

This zine is dedicated to all those affected by brain injuries. To those living with brain injuries, to the friends, family and partners of those with brain injuries, to educators and healthcare workers, and especially to those we have lost. No matter your story, you are NOT alone.

Table Of Contents:

Intro to the brain

Symptoms of brain injuries

Find your care team

The ABCs of brain injury

The stories

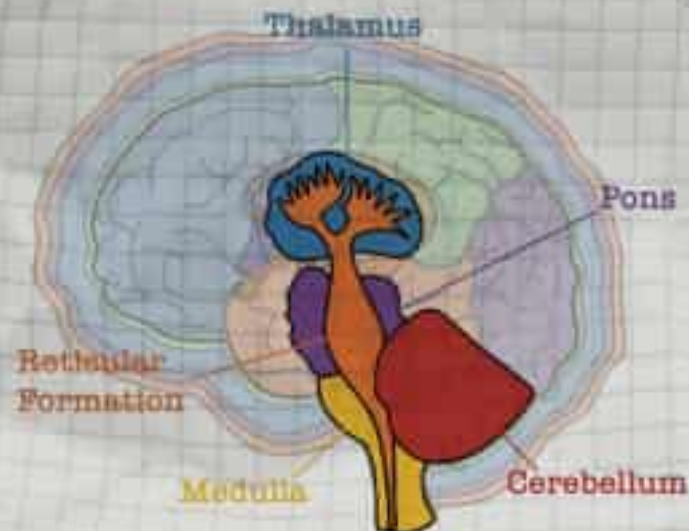
What we wish you knew

How to help

Resources

Letter from the editor

Intro To The Brain: The Old Brain



Thalamus: Processes sensory information

Reticular Formation: Facilitates arousal*

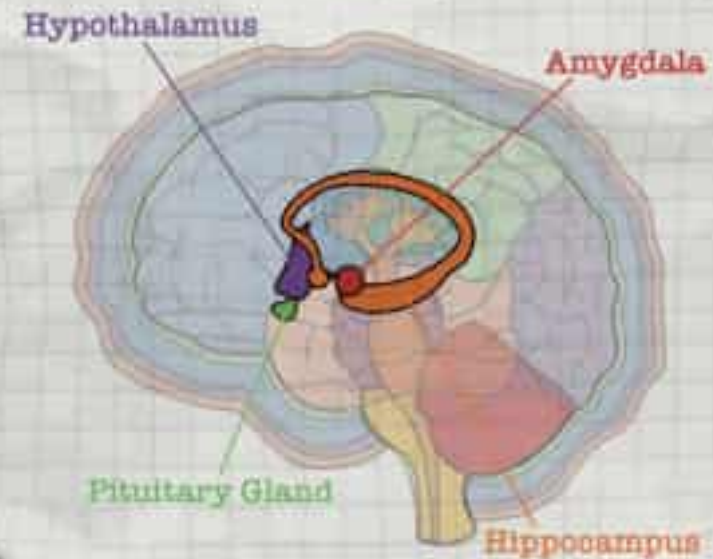
Medulla: Facilitates automatic functions such as heart rate, breathing etc

Pons: Facilitates automatic functions not controlled by the Medulla

Cerebellum: Facilitates non-verbal memory and learning, as well as emotional regulation and the perception of time

*Arousal in this case does not necessarily mean sexual arousal, but nervous system arousal necessary for things like walking and moving

Intro To The Brain: The Limbic System



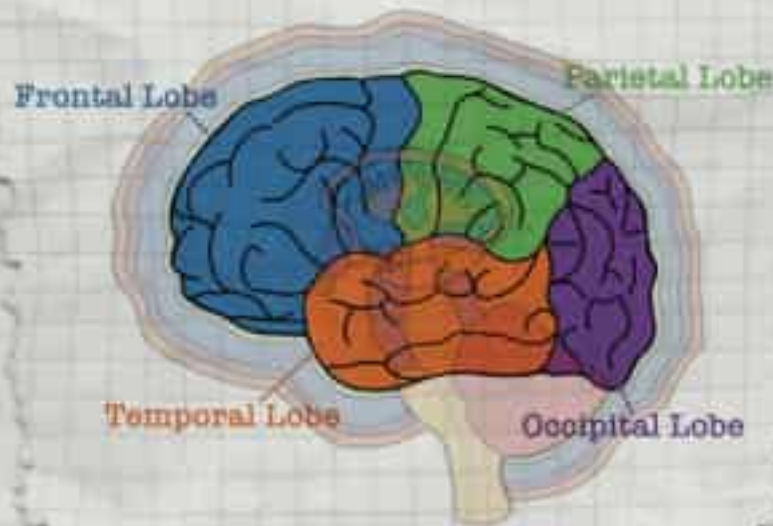
Amygdala: Responsible for activating fight or flight, and automatic learning

