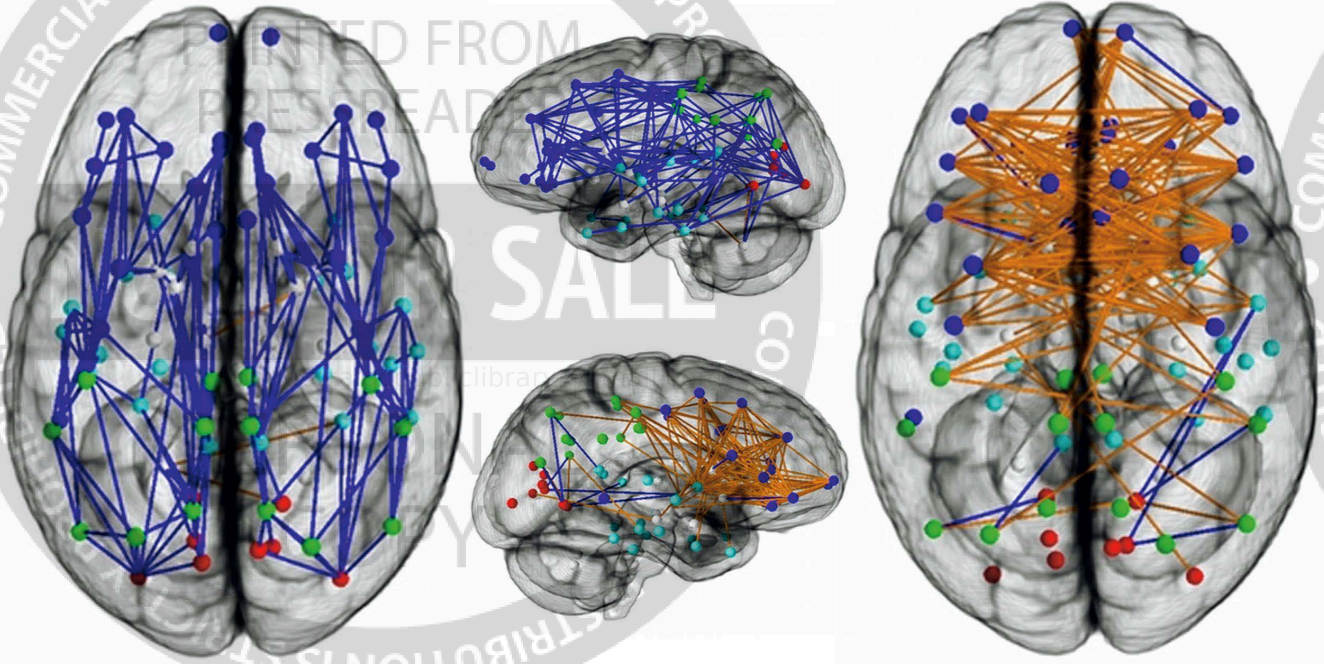


- Brain

SCIENCE



# MALE VERSUS FEMALE BRAINS

Our brains are wired differently. Are we born like this or is it something that develops?

WORDS HAYLEY BIRCH

**R**esearchers at the University of Pennsylvania and the Children’s Hospital of Philadelphia published a study suggesting that male and female brains are wired differently. But their claims in the media that these differences are ‘hardwired’ and could explain some of the stereotypical behavioural differences between the sexes are what really caused a ruckus.

As Professor Dorothy Bishop, a neuroscientist at the University of Oxford, explains, the study does show small differences in the way parts of the brain talk to each other. “It’s revealing possible differences in connectivity between males and females that may well be interesting,” she says. In women, scans showed slightly greater connectivity between the brain’s hemispheres, while in men there was slightly greater connectivity within each hemisphere. But these results represent the average man and woman – some men, for example, could have more left-to-right connections than some women.

But what about the suggestion that these differences are hardwired? “Hardwiring to a lot of people implies that

you’re talking about something that’s there from birth,” says Bishop. However, as the study’s youngest participants were eight years old, it was impossible to determine whether males and females are born with different brains from this study alone. In order to really understand sex differences, we need to know how our experiences – growing up as girls or boys – affect our brains. For example, if girls are taught to like dolls, does this affect their brain development? Unsurprisingly, though, getting babies or toddlers to behave in a brain scanner isn’t easy.

Despite claims that these results could explain so-called ‘female intuition’ and why men are said to be better at map reading, the study doesn’t link brain wiring and behaviour directly. The participants did take behaviour tests, which highlighted slight sex differences, but there’s no proof that these are due to differences in brain connectivity. Saying that one caused the other is like saying, “I’m out of jam. I saw you eating some jam the other day, therefore you ate my jam.” It’s a seductive argument, but not something that’s necessarily true.

**Did you know?**  
The human brain weighs around 1.4 kilograms

**ABOVE LEFT** Male brains show greater amounts of wiring within hemispheres

**ABOVE RIGHT** The female brain has a great deal of wiring between hemispheres

## BRAIN FACTS

**1** Women have more white matter than men.

**2** Men have bigger brains. Could size, rather than sex, explain the wiring differences?

**3** If the corpus callosum connecting the two hemispheres is severed, links between vision, reasoning and speech are impaired.

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