

How long are you able to read something or think carefully about a topic without being distracted by something else? Are you happy with the length of time you can do this? Does it depend on the time of day or what you are doing? Has it changed over the years for you?

The questions above are about something called “attentional control” – in other words our ability to keep our attention and thoughts focused on a chosen task, object or idea for a set period of time. Attentional control may involve two separate brain systems – with one responsible for *increasing and maintaining* focus on *relevant* information and a second set responsible for *suppressing* urges to attend to *irrelevant* information (i.e., looking elsewhere, doing something else, changing the topic and thinking about something else). These two systems improve gradually from childhood to young adulthood (and start to decline again in middle to older adulthood- with some studies suggesting it is the “suppression systems” rather than the “focus systems” which fail first).

It seems that attentional control skills are important to our ability to learn and problem solve. In fact, some psychologists have theorized that one reason for the “clustering” of cognitive skills in humans is that attentional control is what underpins many or most of them. In other words, if we can stay focused well enough and for long enough, we can do well in almost anything!

The opposite of a good attentional control is inattention and distractibility: in other words when our thoughts and attention are *involuntarily diverted away* from an idea or task we were focusing on onto other topics. Inattention and distractibility problems lead to forgetfulness, slowness in completing tasks, organization difficulties, difficulties maintaining focus in conversations, the forgetting of instructions, difficulties focusing on school/homework tasks and a host of other problems related to not being able to keep attention focused.

Everyone (children, young people and adults) struggles with inattention and distractibility problems at times - especially in the face of challenges such as tiredness, boredom, pain and being in the presence of more interesting distractions. However, some people have more significant difficulties than others. With regards to children and adolescents, about 20% of them have at least moderate difficulties with inattention and distractibility, with 4-5% having severe difficulties.

Those with severe difficulties with attention and distraction may be diagnosed with having a psychological disorder - Attention Deficit Hyperactivity Disorder (ADHD). If they only have problems with inattention and distractibility this is called Attention Deficit Hyperactivity Disorder *Predominantly Inattentive type* (ADHD-I). If they have problems with inattention and distractibility AND problems with hyperactivity and impulsivity, *this is called ADHD Combined Type* (ADHD-C).

To get a diagnosis of ADHD-I, young people need to have 6 or more of the symptoms below:

- Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or with other activities.
- Often has trouble holding attention on tasks or play activities.
- Often does not seem to listen when spoken to directly.
- Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., loses focus, side-tracked).
- Often has trouble organizing tasks and activities.

- Often avoids, dislikes, or is reluctant to do tasks that require mental effort over a long period of time (such as schoolwork or homework).
- Often loses things necessary for tasks and activities (e.g., school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).
- Is often easily distracted
- Is often forgetful in daily activities

(For a diagnosis of ADHD-C, children/young people also need to have symptoms of hyperactivity /impulsivity - I will not list these here as this is not the focus of this article.)

To be diagnosed with ADHD, these symptoms above need to have been present in kids before they were 12, be present in at least two settings (i.e., not just school), cause significant problems for them, not be better explained by another disorder and finally (and this is important) these symptoms above need to *occur much more frequently* than they do in other children of a similar age.

Whether or not they reach the level of a being able to be diagnosed with formal disorder, difficulties with inattention and distractibility can lead to serious challenges in other areas for young people. Some research has suggested that inattention specifically (above and beyond other challenges such as hyperactivity) might be part of what leads to learning difficulties, anxiety, challenging behaviours and social problems.

One particular problem that many children with attention and distractibility challenges have is with something called “working memory”. Our working memory skills refer to the ability we have to hold relevant information in our mind while we are solving a problem/doing a task (for example – keeping the first set of numbers in our head while solving a multi-step maths problem, or remembering what we are doing when we are getting ready to go out). Not all children/teens with attention problems have working memory problems – but many do, and this may contribute to difficulties with attention (if we can’t “hold in mind” what we are doing/trying to think about, then we are more likely to get distracted from that task/thought).

Problems with attention (and working memory) can have long lasting effects beyond childhood. A New Zealand study found that attentional control as measured in childhood related to educational, social and work outcomes 20 years later.

It is worth noting however that many children/young people do improve in this area - and often improvements are seen right up until early adulthood. However, some do not: a study published in 2018 which followed 5000 children from childhood into adulthood found that 1/3 children with symptoms of ADHD still had symptoms in adulthood. Another separate study found that children/teens with difficulties with attention and distractibility were more likely over the longer term to continue having these particular challenges than difficulties with hyperactivity and impulsivity.

