

My teen brain

Information for
practitioners

Contents



Section one - The teenage brain

Growth, change and opportunity

The remarkable brain

Of all the organs in the human body the brain is the most remarkable. It is enormously complex, controlling every other organ and acting as the seat of physical, intellectual and emotional activity. For the teenager, the brain is an organ that is virtually unnoticeable, and most young people have very little idea of what is happening in their brains during and after puberty. For parents and professionals who are largely unaware of what is happening in the teenage brain, information about brain development can be extremely useful in learning how to cope with adolescent behaviour.

Many factors influence behaviour

What happens in the teenage brain has major consequences for all aspects of development. The brain is influential in relation to emotion regulation, perception, communication, sleep and the way relationships are managed. Thus the more we know about this topic, the more we will be able to understand adolescent development. Having said this, it is also important to underline that the brain is only one factor influencing teenage behaviour. We cannot ignore the part that genetic factors play, nor can we forget that the environment in which the young person grows up will have as much impact on behaviour as both genes and the brain.

The adolescent stage is particularly important

Magnetic resonance imaging (MRI) is a type of scan that uses strong magnetic fields and radio waves to produce detailed images of the inside of the body. With recent advances in MRI scanning technology it is now possible to say quite a bit more about the adolescent brain than was possible 15 or 20 years ago. Neuroscientists have shown particular interest in the adolescent brain for one simple reason. The years from puberty onwards are years when the brain shows more change and development than at any other time apart from the first three years of life. This makes the adolescent stage of particular importance, since we may be able to learn a considerable amount about the brain in general by studying this period of life.

Scanning is still in its early stages

As we look more closely at the teenage brain we should bear in mind that the technology of scanning is still in its very early stages. Although a lot has been learnt, it is essential to remember that this aspect of science is in its infancy. Some of the first findings about the adolescent brain have offered exciting insights into teenage development, but other early conclusions have proved controversial. We have learnt a lot in the last 20 years which is of enormous value in helping us to understand the behaviour of teenagers. However there is a long way to go before all the questions about this stage of life can be answered.

Key points for adults

- Learning about the brain will not answer all your questions about teenagers. But it will mean that you see adolescent behaviour in a different light.

Changes and individual differences

A time of major change

The primary finding derived from scanning technology is the identification of the enormous amount of change that occurs in the brain from puberty onwards. It has been established that this is a period of rapid and profound alteration in the brain. Interestingly it has also been shown that the brain continues to change and develop until the individual reaches the early twenties.

Everyone is different

The second thing to say is that everyone is different. Just as our physical appearance, our intelligence, and our personality differs from individual to individual, just the same is true of the brain. Everyone's brain is slightly different, and this means that the part the brain plays in determining development will vary according to the individual.

If we consider the physical appearance of teenagers, we know that change occurs at different rates for different individuals. As an example, some 13 year-olds will already look mature, whilst others will still look as if they are children. It is probable that growth and change in the brain also varies from individual to individual. Some brains will mature early, whilst others will take a little longer. This is all part of normal development.

Grey matter

Next we can identify some of the main changes that occur during this period. Grey matter consists of nerve cell bodies (neurons), nerve fibres and support cells and is responsible for transporting information from sensory and motor stimuli. The amount of grey matter increases in late childhood, and then is gradually re-arranged and re-organised during the adolescent years. This process is known as pruning and refers to a mechanism whereby unwanted connections between neurons are removed, allowing the existing connections to function better. The pruning process is not negative and is a normal and a necessary part of becoming an adult. It allows the brain to prune back grey matter, and to fine tune and ensure strong growth in the most used areas. A simple way to describe this process is to liken it to the pruning of a tree, where the weaker branches are cut back to allow the stronger branches to grow.

New connections

Another important change occurs as the connections along the nerve fibres become more mature. Connections between neurons become more efficient, as well as becoming stronger, and this process is referred to as myelination. As part of this process the connections between the two hemispheres of the outer surface of the brain (called the cortex) become better organised. The increased connectivity between the hemispheres allows the individual to use more areas of the brain, and to coordinate different aspects of brain activity.

