

Amyotrophic Lateral Sclerosis

Amyotrophic lateral sclerosis (ALS) is a type of progressive motor neuron disease that is inevitably fatal. Also known as Lou Gehrig's disease after a famous baseball player who died from the disease, ALS causes the upper and lower motor neurons in the spinal cord and brain to degenerate or die, halting the delivery of messages to muscles.

ALS patients gradually lose voluntary control of muscles, that is, they lose the strength and ability to move their arms and legs, and to hold the body upright. When muscles in the diaphragm (breathing muscle) and chest wall fail, patients can only breathe with the support of ventilators.

ALS does not impair patients' sensory abilities (seeing, hearing, recognizing, tasting, touching). Some people with ALS may develop cognitive issues such as loss of memory, reduced speech fluency, and slow decision-making.

Causes:

There are 2 types of ALS:

- **Sporadic ALS:** the most common form. It occurs without any known causes, they are without any familial history.
- **Familial ALS:** it is thought to be inherited and affects a small amount of people

Symptoms:

- Dropping things
- Tripping and falling
- Loss of motor control in hands and arms
- Slurred or thick speech
- Impairment in use of arms and legs
- Paralysis
- Breathing difficulty

Treatment:

There is previously no cure and no proven treatment for ALS. However, the drug riluzole could prolong the survival of people with ALS. The FDA has approved the NeuRx Diaphragm Pacing System, to help ALS patients that have breathing difficulties contract their diaphragm.

Other main treatments focus on the management of symptoms, physical therapy, occupational therapy, nutritional therapy and rehabilitation may help to prevent joint immobility and slow muscle weakness and atrophy.

Research by: Yolanda Li
Graphics by: Karena Dindial

References:

<https://www.brainfacts.org/diseases-and-disorders/neurological-disorders-az/diseases-a-to-z-from-ninds/amyotrophic-lateral-sclerosis-als>
<https://www.hopkinsmedicine.org/health/conditions-and-diseases/amyotrophic-lateral-sclerosis-als>



The Vagus Project
Neuroscience Foundation