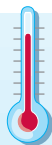


The marathon – the agony and the ecstasy

The energy which enables an athlete to run the marathon is generated aerobically, that is, by burning glucose and oxygen in the body to form water and carbon dioxide. Glucose is available from two fuels – fats, which are stored under the skin and glycogen, stored in the muscles and liver

Aerobic system

80-90% of energy is supplied aerobically, producing a constant supply of running power



Dehydration

Body temperature can reach over 40°C and the runner can lose more than 2 litres of water per hour through perspiration



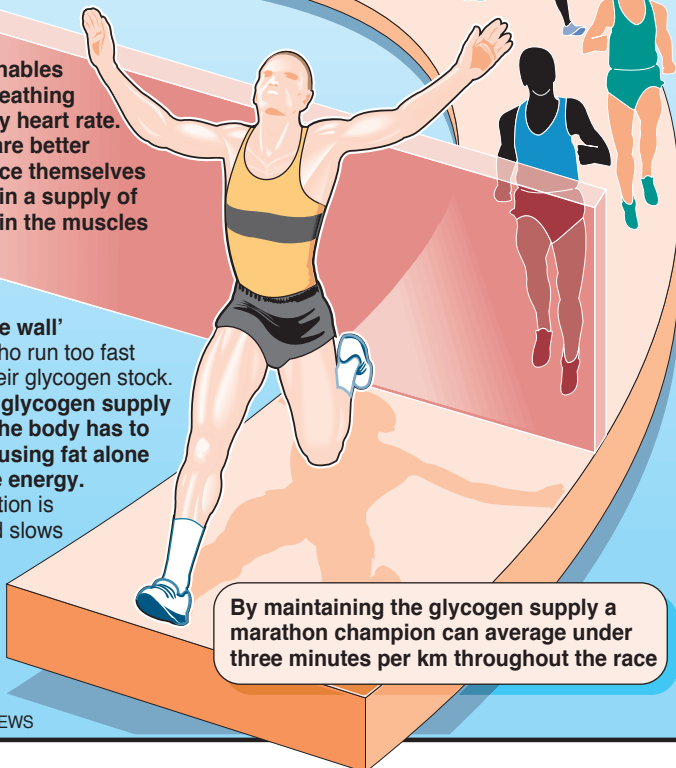
Aerobic training enables regular breathing and steady heart rate. Runners are better able to pace themselves and sustain a supply of glycogen in the muscles

'Hitting the wall'

Athletes who run too fast burn up their glycogen stock.

When the glycogen supply runs out the body has to switch to using fat alone to provide energy.

This transition is painful and slows the runner down



By maintaining the glycogen supply a marathon champion can average under three minutes per km throughout the race