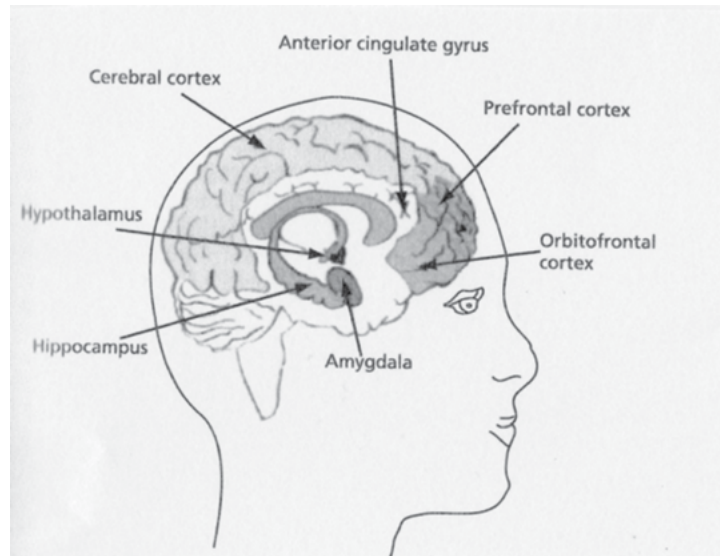
Neurotransmitters

We have talked about connections between neurons. These connections occur as impulses travel along the nerve fibres and move from one neuron to another. This movement is helped or hindered by chemicals in the brain known as neuro-transmitters. These are sometimes called chemical messengers, since they make a difference to the way in which messages are transmitted. Some neuro-transmitters help the impulses travel fast around the brain, but some do the opposite. These hinder or delay impulses, and this can result in the individual showing a lack of attention, or delay in response. Neuro-transmitters which hinder or delay impulses are most likely to be released when an individual is anxious or under stress.

Key points for adults

- Be aware that each person will develop in their own way.
- Be supportive to your teenager, big changes are underway.
- If you can understand something of what is happening in the brain, this will help you understand your teenager's behaviour.
- The brain will play a part in development, but so will the family, the school and the community.

Sites under construction



Thinking and planning

The research from the last decade has identified the sites or areas in the brain which undergo the most significant growth and change during adolescence. Two sites have been identified as being particularly affected by the developmental process. The first is the prefrontal cortex. This part of the brain is responsible for thinking, planning and problem-solving. It has a big part to play in memory, language development and the ability to think ahead. It is also influential in social interaction, preventing us from making inappropriate decisions and comments. Because this is a period of rapid development the brain is extremely malleable, so that the environment, including education, will be shaping the brain at this time.

Emotion and sensation

The second site undergoing rapid change is the amygdala, part of the limbic system. This area of the brain is associated with emotion, sensation and arousal. It is also the site that is sensitive to rewards. The influence of this area of the brain makes it more likely that the individual will choose something that makes him or her feel good, rather than opting for something that may be beneficial in the long run.

Both sites show marked change, but studies have suggested that, in some teenagers, the development of the prefrontal cortex may lag behind the development of the amygdala. If in the brain the amygdala has a more powerful influence than the prefrontal cortex, this will result in the teenager being more reward-sensitive. This has led researchers to argue that this explains why some teenagers are more likely to take risks, and to live in the moment. However more research is needed and this argument is still open to debate. It is important to remain cautious for the moment.

New learning is taking place

It is really important to emphasise that this is a period of rapid learning. The brain is changing, and new capabilities are developing at this time. Vocabulary is increasing, memory is improving, new thinking skills are evident in the school work that the young person is now able to do. Often adults concentrate on the negative features of teenage behaviour, such as moodiness, lack of communication and risk-taking. Whilst these may well be part of the overall picture, they are only one side of the coin. Keeping the positive changes in mind is important because adults have such a key influence at this time. The brain is undergoing major change, and this should be considered a sensitive period for development. The way parents, carers, teachers and other adults respond at this time will have a critical impact on the way the teenager's brain develops.

