

# Brain matters in multiple sclerosis



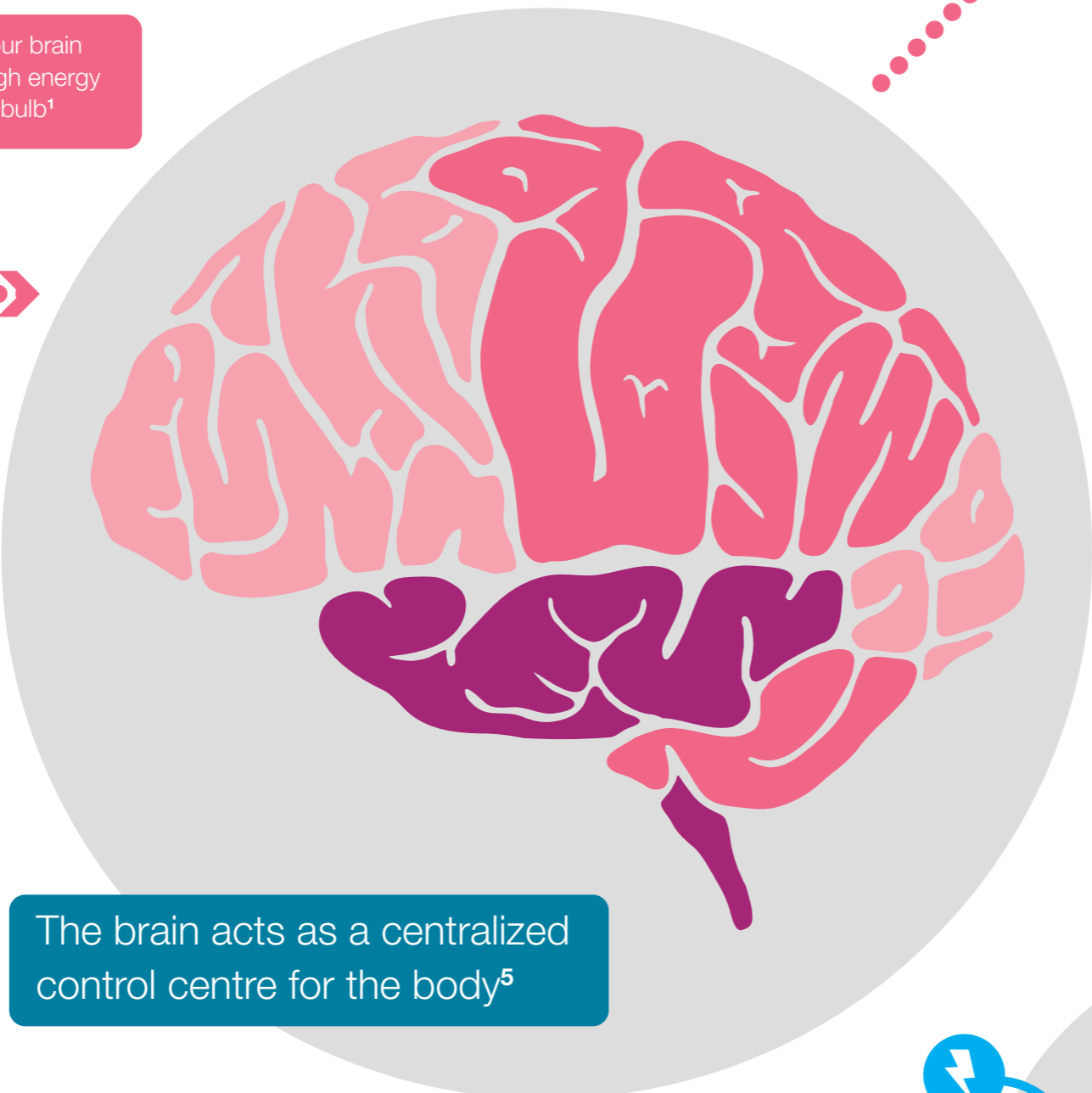
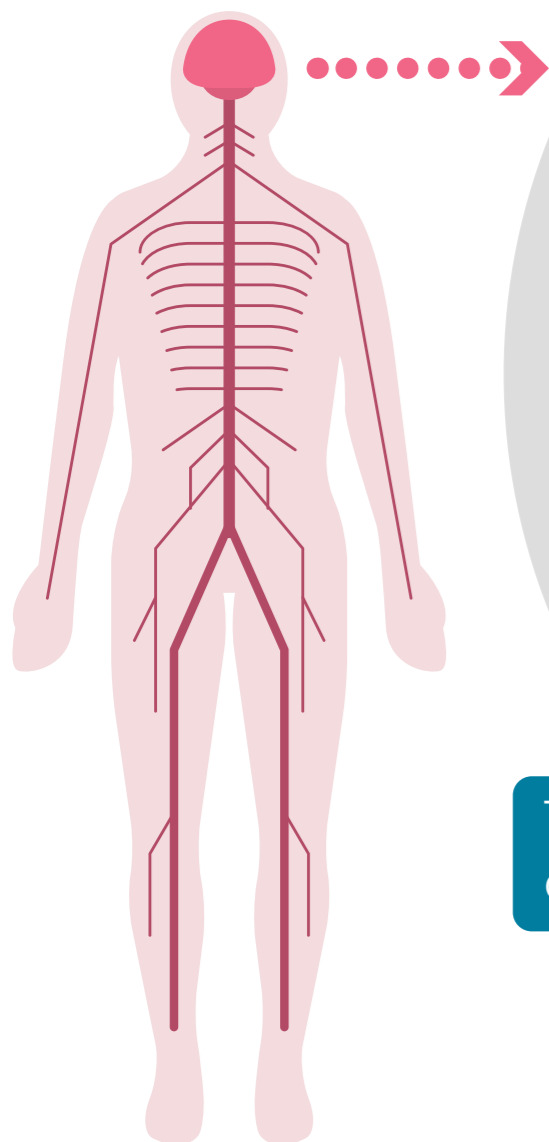
## Did you know...

