

Blood pressure and obesity

[Health & Medicine](#), [Obesity](#)



Physical activity is a crucial ingredient to children and adolescents leading a healthy life. Not only does physical activity help improve overall health and well-being, but physical activity can also help prevent future disease and health risks. (U. S. Department of Health and Human Services 2008). When children and adolescents are physically active at a younger age it helps to improve overall health and tends to then lead to a healthier lifestyle in the long run. (U. S. Department of Health and Human Services 2008) There are many factors that lead to children and adolescent's health and well-being, one of these factors being blood pressure. Physical activity is beneficial in lowering blood pressure in normal weight and obese children. The recommendations for physical activity in children and adolescents were developed by the Department of Health and Human Services in 2008. (CITE) There are different components that make up a child's overall physical health- " aerobic health, muscle strength, and bone strength". (CITE HERE) Children should be physically active for at least sixty minutes or more a day to help improve their physical health. (CITE HERE) Some of the exercises that children can partake in are- hopping, skipping, jumping rope, dancing, climbing trees, lifting weights, playing active games, and playing sports. (CITE HERE) The Department of Health and Human Services says that engaging in activities like the ones listed will help to improve body composition and body weight. (CITE HERE) A healthy blood pressure is said to be dependent on certain factors- gender age and height. (CITE HERE) There are two numbers that make up a blood pressure reading. There is a systolic and diastolic number. The systolic measurement is the top number and indicates the pressure in the arteries when the heart contracts and the

diastolic is the bottom number and indicates the pressure when the heart is relaxed. (CITE HERE). An average blood pressure is said to be 120/80mmhg. (CITE HERE) Blood pressure is important because it is an indicator of how hard the heart is working. When the heart is working too hard it can cause high blood pressure and that leads to other diseases and problems in the future. (CITE HERE) High blood pressure is not a condition that is symptomatic. There is no certain side effect of it, but high blood pressure damages arteries, heart and other organs. (CITE HERE) Some of the serious problems or diseases that high blood pressure can cause over a long period of time with no solution are a heart attack, heart disease, stroke, kidney damage, vision loss. (CITE HERE) Blood pressure is something that children and adolescents need to be aware of because later on in life it could greatly affect them. A study by Gately examined a children's weight loss camp and its effects on overweight and obese children. The study focused on the effectiveness of the weight loss camp idea. (CITE HERE) One hundred and eighty five children participated in the study and there was a comparison between children who attended the camp and children who did not attend the camp. The children who participated in the camp participated in a " daily schedule of six 1-hour, skill-based, fun, physical activity sessions, moderate dietary restriction, and group-based educational sessions". (CITE HERE) Blood pressure was taken at baseline and at the end of the study. The study found that the children who did attend the camp had a decrease in their systolic blood pressure and an increase on overall aerobic fitness. (CITE HERE) The study also showed that children who participated in the weight loss camp for a longer period of time saw greater results. (CITE HERE) This

would lead to the assumption that engaging in physical activity for an extended amount of time or regularly will help to lower blood pressure in overweight children. The reason this study shows that physical activity does help in the lowering of blood pressure and improvement in overall fitness is that these children were mainly sedentary before camp and that the camp pushed the children to be more physically active and engage in a healthier lifestyle choices. This change of environment helped to improve their physical health. A 2008 study done by Szamosi and colleagues discussed the effect of diet and physical exercise on insulin resistant schoolchildren. (CITE HERE) This study targeted higher risk children and studied how physical activity and diet changes can lead to a healthier and safer life. The children who participated in the study were chosen based off a family history that had cardiovascular disease, hypertension, and obesity woven into it. (CITE HERE) The study called for a two year lifestyle change that imposed a healthier diet and a regular regiment of physical activity. (CITE HERE) Blood pressure was a factor in this study and in some cases hypertension was one of the main reasons the children were chosen to participate. The main criteria asked of the patients for this lifestyle change are as follows- Diet: use sunflower oil during cooking, serve vegetables and fruits multiple times a day along with whole grains, soups without roux, change fatty meats to poultry, lean meat and fish added to diet, no fat containing material on bread, yogurt, milk, self-made drinks, and more spices in place of salt. (CITE) Physical activity: the goal of a workout was to make the subjects t-shirt wet, and exercise daily. (CITE HERE) The study found that the implementation of these factors did lead to lowering the systolic blood pressure in people who are pre-disposed