Key points for adults

- Changes in the brain will allow new learning and the development of new intellectual skills.
- The adult has a critical role to play in assisting positive brain development.
- Changes in the brain may explain some of the 'typical' teenage behaviour.
- While some teenagers may show risk-taking behaviour and reward-sensitivity, this will not necessarily apply to all.

Hormones

Hormone balance

It is well known that the release of certain hormones accelerates during and after puberty. The obvious example is the release of the sex hormones, such as testosterone and oestrogen. In fact there are a large number of different hormones affecting behaviour at any one time, and the teenage years are a time of significant change in the balance of a variety of hormones in the body.

Hormones and brain development

There are many different hormones which are active in the brain and which affect brain function. Some hormones, such as serotonin, have a positive impact on brain development. This is the hormone which is released when we feel happy or have a sense of well-being. At the opposite end of the spectrum is a hormone such as cortisol, released at times of stress and fear. Hormones such as this prepare the body for flight or fight, and are an essential feature of the capacity of the individual to survive threats in the environment. However we also know that continuing high levels of such hormones can hinder brain activity. At a critical time such as adolescence high levels of hormones like cortisol can be damaging to long-term brain development.

Mental health

Understanding the role of hormones can help us understand some common mental health problems, such as attention deficit hyperactivity disorder (ADHD). If a hormone like cortisol is released in the brain, this will affect the way the impulses travel along the nerve fibres. When hormones get out of balance the individual may over-react to certain stimuli, becoming jumpy and unsettled. It may become hard to concentrate for any length of time, and thus learning and paying attention in class may become a problem. This is just one example of how a symptom, such as hyper-activity, can be linked to the hormone balance in the brain.

Key points for adults

- Teenage behaviour will not always be consistent or sensible. Make allowances for this in your reactions.
- Remember that a lot is happening to the young person, much of which is invisible from the outside.
- Some hormones have a more positive effect on brain development than others.
- You can help your teenager learn how to deal with mood swings.
- Your support is essential during these years, as this stage is a critical period for brain development.

Sleep

Melatonin

It has been quite an eye-opener to discover that the way the body clock works in teenagers is not the same as it is in children or adults. The hormone melatonin, which is one of the main triggers that makes us sleepy in the evenings, is released approximately two hours later among adolescents than in other age groups.

Biological reasons for sleep patterns

If young people liked to stay up late at night, or resisted getting up in the morning, parents tended to put that down to teenagers just being difficult. Now we know that there is a genuine biological reason why adolescent sleep patterns are different from those of other age groups.

Young people need their sleep

This is an important finding, as young people need their sleep. If they get too little sleep both behaviour and learning can be affected. Parents have a key role to play here in helping teenagers get into regular sleep routines and ensure that everything possible is done to ensure sufficient sleep during the teenage years.

Key points for adults

- How much sleep a young person gets will affect learning and behaviour. Try to let teenagers catch up on sleep at the weekend.
- Young people may need help to develop regular sleep routines:
 - Have a regular night time routine
 - Avoid going on phones/tablets/listening to music etc. late at night
 - Have some relaxing time before bed
 - Try reading before bed
 - Avoid caffeine.

Section two - the role of adults at a time of rapid brain development

Significance

The role of parents and carers

Parents and carers of teenagers frequently feel that they no longer have a role as parents. They see that their sons and daughters prefer to talk to their friends rather than to them. They experience rudeness and disrespect, where previously they enjoyed warm relationships with their children. They are no longer sure about how to respond, or what parents of teenagers are meant to do when dealing with conflict and the need for independence.

Parents of teenagers matter

In fact parents and carers of teenagers matter hugely. They are just as important during the teenage years as they are during early childhood, but they are important in a different way. Everything we have said up to now about brain development underlines the key role of parents, carers and other adults at this critical time. All the research shows that parents have a profound effect on a teenager's development. In addition to brain development, things such as health and school achievement, self-esteem and risk-taking, all will be affected by relationships in the home.

