

How running a marathon affects your body

We asked sports physician Dr Mark Fulcher to explain the physical effects of the race on a fit 38-year-old man.

Brain

- Endorphins from exercise, a sense of wellbeing
- Countered by excitement from adrenalin, nervousness and as the kilometres drag on, depression and psychological pain

Heart rate

- Probably 60 to 70 beats per minute at rest given that he is fairly fit
- Likely to reach 130 to 140 beats per minute if he runs comfortably

Kidneys and digestive system

- Reduced blood flow because blood is diverted to exercising muscles
- Important to keep drinking and to consume carbohydrates while running to help limit fatigue, but too much can cause reflux indigestion and diarrhoea

Hip, knee and ankle joints

- Likely to get a bit sore during the race and for a few days afterwards, especially because, as a 38-year-old, he may have some age-related wear and tear
- Exercise is good for joints in general – but could make pre-existing knee symptoms worse

Skin

- Risk of abrasion to nipples and thighs
- Risk of blisters to the feet

Simon Brown

Age: 38

Fitness: Always reasonably fit

Training: 4-5 months of gradual build up

Experience: First marathon

Injuries: "Niggling" injuries to a knee and a hamstring

Anticipated time: 4 hours 15 minutes

Body temperature

- Normal is 37C to 37.6C
- May rise or fall slightly in response to air temperature, wind, rain and sun.

Blood

- Increased blood count and ability to transport oxygen with training

Immune system

- Training improves immunity
- However, susceptibility to infection increases from the peak of training until about 48 hours after the race.

Leg muscles

- Some muscle damage is normal
- Expect delayed onset muscle soreness, for about 48 hours
- Pre-existing hamstring pain is likely to get worse