How do we assess problems with inattention and distractibility?

If you think your child/teen has difficulties with inattention and distractibility, then you understandably would expect they should be able to be assessed by a health professional to figure out the extent of these problems and to see whether they have genuine and real problems in this area. Unfortunately, this is easier said than done.

There are three methods for assessing inattention and distractibility. The first is a *clinical Interview*, in which health professionals ask a list of questions about attention and distractibility problems. These include when they occur, how long they have been present for and how much they interrupt functioning.

A good clinical interview of course would include asking for input from a range of people – the child/young person themselves as well as parents/family members and teachers for example.

While a clinical interview is an important way to collect information, the result obviously entirely depends on who you ask and how they feel about the problem, and these answers can vary a great deal. It is easy for teachers, parents/caregivers and young people themselves to both under-estimate or over-estimate problems with attention because all of these people do not always know what is “normal” for kids/teens at various ages. They may also not know whether the attention problems are due to genuine attention/distractibility difficulties – or other underlying learning or emotional problems.

A second potentially more useful method for measuring problems with inattention/distractibility therefore is by using *rating scales*. These are questionnaires (usually measuring both with inattention/distractibility and hyperactivity/impulsivity challenges) for young people, parents/caregivers and others (e.g., teachers) – for example (e.g., SNAP-IV 26 - Teacher & Parent Rating Scale – available free online) in which children/young people’s scores can be compared to “norms”.

While rating scales remove some element of “over” and “under” estimation of problems, we should be aware that these too are subjective and therefore can lead to problems with bias and expectation effects. For example, one study found that a group of teachers rated a huge 75% of young people in their class as having attentional problems. Other studies have found that these rating scales often have very low “interrater agreement” – in other words, teachers versus young people versus parents (and even one parent versus another parent) often disagree about the degree of attention problems which exist. Other studies have found that the results depend on the day you ask a parent (and even the mood they are in at the time!).

None of these problems mean we shouldn’t use rating scales however we do need to use them carefully.

A third way of assessing attention challenges is to use standardized cognitive or neuropsychological tests of attention. These consist of computer or pen and paper tasks which are usually simple but require close attention /avoidance of distraction for a set length of time (for example the *Continuous Performance Test* and the *Test of Variable* attention).

Unfortunately, children with many kinds of learning challenges struggle with these tests, not just those with inattention/distractibility challenges. Also, some children with genuine with inattention/distractibility challenges observed in real life do not find the tasks in these particularly difficult – possibly due to them not being overly long and occurring in a quiet and controlled “test” environment.

Overall therefore, unfortunately the assessment of inattention/distractibility presents ongoing challenges which have not yet been solved.

What causes inattention and distractibility difficulties?

Inattention/distractibility difficulties are likely to have a biological basis of some kind. For instance, some studies estimate up to 85% of ADHD (all types) can be linked to genetic causes. There has been much wider acknowledgement over the past few years of the biological component of attention problems – and this has done a great deal to reduce stigma, reduce shame and encourage help seeking.

However, like most psychological challenges, it is likely that there are also non biological and environment factors which contribute to inattention/distractibility difficulties in young people. For example, there have been studies on factors such as diet (sugar and energy drink intake for example), sleep, general health,

levels of physical exercise, parenting behaviours and general psychological well-being – all showing that these factors often do influence the *extent and severity* of inattention and distractibility in children and young people.

Are problems with inattention and distractibility made worse (or even caused) by use of technology?

One particular potential environmental influence on distractibility which has been the subject of much scrutiny in recent years is the usage of technology. In today's world most of us are constantly breaking our attention from what we are doing or thinking about to look at or use technology. Just for your interest here is a selection of study results I've read recently: we look at our smart phones for up to 5-8 hours a day; students use their laptops for non-class activities for 20% of the time spend in class; employees in some settings are able to focus on tasks for an average of only 60 seconds; Australian teens in some studies send an average of 80 text/in app messages each day and so on.

It is a reasonable question to ask whether this regular and frequent breaking of attention we do as a result of technology is having a long-term effect on our attention skills. This is something I certainly have concerns about for myself. Many years ago, I would read for hours almost without blinking – now I'm lucky to get to 15 minutes before checking my phone.

Before I start discussing the research, it is interesting to remember that “we can't concentrate these days” is not a new concern: 2300 years ago Aristotle bemoaned that many people were too distracted by listening to others play the flute rather than focusing on the discussion they were having with others, and in the early 1900's an ironic cartoon emerged showed a couple ignoring each other while being distracted by their telegraph machines!

