

Attention Deficit and Hyperactivity Disorder

School adaptation in postsecondary education presented by Dr. Annick Vincent,

Clinique du TDAH

Institut Universitaire en santé mentale, Centre hospitalier Robert-Giffard

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The Attention-Deficit/Hyperactivity Disorder (ADHD) is a neurological condition that leads to difficulty controlling (inattention), halting ideas (restrain), movement (physical restlessness) and behaviour (impulsivity). ADHD affects about 5% of children. A recent U.S. study estimates the prevalence rate of ADHD in the adult population at 4%.

ADHD individuals suffer above all from cognitive-attention problems (distractibility, mental restlessness, difficulty to organize themselves, are forgetful and lose objects), associated disorganization (e.g., procrastination: difficulty beginning and completing tasks, tendency to scatter one's attention, difficulty keeping track of time), and impulsivity which impede in their work as in their private life. At times, they also have difficulty modulating their emotional responses ("thin-skinned", "hypersensitive", "short-fused").

On account of these symptoms and their impact, many ADHD individuals also suffer from poor self-esteem and a chronic sense of under-achievement.

ADHD has a genetic component in most cases and can, more rarely, also be tied to the consequences of a neurological condition at an early age (e.g., premature birth, neonatal problem, early neurological disease of an infectious nature, such as meningitis).

Again, ADHD is a neurological condition; it is not caused by a poor upbringing or by psychological stressors. However, one's environment can modulate its expression and course. For example, the presence or absence of help and support to remedy this disorder can generate anxiety, undermine self-esteem, and give rise to behaviour problems (e.g., opposition and delinquency).

To gain a better understanding of the effects of ADHD, we might compare it to how information circulates in the brain to a road network. Studies of brain function in persons with ADHD have revealed **an impairment of the region responsible for controlling or inhibiting certain behaviours** (in medical jargon, these are referred to as "executive functions" they are what allow, among

other things, “turning on the engine, breaking, changing directions and prioritizing on the road”). In ADHD, the information-transmission network appears to be defective, as though it was lacking traffic lights and road signs and as though the automobiles were equipped with a faulty ignition or brake system. To explain ADHD, scientists have advanced the hypothesis of a dysfunction at the level of certain information-transmission mechanisms involving neurotransmitters such as dopamine and noradrenaline.

Just because someone has difficulty concentrating or cannot sit still does not mean that they have ADHD. The only way to determine this for sure is through a diagnostic assessment. This takes the form of a clinical interview during which a physician searches for symptoms specific to ADHD in childhood and subsequently explores whether these symptoms are still present in adulthood. The clinician, together with the individual, then gauges the extent of the impact on his functioning in order to decide whether treatment is needed and, if so, which type. Seeking out associated problems and conditions is essential in order to establish an effective, personalized treatment plan.

However, neuropsychological tests alone do not determine a diagnosis (there is no specific test for ADHD). A neuropsychological evaluation serves to better quantify and qualify the cognitive impairments in order to work on them specifically in therapy or to confirm or exclude other possible diagnoses.

The individual suffering from ADHD does not act this way ON PURPOSE, it comes from a deficit modulation of the executive brain functions and we must adapt his surroundings to help him, in addition to trying to find the appropriate medical treatment.

ADHD treatment begins with confirmation of the diagnosis followed by an educational effort. It is essential that the person affected, their family members and the people surrounding him such as teachers and others working in the school understand what ADHD is. Often, the mere fact of “finally knowing” permits to put in place effective personalized adaptations.

At home, even with a young adult, the parent is still the child’s coach to help him organize his environment, help him remember things to lessen oversights and help organize himself in everyday life. This task is demanding and has to be done daily. **Adaptations must take place everyday, for ADHD is chronic.** It’s like wearing glasses, knowing where they are is not effective unless the individual is wearing them...

In college or university, the student will also need help on a daily basis. The student and the parent become spokespersons to ensure that adaptations are well established and in an appropriate manner.

- The student has difficulty concentrating, he is distracted by the surrounding stimuli, he will benefit from being positioned at the front of the classroom next to the teacher and next to the students who are the most quiet. Instructions will have to be repeated often and the teacher will have to ensure that the student understands the instructions before he starts the task at hand and often will have to get him to focus his attention back on the task so he can complete it on time. Providing more time to a distracted student will be efficient only if the adult supervises and closely watches him (e.g. divide the task into smaller divisions, take a break between sections and continue).
- A student who forgets his homework or work will benefit from having a responsible adult (which may be another student) who daily checks his agenda, the work to be done, the contents of his school bag, the documents to bring home and supervises him with the handling of his schedule concerning longer term papers, and the preparation and the studies for exams.
- A student who forgets, misplaces and loses things will need to have with him at all times in school his agenda, his watch, his school bag and his computer (if any) in a specific bag. The more he is asked to change his bag's content and to place his things in different areas, the more disorganized he will be.
- In more severe cases, an individualized plan of action on strategies for daily difficulties is needed.
- The overall task may have to be adapted according to different levels of difficulties. Dr. Russell Barkley, an internationally renowned specialist in ADHD, reported that there was no effective way to catch up at home what was not completed in the classroom and that the supervision and the consequences that follow have to be done in the immediate moment to correct the problem. For example, a problem in the classroom should be resolved through interventions in the classroom and not when returning home or by a suspension. He suggests the presence of a liaison officer to assist in the application of strategies to everyday life.
- The use of a computer is recommended for any learning disability in English. Software, such as Antidote and WorldQ, facilitate the correction of spelling and grammatical errors. For those suffering from dysgraphia, they will be able to read from the computer screen. Having documents done in an electronic format makes it easier to organize oneself. An electronic organizer like a *palm* is also a great tool to have.
- For those who have difficulties taking down notes, recording the classes is a simple solution.