There are **86 billion** neurons in a human brain<sup>2</sup> - ~12 times the world population<sup>3</sup>

Information is transmitted throughout the body by specialized cells called **neurons**

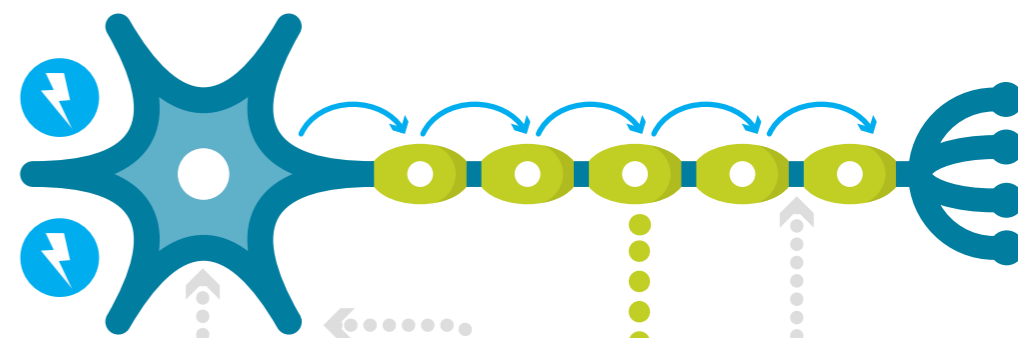
## Did you know...

While awake, your brain generates enough energy to power a light bulb<sup>1</sup>