The teenager is both child and adult

Why do some teenagers push their parents away? Why do they argue and challenge their parent's views all the time? These things are part of normal adolescent development. It may seem contradictory, but it does make sense. On the one hand young people need to try out being independent, and they need some space to do this without the help of their parents. On the other hand they are not yet ready to be completely independent. They are on a journey, and this will take time.

We can also link this to brain development. During a period of such major alteration in the brain it will take time to adjust to the changes, and this adjustment will not necessarily be smooth and easy. There will be ups and downs, and times of stress. As the brain gradually alters and becomes mature, it may be helpful to think that for a time inside every young person is both a child and an adult. This may help explain the contradictory behaviour.

Key points for adults

- Remember that your behaviour has a major impact on the young person.
- It will help if you know as much as possible about normal adolescent development.
- Be loving and warm. Offer encouragement where possible.
- Be involved, and show an interest in the life of your teenager.
- Teenage behaviour may appear contradictory, but there is always a good explanation for it.

Parenting styles

Different parenting styles

The concept of parenting styles refers to the different ways that parents behave with their sons and daughters. Some parents might put more emphasis on discipline, while others may be more relaxed and flexible about what the teenager is allowed to do. During the early 1960s psychologist Diana Baumrind conducted a study on more than 100 pre-school age children (Baumrind 1967). The four main styles commonly described are:

Authoritarian

In this style of parenting, children are expected to follow the strict rules established by the parents. Failure to follow such rules usually results in punishment. Authoritarian parents fail to explain the reasoning behind these rules. If asked to explain, the parent might simply reply, 'Because I said so'. These parents have high demands, but are not responsive to their children. According to Baumrind, these parents are obedience- and status-oriented, and expect their orders to be obeyed without explanation (1991).

Authoritative

Like authoritarian parents, those with an authoritative parenting style establish rules and guidelines that their children are expected to follow. However, this parenting style is much more democratic. Authoritative parents are responsive to their children and willing to listen to questions. When children fail to meet expectations, these parents are more nurturing and forgiving rather than punishing. Baumrind suggests that these parents monitor and impart clear standards for their children's conduct. They are assertive, but not intrusive and restrictive. Their disciplinary methods are supportive, rather than punitive. They want their children to be assertive as well as socially responsible, and self-regulated as well as cooperative (1991).

Indulgent

Indulgent parents have very few demands to make of their children. These parents rarely discipline their children because they have relatively low expectations of maturity and self-control. According to Baumrind, indulgent parents are more responsive than they are demanding. They are non-traditional and lenient, do not require mature behaviour, allow considerable self-regulation, and avoid confrontation (1991). Indulgent parents are generally nurturing and communicative with their children, often taking on the status of a friend more than that of a parent.

Indifferent

An indifferent parenting style is characterized by few demands, low responsiveness and little communication. While these parents fulfil their child's basic needs, they are generally detached from their child's life. In extreme cases, these parents may even reject or neglect the needs of their children.

The research on parenting styles has shown that the style that leads to the best outcomes for young people is the authoritative parenting style. This is because parents who tend to use this style are warm and loving, but also firm where necessary.

What young people need

Different parenting styles can lead to more or less conflict. Thus a parent who tends to use an authoritarian style may expect to have to deal with more conflict than someone who is indulgent. Yet, it is clear that an indulgent style is not what most teenagers need. They need to know where the boundaries are, and they need their parents to provide safety and security.

The authoritative parenting style

At the heart of the research on parenting styles lie two dimensions of parenting behaviour: these are responsiveness and expectations. The authoritative parenting style is high on both these things. The authoritative parent would be responsive to the individual needs of the young person, and would be warm and loving. However this parenting style also involves expectations. By this is meant having clear goals and communicating these to the young person. It also means providing firm boundaries so that the teenager understands the need for limits and structure.

Key points for adults

- The style that most fits the needs of a maturing adolescent is the authoritative style.
- Be clear about rules and consequences, but always explain your reasons.
- Be mindful of the young person's need for increasing independence.
- Be sure to ask your teenager's opinion. Listen to and respect their views, and if you agree with them take them into account. If you don't agree, explain why.
- Let the young person know they are valued and respected.
- Set the rules with the young person so that they have a say in how they are decided.
- Make sure all rules are age-appropriate and the young person is aware of what will happen if they are broken.
- Be sure that adults also take time for themselves.