Hypothalamus: Regulates body temperature, sex drive, appetite, blood pressure and sleep

Pituitary Gland: Facilitates growth and metabolism as well as other functions, through the secretion of hormones

Hippocampus: Facilitates memory as well as learning

Intro To The Brain: The Cerebrum



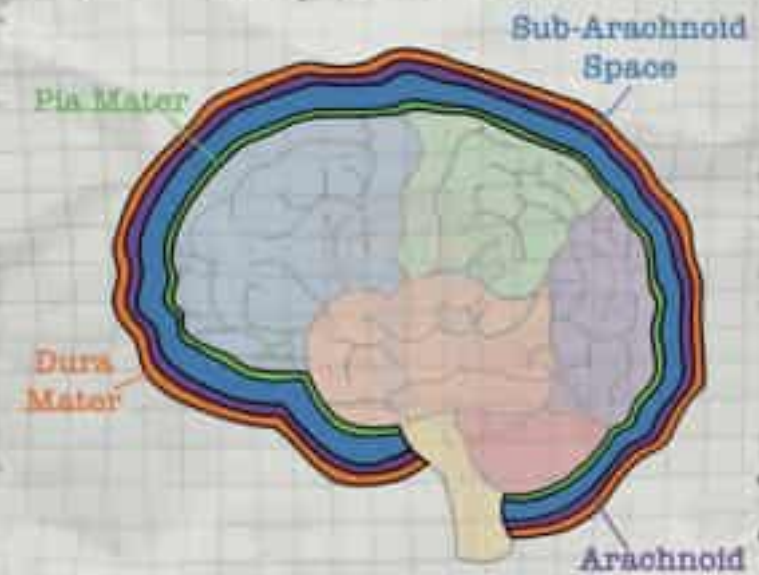
Frontal Lobe: Responsible for executive functions such as planning, speaking, abstract thinking as well as controlling aspects of your personality

Parietal Lobe: Processes touch

Temporal Lobe: Processes speech and other sounds

Occipital Lobe: Processes sight

Intro To The Brain: The Meninges



Pia Mater: The innermost layer of the Meninges, and one of two Leptomeninges

Sub-Arachnoid Space: Contains cerebrospinal fluid in order to cushion the brain from impact and provide nutrients

Arachnoid: The middle layer of the Meninges, and the second of the Leptomeninges

Dura Mater: The outermost layer of the Meninges

Brain Symmetry Drawing

Use the grid as a guide to create a symmetrical drawing of a brain!



Did You Know?

The right side of your brain controls the left side of your body, and the left side of your brain controls the right side of your body

Symptoms Of Brain Injuries

Short Term Symptoms

Many brain injuries share some combination of these common symptoms:

A change in responsiveness

Confusion

Headache

Scalp injury

Amnesia,

Dizziness

Nausea

If your brain injury is minor, you may not have all these symptoms, and you may not have any other symptoms. However if you have a severe head injury you may also experience

Increased drowsiness

Loss of balance or weakness

Difficulty speaking or walking

Seizures

Vomiting

Vision disturbances

Blood or clear fluid leaking from the nose or ears

Unequal pupil sizes

Unresponsiveness

Deterioration of responsiveness

Symptoms Of Brain Injuries

If someone is having a stroke they will often experience:

- Facial drooping
- Arm weakness
- Speech disturbances

But may also experience confusion, a thunderclap headache, difficulty walking, dizziness, vision problems, and weakness on one half of the body.

