## PAUSE FOR THOUGHT - SOMETHING TO THINK ABOUT!

Human beings are presently the dominant species on this planet, largely attributable to a 'blancmange-like' organ encased in a solid bony box — our brain. This vital organ is responsible for regulating involuntary bodily functions, analysing our surroundings, controlling muscle movement, consciousness, memory and thought. Over many millions of years, our brain has evolved both in size (to around 3 pounds in weight) and complexity, giving us the ability to out-think other living organisms.

The human brain contains nearly 100 billion neurons (just over twice that of a Gorilla), with a trillion or so supporting glial cells. Each neuron has multiple dendrites which reach out, like the branches of a tree, and connect with around 7,000 other neurons throughout different parts of our brain, resulting in pathways so complex that most have yet to be mapped. The largest computers may be capable of storing more data and rapidly retrieving it, but autonomy of response is fortunately still in the realms of science fiction.

Our thick skull may protect our brain from outside trauma but offers no protection from internal attack and developing tumours. Because of the complex architecture of the brain, neurons are thought to rarely undergo mitotic activity and divide, certainly in adulthood, meaning that cancers seldom arise from these cells. However, the glial cells 'nursing' the neurons are metabolically very active and can give rise to both benign and malignant tumours of varying grades. The brain is also a site where tumours originating in other organs - particularly the lungs, breast, bowel and kidney - can seed and give rise to secondary tumours.

Brain tumours cause different symptoms depending on where the tumour is in the brain and how slowly or rapidly it grows.

**General symptoms include:** 

- Headache usually worse in the mornings.
- Sickness and vomiting.
- Seizures (fits) especially for the first time in adults.
- Changes in personality, behaviour or thinking.

Symptoms that depend on the position of the tumour can give rise to:

- How we move or speak.
- Changes to how we feel, see or hear.
- Irregular periods, infertility, weight gain, high blood pressure, diabetes or mood swings due to alteration in hormone levels.

These symptoms can also be caused by many other conditions that may be transient or amenable to simple treatment. Headaches, especially, are often a common symptom of stress. But if you have any of these symptoms always go and see your doctor – remember, early diagnosis leads to better results.

One day we will find a way to prevent tumours from developing. It may be more difficult to prevent robots and artificial intelligence, devised by ourselves, from overriding us!



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