

Did You Know these Brainy Facts?



Here Are A Few Facts To Warm You Up

Your busy Brain can probably store as much information as a set of 20 encyclopedias

When you read (just like you are now), your eyes are sending messages to your brain about the words and pictures. Then your brain tells you what you are reading and seeing. You actually see things at the back of your cortex (that's the outer grey coloured wrinkly looking part of your brain). You see things to the left in the right side of your brain and things to the right get seen in the left side.



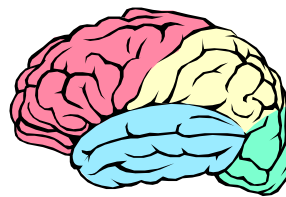
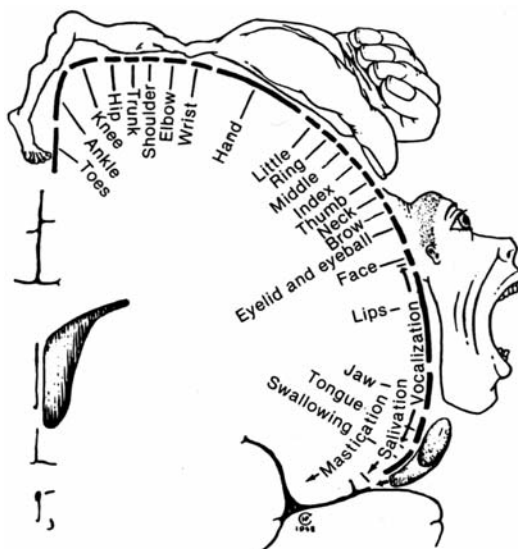
Why is this so? Well Scientist's don't really know, but they do know that....

Our Brain Is A Bit Like A Map.

Different parts of the brain sort out different messages from different parts of your body. The Brain is divided in to two halves called Hemispheres. The Right Hemisphere works the left side of the body and the Left Hemisphere works the the right side of the body. These two sides of your Brain are joined together by a thick strap of more than 200 million nerves. They let messages pass from one side to the other.

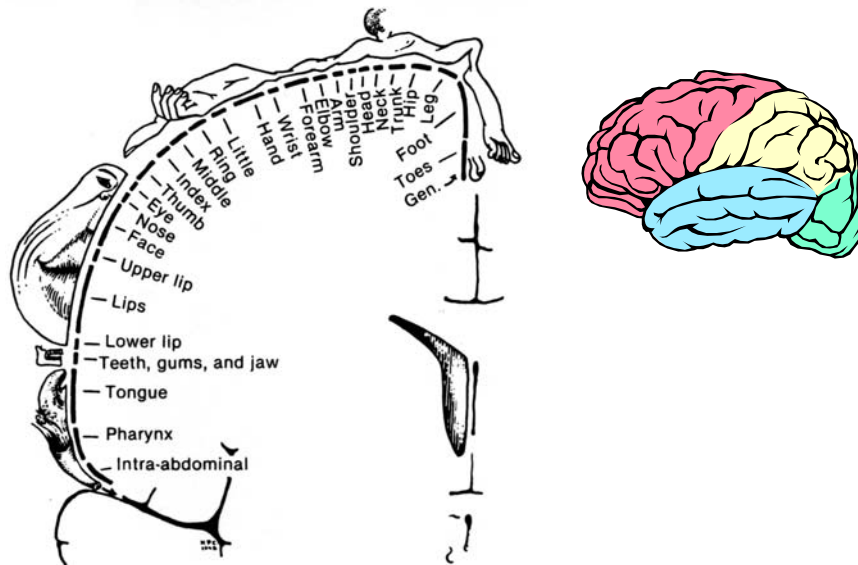
Each side or Hemisphere has parts called Lobes. Each Lobe has different jobs that it does. For Example, if you drew a picture to represent how the part of the brain called the Motor Cortex (found in the Frontal Lobe (coloured pink) next to the yellow coloured Parietal Lobe) help parts of the body to move by drawing the parts of the body next to the part of the brain that makes it move it would look like the funny picture below.

