

The brain structure

- Imagine the overall structure of the brain as an ice-cream cone with two scoops.
- The cone = brain stem.
- First scoop = the limbic system (the emotional brain)
- The second scoop = the cortex (the thinking brain)



Brain structure

- Millions of nerve cells which, like streets and motorways, are connected to each other.
- If you visualize a map of Great Britain showing all the roads you can get a feel for a few things.
- They seem to converge on certain points we call cities, towns, and villages.
- In the brain these points of convergence are called nuclei.
- One of the major nuclei in the brain is called the amygdala. This nucleus controls rage, fear, and sex.



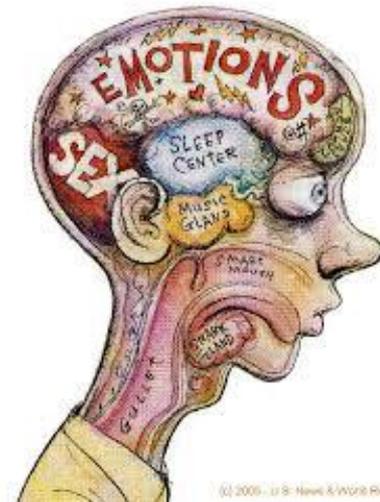
Sprouting and Pruning

- During the teen years, the teenager's brain is being reshaped, and reconstructed.
- It's a massive construction project, unlike anything that occurs at any other time in life. In such a situation, things rarely flow smoothly and surprise destinations thrive.
- Reconstruction continues until age 25.



The changing teen brain

- One of the important things to remember is that what a teen does, and is exposed to during this critical time in life, has a large influence on the teen's future, because experience and current needs shape the pruning and sprouting process in the brain.



Who am I?

- Because of all the change that is occurring in the brain, teens have a deep need to define themselves, to clarify who they are, and what they stand for.
- Often the new identity is supplied by their peer group, for better or for worse. Because the teen doesn't know clearly what they want or what they can do, they like to try many different things. This helps them discover what works for them, what feels right, and who they are becoming.
- The parent-teacher role is to allow and encourage safe exploration.



Emotional brain



- One part of the teen brain that is undeveloped lies in that second scoop of the ice cream cone.
- This is called the pre-frontal cortex (PFC). This part of the brain, when fully developed, is in a constant dialogue with the emotional brain (the limbic brain).
- In the adult, the PFC and the limbic brain are in balance.
- For the teen, however, the PFC is undeveloped, and the emotional brain (including the amygdala mentioned before) rules the moment, until the PFC is developed in the mid-twenties.

PFC loans



- One highly effective way for parents and teachers to help teens develop the PFC is to make them deal with the consequences of their actions.
- This takes some thinking ahead (a PFC function) on the part of the adults, about the new freedoms and responsibilities that their teen will have.
- Letting the teen know the consequences in advance, is in a sense, loaning the teen our frontal lobe functions.



Which is it?

Teenagers misunderstand

- The person in the picture is showing one emotion, and only one. And that is fear.
- Most teenagers will say 'anger', 'shock', 'disgust' or 'pain'.
- In an experiment, researchers asked a group of adults and adolescents the same question. All adults got it right and most teenagers got it wrong.
- In brain scans it was found that teenagers were using different parts of the brain!
- Adults were using the PFC, teenagers were using the amygdala.
- Teenagers can easily misread our signals.

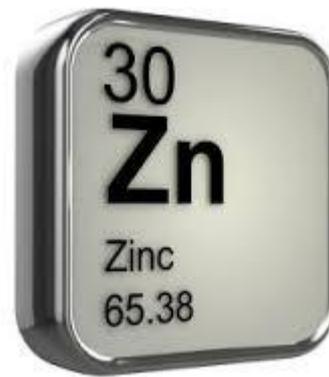


Nutrition

- One of the most overlooked and problematic issues for teens is nutrition.
- The amygdala and other areas of the brain require healthy fats. That means fish oils.
- High levels of these omega 3 fatty acids are associated with less depression and suicide, and many other health benefits too numerous to mention here.



Zinc



- Getting enough zinc is a challenge for teens because their growing bones take much of the body supply of zinc, leaving the brain in short supply.
- This shows up as irritability and moodiness, as well as zinc spots (white spots) on the nails. Giving the teenager a zinc supplement (enough till the nails clear) can make a very significant difference in moodiness, as well as help clear up their skin.
- Add some fish oil capsules and you have some good support for the teen brain.

Addiction

- What doesn't help the teen brain at all are alcohol and drugs. For many reasons, including the fact that the teen brain is changing at such a rapid pace, new experiences that are pleasurable (e.g., music) very quickly become habits.
- Thus the teen will become addicted to substances much more easily than an adult will.
- For some reason, alcohol tends to make adults sleepy, but it does not have this effect on teenagers – it tends to make them hyper and more likely to do something stupid.

Zzzzzzzzz

- Teens need 9 to 10 hours of sleep a night.
- Research in 2015 found that they have substantially less sleep now compared with 2 decades ago.
- ‘Screen’ time is cutting into teen sleep hours and putting them at greater risk of anxiety and depression.



Delayed Sleep Phase Disorder (DSPD)

- Teens also experience a 2 hour shift in their bodily rhythms which results in them wanting to get up later and go to bed later.
- Unfortunately this sleep phase delay does not fit in with our timetables and routines.
- The sleep deprivation that results from this increases moodiness and clouds decision making.



Parents and teachers are important

- Teens need structure and look to parents and teachers for this structure.
- Be a good role model especially when dealing with stress.

“Your adolescent is watching you.”



Teens or toddlers?

- Remember teens are dealing with huge social, emotional and cognitive change and have underdeveloped abilities to cope.
- Therefore they need you to keep calm and be a good listener.

“The more you yell at a teen, the worse they’ll likely behave.”

(Survey in 2013 for the journal Child Development)

Top Tips

- Encourage safe exploration
- Limit behaviours
- Communicate clearly
- Be a good listener
- Keep calm
- Be a positive role model
- Try and remember what it was like to be a teenager!



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