

HALTON

**Epilepsy &
Seizure Disorder
Management
Protocol**

2009

Recognition of Committee Members:

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INTRODUCTION:

In a collaborative effort with the Halton District School Board and the Halton Catholic District School Board, Halton Emergency Medical Services, Children's Services at Community Living North Halton, Halton Regional Health Department and Epilepsy Ontario an Epilepsy and Seizure Disorder Management Protocol along with school resources have been developed to manage and accommodate students diagnosed with seizure disorders.

Rationale for an Epilepsy and Seizure Disorder Management Protocol:

The goal of this protocol is to educate school personnel about epilepsy and seizure disorders, its causes, symptoms and treatments so that a child diagnosed with a seizure disorder can have the support needed in the school setting or on a school trip to be safe and successfully participate in their education.

RESPONSIBILITY TO PROVIDE A SAFE ENVIRONMENT FOR PUPILS WITH SEIZURE DISORDER: LEGAL CONTEXT

DUTY OF CARE:

This Seizure Disorder Protocol for school administrators, teachers and other employees has been developed to meet the requirements of:

Education Act:

- s. 265 (1) Duties of principals:
 - j) care of pupils and property – to give assiduous attention to the health and comfort of the pupils,

Regulation 298:

- s. 20 Duties of teachers:
 - g) ensure that all reasonable safety procedures are carried out in courses and activities for which the teacher is responsible,

The Board's liability policy provides coverage for employees acting within the scope of their duties with the board. Thus, all school staff who administer first aid to a student who is experiencing a seizure within the school or during a school activity are covered.

This protocol recognizes the Accessibility for Ontarians with Disabilities Act, 2005 and the Ontario Human Rights Code both in spirit and intent.

EPILEPSY AND SEIZURE DISORDER

Epilepsy :

A disorder of the central nervous system, specifically the brain, characterized by spontaneous, repeated seizures. Epilepsy, also known as a seizure disorder – the terms are used interchangeably, is not often talked about in public.

Misconceptions and fears persist that are sometimes more burdensome to persons living with epilepsy than the seizures themselves. The fact is epilepsy is not a disease but a common neurological disorder affecting one out of every one hundred Canadians. Anyone can develop epilepsy at any time without a known cause. Most often diagnosed in children and in seniors, epilepsy affects each person differently. Many people with epilepsy successfully control their seizures with medication and are able to enjoy healthy and fulfilling lives.

Seizure:

A seizure occurs when the normal electrical balance in the brain is lost. The brain's nerve cells misfire: they either fire when they shouldn't or don't fire when they should. The result is a sudden, brief, uncontrolled burst of abnormal electrical activity in the brain. Seizures are the physical effects of such unusual bursts of electrical energy in the brain and may include muscle spasms, mental confusion, loss of consciousness, uncontrolled or aimless body movement, incontinence and vomiting.

Note:

- Seizures are not contagious
- Seizures are not the child's fault
- Many seizures are hidden
- Seizures are not dangerous to others

Conditions that may cause seizures:

- a) Epilepsy
- b) Medical conditions where seizures may be among their symptoms, such as:
 - Cerebral Palsy (25%-35 % of the population has seizure occurrence)
 - Intellectual disability (as much as 1/3 of the population can have seizure occurrence)
 - Angelman's Syndrome
- c) Physical trauma/injuries to the head and/or brain

Myths: Common Misconceptions – Epilepsy Ontario

1. *You can swallow your tongue during a seizure.* It is physically impossible to swallow your tongue.
2. *You should force something into the mouth of someone having a seizure.* Absolutely not! That is a good way to chip teeth, puncture gums, or even break someone's jaw. The correct first aid is simple: just gently roll the person onto their side and put something soft under the head to protect from injury.
3. *You should restrain someone having a seizure.* Never use restraint! The seizure will run its course and you cannot stop it.
4. *see appendix B for more myths explained.*

Causes of Seizures:

- For **60% - 75%** of all cases there is no known or idiopathic causes.
- **40%** are caused by abnormality in the brain that interferes with electrical workings. For example:
 - Brain injury (caused by tumor, stroke or trauma)
 - Birth trauma (e.g. lack of oxygen during labour)
 - Poisoning from substance abuse or environmental contaminants (e.g. lead)
 - Aftermath of infection (e.g. meningitis, encephalitis, measles)
 - Alteration in blood sugar (e.g. hypoglycemia)

In most cases, epilepsy is not inherited. Everyone inherits a “seizure threshold” – when brain cells are irritated beyond this point, we will have a seizure. People with a low seizure threshold tend to develop seizures more easily than others.

