

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.

- ✓ [Brain development: the basics](#)
- ✓ [Inside the teenage brain](#)
- ✓ [Building a healthy teenage brain](#)
- ✓ [Risk-taking behaviour](#)
- ✓ [Stress and the teenage brain](#)
- ✓ [Getting help](#)

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.

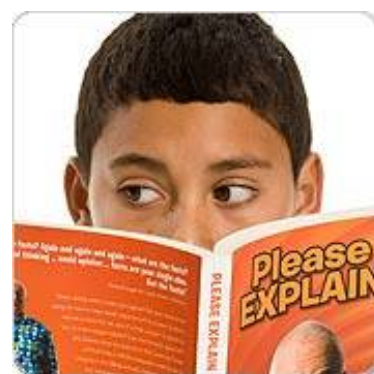
Some brain changes happen before puberty, and some continue long after. Brain change depends more on age and experience, not on when puberty starts. So even if your child started puberty early, this doesn't necessarily mean that brain changes started early too.

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 actions, solve problems and control impulses. Changes in this part continue into early adulthood.



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.

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 some of your child's thinking skills and behaviours seem quite mature, while others seem illogical, impulsive or emotional. 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. Your relationship with your child – as well as 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 desirable behaviour and strengthening positive brain connections:

- Remember that taking some risks can be healthy. New and different experiences help your child develop an independent identity, explore grown-up behaviours, and move towards independence.
- Your child might be expressing and trying to control new emotions. You can help your child find new creative and expressive outlets for how she's feeling. 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.
- Provide clear structure and routines. 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.
- Maintain a warm and approachable relationship 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.
- Be a positive role model. Your behaviour will show your child the behaviour you expect.
- 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.



Adolescence can be a great time for your child to explore new interests and learn new skills. 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 and passions.

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 consequences of an action. The part of the brain responsible for motivation is still developing, so concentrate on the here and now, not on how your child's actions will influence the distant future.
- 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. You can read more in our article on [problem-solving with teenagers](#).

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.



You can read more about [sleep for children aged 12-15 years](#).

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.

But the self-monitoring, problem-solving and decision-making part of the brain – the prefrontal cortex – develops last. This means that teenagers don't always have a lot of self-control or good judgment, and are more prone to risk-taking behaviour. 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. For more information, you can read our article on [risk-taking behaviour](#) during adolescence.

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. For teenagers, stresses can include drugs, alcohol and high-risk behaviour.

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 receptive to parental guidance and monitoring during their teenage years if they've grown up in a supportive and nurturing home environment.

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 skills or behaviours, 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 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](#).

Rated ★★★★★ (9 ratings)

More to explore

- ▶ Mental health and wellbeing in adolescence: an overview
- ▶ Staying connected: you and your teenager
- ▶ Social and emotional changes in adolescence
- ▶ Shifting responsibility to your child
- ▶ Supporting your teenager's growing independence
- ▶ Dealing with disrespectful teenage behaviour
- ▶ Understanding puberty
- ▶ When puberty is early or late

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
- ▶ Time Magazine – Inside the Adolescent Brain
- ▶ ABC-TV: Catalyst – Teen Brain video and transcript

GLOSSARY

melatonin

A hormone made in the brain. It is released when the body is in the dark, giving you the signal to fall asleep. Melatonin levels in the body remain high overnight. The hormone is switched off as day breaks.

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