

Brain

It's amazing just how many medical myths there are *to choose* from, but one part of the body seems **(1) to attract / attracting** more than its fair *share*, and that's the brain. One of my favourite brain myths is the idea that we only use 10% of it. It is quite an *appealing* idea because it suggests the possibility that we **(2) could become / must become** so much more intelligent, successful or creative, if we could **(3) "harness"** that wasted 90%. This might inspire us to try harder, but unfortunately that doesn't mean there is any truth in it.

3. "**harness**" is closest in meaning to ----.

- A) scrutinize B) attach
C) exploit D) denounce
E) exceed

4. Which of the following is true according to the text?

- A) It is possible to use the wasted 90% of the brain.
B) There is no such thing as wasted 90% of the brain.
C) We can become more imaginative by using more of our brains.
D) It is unlikely for us to be motivated to work harder unless we are inspired by a possibility to use more of our brains.
E) The author of the text is an avid supporter of the idea that we only use 10% of our brains.

One of my favourite brain myths is the idea that we only use 10% of it. First of all, it is important **(5) to be asked / to ask** the question – 10% of what? If it is 10% of the regions of the brain to which people are referring, this is the easiest idea to **(6) “quash.”** Using a technique called functional magnetic resonance imaging, neuroscientists can place a person inside a scanner and see which parts of the brain are activated **(7) although / when** they do or think about something. A simple action **(8) such as / despite** clenching and unclenching your hand or saying a few words requires activity in far more than a tenth of the brain. Even when you think you are doing nothing, your brain is doing rather a lot – **(9) whether / neither** it is controlling functions like breathing and heart rate, or recalling the items on your to-do list. So, “a tenth use” myth is debunked in this respect.

6. “quash” is closest in meaning to ----.

- A) inspect
- B) refute
- C) harness
- D) condemn
- E) surpass

So, “a tenth use” myth is debunked in this respect. But maybe the 10% refers to number of brain cells. Again this doesn’t work. When any nerve cells (10) “go spare”, that is, when they serve no purpose, they either degenerate and die off or they are colonised by other areas nearby. We simply don’t let our brain cells loiter, or hang around idly. They are too valuable for that. In fact, our brains are a huge (11) ---- on our resources. Keeping brain tissue alive consumes 20% of the oxygen we breathe, according to cognitive neuroscientists.

10. “going spare” is closest in meaning to ----.

- A) to be used
- B) to be left aside

11. Choose the best option to fill in the blank.

- A) relief
- B) reliance
- C) arrangement
- D) drain
- E) beat

12. Which of the following is true according to the text?

- A) It is not a wise choice for us not to use even a single brain cell.
- B) There are such valuable brain cells that they cannot be spared unlike some other brain cells.
- C) The value of a brain cell depends on the functions it performs.
- D) Our brain cells rarely degenerate and die off or they are seldom colonised by other areas nearby.
- E) The writer probably thinks that the value of brain cells is exaggerated, or in other words, hyperbolic.

It is true that nature can sometimes involve some strange designs, but to evolve to have a brain ten times the size we needed would seem very odd, when its large dimensions are so costly to our survival, occasionally leading to obstructed labour, – also known as *labour dystocia*, which occurs **(13) when / as if** the baby does not exit the pelvis during childbirth due to being physically blocked – and the death of a mother during childbirth if no help is available. Yet many people do **(14) cling on** to the idea that we only use 10% of our brains. The idea is **(15) ----** prevalent that when the University College London neuroscientist Sophie Scott was on a first aid course, the tutor assured the class that head injuries are not very serious because of the 10% “fact”. He was not only wrong about the 10%, but he was also wrong about the impact **(16) on / of** brain damage. Even a small injury can have huge effects on a person’s capabilities. The first aid tutor probably wasn’t expecting instructing a professor of neuroscience on the course, but Scott put him right.

14. “cling on” is closest in meaning to ----.

- A) stick to B) turn down C) rest on

15.

- A) so B) such

17. Which of the following is true according to the text?

- A) *Labour dystocia* is a phenomenon that occurs very often.
B) Obstructed labour does not literally refer to an obstruction.
C) The death of a mother during childbirth has nothing to do with the brain and thus skull size.
D) That the brain has not evolved in time to have a bigger size is a sort of blessing for our survival.
E) The writer thinks that the current size of the brain is the epitome of nature’s strange designs.

So how can an idea with so little biological or physiological basis have spread so widely? It is hard to **(23) track down / look up** an original source. The American psychologist and philosopher William James mentioned in *The Energies of Men* in 1908 that we “are making use of only a small part of our possible mental and physical resources”. He was optimistic that people could achieve more, but he does not refer to brain volume or quantity of cells, nor does he give a specific percentage. The 10% figure is mentioned in the preface **(24) on / to** the 1936 edition of Dale Carnegie’s best-selling book *How to Win Friends and Influence People*, and sometimes people say that Albert Einstein was the source. But Professor Della Sala has tried to find the quote, and even those who work at the Albert Einstein archives can find no record of it. So it seems this might be a myth too.

25. Which of the following is true according to the text?

- A) It is possible to pin down the real source of 10% myth thanks to scholars in the field.
- B) *The Energies of Men* mainly focuses on brain volume or quantity of cells.
- C) The sources cited as the origin of 10% figure are nothing but rumour.
- D) Despite the evidence to the contrary, the 10% figure found advocates among academic circles.
- E) It is only a matter of time before the academic world admits the validity of the 10% figure.