POTENTIAL TRIGGERS:

- Stress- both excitement and emotional upset
- Lack of sleep
- Illness
- Poor diet
- Menstrual cycle
- Change in weather
- Televisions, videos, flashing lights (including flickering overhead lights)
- Inactivity
- Improper medication balance

SCHOOL ADMINISTRATOR'S RESPONSIBILITIES CHECKLIST

- School is to develop a process for identifying students with Seizure Disorder e.g.:
 - School Registration
 - Notification to parents

- Provide parents /guardians with information about the Epilepsy and Seizure Disorder protocol, school's responsibilities, parent responsibilities, child's responsibilities and forms to be completed.

- Delivery System:
 - PARENT/GUARDIAN EPILEPSY AND SEIZURE DISORDER PACKAGE**
 - Package provided to parents/guardians on day of registration.
 - For updated information, at the beginning of each school year, provide the Parent/Guardian Package during June where the following forms are to be completed and returned to the school prior to the student's first day of school.
 - Seizure Disorder Management Plan
 - If student is taking prescribed medication complete, the Board form: Request and Consent for the Administration of Prescribed Medication.

- SEIZURE DISORDER MANAGEMENT PLAN FORMS:
 - Forms are to be used for seizures as a result of epilepsy or other medical or physical conditions.
 - Forms are to be completed by the principal/designate in consultation with the parent/guardian following Board approved procedures.
 - Form to be completed as soon as possible after registration and/or prior to the first day of school.
 - Provide a copy of the student's completed Seizure Disorder Management Plan to:
 - the classroom teacher: Elementary - to be kept in Occasional Teacher folder on teacher desk
 - Post a copy of the Seizure Disorder Management Plan with child's picture in a high traffic area for staff (e.g. staff room)

- Develop a Seizure Disorder binder where copies of each the following forms are kept.
 - Seizure Disorder Management Plan
 - Seizure Incident Record
 - Request and Consent for the Administration of Prescribed Medication (where appropriate)

- Where needed, the school administrator arranges a meeting to gather medical information and management procedures related to the seizure disorder condition of the student and participants may include:
 - Principal/designate
 - Parent/Guardian
 - Classroom teacher (coaches, other staff where relevant)
 - Other relevant medical personnel/information e.g. a letter from a neurologist, paediatrician or other physician if student requires emergency medication such as lorazepam (Ativan) to stop a seizure.

- **In service staff:**
Resources to assist: Refer to Resource page for selection - page 20.
 - Identify student(s) in the school with a seizure disorder.
 - Provide classroom teachers where they have a student with a seizure disorder with a copy of:
 - Classroom Teacher: Epilepsy and Seizure Disorder Management Protocol – Responsibility Checklist.
 - Provide other teachers and those that come in contact with the student on a regular basis with a copy of:
 - Staff Member: Epilepsy and Seizure Disorder Management Protocol – Responsibility Checklist.

- **Instruct classroom teachers to communicate with the following:**
 - **Support staff and volunteers** who come into the classroom on a regular basis.
 - **Classroom students:** *(In discussion with child's parents) Provide information to the class about the child's seizure disorder in age appropriate terminology. A careful explanation of the seizure would alleviate the fears of the children about the disorder. Make students aware seizure disorders are not contagious, the child cannot control it, and is not dangerous to others.*
 - **Occasional Teacher:**
 - Identify student on the School Board's Occasional teacher contact system (Smart Find/ Harri).
 - Locate the student's **Seizure Disorder Management Plan** in the Occasional Teacher folder on the teacher's desk.