To identify a stroke remember **F A S T!**

- F(facial drooping)
- A(arm weakness)
- S(speech disturbances)
- T(time to call 911)

If someone has carbon monoxide poisoning the symptoms are very subtle and nonspecific:

- Headache
- Dizziness
- Weakness
- Nausea and vomiting
- General flu like feelings

If untreated more serious symptoms may appear such as:

- Seizures
- Rapid heartbeat
- Shortness of breath
- Blurry vision
- Disorientation

Symptoms Of Brain Injuries

If someone is dealing with meningitis or encephalitis they will likely experience:

- Fever
- Neck stiffness
- Nausea and vomiting
- Photophobia
- Confusion

Depending on the cause there can also be a purple rash

Babies may not show the same symptoms. Instead they may:

- Be slow or inactive
- Vomit
- Struggle to feed
- Have abnormal reflexes
- Be irritable
- Have a bulging fontanelle (soft spot on the babies head)

If someone is experiencing an opioid overdose they will likely:

- Unresponsiveness
- Pinpoint pupils
- Slowed or stopped breathing
- Be pale with bluish purple lips
- Vomiting or gurgling
- Slowed or stopped pulse

Symptoms Of Brain Injuries

Long Term Symptoms

A brain injury can have minimal or catastrophic long term consequences.

Physical Symptoms:

- Balance issues
- Difficulty or inability to walk
- Changes in physical sensations
- Changes in senses (sight, hearing, smell, taste)
- Decreased energy and fatigue
- Sleep disturbances
- Tinnitus
- Dizziness
- Chronic pain
- Migraines
- Light and sound sensitivity
- Seizures

Cognitive Symptoms:

- Disorganization
- Memory problems
- Lack of concentration and focus
- Slowed thinking
- Slowed reaction time
- Difficulty with reasoning
- Difficulty multitasking
- Problems planning, organizing, problem solving, making decisions and initiating tasks
- Lack of awareness

Symptoms Of Brain Injuries

Emotional Symptoms:

- More sensitivity to stress
- Depression
- Easily frustrated or irritable
- Emotional outbursts
- PTSD
- Withdrawal from family and friends
- Poor coping skills
- Feelings of grief

Communication Symptoms

- Difficulty finding words
- Difficulty understanding or keeping up with conversations
- Inability to write
- Problems reading

Behavioural Symptoms:

- Decrease in ability to perform daily activities of living (self care, chores, etc)
- May be inappropriate
- Personality changes
- Impulsiveness
- Childish behaviour

Symptoms Of Brain Injuries

Anomia	Loss of smell
Anosmia	Weakness or paralysis on one side of the body
Phonophobia	Sensitivity to sound
Photophobia	Getting stuck on a situation, concept or task
Perseveration	Sensitivity to light
Amnesia	Inability to perform purposeful movements
Hemiplegia	Inability to name objects
Ataxia	Loss of memory
Apraxia	A lack of control of the body

Some names of symptoms are not entirely clear.
Try your hand at matching these medical terms
with their definition!

Find Your Care Team!

Your team may include all these people, but could also have more or less depending on your needs

Psw: A personal support worker is a person who comes into your home as often as you need to help with things like meal prep, bathing, changing, planning, and more.

Occupational Therapist: An occupational therapist is someone who helps you learn skills to better complete your activities of daily living. They come up with skills for you to work on as well as suggest assistive devices and other services that may help you.

Physiotherapist: A physiotherapist will come up with exercises to help with balance, pain, mobility, and more, and assist you with those exercises.

Psychotherapist: A psychotherapist will provide therapy to help with the emotional symptoms of a brain injury.

Psychiatrist: Psychiatrists can prescribe medications to help with the emotional symptoms of brain injury.

Neurologist: A neurologist is a brain expert, so depending on the severity of your injury you will see them fairly often. They can also help with migraine relief, on top of helping connect you to resources like other types of doctors

Family Doctor/GP/Primary Physician: Your family doctor will be your main point of contact for long term management.



Occupational Therapist



Psychotherapist



Physiotherapist



Psychiatrist



PSW



Neurologist



Family Doctor



The ABC's Of Brain Injury

Acceleration/deceleration - A type of injury where the brain bounces in the skull, causing damage.

Acquired Brain Injury - Damage to the brain that is acquired after birth.