There are two other phenomena that might **(26) account for / emerge from** the misunderstanding. Nine-tenths of the cells in the brain are so-called glial cells. These are the support cells, the white matter, which provide physical and nutritional help for the other 10% of cells, the neurons, which make up the grey matter than does the thinking. So perhaps people heard that only 10% of the cells do the hard graft and assumed that we **(27) could harness /can harness** the glial cells too. But these are different kind of cells entirely. There is no way that they could suddenly transform themselves **(28) from / into** neurons, giving us extra brain power.

There is a very rare group of patients whose brain scans reveal something extraordinary, **(29) for example / though**. In 1980, a British paediatrician called John Lorber mentioned in the journal Science that he had patients **(30) of / with** hydrocephalus who had hardly any brain tissue, yet could function. This doesn't of course show us that the rest of us could make extra use of our brains, just that these people **(31) adapt / have adapted** to extraordinary circumstances.

It is, of course, true that **(32) if / though** we put our minds to it, we can learn new things, and there is increasing evidence **(33) on / in** the area of neuroplasticity showing that this changes our brains. But we are not tapping into a new area of the brain. We create new connections **(34) between / beyond** nerve cells or lose old connections that we no longer need. What I find most intriguing about this myth is **(35) how / that** disappointed people are when you tell them it's not true. Maybe it's the figure of 10% that is so appealing **(36) because / so** it is so low that it offers massive potential for improvement. We'd all like to be better. And we can be better if we try. But, sadly, finding an unused portion of our brains isn't the way it's going to happen.

1. Three-quarters of the companies in the country have no female senior executives ---- women accounting for, of all seats reserved for management, less than a tenth.

- A) for
- B) with
- C) out
- D) from
- E) by

2. When it comes to education, ---- health and safety should be the number one priority during the pandemic is one thing, that any decision to close schools should not be taken without due consideration is completely another.

- A) while
- B) because
- C) if
- D) as
- E) when

3. A report released the other day based on a review of three decades of research concluded that studies claiming a deterrent effect of capital punishment on murder rates are ---- flawed.

- A) fundamentally
- B) deliberately
- C) initially
- D) predominantly
- E) occasionally

4. Polio, whooping cough and diphtheria were once endemic in wealthier countries, ---- any town and claiming thousands of lives until these conditions have been eradicated thanks largely to vaccines and treatments.

- A) plagued
- B) having plagued
- C) to be plaguing
- D) plaguing
- E) to have plagued

5. What makes legal limits outdated and inadequate to ---- the protection of workers' health is that the permissible exposure limits have not been updated by official bodies for a long while.

- A) penetrate
- B) ensure
- C) require
- D) exhaust
- E) foresee

6. From the 1220s on, German masters ---- in the sculptural workshops of the French cathedrals ---- the new style to their homeland, although German architecture at that time was predominantly Romanesque with little room for variety and innovation.

- A) to have trained / had transplanted
- B) to be trained / transplant
- C) trained / have transplanted
- D) having been trained / transplanted
- E) training / were transplanting

7. The Leaning Tower of Pisa seems ---- undoubtedly the most magnificent piece of architecture in Italy, but the lean only became apparent once three of the tower's eight stories had been built, leaving no chance ---- what had been done.

- A) being / to be reversed
- B) to have been / reverse
- C) to be / to reverse
- D) having been / having reversed
- E) been / reversed

8. For information that can't be obtained from customers easily ---- direct questioning or observations, social media management software will provide assistance ---- no time.

- A) from / on
- B) through / for
- C) to / by
- D) with / over
- E) by / in

9. Poets and writers of the Romantic era went beyond simply telling about things and ---- gave the narration readers need to feel the objects and surroundings.

- A) instead
- B) thus
- C) still
- D) otherwise
- E) similarly

10. With the pandemic impacting areas of the country and communities ----, not everyone is eager to get back to business as usual and many prefer to remain on leave almost for good.

- A) thoroughly
- B) unevenly
- C) hazily
- D) utterly
- E) eventually

11. What is impressive about species of organisms yet ---- is the incredible heterogeneity in size, shape and way of life – from bacteria living in hot springs at temperatures near the boiling point of water to fungi ---- on ice in Antarctica.

- A) discovering / having thrived
- B) discovered / to thrive
- C) to discover / to be thriving
- D) to have discovered / thrived
- E) to be discovered / thriving

12. The calculation of the optimal amount of enzyme a cell should make is ---- because the answer depends both on the specific function of the enzyme and how its actions may have a ripple effect on other chemical reactions within the cell.

- A) complicated
- B) straightforward
- C) dwindling
- D) loitering
- E) grounded

13. Dutch demands verb conjugations like those in English – ----, I am, you are, it is, yet Afrikaans, a language spoken in South Africa which originated from 17th century Dutch, does not bother you with the details.

- A) for instance
- B) in contrast
- C) therefore
- D) similarly
- E) however

14. While our bodies can effectively deal with the low levels of radiation that we are ---- every day, too much of it can damage tissues by changing cell structure and damaging DNA.

- A) given off
- B) protected from
- C) made up
- D) exposed to
- E) taken up

15. Although using baking soda when cooking vegetables will help ---- colour, vitamin C ---- in the alkaline environment produced by it.

- A) to maintain / must be lost
- B) maintaining / would be lost
- C) maintain / will be lost
- D) maintained / can be lost
- E) to be maintained / lost

16. ---- some behavioural adaptations such as wearing appropriate clothing and building shelters, humans have been able to live in temperate and, ultimately, arctic regions.

- A) Rather than
- B) As a result of
- C) Despite
- D) In contrast to
- E) Except for