Field Trip Procedures: Outline to teachers the following procedures to be taken when taking students off school site:

- When taking student off school site it is important that there is communication with the parent/guardian to develop a careful and clear plan of expectations to meet the needs of the student with a seizure disorder (e.g. Parent invited on trip as a supervisor).
- Parents need to know the itinerary and anticipated activities.
- Child with a seizure disorder to be assigned to an informed adult who knows what do in case of a seizure and what to do in case of an emergency e.g. parent or classroom teacher.
- The child should be wearing a medical alert identification.
- The child should have sufficient medication for the entire trip
- Field trip location (e.g. trip to rural setting, Outdoor Education camp, or trip to urban centre (Ottawa):
The trip provider, the campsite manager needs to be contacted, with information about the student with a seizure disorder to check if the provider/site manager can guarantee they can accommodate the student's requirements for safe participation in the program. If the safe participation for the student with a seizure disorder cannot safely be accommodated, teachers may choose an alternate trip location that is accessible for the student.
- Teacher in charge of trip to inform other teachers, volunteers, and bus driver of identity of child with a seizure disorder and review emergency plans.
- Copy of the Seizure Disorder Management Plan is to accompany the student on the trip along with emergency contact numbers, emergency services contact – 911 and the nearest medical facility.

Conduct an Emergency Drill:

- Simulate a seizure disorder emergency – similar to a fire drill – to ensure that all elements of the emergency treatment plan are in place and that everyone knows their role and what to do.

Informing Secondary Schools:

- Have a process in place to identify the Grade 8 student(s) with a Seizure Disorder when transferring to secondary school in September. Provide the secondary school with the student's Seizure Disorder Management Plan.

Informing Summer School Staff:

- Have a process in place to identify students with Seizure Disorders taking summer school programs with the Board. Provide the summer school administrator with the student's Seizure Disorder Management Plan.

CLASSROOM TEACHER'S RESPONSIBILITIES CHECKLIST

- ❑ Know the identity of students in the class with a seizure disorder
- ❑ Where applicable, attend a meeting arranged by the school administrator to gather information related to the student's seizure disorder.
- ❑ Be knowledgeable of the content in the Resource for Classroom Teachers – Epilepsy and Seizure Disorder Management Protocol – Responsibilities checklist.
- ❑ Be knowledgeable of the content of the student's Seizure Disorder Management Plan.
- ❑ Using the student's Seizure Disorder Management Plan
 - Know the triggers to the student's seizure activity
 - Know the signs and symptoms of the student's seizure
 - Know if and when to provide medication
 - Know how to manage a non convulsive and convulsive seizure as outlined in First Aid for Seizures -page 17.
 - Know if and when to call parents/emergency contacts after a seizure.
 - Know when and how to call 911.
- ❑ Communicate information about the student's seizure disorder to others who work with the student on a regular basis:
 - Support staff and volunteers
 - Students in the classroom: With the student's parent permission encourage the sharing of information about seizure disorders with the class in age-appropriate terms. Students must be aware that seizure disorders are not contagious, the child cannot control the seizure and seizing is not dangerous to others.
- ❑ Have a process in place for informing the Occasional Teacher about the student's seizure disorder and management plans.
- ❑ Develop open lines of communication with the student and encourage the student to inform you when he/she feels the first symptoms of a seizure (aura) or a general feeling of unwellness
- ❑ Develop open lines of communication with the parents/guardians., Report behaviour changes that may be due to medications, etc. through phone calls or a communication book.
- ❑ If the child is prone to the possibility of incontinence, during loss of consciousness, request from the parents a pillow, blanket and a change of clothes.
- ❑ If a student is prone to Tonic Clonic seizures, have their desk placed so that if they fall, there is room for the seizure to run its course and request from their parents a pillow and a blanket.
- ❑ Where appropriate, have a buddy system in place so that the student is not alone in the washrooms or hallways.
- ❑ When taking students off site refer to Field Trip Information in Classroom Teacher resource - Responsibility Checklist.