However, this issue has generated a lot more concern in the age of the internet and smart phone. In the last 10 years there has been a flood of studies examining the potential relationship between our attention skills and technology use – with many of them finding a significant relationship.

For instance –a 2019 study found that pre-schoolers who had more than 2 hours of screen time per day (both gaming and passively watching video) reported more difficulties with inattention than children who had less than 30 minutes per day. Another study found that adolescents who met the criteria for internet gaming disorder had significantly more difficulties with inattention in objective testing than a control group. A 2018 study found that the more adults used their smart phone in an “absent minded/non goal driven” manner in any given day, the more problems they had on tests of inattention and distractibility on that day. Another 2018 study found that 15- and 16-year old's who were heavy social media users were more likely to develop difficulties with inattention over a period of two years compared to lower social media users. Children diagnosed with ADHD (both ADHD-C and ADHD- I) have been found in several studies to play more hours of video games per day than those who don't. Other studies have found that those who spend more hours a day *multi-tasking* with media (i.e., using multiple technology devices/platforms at one time) have poorer attentional control than those who either use less technology altogether or who used one technology device/platform at a time. Other researchers point to the fact that there has a recent increase in ADHD diagnoses in countries with increasing technology use, and suggest these may be related.

*Before we get ready to throw all our kids' (and our own!) devices in the bin, it is very important to note that the basis of all the research cited above is what psychologists called correlational. We *do not* have any studies (nor are we ethically likely to get any) which put children into a “use technology” or “don't use technology” group and then follow both groups up to see the impact of low and high amounts of technology on their attention skills.*

This means we know these two issues (inattention/distractibility difficulties and technology use) go together, but we don't know which causes which. In other words, we don't know that it is the technology *causing* the attention problems. Instead, it could be either that children/teen's attention problems are *causing* the increased technology use (for example, it could be that kids with I/D issues may be more drawn to tech and use it more frequently). Alternatively, it could be that there is some third underlying factor which leads both to children using more technology use and to having more attention problems.

I should also say that there have been some studies which have investigated this issue and *failed* to find a difference between high media users and those with attention problems. Given something called "publication bias" (the fact that more research gets published if it "finds something"), it may be there were more of these we can't read about. Finally, there have been a few studies in which action games actually *improved* the cognitive skills (including their attention skills) of the (adult) participants.

All in all, while technology use may play a part in contributing to attention/distraction difficulties in young people, my feeling is it is unlikely to be the primary or sole culprit in any given child – but just one piece in a complicated jigsaw.

How to help young people with difficulties with inattention and distractibility

Here are some ideas to help children and teens manage their difficulties with inattention and distractibility.

1. Explain attention and concentration – and why it matters

It can be helpful to explain the concept of attention to young people, to provide information about why it matters and why they should consider working on this skill. Of course, we need to do this in a way which doesn't make them feel bad about themselves.

Here are some sentences we might explain this (this will need to be varied of course depending on the age of your child).

Paying attention or concentrating means fixing our eyes, ears and thoughts on something. It also means saying "not now" when our brains try to get us to look at, listen to or think about something else. This can be like shining a very bright torch light on something and keeping the torch very still – just on the one thing we are looking at.

Being able to pay attention or concentrate on something without getting distracted isn't something we have to do all the time – but it is really important we can do it at least sometimes.

When we are good at paying attention, it sometimes helps us to do other things – like school work, hobbies and sport, having good relationships/friendships and feeling good about ourselves.

Some people have more difficulties with attention/concentration than others. That's not their fault, it's just the way their brain is. But because the brain is a little bit like a muscle, we can slowly get a bit better at learning to focus, concentrate and pay attention if we practice.

2. Teach strategies for minimizing distractions

Once we have explained inattention and distractibility problems to children/young people we can then start to teach them how to increase their concentration and attention skills.

The first important strategy to help them do this is to help them **minimize distractions**.

We need to help them minimize both *external* distractions (things they can hear and see) and *internal* distractions (mind wandering, other ideas/thoughts/feelings/sensations).

Minimizing distractions makes it easier for children and young people concentrate more effectively. Then, when young people do more bursts of effective concentration this may also improve their concentration skills in an ongoing way through practice and positive self-concept effects (“I *can* do this”).

We might explain the minimizing of distractions to children/young people using words like the following (again, exact words will depend on their age):

“Distractions are things which we are tempted to look at, listen to, think about or do when we are focusing on something else. We have ‘inside our head distractions’ –ideas or feelings which seem more interesting or important to think about.

