

# Westlake Boys High School



## Being in 'Quaranteen' – what have we learnt about supporting your son in a lockdown?

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The teenage brain is perfectly evolved for its core purpose – being a Teenager! Work with it, not against it.

From our first day on earth, we are equipped with almost all of the 100 billion neurons that we will ever have. Our first decade is a time of infinite possibilities, the brain keeps its options open and allows itself a fertile period of learning.

'Learn while you're young' is a good adage to adopt, as we have an almost blank canvas to take on new information and new skills.

The brain at this point (pre-puberty) can be thought of as a place that has the foundations and infrastructure for some good road networks, but as yet the work hasn't been started:



However, around the time your son started at Westlake, his brain began a process of differentiation. Neural tissue started to be rewired, reassembled, and upgraded. In order for your son to get better at certain skills, those that he needs the most, his brain must increase its connections to better the areas that serve these functions.

At this point it may be a good time to stop and reflect on the differences you have observed from when your son was aged 9 or 10 years old to now.

The teenage brain is not a child's brain that has grown a little more, nor an adult brain in waiting. It is evolved for its own specific purpose and should be treated as such.

In the brain of a teenager, many processes your son is utilising are happening for the first time. This takes a huge amount of time, effort, and energy....and often frustration. Things that an adult can take for granted, are first experiences for a teenage brain.

With all the above in mind, you may want to think of the teenage brain as a complicated and 'messy' road network. The roads are all there, but it is going to be easy for him to get lost and/or on the wrong road for his destination.



So, what is going to change this seemingly random and complicated road network with many twists, turns, dead-ends and uncharted terrain? The answer lies in a process called myelination. Myelination is the growth of fatty sheaths on neurons, acting as an insulator and boosting transition speeds by up to 100 times. Myelination also makes neurons more efficient, meaning they use less energy when sending messages and reducing the recovery time between firings by up to thirty times.

Myelination does come at a cost however, this being the loss of some plasticity or flexibility. This is because as the neuron becomes myelinated it loses some of its ability to make new synapses and adapt to a changing environment.

Therefore, if you haven't learned some key/crucial/foundational/fundamental knowledge at age thirteen or fourteen, it is only going to get more difficult to learn after that point.

The brain has a simple message for us: Use it or lose it.

When the myelination process is complete then we can begin to move into a phase where the brain is quick and efficient. You know exactly where you need to go and know the fastest way to do it.



Current thinking is that the age this finally happens is approximately 26 years old!

This means that you cannot accurately predict that your teenage son will always be able to link their thinking and emotions together well...hence some irrational scenes and unregulated actions in every home that has a teenager living in it.

Motor nerve tracks, responsible for physical movement and coordination, are well myelinated and networked by ages 15-16. This is why you see some outstanding athletes begin to emerge at this time. Similarly, peak functioning of emotions is most evident at ages 15-16, meaning that at this age boys feel their emotions so much more intensely than at any other stage of their brain development.

In contrast to the peak functioning of emotions and the emerging levels of athletic performance, the prefrontal parts of the brain, associated with executive functions such as:

- Planning
- Organising
- Paying attention
- Problem solving
- Regulating emotion
- Employing past experiences in new situations

are all growing at a much slower rate and not networked with the emotional brain structures.

#### What does this all mean for your son?

It means that you are much more likely to see a greater outpouring of emotionally driven, reward seeking behaviour in your teenager. As a parent, this will most likely be a testing and often frustrating time, however, it can be used to your advantage (we will look at how in future articles). However, for now, be at peace with the notion that your son will be engaging in a frantic search for rewards, at almost any cost. As an additional challenge for you, they will also be less adept at understanding the emotions of others, in comparison to adults.

You need to be constantly aware that your teenage boy has much less myelinated areas of the brain, particularly in executive function areas, this is an evolutionary fact and not something you will be able to change, no matter how skilled a parent you are. Added to this fact, is the limited 'life experience' of a teenager, they simply do not have the situational knowledge to draw upon when making decisions. Therefore, they need to activate more of their brain when trying to figure things out (particularly the emotions of others) and this really slows them down.

So, your son is going to enter into reward-seeking behaviour long before they are in command of the details of the situations they find themselves in. Your son, no matter how physically well developed, is going to be hampered by his lack of experience and his sensitivity to his emotions.

It will be at least a decade before he will be able to successfully and consistently utilise higher level cognitive structures to take dominance over those early developed emotional brain aspects.

Proceed with patience and care!

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