

## Information for patients from JNNP

# Finger length suggests hormones may be linked to nerve disease

A study looking at the finger length of people with a type of motor neurone disease suggests that the disease may be partly caused by the levels of hormones that people are exposed to before birth.

## What do we know already?

The nerve disease amyotrophic lateral sclerosis (ALS) is a type of motor neurone disease. No one is exactly sure what causes it, although it is more common in men than women. In some cases it seems to run in families, although for more than 95 in 100 people who get the disease, this isn't the case.

It also seems more common among certain groups, possibly linked to head injury, or types of chemicals, such as pesticides. But this hasn't been proven. In this new research, scientists followed up on a suggestion that types of nerve disease may be linked to levels of the hormone testosterone, before birth. Testosterone is known as a male hormone, although women produce it too.

One way of telling whether someone was exposed to high testosterone levels before birth, strangely enough, is to look at their hands. Higher testosterone tends to lead to shorter length index fingers compared to ring fingers, while lower testosterone tends to lead to index or ring fingers the same length, or with a longer index finger.

## What does the new study say?

The study measured finger length among 47 people with ALS and 63 people without. Taking into account the expected differences between finger length in men and women, those people with ALS tended to have longer ring fingers compared to their index fingers, suggesting they'd had higher levels of testosterone before birth.

## How reliable are the findings?

This is an early stage study, which helps scientists focus their research.

## What does this mean for me?

This is an interesting study that shows how hormone levels before birth may play a part in the development of this disease. But it doesn't mean you should worry about the length of your fingers, if you don't have ALS. ALS is rare, and it's very common to have shorter index fingers than ring fingers.

Vivekananda U, Manjalay ZR, Ganesalingam J, *et al.* Low index-to-ring finger length ratio in sporadic ALS supports prenatally defined motor neuronal vulnerability. *Journal of Neurology, Neurosurgery, and Psychiatry* 2011;**82**:635-7. <http://jnnp.bmj.com/content/82/6/635.full>

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