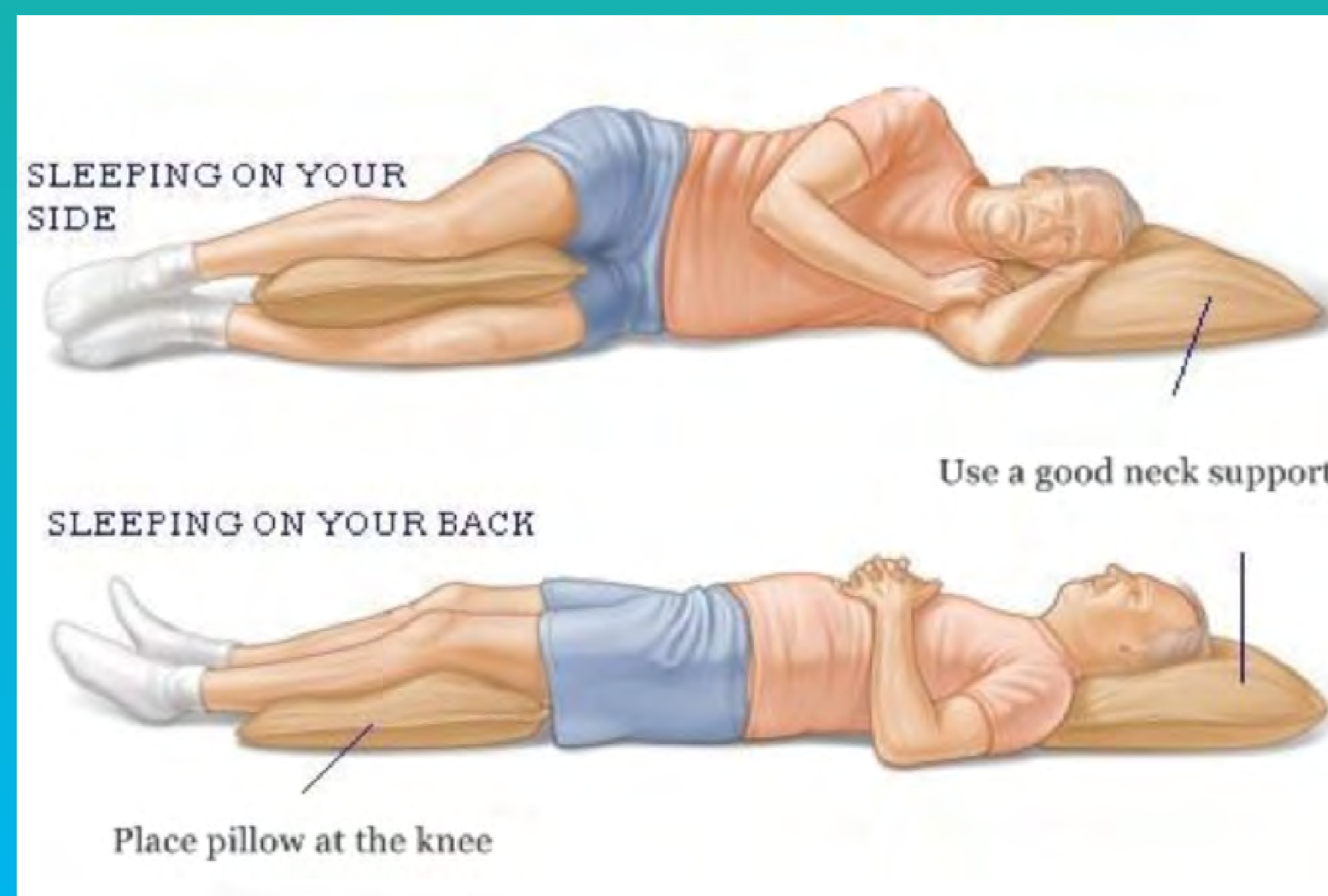
Physical therapy and correct sleep positioning improve hamstring flexibility in one hundred percent of the participants; however, versatility decreases with age and fluctuates with activity possibly leaving some outliers.

"If the human body's strength and flexibility are given attention, people will be more attentive for the unexpected."

