Your teenager's developing brain

As children become teenagers, their brains grow and change. These changes affect their thinking and behaviour. When you understand how, you can better help your child build a healthy teenage brain.

did you know

Scientists once thought that brain development stopped after the first few years of life. Now we know that it keeps going well into adulthood.

Teenage brain development: the basics

Children's brains have a massive growth spurt when they're very young. By the time they're six, their brains are already about 90-95% of adult size. But the brain still needs a lot of remodelling before it can function as an adult brain.

This **brain remodelling happens intensively during adolescence**, continuing into your child's mid-20s.

Some brain changes happen before puberty, and some continue long after. Brain change depends on age, experience and hormonal changes in puberty.

So even though all teenagers' brains develop in roughly the same way at the same time, there are **differences among individual teenagers**. For example, if your child started puberty early, this might mean that some of your child's brain changes started early too.

Inside the teenage brain

Adolescence is a time of significant growth and development inside the teenage brain.

The main change is that unused connections in the thinking and processing part of your child's brain (called the grey matter) are 'pruned' away. At the same time, other connections are strengthened. This is the brain's way of becoming more efficient, based on the **'use it or lose it' principle**.

This pruning process begins in the back of the brain. The front part of the brain, the prefrontal cortex, is remodelled last. The prefrontal cortex is the decision-making part of the brain, responsible for your child's ability to plan and think about the consequences of actions, solve problems and control impulses. Changes in this part continue into early adulthood.

Because the prefrontal cortex is still developing, teenagers might rely on a part of the brain called the **amygdala** to make decisions and solve problems more than adults do. The amygdala is associated with emotions, impulses, aggression and instinctive behaviour.

The back-to-front development of the brain explains why your child's thinking and behaviour sometimes seem quite mature, and illogical, impulsive or emotional at other times. Teenagers are working with brains that are still under construction.

Building a healthy teenage brain

The combination of your child's unique brain and environment influences the way your child acts, thinks

and feels. For example, your child's preferred activities and skills might become 'hard-wired' in the brain.

How teenagers spend their time is crucial to brain development. So it's worth thinking about the range of activities and experiences your child is into – music, sports, study, languages, video games. How are these shaping the sort of brain your child takes into adulthood?

You are an important part of your child's environment. You mean a lot to your child. How you guide and influence him will be important in helping your child to build a healthy brain.

You can do this by:

- encouraging positive behaviour
- promoting good thinking skills
- helping your child get lots of sleep.

Encouraging positive behaviour
While your child's brain is developing, your child might:

- take more risks or choose high-risk activities
- express more and stronger emotions
- make impulsive decisions.

Here are some tips for encouraging good behaviour and strengthening positive brain connections:

- **Let your child take some healthy risks.** New and different experiences help your child develop an independent identity, explore grown-up behaviours, and move towards independence.
- **Help your child find new creative and expressive outlets** for her feelings. She might be expressing and trying to control new emotions. Many teenagers find that sport or music, writing and other artforms – either as a participant or a spectator – are good outlets.
- **Talk through decisions** step by step with your child. Ask about possible courses of action your child might choose, and talk through potential consequences. Encourage your child to weigh up the positive consequences or rewards against the negative ones.
- Use family routines to give your child's life some structure. These might be based around school and family timetables.
- **Provide boundaries**, and opportunities for negotiating those boundaries. Young people need guidance and limit-setting from their parents and other adults.
- **Offer frequent praise** and positive rewards for desired behaviours. This reinforces pathways in your child's brain.
- Be a positive role model. Your behaviour will show your child the behaviour you expect.
- Stay connected with your child. You'll probably want to keep an eye on your child's activities and friends. Being open and approachable can help you with this.
- **Talk to your child about his developing brain.** Understanding this important period of growth might help teenagers process their feelings. It might also make taking care of their brains more interesting.

Teenagers are often passionate about their interests, especially ones that give them opportunities to socialise. You can help your child develop skills and confidence by supporting her interests, activities and hobbies.

Promoting thinking skills
Brain growth and development during these years mean that your child will start to:

- think more logically
- think about things more abstractly – things are no longer so black or white
- pick up more on other people's emotional cues
- solve more complex problems in a logical way, and see problems from different perspectives

- get a better perspective on the future.

