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Flexibility

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Changes in Flexibility Throughout the Day

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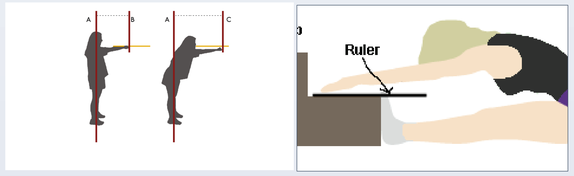
ABSTRACT

The goal of this research was to see if there was any correlation between the time of day and a person's flexibility. We hypothesized that a person would be more flexible towards the end of the day than at the beginning of the day. Subjects had to do a sit and reach test and one part of the Berg Balance test, the reaching forward with outstretched arms test.



The subjects performed these test 3 times a day on 4 different occasions. The measurements show a general increase in flexibility throughout the day with the highest flexibility being in the evening hours. The participants saw an average increase of 88% in the sit and reach and 10% reaching forward with outstretched arms test. This research can help with injury prevention. The knowledge that you are more flexible later in the day could help you schedule more intense workouts for a time of day when you are less likely to injure yourself. In conclusion people, as a whole, have a tendency to be more flexible as the day goes by.

OBJECTIVES

- Test Flexibility at different times of the day
- Use two flexibility tests: Sit and Reach, Reaching forward with outstretched arms.

METHODS

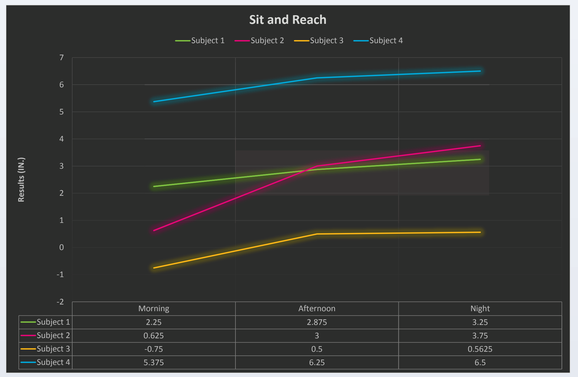
Subjects included 2 male and 2 female ranging in ages from 20-41 years old with differing exercise habits and fitness levels. Subjects tested three times per day. The first test was taken within one hour of waking. The second test 5-7 hours after that. The third test of the day was taken 5-7 hours following the second test. Each time, two different attempts were recorded. The test was performed two times per week for two weeks.

	Morning (1 hour after waking)	Afternoon (5-7 hours after first test)	Evening (5-7 hours after second test)
Wednesday (week 1) **Wednesday (week 2)**	Berg Balance Scale x2 Sit and Reach x2	Berg Balance Scale x2 Sit and Reach x2	Berg Balance x2 Sit and Reach x2
Saturday (week 1) **Saturday (week 2)**	Berg Balance Scale x2 Sit and Reach x2	Berg Balance Scale x2 Sit and Reach x2	Berg Balance x2 Sit and Reach x2

Tests performed included the Berg balance test as well as the sit and reach test. For the Berg balance test, the subjects held arms outstretched at 90 degrees. Put a ruler at the end of the finger tips, then, leaning as far forward as possible with fingers straight, the measurement is recorded. For the Sit and Reach test, with shoes removed and sitting on the floor with legs extended straight in front of the body and feet flat against the base of the step, subjects place a ruler on top of the step. With one hand placed on top of the other, the subjects reached forward as far as possible, keeping legs straight. While the stretch is held for a couple of seconds, the measurement is recorded. If the subject did not reach their toes, a negative score was recorded. If they went beyond their toes, a positive score was recorded.

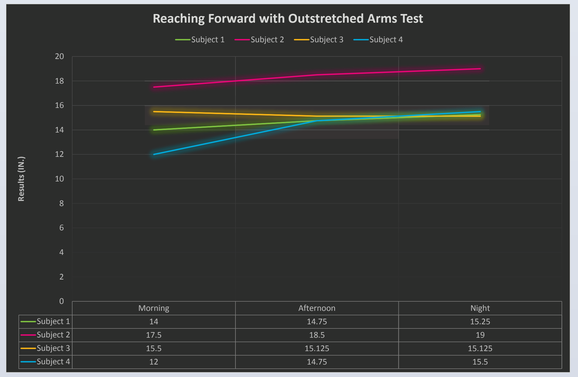
RESULTS

As general observation every subject experienced an increase in flexibility throughout the day to a varying degree.



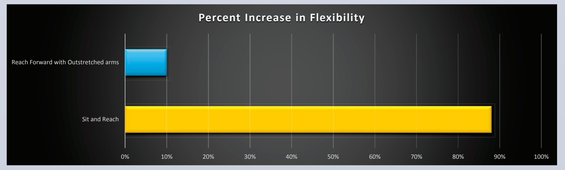
	Morning	Afternoon	Night
Subject 1	2.25	2.875	3.25
Subject 2	0.625	3	3.75
Subject 3	-0.75	0.5	0.5625
Subject 4	5.375	6.25	6.5

The subjects saw an average increase in flexibility of 88% throughout the day on the sit and reach test. All the test subjects



	Morning	Afternoon	Night
Subject 1	14	14.75	15.25
Subject 2	17.5	18.5	19
Subject 3	15.5	15.125	15.125
Subject 4	12	14.75	15.5

The BERG Balance test didn't see as drastic of an increase as the sit and reach test and not every subject saw an increase in flexibility with this test. Although, most of the subjects did see an average increase in flexibility of about 10%.



CONCLUSIONS

Conclusion: For the sit and reach test each test subject improved their results throughout the day. The morning test results were the lowest and the night test results were the highest for each test subject.

For the berg balance test, all test subjects other than test subject 3 all improved their test results as the day went on. The test subjects that improved their results throughout the day had their lowest results in the morning test and their highest in the night test. Flexibility increases during the progression of the day, with the highest flexibility in the evening. "Improved flexibility may enhance performance in aerobic training and muscular conditioning as well as in sport" (1).

Flexibility is an important factor when playing sports and exercising, especially weight lifting. By stretching after your workouts and continually doing stretching you will see results overtime.

REFERENCES

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2. "Berg Balance Scale." *SpringerReference* (n.d.): n. pag. Web.
3. "Sit and Reach Flexibility Test." *Sit and Reach Test*. N.p., n.d. Web. 20 Apr. 2017.