The Respiratory And The Cardiovascular System In Children

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Exercise and physical activities have a beneficial effect on the body of the human being. Physical activities are any kind of activities by which the body burns calories. Physical activities require the control of the cardiovascular and respiratory movement which gives the capability for sustaining the movement over extended periods. Due to frequent training, the physiologic system adopts the changes that increase the body's capacity and efficiency.

The main purpose of the respiratory and cardiovascular systems is to give the body nutrients and oxygen so that the carbon dioxide should be gotten rid of the body. The anaerobic system provides the energy in the absence of the oxygen. However, the children's anaerobic system is not fully developed due to which they need to rely on the aerobic system, as the kids have a lower amount of lactic acid during the exercise as compared to the adults. Moreover, children use a lot amount of aerobic energy. The main energy source is the conversion of fat into energy during light exercises. But coaches should consider that when the exercise gets intense, then the muscle and the blood glycogen are being used for the provision of the energy for that exercise. Children do not have an equal amount of glycogen stored in their bodies and also don't have the same conversion ability during exercise to convert it into energy.

Moreover, the kids are being designed for the less intense type of exercise because of the difference in size as compared to adults. Due to this difference, their internal organs are also comparatively small. The blood controls the amount of oxygen that is being transmitted in and out of the body during the exercise, and that amount of oxygen is controlled by either the heart rate or the amount of blood being pumped with each heartbeat. Children have the ability the increase the amount of blood that is being pumped by each heartbeat, but their hearts can't be able to carry the same amount of oxygen as compared to adults. Of this difference, the amount of oxygen that is being carried will not increase much in children, even if there is an increase in the amount of blood being pumped.

Children have a high heart rate as compared to adults but have less amount of blood in each heartbeat. During exercise, their heartbeat increases and this results in a slight increase in the amount of blood being pumped. So the children can only increase their heart rate due to intense exercise, as they don't have much anaerobic level development in them. Exercise's short-term circulatory effects include the decrease of oxygen levels within the blood, as a result of which the heart rate increases (Brooks, Fahey, and White, 1996). As the exercise gets intense, the long-term effect on the circulatory system includes the thickening of the cardiac muscle which results in the increased volume of the heart. Due to this increase, more blood gets pumped into the body per minute, and oxygen is delivered faster to the muscles of both children and adults. Coaches should be

aware that the pushing of heart rate at a higher level has no danger to health, but needs regular practice to increase it.

Children need more amount of oxygen for their body muscles to perform well during the exercise as their lungs are smaller than adults. When an adult breathes in oxygen due to the larger capacity of the lungs, the more oxygen gets into the body. However, Children need to breathe faster per minute in order to fulfill the amount of oxygen that the body muscle requires (Grogan, 2016). So coaches need to help a child to increase their breath per minute to fulfill the deficiency of oxygen during exercise.

In the case of thermoregulation, the body gets heated up as someone does the exercise. In children, about 20% of the energy is converted into work, while the rest of the energy results in the heating of the body. Unlike adults, children don't sweat enough due to which their bodies don't release the temperature as they have smaller skin surface area (Donnelly, Hillman, Castelli, 2016). So coaches need to train the children in the evening when the temperature is comparatively low so the bodies of the children will maintain a normal temperature. Moreover, the nervous system controls the functions of the body. The body tries to maintain a stable weight as the exercise helps to balance the energy intake. Children are constantly developing their nervous system, and this nervous system is being strengthened by performing more and more exercises as the maturation rate is being increased by doing an exercise again and again (Members.Ltd.co.NZ, 2018). Children's bones are more flexible than those of adults, and their bones mainly break on the side of the bone. Children mostly use their arms to avoid any kind of fall, which results in mostly the breakage of the wrist and the elbow. So coaches should develop the technique of landing on the feet for the children as the feet absorb much of the fall and not easily break.

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