You can support the development of your child's thinking with the following strategies:

- **Encourage empathy.** Talk about feelings – yours, your child's and other people's. Highlight the fact that other people have different perspectives and circumstances. Reinforce that many people can be affected by one action.
- **Emphasise the immediate and long-term consequences of actions.** The part of the brain responsible for future thinking (the prefrontal cortex) is still developing. If you talk about how your child's actions influence both the present and the future, you can help the healthy development of your child's prefrontal cortex.
- **Try to match your language level to the level of your child's understanding.** For important information, you can check understanding by asking children to tell you in their own words what they've just heard.
- **Prompt your child to develop decision-making and** problem-solving skills**.** Try role-modelling and suggesting a process that involves defining the problem, listing the options, and considering the outcome that leads to the best solution for all involved.

Getting lots of sleep

During the teenage years, your child's sleep patterns will change. This is because the brain produces melatonin at a different time of the day. This makes your child feel tired and ready for bed later in the evening. It can keep your child awake into the night and make it difficult to get up the next morning.

Sleep is essential to healthy brain development. Try the following tips:

- Ensure your child has a comfortable, quiet sleep environment.
- Encourage 'winding down' before bed – away from TVs, mobiles and computers.
- Reinforce **a regular sleeping routine**. Your child should aim to go to bed and wake up at regular times each day.
- Encourage your child to get an adequate amount of sleep each night. While the ideal amount of sleep varies from person to person, **the average amount of sleep that teenagers need is around nine hours**.

Risk-taking behaviour

The teenage brain is built to seek out new experiences, risks and sensations – it's all part of refining those brain connections.

Also, teenagers don't always have a lot of self-control or good judgment and are more prone to risk-taking behaviour. This is because the self-monitoring, problem-solving and decision-making part of the brain – the prefrontal cortex – develops last. Hormones are also thought to contribute to impulsive and risky behaviour in teens.

Teenagers need to take risks to grow and develop. You can **support your child in choosing healthy risks** – such as sports and travel – instead of negative ones like smoking and stealing. All risk-taking involves the possibility of failure. Your child will need your support to get over any setbacks.

Stress and the teenage brain

With so many changes happening to your child's brain, it's especially important that your child is protected and nurtured.

The incidence of poor mental health increases during the teenage years. It's thought this could be related to the fact that the developing brain is more vulnerable to stress factors than the adult brain.

Teenage stresses can include drugs, alcohol and high-risk behaviour, as well as things like starting a new school, peer pressure, or major life events like moving house or the death of a loved one.

But **don't wrap your child in cotton wool**! Too much parental attention might alienate your child.

Staying connected and involved in your child's life can help you to learn more about how your child is coping with stress. It can also help you keep an open relationship with your child and ensure that your child sees you as someone to talk to – even about embarrassing or uncomfortable topics.

It's thought that children are more likely to be open to parental guidance and monitoring during their teenage years if they've grown up in a supportive and nurturing home environment.

Every teenage child is unique, and teenagers respond to stress in different and unique ways. You know your child best, so it's OK to trust your instinct on how to support your child if he's going through a stressful time. It's also OK to ask for help from friends, family members or professionals such as your GP.

Getting help

Every child experiences changes at a different rate. If you're concerned about your child's rate of development or you have concerns about your child's changing body, thinking or behaviour, you could start by talking to a school counsellor or your GP. If you're really worried, you could look for a counsellor or psychologist. You don't need a referral, but you might prefer to have your GP recommend someone.

Other parents can also be a great source of support. Try talking with other parents at your child's school. You can also connect using our pre-teens forum or our early teens forum.

More to explore

- Mental health and wellbeing in adolescence: an overview
- Teens development: overview
- Happy teenagers and teenage wellbeing
- Teenage issues: what teens worry about
- Shifting responsibility to your child
- Dealing with disrespectful teenage behaviour

Web links

- Australian Early Development Index – Brain development
- headspace – Parents and Carers
- PBS Frontline – Inside the Teenage Brain (Interview with Jay Giedd)
- PBS Frontline – Inside the Teenage Brain episodes
- ABC-TV: Catalyst – Teen Brain video and transcript

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