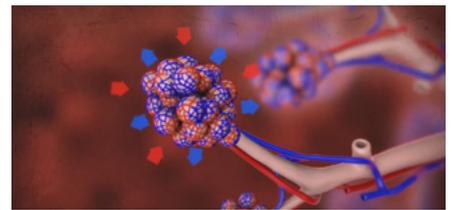
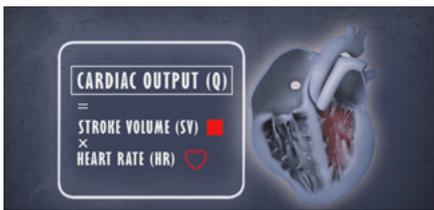




Physical Education

Stills from our new series



Chronic Adaptations to Exercise

As a novice athlete prepares for her first marathon with her coach and a trained endurance runner, this series explores the chronic adaptations to exercise made by the body's respiratory, cardiovascular and muscular systems.

Chronic Cardiovascular Exercise

Regular training causes chronic adaptations in the body's systems. In this programme, our presenter who is preparing for her first marathon, her coach and a trained endurance runner, examine decreased resting heart rate, increased stroke volume and cardiac output, and increased arteriovenous oxygen difference. Three different types of aerobic training are also briefly discussed – continuous, Fartlek and interval training.

Key Stage 4

Additional Resources

- Comprehension Questions
- One Machine — Four Training Programs
- Stories from the Heart



2016 | 10 min | CC | AR

- Suggested Responses
- Transcript

Chronic Muscular Adaptations

A number of chronic adaptations to exercise occur in the muscular system. Both aerobic and anaerobic exercises bring about improved performance over time. As the programme's presenter trains for a marathon with her coach, we examine muscular adaptations to exercise types, including hypertrophy of muscle fibres, improved neuromuscular functioning, increased size and number of mitochondria and increased lactate inflection point.

Key Stage 4

Additional Resources

- Comprehension Questions
- A Twitchy Training Program
- Muscles - What Nerves!



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- Suggested Responses
- Transcript

Chronic Respiratory Adaptations

The respiratory system makes a number of chronic adaptations to regular training. As the programme's presenter prepares for a marathon with her coach, and a trained endurance athlete, we examine a number of those chronic adaptations, including increased tidal volume, changes in respiration rate, increased lung ventilation, VO₂max and lactate inflection point.

Key Stage 4

Additional Resources

- Comprehension Questions
- And Now for Something Breathtaking
- Maxing Out the VO₂



2016 | 10 min | CC | AR

- Suggested Responses
- Transcript