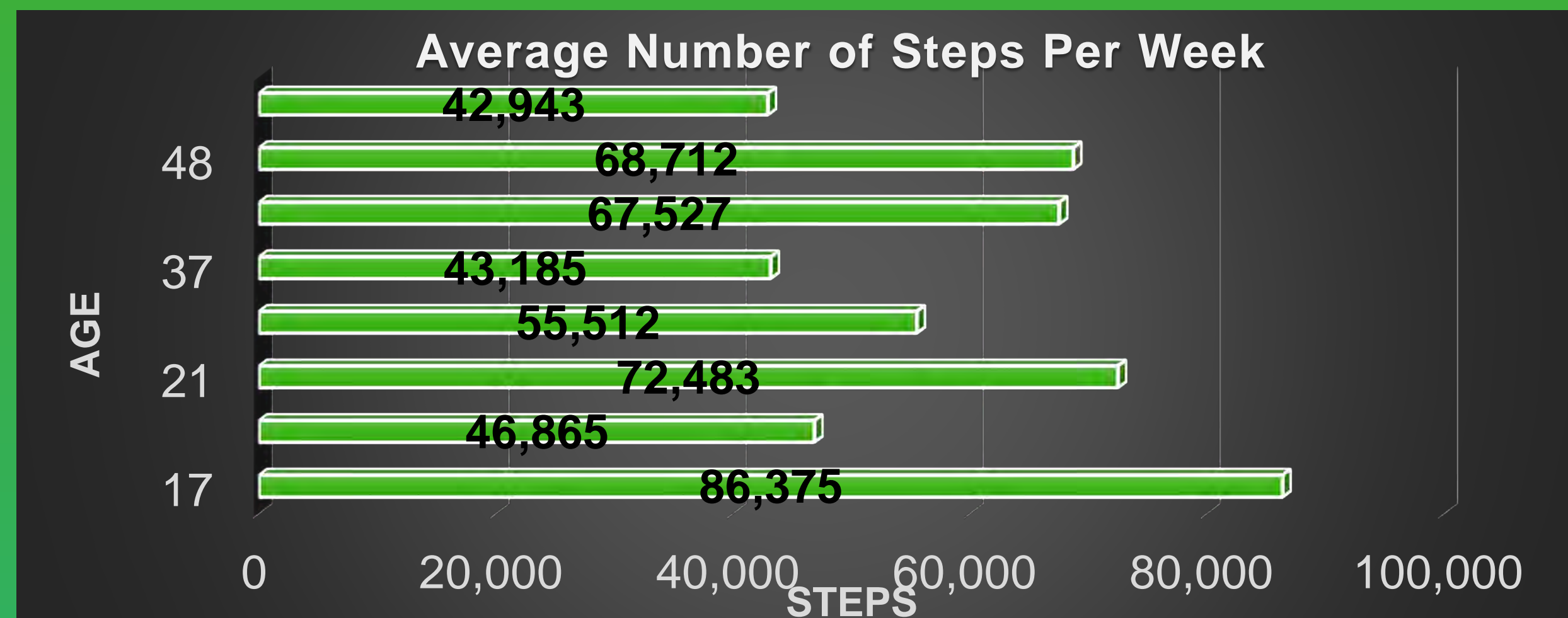
Abstract

Research on injury prevention can be found dedicated to specific sports groups and the general population. This study was designed to focus on the population at Tyler Junior College, so that proper methodology that works for everyone may be established. This research project answers the author's question of how effectively physical therapy and correct sleep positioning can improve hamstring flexibility, based on participant ages and everyday activities. The overall goal is to implement beneficial habits into the minds of people who live active lives, so injuries may be prevented and pain may decrease. The motivation behind this research project's results is that it benefited all of my participants to an extent and will benefit everyone in need of effective methodology.