Aneurysm - A widening of a blood vessel, causing weakened walls and bulging vessels that can burst, causing severe bleeding.

Aoxia - A complete lack of oxygen, often leading to tissue damage.

Benign - A non cancerous tumour that doesn't spread to other systems. A benign brain tumour can still be dangerous depending on location and size.

Brain Cancer - A disease where metastatic tumours grow in the brain and put pressure on it, causing damage to the brain and other organs * Note: you can also have cancer in your brain that has spread from another organ, like your lungs.

Brain Death - An irreversible loss of consciousness where brain activity ceases, often including automatic functions like breathing.

Carbon Monoxide - A colourless, odourless gas that can be created by things like portable generators, charcoal grills, and oil burning furnaces. It claims the lives of hundreds of people every year due to the fact that without up to date carbon monoxide detectors there is no warning.

The ABC's Of Brain Injury

Closed - A head injury where the damage is not caused or related to an open wound (I.E a concussion).

Coma - An unconscious state where a person cannot be awoken.

Concussion - A mild traumatic brain injury with (usually) temporary symptoms.

Congenital Brain Injury - A brain injury that occurs shortly before, during, or shortly after birth.

Contracoup - An injury that damages the brain on the opposite side from where impact took place.

Coup - An injury at the site of impact.

Demyelination - Damage to the protective myelin sheath that protects brain cells.

Diffuse - Widely spread.

Diffuse Axonal Injury - A severe brain injury affecting several areas of the brain.

Encephalitis - Swelling of the brain.

Epilepsy - A seizure disorder caused by electrical impulses in the brain.

Extradural - Outside of the dura mater.

The ABC's Of Brain Injury

Focal - Localized or in one specific area.

Hematoma - A pool of mostly clotted blood that forms when blood leaks from a large blood vessel.

Hydrocephalus - A build up of cerebrospinal fluid in the brain.

Hypoxia - A partial lack of oxygen that gives insufficient oxygen to the tissue, causing damage.

Hypoxic/Anoxic Injury - A brain injury caused by lack of oxygen to the brain, which can be caused by many things, like near drowning, overdoses, and carbon monoxide poisoning.

Infarction - Tissue death due to inadequate blood flow.

Intracerebral - Within the cerebrum.

Locked in Syndrome - A condition where a person is aware and conscious, but cannot move or communicate verbally.

Meningitis - Swelling of the meninges due to infections such (bacterial, viral, fungal, tuberculosis) or a medication reaction.

Metastatic - Another word for a cancerous tumour that can spread to other regions of the body.

The ABC's Of Brain Injury

Oedema - A swelling of fluid.

Overdose - The result of taking too much of a drug. There are many different symptoms depending on the specific drug, but some symptoms can include slowing or stopping of breathing, loss of consciousness, and the possibility of choking on vomit.

Penetrating - A brain injury caused or related to an open wound (I.E a skull fracture).

Plasticity - The ability for the brain to form new connections and compensate for an injury.

Rehabilitation - The process of relearning, recovering and discovering skills lost due to an injury.

Shaken Baby Syndrome - A severe brain injury caused by shaking an infant.

Stroke - A disruption of blood flow to the brain. Can be hemorrhagic (due to bleeding in the brain) or ischemic (due to a blood clot blocking a blood vessel).

Subarachnoid - Beneath the arachnoid mater.

Subdural - Beneath the dura mater.

The ABC's Of Brain Injury

Thunderclap Headache - A sudden, very severe headache that can signal something serious, such as a hemorrhagic stroke.

Tumour - A lump caused by unregulated cell growth. Can be metastatic or benign.

Transient Ischemic Attack - Also called a "mini-stroke" a TIA is caused by a temporary blockage in the blood flow to the brain. The symptoms often only last a few minutes to hours, but is often a warning, as many people have a stroke shortly after a TIA.

Traumatic Brain Injury - Damage to the brain caused by an external force, such as a fall, or being hit by a weapon.

Vegetative State - A state where a person is awake but cannot show signs of awareness.

