

THEME B3 : Neurone et fibre musculaire : la communication nerveuse

ALS and the Ice Bucket Challenge

Question 1. Explain the mechanisms involved in a motor neuron disease like ALS.

Question 2. How can this challenge contribute to curing this disease?

Doc 1: The Ice bucket challenge. (Ellie Broughton, 19 Aug 2014, <http://metro.co.uk>)

1 Amyotrophic lateral sclerosis (ALS) is the umbrella term used in the US to describe motor neuron diseases, as well as the name for the most common disease in this group, which in the UK we call Motor Neuron Disease.

Motor neuron disease (MND) affects a person's ability to move voluntarily. MND stops people from eating, walking and talking, for example, but doesn't stop them from thinking or feeling, effectively leaving sufferers
5 'locked in' to their bodies.

There is no known cure at the moment.

MND is quite rare – only about 5,000 people in the UK suffer from the disease at the moment.

However, it strikes fast, and half of people diagnosed with MND will die within the first 14 months of knowing they have it.

10 Celebrities who have suffered from the disease include Professor Stephen Hawking and the actor David Niven. Hawking's is an unusual case of MND as he's survived with it for over fifty years. Only 5% of patients diagnosed with MND survive the first ten years after their diagnosis.

The ice bucket challenge started after a baseball player
15 with MND, Pete Frates, volunteered to have it done to him.

You can do the ice bucket challenge in the UK. Simply volunteer to have a bucket of ice water tipped over your head. After completing the challenge, nominate two friends, who then have 24 hours to drench¹ themselves in ice water
20 as you did, or make a donation to charity if they would rather stay dry.

According to the ALS Association, donations are up more than \$21 million over the last three weeks, compared with the same time frame last year.

25 Fingers crossed the ice bucket challenge achieves the same success as the 'no make-up selfie' campaign. The social media campaign raised a mind-blowing £8 million for Cancer Research UK in the space of just a week, earlier this year.

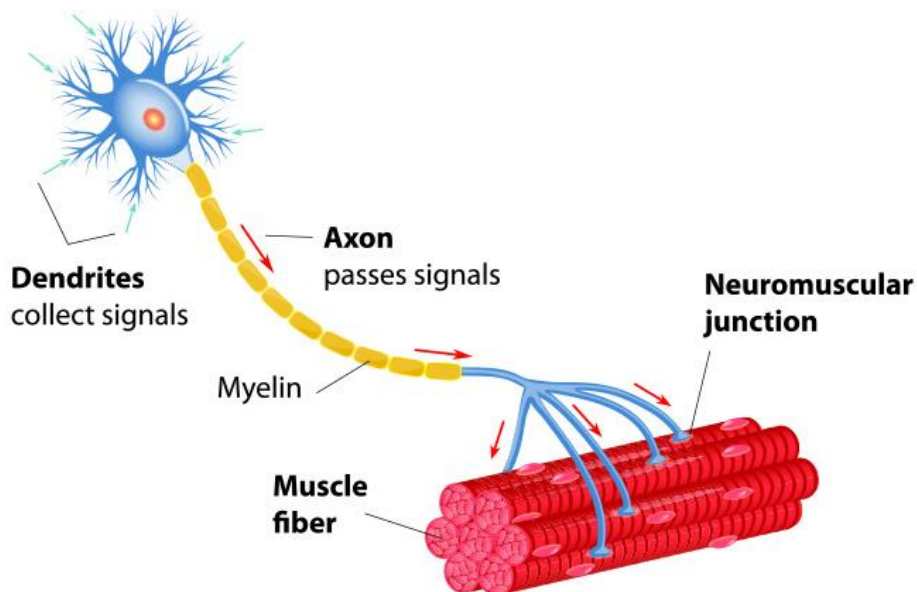


¹ To drench = arroser

Doc 2: Motor neuron (<https://www.ausmed.com>)

Motor neurons control important muscle activity, such as:

- gripping
- walking
- speaking
- swallowing
- breathing



Doc 3: Motor neuron diseases (<http://www.nhs.uk>)

- 1 It's not clear what causes motor neurons to stop working properly. In about 5% of cases there's a family history of either motor neuron disease or a related condition called frontotemporal dementia. This is known as familial motor neuron disease. In most of these cases, faulty genes have been identified as making a major contribution to the development of the condition.
- 5 There's no single test to diagnose motor neuron disease and diagnosis is based mainly on the opinion of a brain and nervous system specialist (a neurologist). The diagnosis of motor neuron disease is usually clear to an experienced neurologist, but sometimes specialised tests are needed to rule out other conditions with similar features.