

Learn through every day and learn to unlearn. Neuroplasticity is the key.

This is a mantra which you will hear me repeat over and over. It cannot be said enough. What does this mean in practice though.

Let us remind ourselves of the purpose here.

My view is that a seizure, in my case either a physical or non-physical event, is the end product of a complex interactions between the brain (more accurately the entire nervous system) and the body. The event itself, is the result of a series of processes which:

- (a) have happened previously and which the brain has remembered as being, 'well if these series of processes happens and I (the brain) recognise this as something which has happened before, then activate the learned response which I (the brain) stored as being the acceptable response to this series of events'; or
- (b) happens and 'I (the brain) do not recognise this as something which has happened previously, then press the red alert button which stimulates the nuclear option of an unresolvable fight or flight response as I (the brain) consider this to be of fundamental danger to myself (the brain)'.

There is then within either (a) or (b) a conscious or sub-conscious element upon which the 'brain' calls upon as a reference point to 'match' the series of events to. This results in either a conscious or sub-conscious response or a combination of the two. This is compounded by the brains two 'states' of consciousness and sub-consciousness being unable to distinguish between the two states. However, it is evident that in my case I do not lose consciousness, but I do exhibit the disassociation of the two states of consciousness and sub-consciousness which are required for my overall perception to be 'in working order'. It gets more interesting the more you think about it. I could introduce the aspect of super synapses and sub consciousness but a little at a time, if I may.

Throughout life we build up a set of learned responses just by virtue of being a sentient being. Unfortunately, in this we have learnt that a seizure event is an acceptable learnt outcome.

It is my simple view that why I am experiencing both physical and non-physical seizures is due to the brain (the entire nervous system) considering these events as being both acceptable, and the correct neural pathways to follow. This is the cycle we must break.

How do we do this.

Well as humans we have this wonderful adaptable ability. We have evolved to become as some would say, the most dominant life form in this small oasis in the cosmos. Me thinks, however the ants may have something to say about that if they could communicate with us. Sadly, their language is not ours as we would understand it, or is it. Maybe Dr Doolittle had something when he tried to talk to the animal kingdom. Conceptually, is there a difference between a pheromone signal and a neurotransmitter. A topic for another day perhaps.

One of the innate abilities of the brain is neuroplasticity. What this means is the brain is flexible and function is not fixed.

Years ago, in the late 1990's, I gave this example in one of the post graduate education sessions to junior doctors, to prove the point.

Sperry won the Nobel Prize for his dual hemisphere work. This strongly suggested that function was fixed innately. And by implication learned response was fixed. Now consider this. It is considered that the major language areas reside in the dominant hemisphere normally the left. To name but two, the areas called Broca and Wernicke's. You can read all about this so I will not go into detail. What was found though, was that for patients who had severe epilepsy caused by developmental damage to the left hemisphere, that if the left hemisphere was removed, then the patient could speak and communicate

verbally. If function were innately fixed and the same for learned response, the right hemisphere would have been unable to adapt to perform the same function as the left.

I gave a further example.

Consider a person who is congenitally blind or who has lost their sight during their life due to an unfortunate accident. As a consequence of this, those areas of the brain which were once used in terms of 'neural processing capacity' are re-purposed. The fingertips and other sensory abilities are enhanced and this has allowed many to be able to 'read' braille as if it were a visual sensation.

There are others.

Neuroplasticity is the ability of the neural network which we call our brain being able to learn new pathways or to re-purpose existing pathways so that the response to sensory stimuli is changed. If you now extend the concept of the brain to include the entire nervous system which touches every part of our body it becomes a very powerful ability to harness.

The ultimate complex adaptive model. Function and learned response are not fixed. Yes, you can teach an old dog new tricks. You just have to learn to unlearn the old pathway and replace it with a different pathway which has a more beneficial outcome.