Communication

Why won't my teenager talk?

Adults often feel that teenagers do not want to talk. The young person may grunt, turn away or show indifference. The adult then assumes that the young person has no interest in communication. However this is not necessarily true. Teenagers will talk, and indeed will want to talk, but in ways that feel safe. Teenagers will talk so long as they do not feel they are being interrogated. Young people will talk at times that feel right for them, such as in the car, or late at night. Teenagers will talk so long as their privacy is respected.

Communication goes both ways

One of the key facts about communication is that it is a two-way process. Talking and listening go hand in hand. If someone feels that they are being listened to, they are more likely to be open and communicative. One of the things that happens between adults and teenagers is that this process seems to break down, and this is often because the adult takes charge. The adult sees communication as telling the young person something or getting a message across. Because of this, it is not surprising that the young person has the sense of not being heard. Communication becomes a one way process, with the young person expected to be the listener. When parents and teenagers are really listening to each other communication between the generations can work well.

Communication is a skill that can be learnt

While it is clear that things such as driving a car involve a skill, it is rarely recognised that communication is skill too. As a result of brain development teenagers go through a period of rapid learning in their thinking and language development. Learning to communicate is part of this process. Teenagers often say that adults are good at talking, meaning that they themselves feel less confident about getting the right words out at the appropriate time. Adults can play a key role here in helping young people develop communication skills, something that is essential in all relationships.

Key points for adults

- Be flexible about the timing of any conversation. Try to find a time that is good for the young person.
- Be prepared to allow teenagers a degree of privacy. This is essential as part of the growing-up process.
- Teenagers do want to talk, as long as their needs are respected.
- Communication is a two-way process. The more one person is prepared to listen, the more the other will be prepared to talk.
- Try and make yourself available to your young person by letting them know when you are free to talk (and listen) if they want to talk about anything.
- Communication in a car is sometimes a good time to talk, as there is no eye-contact and the young person doesn't feel interrogated.

Managing conflict

Why conflict?

Conflict can be caused by many different issues in the family. With teenagers disagreement often occurs as a result of differences of opinion about household rules, or about the behaviour of the teenager. Many conflicts arise because of the boundaries that parents put in place, such as the time to come home at night, or use of the internet. As has already been noted, teenagers need boundaries, even though they may complain, or resist them through disobedience or non-compliance. Boundaries create safety and security, and without boundaries young people feel lost.

More on parenting styles

Different parenting styles will lead to more or less conflict. The parent who is authoritative is responsive to the age and the needs of the young person, while at the same time setting clear goals and boundaries. Conflict can be reduced if the boundaries are set with the interests of the young person at the centre, and if the reasons for any limits are clearly explained. Boundary setting should be done with the teenager's welfare at heart, and not for the convenience of the adults involved. If at all possible any rules or limits should be negotiated with the young person in advance. This can have the effect of reducing conflict, while at the same time helping the teenager to learn about conflict management.

Sanctions for teenagers

There are bound to be situations where the rules are broken, and sanctions may have to be imposed. These will need to be age-appropriate, and suitable for the circumstances and for the individual. Sanctions used often by parents of teenagers include grounding, loss of privileges, loss of pocket money, and various restrictions on freedom. There is no right or wrong answer, and each family will have different ideas about what will work with their teenager. It is important to note that harsh or punitive sanctions are almost always counter-productive, leading to greater conflict in the long-term. The more sensible the rules, and the more explanation there is for any sanction, the lower the level of conflict is likely to be.

Key points for adults

- As teenagers take more control over their lives, there may be conflict with parents. It is part of the process of growing up.
- Parents can manage conflict, and reduce the extent of it, by using an authoritative parenting style, and setting boundaries and limits which are clearly in the best interests of the young person.
- Be prepared to listen, and don't rush to judgement.
- Make sure that all rules are fully explained, and are for the benefit of the young person or the family as a whole.
- Sanctions should be linked to the misbehaviour, and should be fair and age-appropriate. Be clear as to why the sanction is being imposed.
- Only make sanctions that you intend to uphold – don't make false threats.
- Avoid harsh punishment, this will only lead to more conflict.

