

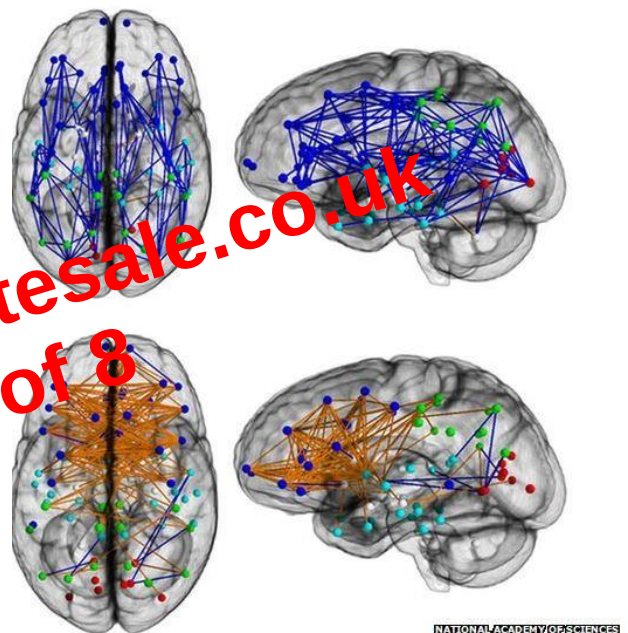
Psychology – Brain Structure/Anatomy and Function

BRAIN FACTS

- Composition of the brain: 78% water, 12% lipids, 8% protein, 1% carbs, 2% soluble organics, and 1% salt
- 10 seconds is the amount of time until unconsciousness after the loss of blood supply to the brain.
- The slowest speed at which information travels between neurons is 260 mph (416 km/h). The brain can stay alive for 4-6 minutes without oxygen; after that, cells begin to die.
- More electrical impulses are generated in one day by a single human brain than by all the telephones in the world.
- How much does the human brain think? 70,000 is the number of thoughts that it is estimated the human brain produces on an average day.
- 89.06% is the percentage of people who report normally writing with their right hand, 10.6% with their left, and 0.34% with either hand.

What are the differences between the male and female brain?

- The neuron activity is dramatically different in the two genders. Male brains see most of their neuron activity firing front-to-back within each hemisphere of the brain, with little overlap. Girls' brains have less hemisphere-isolation and instead have much more cross-hemisphere neuron activity. (This may explain why girls can multitask better!)
- Men's brains are, on average, 10% larger than women's, and consequentially weigh slightly more, 3 lbs to 3 1/4 lbs. These size differences have been found repeatedly, but they emerge only when comparing large numbers of people, so some women's brains are larger than the average, whereas some men's are smaller. These differences partly reflect the fact that men are generally bigger and taller than women, but they are not in any way related to differences in intelligence.
- Men and women's brains also differ in overall composition. Male brains contain about 6 1/2 times more grey matter than women, while female brains have more than 9 1/2 times as much white matter. The frontal and the temporal areas of the brain cortex are larger in volume in women.
- The Amygdala is larger in males; the Hippocampus is activated on its right side in males yet on its left side in females.
- Stress has been found to induce an increase in serotonin and dopamine levels within the amygdala in males, but not in females. In females, both short-term and long-term stress have been found to actually enhance spatial memory while under duress



Why did the brain need sleep?

- To process the day's events and exposure to knowledge. When we sleep, the brain continues to process the input from the day and make sense of it. For instance, in a math concept you learned Monday was difficult and you see uncertain, brain scans have revealed that while you sleep the area of the brain involved with math is active, and in the morning what was difficult on Monday seems easier to understand on Tuesday.
- When you sleep, the upper spinal cord releases a fluid which serves to "flush out" toxic waste products which cells produce with daily use, effectively cleaning out the brain. It removes inflammatory, toxins and protein plaque buildup (associated with Alzheimer's); the waste is flushed out into the bloodstream, through which it is eventually carried to the liver for detoxification
- Discredited theory: It used to be thought that sleep helps animals conserve energy by forcing a period of rest. But this theory is deemed unlikely since the sleeping brain uses up almost as much energy as the awake brain.