STAFF MEMBERS (Coaches, Co-Curricular Supervisors) RESPONSIBILITY CHECKLIST:

- Have a process in place to identify students with epilepsy and seizure disorders.
- Be knowledgeable of the content in the resource for Staff Members – Epilepsy and Seizure Disorder Management Protocol – Responsibilities checklist.
- When you are coaching and/or supervising an activity or club, have access to and be knowledgeable about the content of the student's Seizure Disorder Management Plan
- Using the student's Seizure Disorder Management Plan:
 - Know the triggers to the student's seizure activity
 - Know the signs and symptoms of the student's seizure
 - Know if and when to provide medication
 - Know how to manage a non convulsive and convulsive seizure as outlined in First Aid for Seizures.
 - Know if and when to call parents/emergency contacts after a seizure.
 - Know when and how to call 911.
- Provide appropriate first aid to students exhibiting signs and symptoms of a seizure. Refer to First Aid for Seizures page 17.
- Communicate information about the student's seizure disorder to others;
 - Provide information to others (volunteers) working with the student
- Develop open lines of communication with the student and encourage the student to inform you when he/she feels the first symptoms of a seizure (aura) or a general feeling of unwellness
- Develop open lines of communication with the parents/guardians. Report behaviour changes that may be due to medications, etc. through phone calls.

TIPS FOR TEACHERS – IMPLICATIONS ON LEARNING

Possible Triggers

- Improper medication balance
- Stress- both excitement and emotional upset
- Lack of sleep
- Illness
- Poor diet
- Menstrual cycle
- Change in weather
- Televisions, videos, flashing lights (including flickering overhead lights)
- Inactivity

Side Effects of Medications Taken for Seizure Disorders

- Concentration concerns
- Short term memory loss
- Fatigue/drowsiness
- Hyperactivity
- Motor capacity can be affected: eye-hand coordination, balance, speech coordination
- General well-being can be affected: dizziness, unsteadiness, vomiting
- Mood changes: depression, aggressiveness, anti-social behaviours
- Toxicity: liver damage, anemia

Possible Outcomes/Concerns

- Safety risks
- Possible behaviour issues
- Social issues
- Chronic absenteeism
- Feelings of lack of control
- Poor self-image
- Academic performance can be affected

How Can Learning Be Affected

- Intermittent disruptions caused by seizures may impact learning and the student's ability to attend. This can change from day to day or within the day.
- Medications may slow down the processing of information or may induce fatigue
- Seizures themselves during the day may cause disruptions in the student's memory of what was just learned.
- "Invisible" or absence seizures may result in slower processing, consolidation and retrieval of information

- Night time seizures may leave a student feeling fatigued and less attentive in class the next day
- Possible academic problems with reading, writing, and math as well as difficulty with comprehension and speech may result
- Impaired working memory
- Disorientation
- Disorganization
- Possible difficulty with time management

Some Suggested Teaching Strategies and Accommodations

- Repeat instructions several times or use a “step by step” strategy to help the student who has “blanked out” during a seizure
- Have student repeat the instructions back to the teacher as necessary
- Establish a buddy system so the child can ask the buddy questions and receive missed class work
- Use visual instructions/tools so that the student can refer to them as required i.e. wall calendars, activity lists
- Use visual and verbal prompts to keep the student oriented
- Label items around the class
- Minimize written output as required
- Allow extra time for tests and assignments when required
- Cue the student ahead of an expected response
- Allow extra response time
- Encourage the student to work in a small group
- Use assistive technology as required
- Provide alternate workplace as required
- Use consistent expectations and routines

Other Considerations

- Ensure during physical activities, where climbing is involved, that the student is properly assisted and does not climb to great heights
- Ensure fluorescent light fixtures in classroom/school are working correctly (not flickering)
- Assess quality of audio visual media equipment and the assistive technology in the classroom
- Avoid sudden or ongoing loud noises as appropriate
- Avoid using the “lights out” technique for class control
- For school events such as a dance:
 - ensure that the student and family is aware that the music will be louder than normal.
 - In consultation with parents, and where appropriate, inform the entertainment provider that any type of strobe/flashing lights are not to be used

- If the student is attending an event where they may need to climb a set of bleachers for seating, arrangements should be made to ensure that an area is left open near the lower seats for this student and some friends.
- Students with a seizure disorder should be encouraged to participate in school activities and extra curricular activities.

