

Exercise and memory

Introduction

Couch potatoes beware! Research suggests that a sedentary lifestyle negatively impacts our brain and our bodies. Regular physical activity is critical for keeping our brain cells functioning at optimal levels.

Scientists believe that being physically active can improve mental focus, memory, decision making and reduce the risk of dementia as we age.

The Challenge

In this activity you will be completing an experiment designed to test the effect of physical activity on your memory.

You will be completing a variety of experiments which will test the impact exercise has on your memory.

Materials

- Deck of cards
- Stop watch
- Pen/pencil
- BioLAB workbook

Hypothesis

Circle your prediction.

Exercise will have a **positive** / **negative** impact on my memory.

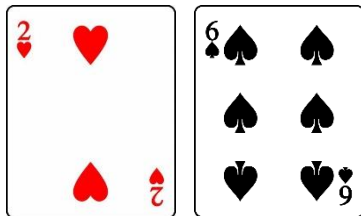
I believe this because;

Method

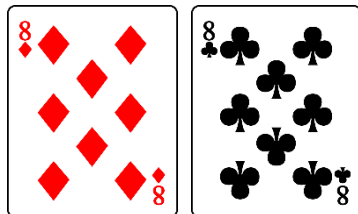
Memory/Matching Numbers

How to play:

1. At the beginning of the game, all 52 cards are mixed up and laid in rows, face down on the table.
2. Start the timer.
3. Turn over two cards at a time.
4. If the card numbers do not match, it's not a pair. Turn them back over and choose two new cards.



5. If the card numbers do match, put the cards to the side and keep playing.



6. Stop the timer when all cards have been paired.

Baseline data collection:

1. Before each new game ensure you are in a relaxed state by closing your eyes for 60 seconds and taking deep breaths.
2. Record the time taken to complete the game.
3. Complete and record all baseline trials one after another.

Exercise data collection:

1. Before each new game spend 3 minutes exercising. This could be a combination of;
 - ✓ Jogging in the back yard, burpee's, star jumps, squats, push up etc.
2. Record the time taken to complete the game.
3. Complete and record all exercise trials one after another.

Discussion and conclusion

1. Which of the trials (baseline or exercise) resulted in a higher mean score?

2. Did your results match your hypothesis? Explain.

3. Justify why you were asked to complete three trials for both baseline and exercise rather than just one each?

4. Identify and explain three reasons why exercise might improve or be beneficial to your performance.

5. Identify and explain three reasons why exercise might decrease or be detrimental to your performance.

6. Identify and explain three sports in which an improved memory would be advantageous.

7. Identify and describe any other strategies that could be used to improve memory and brain function. How could they be tested?