



Fitness Training and Conditioning

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Abstract:

The Best Heart Activities:

A fine-looking, muscular body is good to have. But external appearance aside, what really matters in terms of fitness and longevity is the physical, biological condition of the heart and related blood vessels—the cardiovascular transport system for fuel and oxygen. For an efficient, powerful, long-lasting cardiovascular system that functions in strength and harmony with an equally efficient respiratory system, certain physical activities are predominately high on the list. Certain other exercises and activities, while excellent for improving muscular development, strength, power and flexibility, do very little to improve actual heart of endurance fitness.

Physical education programmes obviously have to contain a balanced selection of both kinds of activity. The following selection of questions and answers about heart fitness should convey a fair understanding about this vital fitness factor to assist our choice of physical activity for pupils.

1. What is a normal pulse-rate for an athlete in good condition?

A well-trained athlete should have a normal pulse rate of around the 60 mark. In endurance activities, such as long-distance running or swimming, or in hard running games such as soccer, across and basketball lower pulse rates are normal and considered an advantage. A low pulse rate is a recognized indication of cardiovascular efficiency and endurance.

2. What are the chief factors in heart and circulatory fitness?

A strong, vigorous heart muscle: elastic, fat-free arteries, and a wide-open transport-drainage system generally. The most effective way of achieving this is by continuous, rhythmical exercise like swimming, running, jogging and brisk walking, so that the rhythmical contraction and relaxation of the large muscle groups, particularly of the legs, exert a massaging effect on the blood vessels, so assisting the return of the venous blood to the heart and lungs.

3. Why is jogging and running termed 'endurance'?

Because of its very beneficial effect of decreasing the heart beat and blood pressure, while developing the heart to pump more volume of blood with each beat with a longer rest interval between beats; at the same time increasing the circulatory capacity of the alveolar capillary bed of the lungs, thereby encouraging a greater exchange of oxygen.

4. Is being overweight harder on the heart than taking vigorous exercise?

In the first place, vigorous exercise is not hard on a normal heart. This must be established without delay. Excess fat is a most harmful condition, putting a heavy overload upon the heart as every pound of fat requires about 4, 500 feet of blood vessels, with much blood going to the fat rather than to nerves, muscles and an overweight body causes the heart to work Otol organs. faster to sUstain the body through its various activities and it must work harder to provide nourishment for the excess weight. It is most likely that a fat body has a fat art muscle also, which will reduce its efficiency. Is

the condition known as 'athlete's heart'? Heart specialists do not recognise such a condition. Many years ago, there was a theory that hard athletic activity created an enlargement of the heart which was thought to be a serious abnormality. But modern medical authorities believe that any dilation of the heart caused by hard athletic exercise is to be expected and welcomed, and not to be considered unusual or detrimental in any respect.

5. What is one of the main reasons for starting a fitness programme?

To strengthen and increase the efficiency of the heart and its blood vessels, as we know there is less danger of fatty infiltration of the heart muscle and cholesterol deposits in the arteries when the total body is kept active by continuous, rhythmical exercise, with its vigorous pumping action of the legs.

6. Is long-distance running good for the heart?

According to the latest medical and physical education research and testing endurance exercise such as long-distance running has a very beneficial effect on a normal heart. Measurement experts say that the most efficient hearts they find are those of long-distance runners.

Such a runner can be assured that he is developing a wonderful heart efficiency that will stay with him for many years if he continues a modified Jogging training programme when he retires from running. Ex-school pupils please note.

7. How is vaso-constriction harmful?

This is constriction of the small blood vessels caused by mental anxiety; stress of business and domestic worries, and also by smoking and sustained, isometric muscular contractions and muscle-tension. It results in poorer blood-flow and progressive loss of muscular nervous and circulatory efficiency. In all such cases the small vessels need to be opened and dilated by full bodily activity great enough to raise the body temperature. Running, jogging, swimming, cycling, continuous ball games, are excellent.