Additional Supports

In some cases, where seizures are not under control, and are considered “drop seizures” or in the case of epilepsy- tonic-clonic seizures, which may happen at any time, the student’s occupational or physical therapist may prescribe specific equipment, e.g. soft helmet, face piece, a gait trainer harness, etc. to ensure the student’s safety.

Remember, it is essential to involve parents in all of these decisions.

You may want to consider having a community health expert speak to the class and staff about seizures. This should be done with both parental and student permission. In some cases, the entire class is encouraged to take on a specific role in the event of a seizure, which empowers the other students and helps them to understand what is happening during a seizure. This is a school-based decision.

Medication:

(Prior to medications being administered by school staff, the **Board's 'Request and Consent for Administration of Prescribed Medication' form** must be completed by parent/guardian and provided to school administrator).

Name of Medication:

Specific direction to administer medication (time, with or without food/drink etc):

(Note: Rectal suppositories will not be administered by Board staff.)

Possible side effects:

OTHER INFORMATION:

I/We will immediately contact the School if I/We believe that circumstances might require an amendment to the Management Plan outlined above.

Signature of Parent/Guardian

Date

The personal and/or health related information used and disclosed on this form has been done so in accordance with the *Education Act, Municipal Freedom of Information and Protection of Privacy Act* and the *Personal Health Information Protection Act*.

FIRST AID FOR SEIZURES:

WHEN TO CALL 911 – EMERGENCY MEDICAL SERVICES:

- STUDENTS NOT DIAGNOSED with EPILEPSY AND SEIZURE DISORDER :**
 - **CALL 911 IMMEDIATELY**

- GENERALIZED CONVULSIVE SEIZURE (e.g. Tonic Clonic Seizure):**
 - **CALL 911 IMMEDIATELY**
UNLESS: you are aware of a different protocol for this student as outlined in the student’s Seizure Disorder Management Plan

- IF IN DOUBT – CALL 911**

STEPS IN MANAGING AN INDIVIDUAL EXPERIENCING A SEIZURE:

PARTIAL NON- CONVULSIVE SEIZURES – RESPONSE:

1. **KEEP CALM. STAY WITH THE PERSON**
 - Do not try to stop the seizure, let the seizure take its course
 - Talk gently and reassure the person that everything is ok and you are there to help
 - The person will be unaware of his/her actions and may or may not hear you
 - Using a light touch, guide the student away from hazards

GENERALIZED CONVULSIVE SEIZURES – RESPONSE:

1. **KEEP CALM. STAY WITH THE PERSON**
 - Take note of the time when seizure begins and length of seizure (e.g. stop watch). Record time on Seizure Incident Record Form.

2. **DO NOT RESTRAIN OR INTERFERE WITH THE PERSON’S MOVEMENTS**
 - Do not try to stop the seizure, let the seizure take its course

3. **PROTECT FROM FURTHER INJURY WHERE POSSIBLE**
 - Move hard or sharp objects away
 - Place something soft under the head (e.g. pillow, article of clothing)
 - Loosen tight clothing especially at the neck

4. **DO NOT PLACE OR FORCE ANYTHING IN THE PERSON’S MOUTH**
 - Doing so may cause harm to the teeth, gums or even break someone’s jaw
 - It is physically impossible to swallow the tongue
 - The person may bite their tongue and/or inside of their mouth

5. **ROLL THE PERSON TO THEIR SIDE AS SOON AS POSSIBLE:**
 - Sometimes during and after a seizure a person may vomit or drool. To prevent choking, simply roll the person on their side. That way, fluids will drain out instead of blocking off the throat and airway.
 - DO NOT BE FRIGHTENED if a person having a seizure appears to stop breathing momentarily

AFTER ALL TYPES OF SEIZURES (The student will be groggy and disoriented).

