NEW ONSET SEIZURES IN ADULTS

What are seizures?
Seizures are an electrical storm of the brain. They are temporary abnormal electrical discharges in the brain, resulting in some degree of temporary brain dysfunction. The symptoms may vary depending on the part of the brain that is affected. It could be an unusual body movement or just altered awareness, behavior or sensation.

What causes seizures?
Seizures can be caused by a brief temporary problem, such as drug overdose, drug withdrawal or sudden head trauma. Seizures can also be caused by a persistent underlying tendency to seizures; this is "epilepsy", also called a "seizure disorder".

What causes epilepsy?
Almost anything that affects the brain can cause seizures so there are many different causes. The cause cannot be identified about half of the time because the cause is microscopic or affects the brain in a way that cannot be detected by normal tests. However, commonly identified causes are head injury, birth-related injury, stroke or other causes of scars on the brain, abnormal brain development, and brain tumors. Some people are born with an underlying tendency to seizures and it runs in some families. It is rarely part of a more severe brain condition.

Are there spells that look like seizures?
Sometimes fainting spells, strokes and even migraine headaches and panic attacks can look like seizures.

What happens in my brain when I have a seizure?
The normal brain consists of billions of nerve cells or neurons. The neuron is different from other cells because it can generate electrical impulses that travel from one neuron to another, similar to an electrical circuit. Neurons conduct nerve impulses to communicate with each other and eventually conduct impulses to muscle cells. Neurotransmitters are the chemicals that conduct the impulse from one neuron to another. All the functions of the brain depend on the delicate balance of normal impulse conduction. Nerve impulses are generated in an orderly manner under normal conditions. When a person has a seizure, there is a kind of outburst of electrical impulses from the neurons. It usually starts in the cerebral cortex and it can spread to the entire brain. The way in which a person behaves during a seizure depends on the area where the abnormal impulses originate and spread.

What are the types of seizures?

The terminology for seizures is slightly confusion because it has changed over the years and it uses words that usually have other meanings.
Partial Seizures: Usually neurons limited to part of one cerebral hemisphere (one half of the brain) are involved in this kind of seizure. Partial seizures are classified to simple partial seizure and complex partial seizure.

Simple Partial seizure: There is no loss of awareness. These consist of twitching, numbness, sweating, or hallucinations, but the person is awake and able to speak.
Complex Partial seizures: There is staring and loss of awareness of surroundings, sometimes with repetative picking at the clothes or smacking the lips ("automatisms").

Generalized seizures: Neurons throughout the entire brain are involved in this type of seizures.

Tonic – clonic seizures: Also known as grand mal or generalized tonic-clonic (GTC) seizures. They usually occur without waring. During the tonic phase, there is sudden contraction of the muscles. The limbs are stiff and rigid, which may prevent breathing briefly, causing them to turn blue. The person will fall to the ground and can be incontinent of urine or bite his tongue. The tonic phase is usually a few seconds. This is followed by the clonic phase in which the body rhythmically contracts or jerks in a violent (convulsive) manner. This phase usually lasts less than 90 seconds but can last several minutes. Extreme fatigue follows a GTC and people may sleep for hours.
Absence Seizure: Also known as "petit mal" seizures. There is sudden interruption of activity and a blank stare. These usually begin in childhood.
Myoclonic seizures: They are sudden brief shock like jerks of a muscle or a group of muscles. They may cause an object in the hand to be dropped or the person to fall.
Atonic Seizures: Also known as drop attacks. There is a momentary sudden loss of muscle tone which can cause sudden falling to the ground or dropping of the head, which often causes injury.

How long does a seizure last?

Depending on the type of seizure, it can last from seconds to a few minutes. A generalized tonic-clonic seizure can last up to a few minutes, while absence seizures usually last only seconds.

Will it get worse or progress?

Each person is different and whether seizures get worse or better over time is highly variable. While it depends on the cause of the seizures, most epilepsies do not progress.

How is epilepsy treated?

The main treatment is to take antiepileptic drugs (AEDs) each day to suppress the tendency to have seizures. Taking medications only when seizures occur is not usually effective because their occurrence cannot be predicted for most people. If seizures do not respond to medications then implantable devices or brain surgery can be considered.

Will I have to take medications for the rest of my life?

This depends on the cause of the seizures. Some epilepsies go away, especially if they start in childhood. Some epilepsies are present throughout life but are easily treated with medications.

Can I have children?

Epilepsy does not generally prevent you from having children. Some special precautions should be taken before pregnancy so it is important that pregnancy be planned in advance.

Will it affect my children?

This depends heavily on the cause of the epilepsy. A few epilepsies are inherited from one generation to another. Discuss this with your doctor if you are concerned about it.

What if a seizure doesn't stop?

Immediate attention is needed if a seizure is longer than 5 minutes or recurs. Call 911 or go to the nearest emergency department.