

The Heart by the Numbers

How often your heart beats, how much blood it moves and how big it really is, with the working shown.



100,000

times your heart beats in an average day

At about 70 beats a minute: $70 \times 60 \times 24 \approx 100,800$. Over a long life that is more than 3.5 billion beats.



60–100

beats per minute: a normal resting heart rate from age 10

Younger children have faster rates, such as 70–110 at ages 7 to 9. Very fit athletes can rest at 40–60.



70 mL

of blood pushed out by each ventricle in one beat at rest

This is the stroke volume. The normal resting range is about 55–100 mL.



~5 litres

of blood pumped by each ventricle every minute at rest

The cardiac output: $70 \text{ mL} \times 75 \text{ beats} \approx 5.25 \text{ litres}$. The normal range is about 4–8 litres a minute.



7,500 litres

of blood pumped through the body in one day

$5.25 \text{ litres} \times 1,440 \text{ minutes} \approx 7,560 \text{ litres}$. Yet an adult body holds only about 5 litres of blood.



12 cm

long: an adult heart is about the size of a fist

Roughly 12 cm long, 8 cm wide and 6 cm thick.



~300 g

is roughly what an adult heart weighs

Typically 250–300 g in women and 300–350 g in men, in line with average body size.



96,500 km

of blood vessels in an adult, if laid end to end

More than twice round the Equator, which is about 40,075 km long.



When you exercise

In a healthy young person, heart rate can rise to about 150 beats a minute and each beat can push out about 130 mL. That lifts the output to about 19.5 litres a minute: 4 to 5 times the resting figure.

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4. Arteries, Veins and Capillaries