Terminology Word Search

I T G R B J D A H E C U A S R L O P V D
V E D V W M P K D Q H Y P O X I A W D F
Q T V M I M H J O D E P N P Q A U N S Q
M K E K N L C D I S L X L M W N C Z T Q
H J F J O B W C E O N G T C I I L B R S
J R O O W O C U A F M D W R N U V Y O T
D K C O N C U S S I O N V Y A F R M K Y
T M A K I B P W N T T P I D R D P O E H
J A L Z F D L U R P M A N Y S M U H F P
W J G E J S A P U T G N F M H Z P R L I
H T Q I J M S L O A B E A E P P H L A K
N H R D I Z T R V O H U R N F G C U B L
P D W Y O T I U T H F R C I A Z I S N H
A S J U F I C G R R J Y T N Z F M J H K
U O R B P A I S I I V S I G B U R E R R
Z A V R N K T D M N Y M O I W C T J L Y
W C N A A K Y G L F P L N T G W W I U X
O F M T M E H A K W C J U I V U A W H Y
R R U O V E R D O S E T I S L Z A T P V
O F F D I F F U S E C D B E N I G N G T

Concussion	Extradural	Meningitis	TIA
Plasticity	Infarction	Diffuse	
Hypoxia	Benign	Aneurysm	
Overdose	Stroke	Focal	

**I asked members of my local
brain injury association to help
me with this zine and they kindly
obliged.**

"Tell your story."

Had a car Accident
Catastrophic
Car
Incident
Delivering
Enhanced
Needed
Transition

I came home around 11:00 to shovel snow. There were 3 cars in the driveway. I was shoveling snow and the next thing I knew I was in the hospital. I was in 3 hospitals throughout my 1 year stay. My kids came to see me when I was in the hospital. That was 28 years ago

I was in the wrong place at the wrong time. I was shot in the eye after leaving a basketball game. I lost my eye and got a brain injury. I had to learn how to walk and talk all over again

My brain injury happened during brain surgery to clip an aneurysm. The operation didn't go well, I had a stroke on the table and was paralyzed on my left side for a year, and brain injured

Born in Trinidad and moved to Canada, then USA. Back to Canada. Have lived through so much. One brother died when I was 12. 10 years ago I lost my father to suicide then 3 years ago I lost my mother and brother a month apart

In May 2006, I moved downtown to be close to a new job. At 10:30 pm I was shot in the head with a shotgun. I was in a medically induced coma, I suffered multiple illnesses while recovering. They told me I died several times while in their care. Due to my injury my family was denied access to see me. The family flew across the country to see me, having to prepare to say goodbye. I was told I may lose all my senses, and potential to live life in a wheelchair. Following assistance from friends, I am lucky they were there to motivate me, and kept me going. They helped me with my movements, and regaining mobility. My injury has largely impacted how I view life, on how I treat others. I've had to adapt for others to understand. It hasn't changed me, it changed my outlook. My brain injury has put me on ODSP, I have PTSD, epilepsy, blindness, and an array of different disorders - including but not limited to many neurological complications. I was released from hospital with limited preparations, families don't have time to prepare a home that will now need accommodations to accommodate my new lifestyle

I was in a car accident in 2021 when someone did a u-turn without signaling, causing us to t-bone him. I was in the back passenger seat. I don't remember if I hit my head or not. I was in the hospital the next day with deep tissue damage in my neck, and a severe concussion. Well that concussion never went away, and after trying to get doctors to listen to me that something was wrong for over 2 years my new family doctor diagnosed me with a brain injury. It was a huge shock. I'm still learning to live with my symptoms, but I've found so much support with my family and friends. I will likely never go back to how I was pre accident, but I stay silly :P

I have had 38 concussions, and because I have not been able to afford treatment for my concussions, I am still dealing with the ramifications. Some of my long term symptoms include cognitive issues such as forgetting what I'm trying to say, or word finding issues, balance and coordination issues, and emotional regulation and frustration

My car was T-boned by a red light runner. I don't remember the accident- my head was injured

I was driving home from helping my mom at night. My husband was driving behind me. A truck hit my car head on. All I remember was the lights coming towards me

In 1988, at the age of 25, my stable life, left my ability to control my own life. Welcome to brain injury!!! Many surgeries, ill fated uneventful attempts. Without you's I'd be dead. One day I was introduced to the west fifth era: Welcome to brain injury. Look around!!!! You'll see what this group does for us!!!