We also have “outside our head” distractions –things we can hear or see which seem more important to look at or listen to.

When we want to concentrate, we should try to make our distractions a little bit harder to see, hear, do or think about. We can’t take them away entirely, but making them harder to see, hear and do will help us concentrate a little better.

Here are some of the common ways to minimize distractions that children/teens may find helpful (with all of these dependent on the child/teen’s age and situation).

- Sitting closer to the focus (i.e., the teacher) to be able to less likely to see other input (minimizing visual distractions)
- Using white noise or using headphones (minimizing auditory distractions)
- Writing down thoughts/ideas/feelings which are repeatedly coming to mind to help “park” them for later (minimizing mental distractions)
- Closing their eyes when trying to think hard about a problem (minimizing visual distractions – incidentally one study found this significantly helped children solve maths problems)
- Closing doors when studying (minimizing visual/auditory distractions)
- Turning off or removing technology (phone away, tabs closed)
- Deleting apps/programs (from certain devices or altogether) to limit their use
- Using other apps and programs (Stay Focused, Freedom and others) to limit the use of other apps/programs when trying to study/do other tasks
- Writing down a plan for when they can do other tempting activities (“parking” mental distractions)
- Turning off music, turning it down or using music without lyrics (minimizing auditory distractions)
- Removing clutter, toys, games, rubbish from the environment (minimizing visual distractions)

It can be helpful to sit with a child/teen for a period of time to see whether we can observe exactly what breaks their attention/distraction and in what situations. This way we can tailor strategies which minimize distractions to the particular young person.

3. Teach strategies to notice distraction and to build quick refocusing of attention

Minimizing distractions is a great first step but it is usually impossible (or inappropriate) to entirely remove all of them.

Another important group of strategies therefore is to help children and teens to *notice* when distractions have diverted their attention and to as quickly as possible “refocus” back on the task at hand.

Here are some strategies which can be helpful for either the noticing of distraction or the quick “refocusing” of attention.

- Have young people set goals for how long tasks should take, and for them to check timers/use alarms to monitor their progress (helps with noticing periods of distractibility).
- Have alarms or sounds which prompt refocus. Some teens have alarms going off every 10 minutes during intense homework periods to remind them to refocus if needed.
- If (and sometimes this is a “big if”!) it doesn’t damage child/parent relationships, parents may be able to provide code word prompts to “refocus” after agreed upon periods of time.

4. Teach strategies for to reduce reliance on (or not “overtax”) working memory

As discussed above, many children and teens with difficulties with attention and concentration will also have difficulties with working memory. It’s also worth noting that working memory problems don’t just exist alongside distraction problems but may in themselves lead to more distraction problems (if kids/teens can’t mentally “access” the information they need in working memory to solve a problem/do a task, they will be more likely to become distracted).

Therefore, often a big part of helping young people with distraction is helping them to reduce their reliance their problematic working memories.

Here are some strategies which can help with this:

- Help kids/teens have pen and paper at hand to write down points and ideas when doing homework (even when using a laptop)
- Encourage them to write out the steps of complex problems rather than relying on mental strategies.
- Ask students to “say out loud” what they are trying to write before they write it (reduces reliance on working memory as “saying” often requires less mental effort than “writing”)
- Teach students to break tasks down into simpler tasks – (i.e., write what you know first, write essays using “little kid language”, write very short sentences first before adding extra complexity etc.).
- Having children/teens use visual task lists. For example, young children can have “picture lists” for everything, from steps to getting ready in the morning, what to do when doing tasks at school and the steps they need to take to clean their room.
- Older teens can (and usually should) use written lists for all to do items like homework and at home chores. By the way, it is not enough for lists to be written – we also need to build in prompts to actually look at these lists (posters, systems, reminders, alarms).
- Teach children/young people to recite phrases in their mind as they are walking to places (shoes on, shoes on, shoes on).

5. Encourage young people to avoid “overtaxing” their concentration and working memory and instead gradually practice increasing the length of time they concentrate and focus

It is important that young people do not *overtax* their attention and concentration systems by trying to concentrate for too long or to attempt problem solving which requires high working memory skills. This will just lead to discouragement and further distraction.

Conversely however, it is usually important that young people DO gradually increase the length of time /working memory requirements of tasks in order to improve their skills in this area. Some writers call this “top down” (skill building) strategies compared to “bottom up” (working around the issue) strategies above.

An analogy I use with kids/teens might make this clearer.