This is called **The Motor Cortex Homunculus**.



You can do the same thing with parts of the brain that help us feel different parts of our body. This is called the Sensory Cortex and it is found in the Parietal Lobe which is coloured yellow in the brain diagram. Other parts of the Brain do different things. The Brain Map has a place for everything that we do, think and say. This is why you can have specific problems doing different things or can act differently if your Brain is injured in a specific place.

The brain map of how we feel parts of our body is called **The Somatosensory Homunculus** and it looks like this:



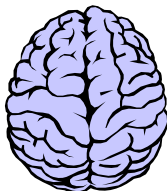
What About Some More Brainsy Facts To Tell Your Parents and Teachers?

Well....

Scientists have learned much of what they know about the brain by accident. The most famous case was that of a man by the name of Phineas Gage who was a man who worked on the railways in New England USA. In 1848 he had a terrible accident. A metal rod that was more than a metre long went straight through his head! Mr Gage was never the same again. Several scientist were very interested about why he had changed. Their studies led them to believe that the brain had a part to play in how we act or behave. Want to know more? Why not Google Phineas Gage to find out more about his story.



http://en.wikipedia.org/wiki/Phineas_Gage



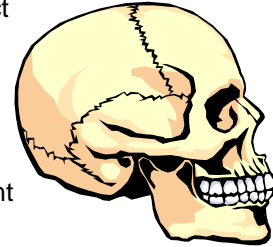
The Cortex of your brain (that is the outer wrinkly looking grey layer) is deeply folded and grooved to enlarge the brains surface area. This means that more brain cells or neurons can be squeezed into a small space. Scientists have estimated that if you could flatten out the cortex it would cover an area about the size of a standard pillow case.

Your Brain is terribly busy and bossy. Every second it send out orders to body parts such as the heart, lungs and guts to automatically keep you breathing, your heart beating and your guts squirming. It is just as well that this happens without us even noticing or we wouldn't have time to do anything else!

Strangely enough, our brain has no feelings. It is not sentive to touch. Brain Surgeons can poke and prod it, and the person would not feel a thing. But if this is the case, how come we get headaches? A headache is brain pain that is caused when more blood squirts into your

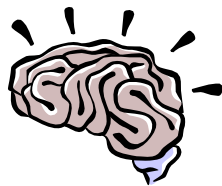
brain than that which is needed or if nerves are shocked in any way. Ever heard of a “Brain Freeze” – you know that pain you sometimes get when you are eating ice cream fast. Well this occurs if too much of the ice-cream touches the roof of your mouth and shocks the nerves that lead to your brain. The best thing to do is to touch the roof of your mouth with your nice warm tongue to relax the nerves. Or you could stop eating ice cream so fast!

The skull which is the boney structure of your head designed to protect your fragile brain is an intricate 3D jigsaw of 28 different bones. The smallest of these bones are the three tiny bones that are located deep within your ear. Efficient movement in these bones is essential for sending adequate messages to the brain to allow accurate hearing messages to be received. Efficient movement in these bones can be effected by trauma, such as a blow to the head or exposure to constant excessive noise. So listen to your parents and give the littlest bones in the skull and your brain a rest from your iPod so that you can preserve the quality of your hearing for as long as possible.



Every day thousands of your brain cells die and cannot be replaced. But don't worry – you've got lots of them! Your Brain is bulging with 100,000,000,000 – that's 100billion – nerve cells or neurons. These are special cells used for sending signals inside the brain. If you don't believe it, try counting them yourself! If you laid the cells from just one brain in a line they would stretch 1000km – that's pretty much all the way to Sydney from Brisbane!!

Messages from your body (like if you kick your toe) whizz along your nerves at very high speeds, even faster than an express train (that is why you feel pain very quickly)!



