

MEDI- CABU- LARY

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What is neuroplasticity?

The term is derived from the root words neuron and plastic. Neurons are the nerve cells in the brain and each neural cell is composed of an axon, dendrites and are linked to another neural cell by synapses. Plasticity means the quality of being easily shaped or molded or the adaptability of an organism to changes in its environment. Therefore, neuroplasticity is the potential of the brain cells to reorganize themselves by making new neural pathways to adapt to the individual's needs. Previously, it was believed that the human brain consists of about 100 billion neural cells that are set from birth to adulthood, and that the brain could not make new cells or generate new neural pathways. Current neuroimaging techniques (PET and MRI brain scanning) reveal that new neural cells and neural pathways are generated throughout life. What this discovery means is that not only is there no end to how much someone can learn through focus, sharpening of skills and concentration throughout their lifetime, it also sheds new hope for patients recovering from a brain injury.

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What is Tetralogy of Fallot?

Tetralogy of Fallot (TOF) is the most common cyanotic congenital heart lesion found in newborn babies. The defect, which is a major cause of so-called “blue babies,” was first described by pathologists centuries ago.

There are four components to TOF:

- A large hole between the lower chambers of the heart (ventricular septal defect–VSD)
- Obstruction of blood flow to the lungs
- Shift of the aorta rightward over the VSD and
- Eventual thickening of the right ventricle in order to overcome the obstructed flow.

The development of this abnormality occurs very early in gestation (before week 7 of pregnancy). The result is a physiologic state where deoxygenated blood mixes with the oxygenated blood that circulates throughout the body. This leads to cyanosis or a bluish discoloration of the skin.

Once uniformly fatal, TOF can now be repaired by congenital heart surgeons. With ongoing medical care, these patients can be expected to have a normal life with few restrictions in their activities and an excellent quality of life.

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What are bunions and how can they be treated?

A bunion, also known as hallux valgus, is a deformity of the big toe joint. A major driver of foot and ankle surgery, bunions are associated with functional disability, foot pain, poor balance, and a risk of falling in older adults. Because bunions are progressive and worsen with time, it is important to get a proper diagnosis and treatment.

Bunions are commonly corrected with surgery and there are more than 100 different surgical procedures to accomplish this. Although surgery is the only way to correct the problem, there are non-surgical options to reduce the pain. These non-surgical options include wide toe-box shoes, bunion pads, arch supports, custom shoe inserts (orthotics), anti-inflammatories and steroid (cortisone) injections.

Since there are other problems that can cause toe pain, the first step should be to visit a podiatrist for an examination and x-rays. From there a diagnosis and treatment plan can be discussed.

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