Section three - Risk and resilience

Understanding risk

What is risky behaviour?

There are many types of risky behaviour. Some are potentially more harmful than others. Almost every teenager will drink too much alcohol at one time or another, but only a few will experiment with hard drugs. Seriously risky behaviours tend to cluster together, so heavy drug use may go alongside engaging in unsafe sex, or taking risks with personal safety.

However taking normal risks is part of everyday life e.g. learning to ride a bike, learning to swim, using the internet, starting a new project etc. If we are not prepared to take an element of risk we would not get very much done! As children get older, the adults in their life have less control of the risks that they are taking and that can feel scary.

Why do teenagers take risks?

Adolescent brain development is one reason why teenagers take risks, but it is only one reason out of many possible explanations. It may be that for some teenagers, and for a short period, the reward sensitivity that is associated with the development of the amygdala in the brain will become more powerful than the thinking and planning associated with the prefrontal cortex. Of course there are other reasons why teenagers take risks, including alcohol or substance use, peer pressure, low self-esteem, and lack of suitable or interesting activities. It is important to remember that there are big individual differences. Many teenagers do not engage in serious risk-taking, or only do so on rare occasions.

The trainee adult

Some risk-taking has a positive function, as it provides a means for teenagers to learn about harm and safety. Young people have to experiment to find out what is right for them, and to discover the limits of sensible behaviour. Teenagers are sometimes referred to as trainee adults. Trainees do not always get everything right, and they learn by their mistakes. Risk-taking, as long as it is not too serious, can offer valuable learning experiences.

Learning to think ahead

Risk-taking can occur in many different settings. Young people who leave their homework to the very last minute are taking one type of risk. Teenagers who self-harm or who stay out late at night without a means of getting home are taking very different risks. Risk-taking can occur in the health arena, at school or at work, in social relationships and so on. This leads to the conclusion that learning about consequences, and being able to think ahead, are the most important skills for teenagers to develop. Adults can help with this, by providing opportunities for young people to develop age-appropriate skills for independence. Adults can also enhance the development of the brain by encouraging curiosity and by offering as wide a range of intellectual and physical activity as possible.

Key points for adults

- Remember that not all risk-taking is bad. It depends on the circumstances. Some risk-taking is essential for learning.
- Be willing to allow the young person gradually increasing levels of independence.
- Letting go is one of the hardest tasks for parents and carers. Try and accept it gracefully.
- Talk to the young person about the risks we all take and discuss any concerns you may have with them.
- If things do go wrong, do provide as much support as possible. The lecture and the sanctions (if there have to be sanctions) can come later.
- Not all teenagers take risks. Those who do take risks may do so because of the stage of brain development, or because of other factors such as peer pressure or low self-esteem.

Protective factors

What is meant by protective factors?

Protective factors are the elements in the life of the young person that help reduce the chance of serious risk-taking. These include individual, family and social factors. Protective factors also come into play following a risk-taking incident. Here, for example, a parent may act to minimise the consequences of a negative event. Parents can also play a role in encouraging and supporting healthy brain development. The more opportunities the young person has to plan ahead, the more development there will be in the areas of the brain associated with problem-solving and thinking about consequences.

Everyone has negative events in their lives. In the case of the teenager these could range from failing an exam, to a health risk, or involvement in anti-social behaviour. Where protective factors are in place these will help to reduce the chances of harm following such negative events.

Individual differences

It is an obvious thing to say, but no two individuals are the same. In the case of risk-taking, teenagers will vary enormously depending on age, stage of development, gender, ethnic background and so on. In addition to this, factors such as personality, intelligence and interests will also play their part. Even within the same family siblings will differ in their approach to risk-taking behaviour. It is important to keep individual differences in mind when considering risk-taking.