Independent Variable

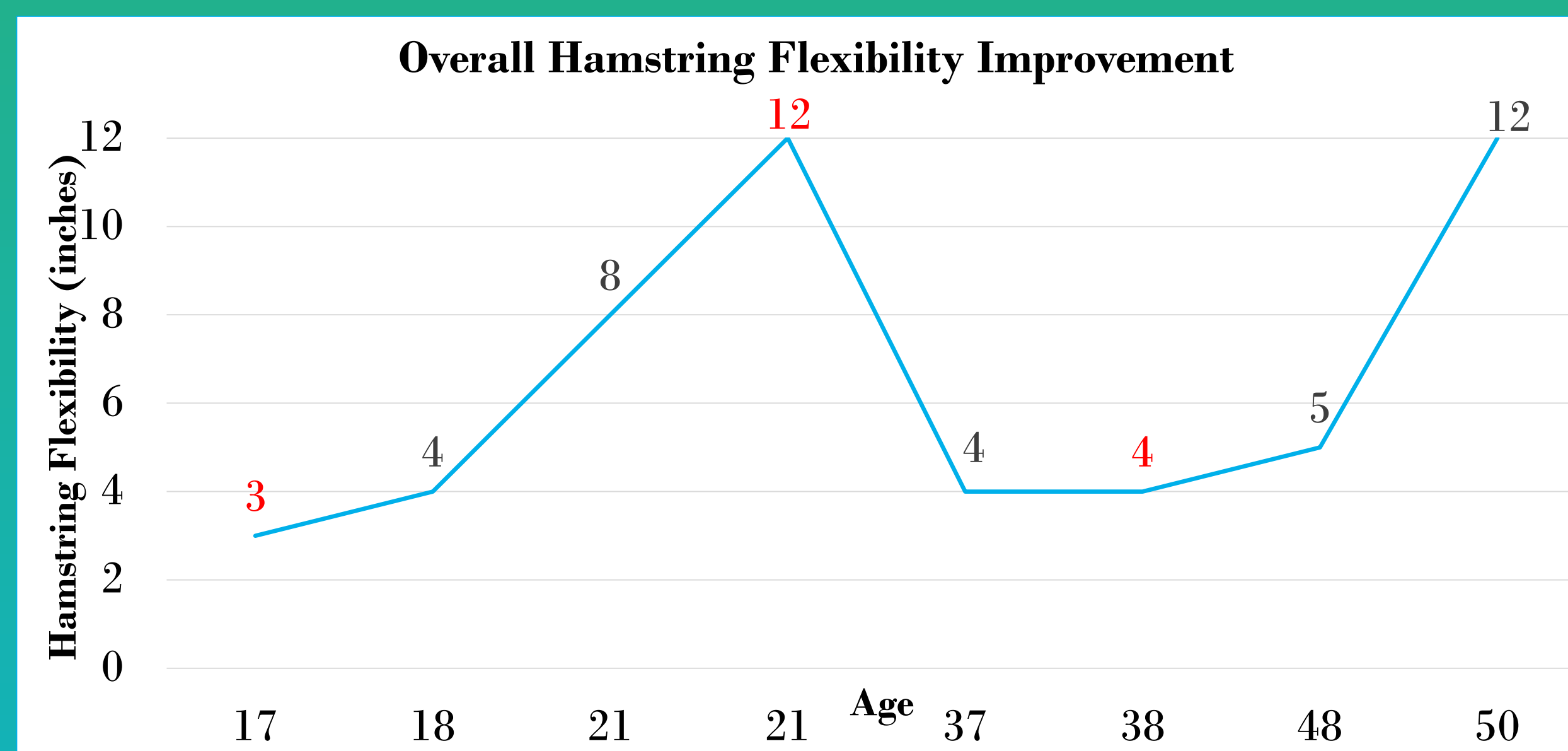


Visual Observations



Control Group / Experimental Group

Age	Initial Pike Stretch	Week 1 Improvement	Week 2 Improvement	Week 3 Improvement	Overall Hamstring Flexibility Improvement
17	-9"	-11"	-11.5"	-12"	3"
18	-5"	-7"	-8"	-9"	4"
21	8"	2"	1"	0"	8"
21	11"	4"	0"	-1"	12"
37	-5"	-8"	-8.5"	-9"	4"
38	0"	-2"	-3"	-4"	4"
48	-3"	-6"	-7"	-8"	5"
50	6"	-1"	-3"	-6"	12"