to disease or obesity. This study's main purpose was to research the different ramifications of insulin resistance syndrome and to evaluate how a lifestyle modification and baseline testing on cardiovascular risk factors helped or hurt subjects. (CITE HERE) Blood pressure plays a role in this study because it was one of the baseline tests that were taken. Hypertension which is a term for high blood pressure was highlighted in this study with regards to family history and the risk it put their offspring in. The results in this study showed that there was a greater decline in numbers for systolic vs. diastolic blood pressure. There were three separate groups in this study and all of the groups showed a significant decline in systolic blood pressure. Whole group measurements showed that systolic decreased by eleven mmhg and diastolic decreased by one mmhg. (CITE HERE) Chen and colleagues conducted a study that focused on the risk factors for high blood pressure and obesity in Chinese American Children. (CITE HERE) This study was unique in that it focused directly on Chinese American mothers and children. " The prevalence of childhood obesity and high blood pressure has increased dramatically in the past two decades, so understanding the factors related to increased risk for obesity and high blood pressure is critical, especially in a fast-growing population of immigrants". (CITE HERE) The study took a closer look at the mother and child relationship and how the Chinese mothers integrate their children into the American culture. (CITE HERE) In the background of this study it discussed factors that lead to increased blood pressure in children- " high BMI, lower level of physical activity, high sedentary activity time, and unhealthy dietary intake" (CITE HERE) This study examined the increasing obesity and blood pressure levels in Chinese

American children the study showed that “ a lower level of physical activity is related to increase the risk for a higher level blood pressure in children”. (CITE HERE) This study was not conclusive in establishing a direct relationship between Chinese American children and physical activity lowering blood pressure but it did find a correlation between races and physical activity with regards to blood pressure. Other races are said to be more active and that would mean that Asian and Chinese people are normally more focused on academic achievements vs. physical activity amounts. This study also shows that Chinese parents that are more educated about physical activity and the importance of it had children with healthier results and blood pressure level. This is an important study because it does show that minority races are suffering more from a sedentary lifestyle. Education is crucial to setting children up for a healthy and long life. Shahraki and colleagues conducted a study that looked at blood pressure changes in athletic and non-athletic student’s pre, during, and post exercise. (CITE HERE) This study included sixty females that ranged from twenty one to twenty three years of age. (CITE) The study took a look at physical education students who were athletic and medical students who were not athletes. The purpose was to see if there was a difference in blood pressure between the groups. The set up was a stress test in which each female was examined before, during, and after with heart rate and blood pressure. The study found that heart rate was lower in the athletic students. Non-athletic student’s heart rate tended to be higher. The blood pressure of the active group was lower for pre, during, and post exercise. Before exercise the athletic group’s systolic blood pressure was two mmhg lower than the non-

athletic group. During exercise the athletic group was nine mmhg lower. After exercise blood pressure was four mmhg lower. Before exercise the non-athletic group had lower diastolic blood pressure by three mmhg, during it was four mmhg lower, and after it was two mmhg less than the active group. (CITE HERE) This shows that females that are athletic and overly active will have a lower blood pressure before, during, and post exercise than non-athletic less active females. One study done by Susi Kriemler and colleagues focused on a school based physical activity program. The goal of this study was to test the usefulness of a school based physical activity program carried out for one year. Children were placed one of two groups; intervention or control. The intervention group received a diverse physical activity program that included five lessons a week with short activity breaks and physical activity homework. (CITE HERE) The control group did not receive changes and did not know about the other group. Multiple schools took place in this study and many measures were taken at baseline and at the end of the study; one of them being blood pressure. “ This randomized controlled trial showed that a multi-component physical activity intervention for one school year in first and fifth grade schoolchildren favorably affected body composition, aerobic fitness, physical activity, and cardiovascular risk, as well as lowering blood pressure". (CITE HERE) The intervention group’s systolic blood pressure was lowered by four mmhg and decreased by eight mmhg at their post study examination. (CITE) The intervention group’s diastolic blood pressure decreased by one mmhg and diastolic blood pressure stayed the same. (CITE) This study was unique in that it took two different groups and altered one of the groups physical activity levels and

found that the intervention group that received the extra minutes and lessons of physical activity showed great improvements in their overall health and blood pressure.