**"What do you wish people
knew about brain injuries?"**

I have no control over my emotions. Please stop judging me if I get upset, angry or frustrated. Don't talk fast to me especially in medical appointments as my brain needs time to process what you are asking me to do. I am doing my best to recover with no access to services to help me recover

Not to pity, but to understand the challenges of having a brain injury

I am by myself since 2002. Last year I had to be in hospital for almost 4 months. They kept me in diapers but I don't wear diapers. People with brain injuries can live alone when properly accommodated but I can't go anywhere by myself anymore without a nurse

You will not know what it is like until you experience it yourself. Be understanding, be kind, be patient as we are already frustrated with ourselves

We are all 8 pecial
M embership
A cquired
R eaching
T raction
Our story continues

Be patient, ask
if they need
more help

Brain injury has existed forever, given little attention, unfortunately until it happens to them. I have found there is a lack of available resources, it can be all too easy to give up and seek other support when your current medical lacks understanding. My advice is to prepare as best you can, financially, physically at your home in case some catastrophic accident occurs. It can happen any place, to anyone, at anytime

"But you seem totally fine" is not a compliment. Brain injuries can be invisible to others, but that doesn't mean it's not there. It can feel very invalidating to hear that.

Healing is NOT linear. A person with a brain injury may experience setbacks or be slow to recover. Assume they are doing the best that they can, remind them you are proud of them despite their challenges, and if you snap at them for struggling with something, apologize.

Don't be judgmental, appearances can be deceiving. Healing takes time- don't get discouraged. Surround yourself with like-minded people. Be caring and loving to other people. Live life to the fullest

A person with a brain injury may look fine, so people don't understand all the challenges - vision, balance, memory, tiredness and lots more. Kindness and patience are very important and mean a lot!

I want the people to know that this place is the reason a lot of us are alive and here! It's invisible. We have it all and want more. We are here Monday, Tuesday, and Thursday. To those who care, thank you from the bottom of my heart.

How Can You Help?

DONATE! Research local brain injury interventions in your area (support groups, sleep away camps, associations etc) and donate to them. Show up for fundraisers and other community events.

Be patient. Whether you are dealing with a stranger, a loved one or yourself, being patient is so important when someone is struggling with something.

Help advocate but don't talk over people with brain injuries, listen to what we need and what we can do ourselves.

Stand up when you see ableism in the world.

Take what you learned in this zine to heart, and continue to research and understand brain injuries and what we go through.

Be up to date on bills and other political movements based around brain injuries.

If a loved one has a brain injury, get educated on their specific type of injury, and talk to them openly about their struggles. Let them lead the discussion.

Look for support if you are struggling with a brain injury and it's after effects.

Resources

Brain Injury Organizations:

Ontario Brain Injury Association

Headway UK Brain Injury Association

Brain Injury Association Of America

International Brain Injury Association

European Brain Injury Society

Brain Injury Canada

There may also be city wide brain injury associations, so look up your city or a city close to you!

YouTube Videos:

Crash course - Meet your master - Getting to know your brain

TED-ED - What happens during a stroke?

TED-ED - What happens when you have a concussion?

TED-ED - Why is meningitis so dangerous?

TED-ED - What causes opioid addiction, and why is it so tough to combat?

Resources

Websites:

Hopkins Medicine - Brain, Nerves, And Spine

National Institute of Neurological Conditions and Stroke

Heart and Stroke Foundation

National Institute On Drug Abuse

St Johns Ambulance UK

Center For Disease Control

National Center For PTSD

Mother Against Drunk Driving

Other Resources:

Letter From The Editor

I am going to assume that at least a portion of people reading this picked up this zine because their lives have recently been changed by a brain injury.

So to those who are feeling a whirlwind of emotions, from fear and anger to grief and hopelessness; we see you. We were you.

Now don't get me wrong, your story is completely unique to you. No one else has experienced exactly what you have. But there is a community out there that understands.

Got a concussion that never went away?
Someone else has been there.

Had to relearn how to walk, talk and read?
Someone else has been there.

There are resources out there to help you.

There are people who understand.

There are people out there who care about you, even if they don't know you.

You have a whole community behind you.

Now go forth, and believe in yourself.
You've got this