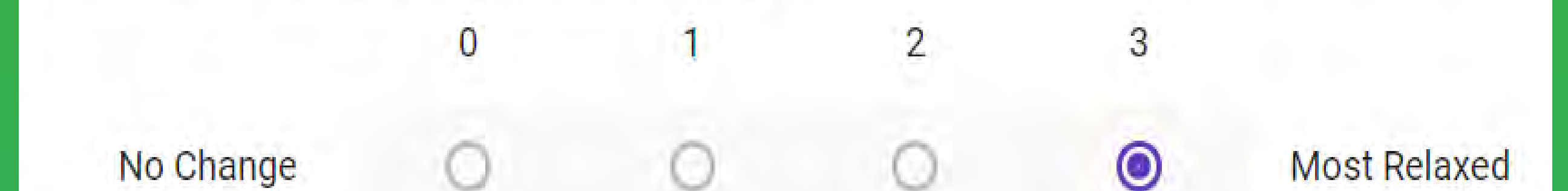
Activity: stronger impact than sleep positioning on how versatile the body is to improving hamstring flexibility

Methodology

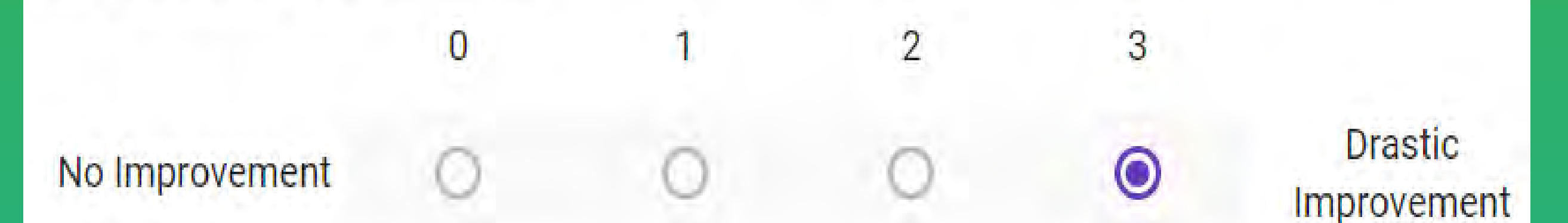
- Control Group: normal sleeping position
- **Experimental Group:** one of the two correct sleep positions
- Quantitative data documented in an Excel document
- Secret Facebook group created for data collection and reminders
- Measured weekly pike stretches with a ruler (inches), participants posted pictures to prove it
- Daily physical therapy exercises and stretches
- Logged sleep patterns (restful/restless hours) with Fitbit app
- Logged weekly amount of steps with Fitbit app
- Surveyed participants at the termination of the research

Survey Results

On a scale of 0-3, how do you feel when you arise from sleep, now that you have been sleeping in one of the two provided positions? (1: Slightly More Relaxed 2: A Lot More Relaxed)



17. On a scale of 0-3, did sleeping with a pillow between your legs improve any regular pains you felt at one time? (1: Some Improvement 2: Expected Improvement)



Pain with exercising/stretching decreased with experimental group.

Implications for Future Research

- *One specific group* should be analyzed for more accurate comparisons.
- *Apache Belles Spring Show:* one participant could not wear a Fitbit during that time. This problem can be avoided with more detailed communication.
- *Resolve Old Habits:* Track physical therapy progress in a clinical environment. Track sleep positions with pictures of positioning before they go to sleep and when they arise each day. This requirement could prevent them from forgetting to sleep as instructed. It may also aid in tracking restlessness.

Essential References

1. Are you sleeping with the correct sleep posture? If not it could make you more tired and give you back problems! (2012, August 29). Retrieved April 05, 2018, from <https://chiropracticdubai.wordpress.com/2012/08/29/are-you-sleeping-with-the-correct-sleep-posture-if-not-it-could-make-you-more-tired-and-give-you-back-problems/>
2. Edwards, J. (2018). Physio Works - Physiotherapy Brisbane. Retrieved April 02, 2018, from <https://physioworks.com.au/injuries-conditions-1/hamstring-strains-amp-injuries>
3. Porterfield, N., D.C. (2014, April 16). 5 Muscles to Stretch, Part II. Your Sleeping Position Could be to Blame. Retrieved April 04, 2018, from <http://www.tabatatimes.com/5-muscles-stretch-part-ii-sleeping-position-blame/>