It is essential to remember that these strategies are to be put in place daily. Not following them would result in a return to stronger past difficulties. These are coping strategies, they are not a cure for ADHD, but they allow students to better develop their potential by increasing their CAPABILITIES to do things.

When ADHD symptoms remain disruptive, medication can be provided. The clinical evaluation may require time and involves a gathering of information from the individual, his family and others helping him (for example school staff members). The doctor must also take into account the presence, if any, related disorders. There is no neuropsychological tests to allow for a clear diagnosis of ADHD. It is the personal history that allows clinical diagnosis. Often, the clinical questionnaires are filled out to measure the intensity of symptoms in various spheres of life, at home and at school. The neuropsychological evaluation is often very important in determining the degree of IQ and detect the presence of specific learning disorders, distinct from learning difficulties associated with ADHD.

Medication acts somewhat like a pair of biological glasses that help improve the brain's ability to focus. It fosters better information transmission, as though traffic officers were placed at strategic intersections, and the ignition and brake system of an automobile were enhanced.

Standard pharmacological treatment consists in taking psychostimulants, either amphetamine-based (Adderall XR™, Dexedrine™) or methylphenidate-based (Biphentin™, Concerta™, Ritalin™). A non-stimulant drug, too, is now available for ADHD treatment: atomoxetine (Strattera™). Doses must be adjusted progressively under medical supervision. When the right dosage is reached, the clinical response is noticeable within a few days for psychostimulants and within one or more weeks for the non-stimulant. Certain products are short-acting, while others can have an all-day effect.

ADHD treatments available in Canada

Psychostimulants

Adderall XR^{MD} (4 Amphetamine salts) :		duration : 12 hours
Dexedrine^{MD} :	Tablets	duration : 3-4 hours
	Capsules	duration : 6-8 hours
Methylphénidate :	Biphentin ^{MD}	duration : 10-12 hours
	Concerta ^{MD}	duration : 12 hours
	Ritalin ^{MD}	duration : 3-4 hours

Non-Psychostimulants

Strattera^{MD} :	Capsules	up to a 24h effect
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New treatments like methylphenidate administered in a dermal patch, which is already available in the United States, might be soon accessible in Canada. Other pharmacological options can be tried, but exceed the framework of a general information document like this one.

The pharmacological treatments described above are designed to be effective in ADHD in about 50-70% of cases. They are generally well tolerated. However, all drugs can cause side effects. Doctors and pharmacists are those who can answer questions about this subject. The adaptation techniques are often easier to implement when the medication is effective, thus leading to a synergistic effect in the overall clinical effect. It is not because a person takes medication that the coping strategies must be put aside, they need to be maintained as long as the individual needs them to function properly. Once symptoms are less severe, a person can better develop his potential.

In Quebec, people with ADHD can find help and information from PANDA (Parents aptes à négocier avec le déficit de l'attention) and AQETA (Association québécoise des enfants en troubles d'apprentissage). The Centre for ADHD Advocacy Canada, CADDAC, is a national not-for-profit ADHD organization that serves as an umbrella organization to network other ADHD organizations across Canada, advocates for and educates about ADHD. There are other support groups across Canada and in other countries that can be found on the CADDAC web site under "support groups" and "international links". In the United States,

there is a well structured group called Children and Adults with Attention Deficit Disorder (CHADD) that has an excellent website. Furthermore, In Canada, the Canadian ADHD Resource Alliance (CADDRA) is an association formed by clinicians and researchers whose mission is to improve our understanding of AD/HD through research and education and to promote the adequate diagnosis and treatment of the condition (refer to CADDRA Canadian AD/HD Practice Guidelines). This association has also given itself the mission of representing affected people and their families at government agencies and educational institutions so that children, adolescents and adults with AD/HD can have access to adequate diagnostic and treatment resources. CADDAC and CADDRA websites include documents that offer many suggestions for school adaptation when ADHD is impairing academic functioning.

There are many books about AD/HD written for the general public. Magazines, newspapers, radio, television and the Internet can all be useful sources of information. You can also access Dr Annick Vincent's website www.attentiondeficit-info.com for many reading suggestions, addresses and links.