- Talk gently to comfort and reassure the person that everything is ok
- Stay with them until they become re-oriented
- Provide a place where the student can rest before returning to regular activity

RESOURCES TO IMPLEMENT THE EPILEPSY & SEIZURE DISORDER MANAGEMENT PROTOCOL

The following resources are available electronically through your Board's site to assist schools in implementing the Epilepsy & Seizure Disorder Management Protocol:

ELEMENTARY SCHOOLS:

Epilepsy and Seizure Disorder Management Protocol – Responsibilities

Checklists for:

- School Administrators
- Classroom Teacher (with a student with a seizure disorder in their class)
- Staff Members
- Parent/Guardian Package (Forms to be completed)
- Occasional Teacher

SECONDARY SCHOOLS:

Epilepsy and Seizure Disorder Management Protocol – Responsibilities

Checklists for:

- School Administrators
- Classroom Teacher (with a student with a seizure disorder in their class)
- Staff Members
- Parent/Guardian Package (Forms to be completed)
- Occasional Teacher

Resources

Epilepsy Canada	http://www.epilepsy.ca
Canadian Epilepsy Alliance	http://www.epilepsymatters.com
Epilepsy Ontario	http://www.epilepsyontario.org
Local agencies to assist families	http://www.advanceinepilepsy.com
Epilepsy Classroom	http://www.epilepsyclassroom.com
Epilepsy Support Centre	http://www.epilepsysupportcentre.com/ Click on About Epilepsy tab, scroll to the bottom of the screen and click on School programs for grades 5 and 12 – handouts, curriculum and much more –both public and catholic curriculum posted.

Videos

All About Epilepsy DVD	http://www.epilepsyontario.org
Glen's Journey	http://www.destinymaker.org

Epilepsy Foundation <http://shop.epilepsyfoundation.org> has several videos at reasonable prices.

A) *Seizure Disorder and the School I (elementary school) and Seizure Disorder and the School II (secondary school)* – designed to improve understanding of epilepsy for teachers, administrators and other school personnel. The videos show actual seizures in children, describe first aid and management in the classroom and stress the importance of early recognition. Fears and concerns of school personnel are addressed. Details how epilepsy may affect learning and discusses how the teacher can make the school experience a positive one. Reviews the importance of promoting self-esteem, assuring full inclusion of the child in all school activities and responding to the reactions and questions of other students.

B) *Out of the Shadows: Teens with Epilepsy Take Charge* is a fast-paced, documentary-style program that shares the stories of four teens living with epilepsy.

Other Resources:

Dr. Henry Hasson, MD, Paediatric Neurology explains seizures
<http://www.youtube.com/watch?v=NxeMr2PSwdQ>

Reuber, M., Schachter, s., Elger, c., Altrup, v. (2009). *Epilepsy Explained: A book for People Who want to Know More*. Toronto, ON: Oxford University Press.
ISBNL 978-0-19-537953-2

Be Aware of Ketogenic Diet
<http://www.epilepsyfoundation.org/answerplace/Medical/treatment/diet>

Types of Seizures

The type of seizure depends on where in the brain the discharge begins.

Some children have just one type of seizure but it is not unusual for more than one type of seizure to occur in the same child. There are more than 40 types of seizures but most are classified into two main types of seizures. If the electrical discharge disturbs the whole brain, the seizure is called generalized. If the seizure disturbs only part of the brain, it is called partial

Status Epilepticus is a state of prolonged seizure (longer than 30 minutes) or repeated seizures without time for recovery and can happen with any type of seizure. Status epilepticus is a medical emergency.

Generalized Seizures – types:

- a) **Absence Seizures**, formerly petit mal seizures, are brief periods of complete loss of awareness. The child may stare into space – completely unaware of surroundings and unable to respond. These seizures start and end abruptly, without warning. They last only a few seconds. The child may stop suddenly in mid-sentence, stare blankly, then continue talking without realizing that anything has happened. Rapid blinking, mouth or arm movement may occur.

