

# Brain Injury: An Uphill Road: Where did all these bumps come from?

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<b>Objectives:</b>	<ol style="list-style-type: none"> <li>1. Improve understanding of the effects of brain injury.</li> <li>2. Improve your ability to cope with it.</li> <li>3. Suggest sources of help and hope.</li> </ol>
<b>Common Causes of Brain Injury</b>	<b>Stroke</b> , TBI, Anoxia, Penetrating brain injuries TBI: Road accidents, Falls, Crime
<b>Common Effects of Brain Injury</b>	<b>Stroke</b> – paralysis and dysfunction specific to site <b>TBI</b> – Dysfunction in anything the brain is involved in
<b>Common problems Associated with TBI</b>	<b>Global:</b> Fatigue, Pain <b>Mind:</b> Organizing, Language, Multitasking, Emotionality, Attention <b>Memory:</b> Recent memory <b>Sum of Everything:</b> Economic security, Health
<b>Global Problems: Brain Causes</b> Brain moves inside skull	<ol style="list-style-type: none"> <li>1. Skin (meninges) and outer cortex is bumped and bruised</li> <li>2. Stem of brain can be stretched</li> <li>3. Fibres connecting brain cells can be broken (diffuse axonal injury)</li> </ol>

Category	Causes	Effects
<b>Global Problems</b>	Meninges and blood vessels	Headache
	Cortex and Brainstem	Fatigue and sleep
	Diffuse Axonal Injury	Increased mental effort
<b>Mind Problems</b>	<b>Frontal Lobe</b>	
	Planning and Organizing	Being disorganized
	Coordinating Actions	Wandering attention No multi-tasking Sequencing problems
	Emotional Interpreter	Emotionality Empathy, social skills
	Behaviour inhibitor	Impulsivity, lack of manners
<b>Memory Problems</b>	<b>Temporal Lobe</b>	
	Anterior tips	Object and word finding
	Hippocampus	Recent memory: people and events Spatial memory: getting lost

<b>Hope: Neuroplasticity</b>	Defined: Brain's ability to change – by re-wiring Synapses (connection points) get stronger
<b>Mechanisms of Recovery</b>	A. Recovery from Brain Shock (Diaschisis) B. Sprouting C. Rewiring (& relearning)
<b>A. Recovery from Brain Shock (Diaschisis)</b>	Uninjured cells “offline” because they've lost inputs, & can't get excited by what's left. Time and use brings them back “online”
<b>B. Sprouting</b>	Nearby Neurons sprout new connections
<b>C. Rewiring (&amp; relearning)</b>	Learning to do a task a different way (Behavioral compensation) Currently best and most used therapy
<b>Hope: Research</b>	Neurobiology – aiding cell and fibre regrowth – promising but years from clinical trials  Neural imaging – improving our ability to see what's wrong – but not fix it.
	My research  1. Spatial navigation: What's lost, what's spared 2. What brain areas are not working (long-term project)
	Rehab Research  1. Working to measure outcome better 2. Methods developed by practitioners – often spread slowly 3. Community-based research – UVic and community partners 4. E.g. VBIS and I – evaluating impact of coping skills training
<b>Hope – Right Now</b>	1. Exercise: Mind, body, fun 2. Purpose in life – find meaning, work to goals 3. Happiness in social life
<b>Resources</b>	Lots on Internet My website: <a href="http://web.uvic.ca/psyc/skelton/">http://web.uvic.ca/psyc/skelton/</a> (or Google UVic – Skelton) - Lots of links to websites about TBI - Lists/links to inexpensive books about TBI  Most important: VBIS – non-profit society to help brain injury survivors.