Your Brain is the hottest part of your body. It is not hot because of all the amazing thinking that you do, but because it needs lots of energy to work well. It gets its energy from the sugar and oxygen carried in your blood. It sucks about 750ml of the red stuff every minute. All this hot blood gives out a lot of heat.

The brain needs water for vital chemical reactions. These chemical reactions needed to send nerve signals around the body and within the brain itself. Without water, a brain begins to overheat and starts to see things that aren't there. Our Brains will die without enough water. It is the water that makes the brain feel like squidgy blancmange or a soft-boiled egg (don't believe me? – well you will have to become a brain surgeon to find out for sure!! In the mean time make sure you drink lots of water, wear a hat and keep as cool as possible when it is hot so you can protect your brain!)

There is no limit to the thinking power of your brain. Don't believe me? Well remember how Scientists think that there are more than 100 billion brain cells and synapses (that is the gaps between the neurons or brain cells that is needed for messages to travel around your nerves). Scientist also believe that a thought can travel through these synapses in ANY order. So this means that there may be more possible routes for a thought than atoms in the entire universe. And that means that there's NO LIMIT to the thinking power of your brain.



Bet you didn't know that Boys and Girls use their brains differently! Brain Scans performed at Yale University School of Medicine, USA, show that boys only use the left side of their brains to talk, but girls use both sides. So does this mean that girls are more clever than boys? No it doesn't. (Sorry Girls!!) Every scientific study done comparing Boys and Girls has shown that they have different abilities in some areas, and use their brains in different ways, but overall, they are equally clever! So end of argument OK!

OK, so if Girls aren't more clever than boys, are big brains better than small ones? Well, not really. Elephants have bigger brains than humans, but humans can do more than elephants (like speak). Studies have also shown that size doesn't matter when you compare boys and

girls either. A girls brain is on average 150 cubic centimetres smaller than a boys brain, but despite this there are many boys and girls who have equal levels of intelligence (that is, they are just as smart as each other). Also, people with an intellectual disability have been shown to have exactly the same sized brain as a person who might be a genius.

Here is another fact. When you go to sleep you lose consciousness. Your brain produces what are called delta brainwaves and you are unaware of your surroundings, however your brain remains on high alert to messages from the senses so that it can wake us up if necessary. Oh, so you knew that? Well I bet you didn't know that staying awake for two weeks could kill you. Scientists believe that the body needs a period of rest each day. Without it, the body gets more and more exhausted and vital functions like heartbeat begin to falter. So listen to your mother for your brains sake and stop staying up past midnight OK!



What about this? Is it true that most people use only a tiny fraction of their brainpower? Well there is no scientific evidence to support the claim that we could all be like Einstein if we worked our brains harder. PET scans (high imaging scans of the brain) actually show that the brains of people who score highest on IQ tests don't "work as hard" (that is, use as much oxygen and sugar) as those of their average-scoring friends.

Still want to know more facts? Well you can...

Discover These Facts And More In The Following Books:

Horrible Science: Bulging Brains (1999) Nick Arnold; Scholastic Childrens Books, London

Brain Box (2003) Anita Ganeri; Evan Brothes Limited, London

Brain Surgery for Beginners and other Major Operations for Minors a scalpel-free guide to your insides (1993) Steven Parker; Simon and Schuster Young Books, London

What's the Big Idea? The Mind: the essential guide to what goes on in your Head! (1996) Nicola Barber; Hodder Childrens Books, London

101 Questions Your Brain Has Asked About Itself But Couldn't Answer...Until Now (1998) Faith Hickman Brynie; The Millbrook Press Inc, Bookfield, Connecticut USA

Still Want To Know More Weird And Wonderful Brain Facts?

Have a look at the Neurosciences for Kids website
<http://faculty.washington.edu/chudler/neurok.html>



Contact ABIOS
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