8. Which activities are most valuable for cardiovascular improvement?

From years of research and testing in America, particularly with Thomas Kirk Cureton of the University of Illinois, there is now much data accumulated to show the systematic improvement of cardiovascular condition of individuals and groups who have been put through the endurance type, fitness training programmes for several months. These activities show the best gains:

- (a) Running.
- (b) Swimming.
- (c) Cross-country, orienteering and endurance running.
- (d) Hard ergo meter bicycle endurance work.
- (e) Daily jogging programme, two miles minimum. Or 8 to 10 minutes each day on 'carpet jogging'.
- (f) Endurance swimming.
- (g) Hard gymnastic combined with endurance running and swimming.
- (h) Soccer, rugby, hockey, netball, basketball and squash combined with wind sprints.
- (i) Amateur wrestling combined with running training.
- (j) Walking uphill on a treadmill for 30 minutes, 5 days per week; or hill or sand-dune running.

Activities which produce the least cardiovascular improvement are those of very short duration and of the tensing, near-maximum effort kind, such as weight training and lifting, Umnastics, stop-go social games like bowling, cricket, archery, and supplementary treatments like massage, hot baths, ultraviolet light.

It is plainly seen how a continuous, running-type activity involving the total body as an endurance exercise rates very high in this cardiovascular improvement. It then rests as to whether or not we rate this their professional lives researching the effect of endurance exercise on cardiac condition, clearly

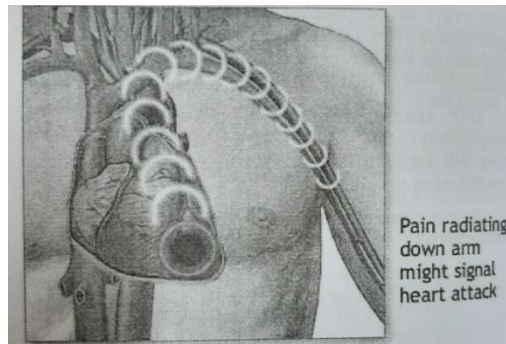
believe that we should. Our special responsibility: conveying this information to our pupils-selling it so convincingly that they will want to take it and use it widely in their conditioning programmes.

9. How can exercise act as a defence against coronary thrombosis?

It has been discovered that the cardiovascular System of a regularly exercised person actually increases. Countless small 'blood vessels flattened and out of action, open up, increase, previously and number and provide a vastly improved blood flow. By continuing the fitness training and increasing it on a progressive basis so as gradually to raise the load on the heart, collateral blood vessels are actually formed to by-pass defective coronary arteries, thereby ensuring the heart muscle of its own blood supply safeguarding it against failure.

10. The Heart Attack

The basis for the heart attack is partial blockage of the coronary artery supplying the heart muscle directly with fuel and nutriment. When these direct supply arteries become clogged and blocked by soft fibrous, fatty and calcareous deposits called atherosclerosis, then the amount of blood reaching the heart muscles is reduced.



If this blood supply is severely reduced, the section of heart muscle dependent upon this supply for its and fuel can no longer function. Those Ufilll fibres cease functioning and a heart attack is erieced. If the affected section is large enough, efficient fibres in the heart may cease operating and because total hear the chief preventive measures are to keep these arteries wide open and supply through regular exercise and constant selective blood-supply nutrition, to feed and so ensure the heart.

11. Actual harm does smoke due to fitness?

The carbon-monoxide gas paralyses the red blood corpuscles and restricts the oxygen intake; it also acts as a vaso-constrictor, particularly in the alveolar capillary bed of the lungs. Additionally, it has been assessed that each cigarette destroys 25 mgs of vitamin C. It causes chronic bronchitis, pulmonary fibrosis and arterial blockage, destruction of lung capillaries and malformation of the alveolar walls leading to their rapture.

12. How can the pulse rate influence longevity?

The heart rests 8 to 12 hours a day in momentary pauses between beats, therefore it is important to develop a slow but powerful beat that will supply the body-flow requirements, yet will permit maximum rest and relaxation between beats and so increase the ag€ potential.

A normal, untrained heart will beat 70 to 72 time Per minute, handling about 3 oz. of blood per beat, or 100 gallons in an hour. It will be expected to receive and deliver around 73 000 gallons, or 50 million gallons in a lifetime of Years.