**Please do the grammar check and if you need to edit or delete anything feel free to do that.**

**Need help with the last question please**

**What exactly I am trying to figure out is Comparing Resting and Exercising Blood pressure.**

The purpose of this experiment is to determine the difference between exercising and the resting blood pressures of any age. I became interested in this idea when I was at soccer practice. Before starting practice our coach always makes us run about two laps. Some kids were getting out of breath I wanted to know why? What happens our blood pressure? I became curious and wanted to know whether our blood pressure goes up when we are exercising and it goes down when we are resting. I know exercise and physical activity is good for our health. We all know that I 0ver time, a regimen of cardiovascular workouts helps us maintain healthy blood pressure levels. The information gained from this experiment could be helpful to coaches, doctors or PE teachers to better identify the effect that exercise has on a young kids and adult blood pressure.

**What is Blood pressure?**

Blood pressure levels vary according to the age, gender and overall health of the person. The force exerted by blood on the walls of the blood vessels is known as Blood Pressure (BP). The pressure measured when the heart contracts and pumps the blood into the vessels is called systolic blood pressure and the pressure measured when the heart relaxes and fills up with blood is called diastolic blood pressure. The unit of BP is millimeters of mercury (mmHg). High blood pressure causes extra strain on the heart and arteries and increase the risk of heart disease and stroke, while low blood pressure can cause dizziness. Optimal blood pressure falls between these extremes, and is calculated in children based on gender, age and height.

**How is measured?**

One of the many tools that doctors and nurses use to measure patient’s blood pressure is a sphygmomanometer.A sphygmomanometer is the kind of equipment that measures blood pressure using a column of mercury. The person taking your blood pressure will put a cuff around the top of your arm, pump up this cuff and then listen for sounds through a stethoscope placed on your arm. The sounds heard through the stethoscope will start and then finish at certain points on the mercury column, and this will give the reading for your blood pressure.

**Hypothesis**

My hypothesis is that the blood pressure would be lower while resting than when doing exercise. I based my hypothesis on my experiment findings when we are playing sports or doing any kind of exercise. Because of the nature of exertion, though, our blood pressure increases somewhat during exercise. Depending on the intensity of our workout and our overall health.

Methods

Purpose to prove my observation I will be using Supply and demand procedure. I will be using recording blood pressure and heart rate at rest and after exercise I will show increase in blood pressure and plus. Resting blood pressures for each subject were obtained by the random-zero sphygmomanometer. Blood pressure after exercise was measured and recorded when the subject was sitting.

I have taken four subject to studies

|  |  |
| --- | --- |
| Before exercise blood pressure And pulse | After exercise blood pressure And pulse |
| 1.11 year 104/58 pulse -67  2.12 year 140/57 pulse- 96  3. 40 year 126/78 pulse-57 | 121/68 pulse-99 exercise 25 min  155/77 pulse-122 exercise 30 min  132/79 pulse 77 exercise 10 min |

Results:

Because of the results of this experiment the results indicate that this hypothesis should be accepted. Looking at above chart proves that the harder the heart has to work to pump blood, the more oxygen it needs. For example, when you exercise, your heart rate and blood pressure increase, which in turn increases your heart's demand for oxygen. When heart is at rest demand and supply are minimum. Exercise working muscle demand has increased they need more oxygen more calories to keep muscle working. So heart beating and pumping has to increase to bring more oxygen calories to muscle through blood. Heart has to pump harder and faster to keep up demand that is why blood pressure increases.

Researchers at Cincinnati Children's Hospital, in Ohio and elsewhere have linked pediatric high blood pressure with enlarged hearts and early stages of disease in the arteries. Enlargement of the heart, known by doctors as left ventricular hypertrophy, or LVH, is a thickening of the heart's main pumping chamber that results from the extra work the heart must do to pump against the resistance caused by high blood pressure. "The heart is a muscle," says Tammy M. Brady, a pediatric nephrologist at Johns Hopkins Children's Center, in Baltimore. "If I'm lifting weights, my arm muscle is going to get bigger. When my heart is pumping against higher blood pressure, it's going to work harder and get bigger.

According to American Heart Association your blood pressure rises with each heartbeat and falls when your heart relaxes between beats. While BP can change from minute to minute with changes in posture, exercise, stress or sleep, it should normally be less than 120/80 mm Hg (less than 120 systolic AND less than 80 diastolic) for an adult age 20 or over.

Conclusion

After perfuming experiment on four people I learned that when exercise our heart rate will be faster. This allows the body to supply blood to the working muscles more quickly. As oxygen is carried in the blood this means that more oxygen can be transported to these muscles and allow them to keep contracting. The supply and demand forces our heart to beat faster. Once we stop exercising, our heart rate will reduce, but can remain slightly elevated for a while afterwards depending on the duration and intensity of our exercise. I also learned how it blood pressure measured and what the numbers mean. After all the researches and experiments I have more understanding now what happens when we run laps at the soccer practice.it is all supply and demand, muscle demands oxygen and calories to work efficiently heart increases supply and pumps faster. We start to breath faster and start getting tired. Heart rate and blood increase. The faster pumping of the heart supplies oxygen and calories to organs and starts getting rid of waste materials like carbon dioxide through the lungs and kidneys.

How can you relate your experiment to other research? (**Need more on this not sure what they are asking)**

I can relate this experiment to real life, for example when I am playing soccer or basketball if I am out of breath I will slow down a little, I will make sure I don't push myself too hard and overexert myself. I can also relate this research to my middle school and high school biology projects.