Trying to improve our attention and concentration skills is like trying to build up our ability to run long distances. If we try to run a marathon before we are fit enough – we will exhaust ourselves and fail. However, if we don't push ourselves by trying to run just a little longer each time we train – we will never improve.

To run a marathon, we have to do two things: a) gradually but b) consistently increase the amount of time we run as time goes by.

This means we want to have children and young people practice focusing their attention for gradually longer periods of time without them “maxing out” their attention. Strategies to do this might include:

- Get kids/teens to use the clock/timer to focus intensely for shorter periods of time and then have a restorative break (more on these breaks in a minute). They can record their times spent concentrating and set goals for new concentrating time periods as they improve.
- We can do the same but instead of using length of time as the metric, we can use length of material read or written (i.e., one paragraph, then one page, then two pages etc).

We can also help children and teens "practice" with increasing distractions and/or trying to beat their time in completing tasks. For example:

- Having a young person try to read as much of a story as possible in a short amount of time while we actively try to distract them. After each round ask the young person how many times they managed to re-focus and how they did this (e.g., I told myself “Ignore that, keep concentrating”).
- We might deliberately mess up a room and then have a young person tidy a room with our help, as quickly as they can and try to beat their time. To show the usefulness of visual lists and plans, we can do this with and without the plan to see if having the plan is useful.

6. Encouraging young people to have more restorative breaks

Research shows that it is not just “breaks” from concentrating which are important to renew our ability to refocus but instead *restorative* breaks – those in which we move away from what we are doing, move our body or change our focus entirely.

I find teens in particular do not often take restorative breaks when they are doing homework/study. They sit for hours at the same desk, often only working efficiently for several minutes at a time. They very frequently “break” from study tasks to use their phones/computers to do non-homework tasks but do take longer and more effective breaks.

Restorative breaks for young people might include:

- Exercise or stretching
- Being in a different room or place from where they are concentrating
- Doing an entirely different (possibly creative) task
- Being outside – and looking into the distance rather than at a screen.

We might ask young people to plan the length of time they are going to work without a break, and also plan how long (and how to make restful) their breaks.

7. Helping young people look after their health

Several studies found that making positive changes to children and young people's diet, sleep and level of exercise resulted in improvements in attention and concentration skills. This is of course an ongoing challenge for us as parents, but if we make small changes in each of these areas, it is likely this will help children manage inattention challenges a little better.

8. See a health professional for medication review

I haven't discussed medications in this article as it is outside my scope of expertise. There has however been a great deal of research to show that pharmaceutical treatments can be very beneficial for many young people with severe difficulties with I/D, at least in some areas and at least in the short term. Like most medications, however, there does appear to be some potential risks (e.g., possible side effects and long term "tolerance" effects) with these needing to be discussed thoroughly with an informed health care professional to help families weigh up these risks against the potential benefits.

9. Building of self-reflection and monitoring skills in children/teens

Helping children/young people to get better at attention/concentration skills by giving them a list of strategies and forcing them to use them does not build long term skills in this area. Instead, we want them to be able to self-monitor and improve in this area over a lifetime. To do this, it is important to ask children/young people to reflect on their attention/concentration in different situations and when using different strategies.

To do this we might ask them to rate (out of 10 for example) their attention/concentration in different situations and before and after using different strategies. We can ask them questions like: *What helped? What made it better? Do you have any other ideas for how I can help you in this area? What would you like to do next?*

Helping young people to reflect, monitor and plan their own strategies is likely to lead to more stable and more long-term improvements.

10. Remembering to celebrate the uniqueness of individual children and young people

Finally, it is important to acknowledge that a tendency to struggle with inattention and distractibility is not entirely negative. The ability to break focus to notice "what is over there" may have been responsible for the survival of our species (for instance I imagine it was pretty important to prehistoric humans to break their attention on a plant to notice a tiger approaching!). In today's world, the ability to flip quickly between many different ideas in a short period of time may also be vital for innovation and creativity.

I have worked with many amazing kids and teens with attention/concentration challenges who think in far more creative, interesting and amazing ways than many other children. Instead of just seeing these young people through a "defective" lens, we should affirm and capitalize on their unique and powerful strengths. This doesn't mean we don't continue to work on helping them improve their attention and concentration skills, but we should acknowledge that this is a "marathon not a sprint" and that in the meantime, their strengths and unique approach to the world mean they are wonderful and valuable just as they are.

All the best with your work in supporting your child/teen with these challenges. It's certainly not an easy task – but one worth attending to!