

A study to show the physiological and psychological factors of joining a health a...

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This experiment was conducted in order to find the physiological and psychological effects of joining a health and fitness club. Three hypotheses were studied and investigated. They were 'Males are fitter than females,' 'Older people will visit the health club more,' and 'There will be a link between self-image and depression.' Tests conducted were the Cooper's twelve minute run to test for VO_2 max, Goldberg's depression test, and the Ego-school self awareness test. There was also a tally to see how many times older people visit the health club compared to younger people.

It was found that males are fitter than females, older people don't visit the health club more than younger people, and that there is a link between self-image and depression. Introduction This study was performed in order to investigate the physiological and psychological effects of joining a health and fitness club. Three hypotheses were looked at during the study to investigate this. People join health clubs for many different reasons. Reasons include, to improve the way we look, to increase self confidence, and for social factors. The main reason however is usually to improve one's fitness.

Fitness can be defined by using VO_2 max, which in turn can be defined as 'The maximum rate at which oxygen is consumed during a progressive exercise test to exhaustion.' (Davis, Bull, Roscoe 2000) Individual's VO_2 max can vary significantly. A trained individual's oxygen consumption will be much less than that of an untrained individual if they both did the same exercise. An individual's VO_2 max depends on the capacity of that particular person's cardiovascular system. Therefore, it is said that the cardiovascular capacity determines VO_2 max, which in turn determines fitness. All

individual's and groups of people will have different fitness levels.

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Two different groups which generally have great physiological differences are men and women. At a young age girls mature earlier than boys, which means that girls are generally physically stronger than boys during their early life. One of the reasons for this is that girls reach puberty between the age of ten and thirteen, whereas boys don't reach puberty until the age of twelve to fifteen. This explains why girls are usually more physically stronger and skilled than boys at this young age. However, after puberty it is usually men who are physically stronger. This is because during puberty males grow for longer, to be precise 10% taller and 17% heavier.

Also, muscle mass grows greatly in males during puberty. Once adolescence has been reached, the average male is stronger and bigger than the average women. Males also have larger hearts which gives them a greater oxygen transport capacity. Males also have higher haemoglobin content, which gives them a higher oxygen carrying capacity. (Brooks, Fahey, White, and Baldwin 2000) All these facts lead to one of this studies hypothesis's which is 'males will be fitter than females.' The next hypothesis looked at in this study involved the different age groups visiting the health club.

Ageing is something that happens to everyone, and it is something that contributes largely to deteriorating an individual's physiological capacity. Ageing contributes to this deteriorating physiological capacity in many different ways. One physiological factor of ageing is an increase in resting pulse due to decrease in stroke volume. A reduction in cardiac muscle fibre size also causes an increase in resting heart rate and a reduced maximum heart rate. This in turn causes a reduction in maximal cardiac output and

hence vo2 max leading to a reduced capacity to deliver oxygen to muscle sites at maximal effort. A person's vo2 max declines at a rate of 10% per decade, starting in late teens, for inactive males and females.

Another physiological factor of ageing is that heart rate recovers slower due to an oxygen debt taking longer to remove than in younger people due to a lower rate of blood-flow, and hence a lower oxygen carrying capacity to working muscles. There is also a reduction in lung capacity. The population is older than ever before due to life expectancy being at an all time high. This means that there are many older people involved in exercise. It has been stated that leading causes of death are related to lifestyle, therefore many take up exercise in a belief it will keep them healthier for longer. This is because exercise helps keeps the body healthier and younger.

The main physiological factors of exercise on ageing are that exercise gives an individual improved pulmonary functioning, improved cardiovascular functioning, maintenance of strength and hypertrophy, reduced risk of cardiovascular diseases, reduced risk of injury, and an increased ability to perform routine tasks in daily life. (Davis et al) Exercise also helps the body fight off diseases such as heart disease, diabetes, insulin resistance, and some cancers. Strength training is very popular amongst older people as it helps prevent bone loss, which reduces the risk of fractures. (Brooks et al) As many older people or people pushing towards middle age know that lifestyle can relate to early death, it can be said that older people have more reason to exercise than younger people. This leads to the second hypothesis in this

study which is, ' Older people will visit the health club more.'The final hypothesis in this study researched in to self image and depression.

In a culture pre occupied with physical appearance, mainly due to the media, self image has become of huge importance. Self image normally involves three concepts that an individual has of themselves. They are, the image you have of the way you look, how much you value yourself, and what you wish you were really like. Self image is the description you would give of the person that you know you are. (Davenport 1995) Another important factor of self image is an individual's body image. This links in to the reasons why people go to a health club, as many visit them to improve their body image.

Another factor affecting someone's self image is what people say to us, and the way people react to us. Depression is a clinical observation and is one of the most common mood disturbances in all individuals. (Rosenburg 1965)

Many people suffer from depression. It is caused by an imbalance of chemicals, and it is not something that can be cured at the click of a finger. Millions of people have depression, and the economic cost of depression is estimated at around 20 billion English sterling, but the cost of human suffering cannot be estimated. There is a link between exercise and depression, where research suggests that exercise effectively reduces depression.

In a study run by La Fontaine, Di Lorenzo, Frensch, Stucky-Ropp, Bargmen, and McDonald (1992) they found exercise to be such an effective anti depressant that they quoted ' If exercise could be packed into a pill it would be the single most widely prescribed and beneficial medicine in the nation.'

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This information may show up in the results, in a form such as the more times an individual visits the health club, the less depressed they are. As well as links between depression and exercise, there are said to be links between self-image and depression. It is true that even mild depression can cause a reduction in self esteem, and therefore self-image. It can also be said that if someone has a high self-image, they are likely to have a low level of depression.

This is what leads us into the studies final hypothesis which is ' There will be a relationship between self-image and depression.'MethodThe first measurements recorded were the heights and weight of the sixty participants. The participant's weights were measured on an accurate pair of scales. The units used were kilograms. After their weight had been recorded, their height was taken.

This was done using a height measuring scale which was connected to the wall. The units used for the participant's height was metres and centimetres. After this, each participant's fitness was measured. This was done by obtaining all of the participants vo2 max. This was performed by having the participant's do the cooper's twelve minute run. This was performed on a 400 metre running track.

The idea was for each participant to run as fast as they could for twelve continuous minutes around the track. After the twelve minutes was up, the distance ran was measured. This could then be put into an equation and used to calculate the participant's vo2 max. The equation used to work this out was (distance covered - 504. 9 / 44. 73.

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) The Cooper's twelve minute run is a reliable test as long as the participant's run to their maximum, the track is of correct distance, and the stopwatch is reliable. All of this was ensured before the test. Another measurement that had to be taken for this study was the amount of times the participant's visited the health club. This was recorded in the form of a tally chart, where each participant had a mark next to their name each time they visited the health club. The sixty participants' were set up into young and old categories in order to see if one of the hypothesis's was correct. Out of the sixty participant's, 32 were in the old category, and 28 were in the young category.

The next factor measured was each participant's depression level. This was done using Goldberg's depression test. In this test there are eighteen statements where the participant had to answer with one of five options which were, not at all, only slightly, partly, quite a lot, a lot, and to a great extent. An example of one of the statements is ' I feel like a failure.' Once all the statements had been answered with a response, a score out of ten was given to each participant. Self-image was the final factor to be measured.

This was done by using the Egoschool self awareness test. This involved twelve pairs of statements being from one extreme to another, with a scale of eight in between. An example of one of the pairs of statements was I am not self confident at one end of the scale, and I am self confident at the other end. Once all statements had been answered each participant was given a score out of 100.