During absence seizures, the child is not day dreaming, forgetting to pay attention or deliberately ignoring your instructions. These seizures happen many times a day, interrupting attention and concentration. Absence seizures often disappear before adolescence

- b) **Tonic-clonic Seizures**, formerly known as grand mal seizures, are general convulsions with two parts. First, in the tonic phase, the child may give a loud cry or groan. The child loses consciousness and falls as the body grows rigid. Second, in the clonic phase, the child's muscles jerk and twitch. Sometimes the whole body is involved; at other times, just the face and arms. Shallow breathing, bluish skin or lips, heavy drooling and loss of bladder or bowel control may occur. These seizures usually last 1 to 3 minutes. Afterwards, consciousness returns slowly and the child may feel groggy and want to sleep. The child will not remember the seizure.
- c) **Infantile Spasms** are rare. They occur in clusters in babies usually before six months of age. The baby may look startled or in pain, suddenly drawing up the knees and raising both arms as if reaching for support. If sitting, the infant's head may suddenly slump forward, the arms flex forward and the body flexes at the waist. Spasms last only a few seconds

but often repeat in a series of 5 to 50 or more many times a day. They often occur when the baby is drowsy, on awakening or going to sleep.

- d) **Atypical Absence Seizures** involve pronounced jerking or automatic movements, a duration of longer than 20 seconds, and complete loss of awareness.
- e) **Myoclonic Seizures** involves a sudden, shocking jerk of the muscles in the arms, legs, neck and trunk. This usually involves both sides of the body at the same time and the student may fall over.
- f) **Atonic Seizures** last a few seconds. The neck, arms, legs or trunk muscles suddenly lose tone or loss of tone without warning. The head drops, the arms lose their grip, the legs lose strength or the person falls to the ground. Students with atonic seizures may have to wear a helmet to protect their head from injury during a fall. The child's surroundings may need to be altered to ensure safety.

Partial Seizures –types:

- a) **Simple Partial Seizures**, formerly known as focal seizures, cause strange and unusual sensations, distorting the way things look, sound, taste or smell. Consciousness is unaffected – the child stays awake but cannot control sudden, jerky movements or one part of the body.
- b) **Complex Partial Seizures**, formerly known as psychomotor or temporal lobe seizures, alter the child's awareness of what is going on during the seizure. The child is dazed and confused and seems to be in a dream or trance. The child is unable to respond to directions. The child may repeat simple actions over and over e.g. head turning, mumbling, pulling at clothing, smacking lips, make random arm or leg movements or walk randomly. The seizure lasts only a minute or two but the child may feel confused or upset for some time and may feel tired or want to sleep after the seizure.

Warning Sign: 'AURA'

Some children have a strange sensation before a seizure. This “aura” acts as a warning that a seizure is about to occur. Sometimes it helps the child to prepare for the seizure by lying down to prevent injury from a fall. The aura varies from one child to another. Children may have a change in body temperature or a feeling of anxiety. Some experience a strange taste, striking odour or musical sound. An aura may occur before partial or tonic-clonic seizures. An aura is not always followed by a seizure, in fact, the aura is a simple partial seizure. Ask the child’s parent if there are signs of an impending seizure.

Medications

Many seizures may be partly or fully controlled by medication (up to 80%) and there are many drugs available which may control different types of seizures. The challenge is to match the type and dose of medication(s) to the individual and what (s)he is experiencing.

The goal is for **one** medication to control the seizures of an individual with negligible side effects. Unfortunately this is often not the case. Finding a suitable regimen of medications often involves not just one medication, but a combination of 2 or more different meds, each with its own attributes and side effects. In reality, many medications have side effects ranging from nuisance to dangerous. The process of identifying and balancing the appropriate mix and balance of medications may be one of considerable complexity, and could be ongoing over a lengthy period. During the process, there may uncertainty surrounding seizure control (possibly including different types of seizures) and the accompanying side effects.

Patience and ongoing consultation are critical.

Seizure disorders are usually treated with drugs called anti-epileptics or anticonvulsants. These drugs are designed to control seizures. Some drugs control just one or two types of seizure while others have a broad range. In some children, these drugs work so well that no seizures. For those on these drugs, seizures are eliminated in about 50% of cases. Drugs reduce the frequency or intensity of seizures in another 30%. The remaining 20% of people have seizures that cannot be brought under control by conventional drug therapy.

Some children may experience the following side effects of drug treatments.