The role of the family

It is generally believed that the family acts as one of the most important protective factors in relation to risk-taking behaviour. The more parents and other family members remain engaged and supportive of the teenager, the less the chance of risk-taking. It is not only parenting styles that are important here. Parents and other adults act as role models in many spheres. Parental behaviour will have an influence on the young person, and this influence will include health behaviours, the management of conflict, and of course, risk-taking itself.

Peers and the school

While many adults see the peer group as having a negative influence, the peer group can act as a protective factor. There are many different types of peer influence, not all of them bad. In some circumstances the peer group can protect the individual's safety and help to reduce the extent of risk-taking.

The school has a part to play too. Research shows that schools vary in the impact they have on out-of-school behaviour. The more engaged the young person is in school, and the more identified he or she is with the school ethos, the lower the chances of serious risk-taking.

Key points for adults

- Don't be too hard on the teenager if mistakes are made. Not everyone gets it right first time.
- Try to ensure that as much learning as possible is gained from any mistakes that are made.
- Remember that the family has a major role to play. Parents and carers are the first line of support when things go wrong.
- Don't forget that friends and the wider peer group can be a source of support too.
- Engage with your teenager's friends, and get to know them. They can play a big role if your teenager runs into difficulties.

Resilience

What is resilience?

Resilience has many different meanings. It can mean the capacity to overcome serious adversity, such as trauma, bereavement, life-threatening illness, or poverty and deprivation. In this sense it applies to a relatively few individuals.

Resilience can also mean a general characteristic such as grit or determination, applying to everyone. In this sense resilience is taken to mean the ability to bounce back after upset, or to be able to overcome obstacles.

How can we promote resilience?

The promotion of resilience differs depending on the meaning. We can all play a part in helping our young people become resilient and confident adults by helping them overcome challenges. Research shows the positive impact that a supportive adult can have in a young person's life. We can also relate this to brain development, since the more effective the brain becomes in problem-solving, the more likely it is that the teenager will become a resilient individual.

Resilience can be taught in schools as part of a life skills or Personal, Social, Health and Economic Education (PSHE) curriculum. Similarly all adults will be able to recall times when they have had to overcome challenges and can use this knowledge to help and guide young people who are experiencing difficult times.

Of course resilience can also be developed as part of learning in the family. However where resilience is applied to the overcoming of serious adversity, it is a more complex process.

For an individual to be resilient in the face of serious adversity it is generally considered that individual, family and community factors can all play a part. The stronger the protective factors (as defined in the previous section), the more possible it will be for the individual to show resilience in the face of adversity.

Key points for adults

- Resilience has different meanings. In one sense it applies to everyone, but in another sense it only applies to the few.
- Resilience for everyone can be promoted in school and in the family.
- For those facing serious adversity it is a more complex process.
- Relating to and/or relying on those who you can is very important for resilience.
- We are all unique, diverse and brilliant in our own way. Understanding our own strengths and using them, is key to our resilience.

Booklist

Books about the brain

“Blame my brain” by Nicola Morgan. Walker Books. 2103

“The teenage brain” by Frances Jensen. Thorsons. 2015

“The brain: the story of you” by David Eagleman. Canongate. 2105

“The science inside the child: the story of what happens when we are growing up”
by Sara Meadows. Routledge. 2016.

Books about parenting

“Why won’t my teenager talk to me?” by John Coleman. Routledge. 2014

“Parents and digital technology: raising the connected generation” by Suzie Hayman and John Coleman. Routledge. 2016

“Whatever! A down-to-earth guide to parenting teenagers” by Gill Hines and Alison Baverstock. Piatkus. 2006.

“How to talk so teens will listen and listen so teens will talk” by Adele Faber and Elaine Mazlish. Picadilly Press. 2006.

“Get out of my life, but first take me and Alex into town” By Tony Franks and Suzanne Wolf. Profile Books. 2008.

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Baumrind, D (1991) “Effective parenting during the early adolescent transition”. In Cowan, P.A. and Hetherington, E.M. (Eds.) Advances in family research (Vol. 2). Hillsdale, NJ. Erlbaum.