

# ABI and The Senses

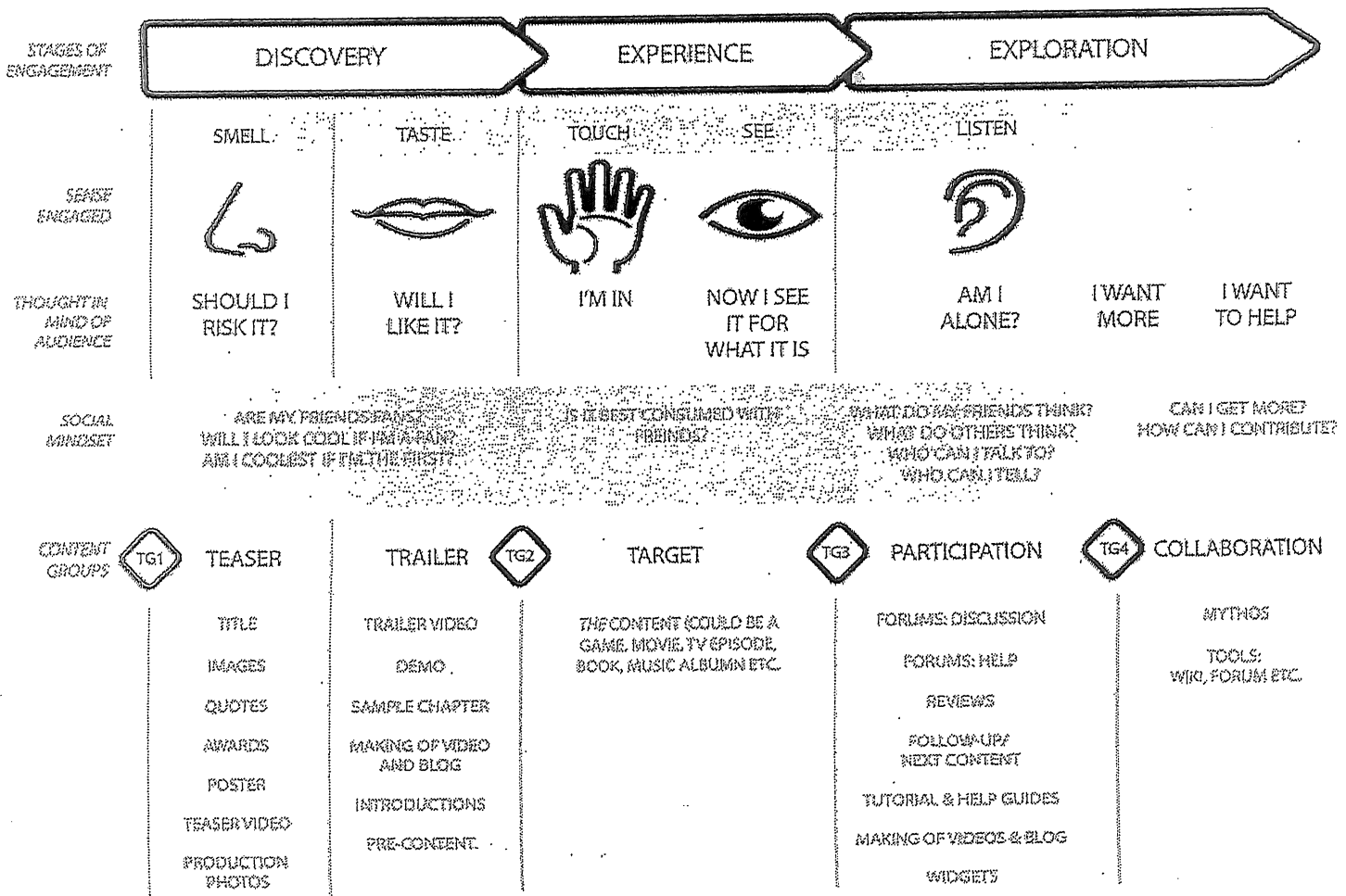
By: Sari Shatil

Sensory Loss is common after Acquired Brain Injury (ABI) and can be a significant impairment to function. Although there are 7 sensory systems in our body, all of which can be interrupted by ABI, this article will touch on only a few of them.

**Vision:** ABI can affect vision in several ways. Damage to cranial nerve 3 can result in total blindness, or loss of parts of your visual field, including being unable to see half or one quarter of the world around you. Damage to the occipital lobe, in the back of the brain, can stop the brain from registering the picture accurately. The nerves that control eye muscles can be impaired causing double vision, blurred vision, poorly coordinated eye movement, dizziness difficulty with concentration. Photophobia (difficulty with bright lights) is com-

mon. Vision may be corrected with prism lenses prescribed by optometrists, patching and visual rehabilitation. Sunglasses are recommended for photophobia, and side blinders reduce dizziness while in a car. Helpful Tip: Try taping the inside edges of your glasses beside your nose as a way to open up your visual field.

**Hearing:** Fractures of the temporal bone or nerve damage to the eighth cranial nerve may result in a loss of hearing in one ear. Ringing in the ears, also known as tinnitus, is common in ABI. This can present in one or both ears and frequently changes in pitch with your mood. There are few effective treatments for tinnitus, leaving survivors left to live with it. Helpful Tip: See an Audiologist to measure hearing loss and identify if you are a candidate for a hearing aid or surgical hearing implant.



**Proprioception:** Proprioceptors joints and muscles that tell us if are small sensors in our our limbs are bent or straight.

They contribute to balance and coordination. If ABI affects proprioception, we cannot feel where our limbs are in space and hence do not use them effectively. Watching your limbs move can help overcome proprioception loss. Helpful Tip: Practice standing on a pillow with your eyes closed to improve ankle proprioception. Make sure you have a counter in front of you to steady yourself if needed!

Sensation is important for quality of movement and quality of life. If you have noticed a reduction in any of your senses since an ABI, there are tools that can help. Speak with your doctor or physiotherapist to find strategies that can lead to improved sensory input.

**Touch:** Loss of tactile sensation can occur if the sensory cortex of the brain has been damaged. This results in numbness or reduced sense of touch. This kind of sensation can be retrained with physiotherapy. Techniques that help include using touch to improve touch, electrical therapy to stimulate nerves and the philosophy of neuroplasticity. Helpful Tip: Practice stroking your affected body part with smooth and rough surfaces to increase the input of sensation to your brain.

**Vestibular:** The vestibular sensory organs are imbedded in the inner ear. They are responsible for telling us if we are moving, spinning, dropping or rolling. Damage to this system is common after ABI, causing vertigo, lightheadedness or dizziness that contributes to imbalance. Vestibular Rehabilitation is helpful and can be provided by Physiotherapy experts. Depending on the underlying cause, treatment can take one visit to move crystals into place, or up to 8 visits to retrain the system. Helpful Tip: Practice looking directly at an object while moving your head side to side. It can help with re-setting the vestibular system.

