

Left-handedness

Whether a person favours their right hand or their left, and what this reveals about brain function, has been studied for at least 150 years. However, researchers still don't understand why around 10 per cent of the population turn out to be left-handed.

In the past, children who were naturally left-handed were encouraged or forced to use their right hand, mainly because of prejudice against the awkwardness of left-handed writing and the prevalence of 'right-handed' utensils. These days, left-handedness is more accepted.

If your child is naturally left-handed, don't try to force them into using their right hand. While we know very little about what influences hand preference, we do know that handedness reflects the wiring of the individual brain.

Causes of left-handedness

Just why one in 10 people favour their left hand is a mystery. A straightforward genetic link hasn't been proven, and it is possible for two right-handed parents to have a left-handed child. Theories include:

- **Genes** – perhaps genetic factors predispose a child to favour the right hand. A single gene might be passed from parents to children to influence which hand a child favours. If a particular version of this gene is inherited, the child may be more likely to be left-handed, depending on reinforcement and other environmental influences. However, more recent research suggests it is more likely that lots of different genes 'add up' to produce a left-handed person.
- **Sex** – slightly more boys than girls are left-handed. This suggests to some researchers that the male hormone testosterone has an influence on right and left-handedness.
- **Fetal development** – some researchers believe that handedness has more of an environmental influence than genetic. They propose that environmental factors in the womb (including exposure to hormones) may influence whether we favour the right or left hand later in life.
- **Modelling** – children learn to choose their right or left hand by copying parents and other significant caregivers. However, this doesn't explain why right-handed parents sometimes have left-handed children, and vice versa.
- **Brain damage** – a small percentage of researchers theorise that all human beings are meant to be right-handed, but some type of brain damage early in life causes left-handedness. For left-handers and parents of lefthanders, it is important to note there is no hard evidence to support this rather controversial theory.
- **Adjustment** – some people who are naturally right-handed become left-handed because of the need to adjust to injury.

The development of preferred handedness

Very young children often use both hands equally. Hand preference in the early years seems to rely on which hand is closer to the desired object; for example, a toddler may reach for a toy on their left side with their left hand because of convenience, regardless of future hand preference.

Most children have a preference for using one hand or the other by the age of about 18 months, and are definitely right or left-handed by about the age of three. However, a recent UK study of unborn babies found that handedness might develop in utero. About nine out of 10 unborn babies preferred to suck their right (rather than their left) thumb, and this hand preference was borne out later in life.

Researchers still looking for answers

The brain has two hemispheres, the left and the right. Researchers into the brain once believed that handedness revealed which brain hemisphere was dominant. However, if this were true, it would indicate that other functions controlled by the brain should be influenced by this 'dominance'. This doesn't appear to be the case; for example, the speech centres tend to be located on the left side of the brain, regardless of hand preference.

Another difficulty for researchers is that handedness isn't always cut and dried. While some people use one hand exclusively for all tasks, others tend to swap depending on the activity; for example, some people write with their left hand but open jars with their right.

It was once believed that a right-handed person has general dominance on the right side of their body, which means their favoured foot, eye and ear are also on their right side. We now know this isn't the case. Many people may be right-handed but, for example, always take the first step with their left foot. The more we find out about right and left-handedness and their links to brain function, the more we realise we don't know.

Cross laterality explained

Cross laterality is an ambidextrous mixture (for example, being left handed but dominant in the right eye and foot). This may cause coordination difficulties. However, some sports (such as gymnastics) benefit from the distribution of brain dominance. Research into cross laterality is ongoing.

Problems for left-handed people

Since 90 per cent of the population is right-handed, left-handed people do experience some practical problems, including:

- Western writing runs from left to right. A left-handed person has to 'crab' their hand in order to write without smudging the ink.
- Left-handed children learning to write often write back to front ('mirror' writing). This is a natural inclination, not a sign of dyslexia, and will resolve given time, practice and encouragement.
- Implements such as scissors are designed for use with the right hand.
- Tools such as circular saws can be dangerous if operated with the left rather than the right hand.
- Some research has suggested that learning difficulties, epilepsy and autism are more common in left-handed people. However, other researchers have been unable to confirm these findings and current knowledge suggests that handedness is not associated with learning disabilities.

Advantages for left-handed people

Being left-handed also has its perks, including:

- Left-handed people are at an advantage in a wide range of sports, from fencing to boxing.
- The sporting advantage also includes taking the right-handed opponent by surprise, because right-handed athletes aren't used to playing against left-handed opponents.

Where to get help

- School teacher and principal (in the case of a child's writing difficulties)
- Your doctor

Things to remember

- Researchers still don't understand why around 10 per cent of the population turn out to be left-handed.
- Most children have a preference for using one hand or the other by the age of about 18 months, and are definitely right or left-handed by about the age of three.
- If your child is naturally left-handed, don't try to force them into using their right hand.

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