



Does Heart Rate Depend On Age/Sex?

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Introduction:

Your target heart rate, which should be achieved during exercise, depends on your age. The standard formula for determining maximum heart rate is 220 minus your age. For example, the maximum heart rate for a 60-year-old is 160, though the maximum heart rate for a 30-year-old is 190. Your target heart rate during exercise is a percentage of your maximum heart rate. Therefore, your age does affect your heart's response to exercise.

According to the National Institute on Aging, the body's capacity to perform vigorous exercise decreases 50 percent between 20 and 80 years-of-age. During activity, the heart rate rises but cannot rise as high when you are older. For example, a 20 year-old can increase cardiac output during exercise three to four times resting levels. An 80 year-old can increase cardiac output only two times more than resting levels. The older heart responds to the increased demands of exercise by adapting, but it is still pumping less blood because it can't beat as fast.

Procedure

The heart beat test is performed by searching between the fore arm and the hand (wrist). This place is touched gently with the thumb, the heart beats will be felt through the blood vessels and by using stopwatch or wrist watch and thus the pulse rate of the heart can be determined.

A sample of 28 people of different age and sex is selected randomly. Heart beat rate test is performed and the results are tabulated below.



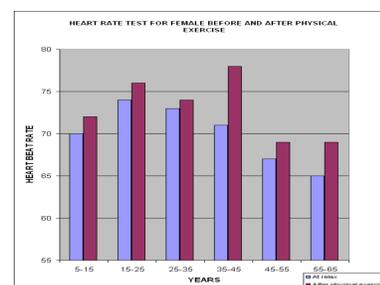
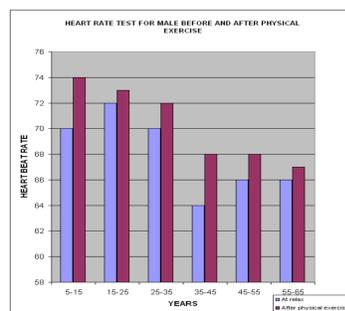
Results:

Male

| Age (years) | 5-15 | 15-25 | 25-35 | 35-45 | 45-55 | 55-65 |
|-------------------------|------|-------|-------|-------|-------|-------|
| At relax | 70 | 72 | 70 | 64 | 66 | 66 |
| After physical exercise | 74 | 73 | 72 | 68 | 68 | 67 |

Female

| Age (years) | 5-15 | 15-25 | 25-35 | 35-45 | 45-55 | 55-65 |
|-------------------------|------|-------|-------|-------|-------|-------|
| At relax | 70 | 74 | 73 | 71 | 67 | 65 |
| After physical exercise | 72 | 76 | 74 | 78 | 69 | 69 |



Conclusions:

We expect these findings represent normal heart beat rate according to ones age and sex. It is a simple test such that an individual is able to test him/her self so that if more divergence is observed, the person is advised to consult a physician.

We observed that heart beat rate of a person at relax condition are lower then his/her heartbeat rate after doing physical exercise.

References

During this research we have nourished our knowledge through the following books.

1. **Human Biology** (pg. 101 to pg. 105), By Bill indge, Martin Rowland and Margret Baker, Published by **Hodder Murray**, (member of hodder headline group)
2. **Human body** (pg. 191 to pg. 199), By Phil Tate, Rod R. Seeley, Trent D. Stephens, Published by **Mosby**
3. **New biology for tropical schools** (Pg. 165 to 166), By RH Stone, AB Cozens, J.Omage, Published by **Longman**.

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Further information:

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