- Learning capacity: concentration, short term memory loss
- Alertness: hyperactivity, drowsiness, fatigue
- Motor capacity: hand, eye, balance, speech coordination
- General well-being: unsteadiness, vomiting, dizziness
- Mood changes: depression, aggressiveness, anti-social behaviours
- Toxicity: liver damage, anaemia

Diet as a Treatment

The Ketogenic Diet is used to treat a small number of children with intractable epilepsy who do not respond to standard therapies. It is an extreme, multi-year, high-fat diet that is challenging to administer and maintain. There is no way to predict whether it will be successful, but a significant percentage of children who are placed on the Ketogenic Diet achieve significant reduction in intensity and frequency of seizures. This type of diet is physician-monitored.

Brain Surgery

Brain surgery for epilepsy is performed, but only in a small percentage of cases, and only when all other treatments fail to adequately control seizures. The last decade has seen significant advances in the surgical treatment of epilepsy. The area of the brain with abnormally discharging neurons (the seizure focus) is surgically removed, if it is possible to identify this area and remove it safely. In certain patients without a well-defined epilepsy focus, surgically disconnecting or isolating the abnormal area so that seizures no longer spread to the neighbouring normal brain can help. As with any operation, there are risks to epilepsy surgery. In patients with an identified seizure focus, the success rate of surgery is up to 80%. For some children who experience seizures, their seizure activity may occur/increase with times of stress e.g. illness, fever, fatigue, dehydration, heat, bright and/or flashing lights.

Vagus Nerve Stimulation Therapy

The vagus nerve stimulator has been approved to treat hard to control seizures. The device is a small, pacemaker-like generator which is surgically implanted near the collarbone to deliver small burst of electrical energy to the brain via the vagus nerve in the neck. So far, research has shown that vagus nerve stimulation may reduce seizures by at least 50% in about half the study participants.

Common Misconceptions

MYTH: Epilepsy is contagious.

You simply can't catch epilepsy from another person.

MYTH: Only kids get epilepsy.

Epilepsy happens to people over age 75 more often than it does to children aged 10 and under. Seizures in the elderly are often the after effect of other health problems like stroke and heart disease.

MYTH: People with epilepsy are disabled and can't work.

People living with the condition have the same range of abilities and intelligence as the rest of the population. Some have severe seizures and cannot work; others are successful and productive in challenging careers.

MYTH: People with epilepsy shouldn't be in jobs of responsibility and stress.

People with seizure disorders are found in all walks of life and at all levels in business, government, the arts and other professions. We aren't always aware of them because many people, even today, do not talk about having epilepsy for fear of what others might think.

MYTH: With today's medication, epilepsy is largely a solved problem.

Epilepsy is a chronic medical problem that for many people can be successfully treated. Unfortunately, pharmaceutical treatment doesn't work for everyone and there's a critical need for more research.

MYTH: Epilepsy is rare and there aren't many people who have it.

There are more than twice as many people with epilepsy in Canada as the number of people with cerebral palsy, muscular dystrophy, multiple sclerosis and cystic fibrosis combined. Epilepsy can occur as a single condition, or may accompany other conditions affecting the brain, such as cerebral palsy, mental retardation, autism, Alzheimer's disease, and traumatic brain injury.

MYTH: You can't die from epilepsy.

Epilepsy is a very serious medical condition and individuals do die of it. Epilepsy as a direct cause of death can be divided in different categories.

- Seizure-related deaths, such as from accidental drowning, auto accidents, etc.
- Death due to prolonged seizures ([status epilepticus](#))
- [Sudden Unexplained Death in Epilepsy](#) (SUDEP)

MYTH: You can't tell what a person might do during a seizure.

Seizures usually take a characteristic form: the individual will do much the same thing during each episode. Although the behaviour may be "inappropriate" for the time and place, it is unlikely to cause harm to anyone and should not be seen as an embarrassment to anyone.

MYTH: People with epilepsy are physically limited in what they can do.

In most cases, epilepsy isn't a barrier to physical achievement, although some individuals are more severely affected and may be limited in what they can do. Professional sports players with epilepsy include Greg Walker (baseball, Chicago White Sox), Bobby Jones (basketball, Denver Nuggets and Philadelphia '76ers), and Gary Howatt (hockey, New York Islanders).