The brain acts as a centralized control centre for the body<sup>5</sup>

## A neuron is made up of<sup>4</sup>:

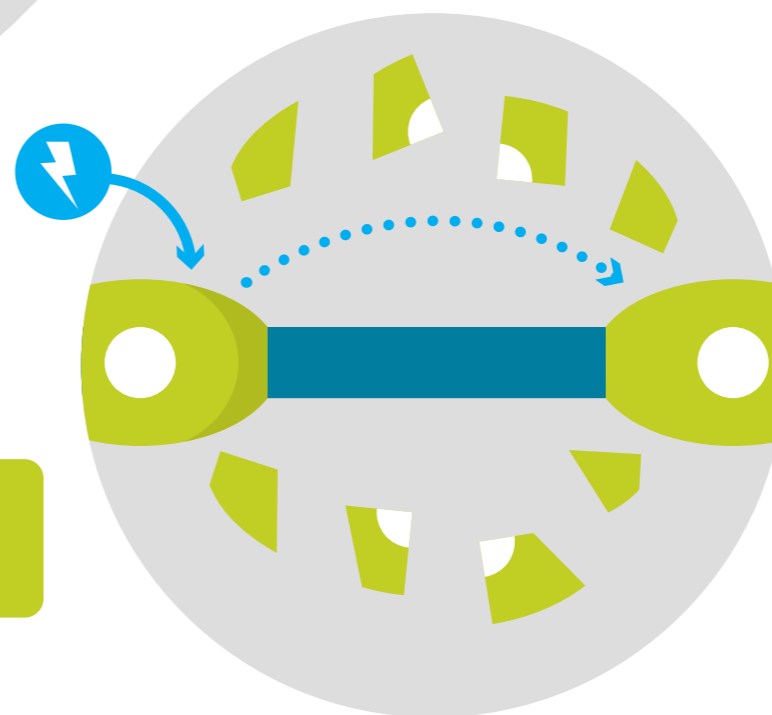


**A cell body:** Information from other neurons is integrated here

**Dendrites:** These receive information from other neurons

**An axon:** This carries information from this neuron to other neurons

Axons are often surrounded by an insulating material called **myelin**<sup>6</sup>. This helps information to be transmitted efficiently



In **multiple sclerosis** **myelin** is destroyed and **signal conduction** is affected<sup>7</sup>

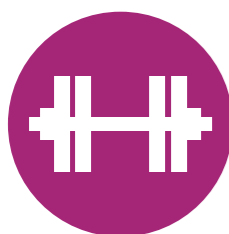
Even as a healthy individual, brain volume is lost as you age<sup>7</sup>

## Did you know...

Memories triggered by scent have a stronger emotional connection and therefore appear more intense<sup>8</sup>

## Did you know...

Neurons can process information as fast as **120 m/s**<sup>9</sup> - that's faster than a Formula 1 car<sup>10</sup>



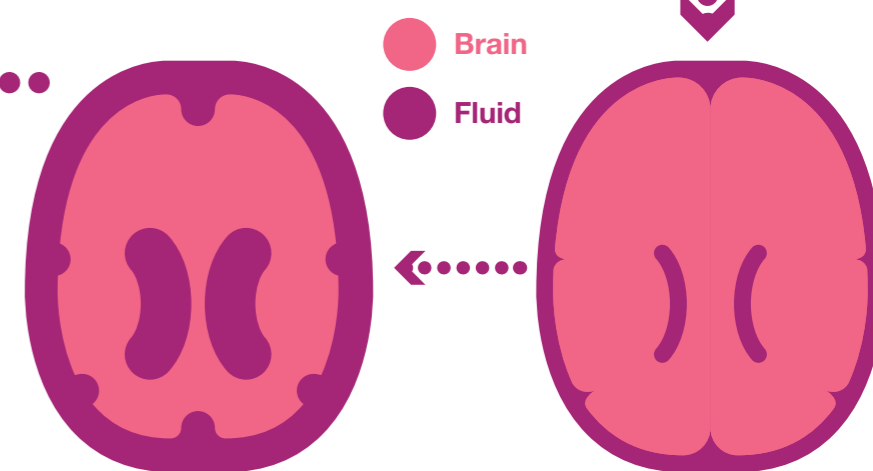
**Brain volume loss** has been linked to many of the symptoms of multiple sclerosis e.g. reduced strength, difficulty walking, cognitive impairment, fatigue<sup>11-14</sup>

People with multiple sclerosis **lose brain volume 3-5x faster** than observed in people without multiple sclerosis<sup>7</sup>

Increasingly, research in multiple sclerosis is focusing on understanding the relevance of **brain volume loss** and the importance of preserving brain early in the disease

## Did you know...

You can't tickle yourself because your brain can distinguish between unexpected external touch and your own touch<sup>15</sup>



## References

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