

How does chocolate affect our concentration?

Kobe High School (General Science Department)

Jundai Inayoshi Mikiya Kambara Marin Nakata Sho Nakatsuru Ririko Matsue

Purpose

We wanted to know about the relationship between eating chocolate and our concentration. So we started research. We wanted to know about the effect on our body by eating them.

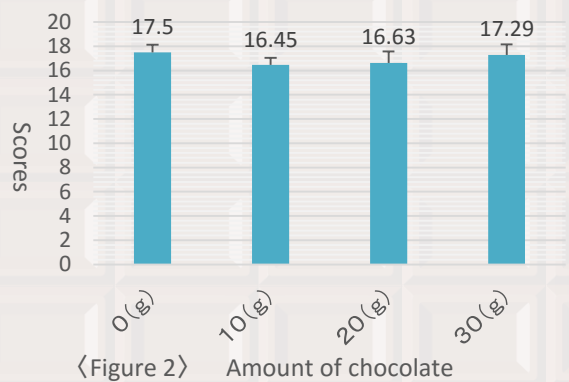
Methods

- i) We had 30 subjects eat chocolate an hour before the experiment. We designed the amount of chocolate 0g~30g at random.
 - ii) We distributed the grid exercise sheets to all subjects. They answered them and a questionnaire.
- ※ Grid exercise is the test. There are the figures from 0 to 99 put in a table at random on the test. Subject checked the figures in order from 0 to 99. We regard the number of figures subjects found as their scores.
- iii) We collected the exam sheets after we made the names of students who answered them hidden.
 - iv) We graded the exam sheets.
 - v) We did T.TEST.
- ※ In this T.TEST, we established some points.
- People can't increase their concentration even if they eat some chocolate
→ null hypothesis
 - Level of significance → 5%
 - This t-test was a two-sided test. The data in this experiment was regarded as two corresponding data. We compared the scores of the first time with the scores of the other time.

Result

From Figure 2, we know that even if they eat more chocolate, their scores barely changed. (The error bars of Figure 2 represent standard error.)
Moreover, in the result of T.TEST, we can't dismiss the null hypothesis. In short, we can't say that there is a relationship between eating chocolate and concentration.

Average score for each intake



〈Figure 1〉 The result of T.TEST

t-test: The average test tool by a pair of samples

	parameter 1	parameter 2
Average	16.9285714	14.8571429
Distributed	0.95238095	26.4761905
Number of observations	7	7
Pearson correlation	0.64484676	
Differences and hypothesis average	0	
Flexibility	6	
t	1.19729809	
P(T<=t) one-side	0.13817139	
t boundary value one-side	1.94318028	
P(T<=t) two-side	0.27634279	
t boundary value two-side	2.44691185	

Conclusion

As a result, we considered that there is no relationship between eating chocolate and concentration.

The proofs are:

- It is sure that there is very little error because every subject took each set amount of chocolate. In addition, we tested the subjects in various situations.
- Considered from the data of T.TEST, it seems that chocolate did not affect our concentration.
- Through all this experiment, we took a high amount of data(about 200). Also, there didn't seem to be a significant difference considered from the standard error on Figure 2.

For these reasons, we cannot say that there is the relationship between eating chocolate and concentration under the conditions of this experiment.

Review / Thanks

The result of T.TEST was a disappointment. We think the reason for this is that we didn't consider subject's weigh, placebo, individual difference of grid exercise, and so on. We would like to do experiments in the future supposing every possibility even in fine respects.
We thank everyone for cooperating in this experiment.