

The Falling Sickiness Story

A Neurologist's View

Healthiest Justice?

The oped page of *The New York Sun* interviewed Dr. Martha Morrell, clinical professor of Neurology at Stanford University and chief medical officer of NeuroPace, a company that has developed and is now testing a new medical device to treat epilepsy. Dr. Morrell spoke about Chief Justice Roberts' recent epileptic seizure and its effect on his own work and public policy.

The chief justice had a seizure while on holiday, but some people are saying he is not epileptic. What is the correct definition?

Epilepsy is a common and misunderstood brain condition. A person has epilepsy if he or she has had two or more seizures.

Seizures are caused by sudden abnormal electrical activity in the brain. Although one in every 10 persons has a seizure in their lifetime, only one out of 100 go on to have epilepsy.

Some epilepsies are inherited. Others are caused by abnormalities in brain development, head trauma, stroke, brain infections and rarely, brain tumors. Often there is no obvious cause.

What are seizures like?

The easiest seizure to recognize is a generalized tonic clonic seizure, also known as grand mal. This type of seizure causes loss of consciousness with uncontrollable jerking of the arms and legs. Fortunately, most seizures are not as severe.

More commonly, a seizure causes a change in sensation or small movements in a part of the body. Some seizures are characterized by a smell, a taste, or a change in vision; others by sudden feelings of anxiety or apprehension. Seizures may also cause confusion or brief loss of awareness.

What share of the population have epilepsy? And who are some people we've heard of in history who have had epilepsy?

Epilepsy is common but many people with epilepsy do not tell others. That is because epilepsy still carries a stigma. Epilepsy historically has been associated with mental illness and even spiritual possession. Many people still think that epilepsy causes mental retardation. Some consider epilepsy contagious, it is not.

Famous figures in history who have had epilepsy include St. Paul, Alexander the Great, Julius Caesar, Joan of Arc, Napoleon Bonaparte, Dante, Flaubert, Paganini, Tennyson, Byron, Charles Dickens, Fyodor Dostoyevsky, Molière, Lewis Carroll, Agatha Christie, Handel, Beethoven, Vincent Van Gogh, Isaac Newton, Alfred Nobel, and Richard Burton.

Will the Justice have other seizures?

There is between a 60% and 75% chance that the judge will have another seizure. Testing with an electroencephalogram and a brain MRI may help the neurologist more accurately predict the risk. The neurologist also will carefully question the judge to see if there have been symptoms to suggest previous more subtle seizures.

Will the Justice's drugs or treatments necessarily impair his work? We're hearing about cognitive side effects that could trouble him. Is the challenging kind of work that a chief justice does possible when you have epilepsy?

Antiepileptic drugs do not cure epilepsy; they reduce brain excitability so that seizures are less likely to occur. Therefore, in order to work, these medications must be taken every day. The Judge will need to decide whether or not he wants to take antiepileptic medications.

Since it was many years between his first and second seizure, he may prefer to wait to see if and when he has a third. Alternatively, he may prefer to begin medication rather than worry about when the next seizure will hit. Taking medication, however, does not guarantee that someone will be seizure free. Unfortunately, one-third of people with epilepsy do not have seizure control despite taking antiepileptic medications.

What if Justice Roberts were a wood-

worker, not a justice? How might he be treated then? And what drugs are available?

There are a number of antiepileptic medications available, and the choice of which medication to use is based on the type of seizures and on the possible side effects. Antiepileptic drug side effects include fatigue, mental slowing, depression, incoordination, weight gain, and other cosmetic changes.

Specific antiepileptic drugs are more or less likely to cause particular side effects. The neurologist will often suggest a specific antiepileptic medication based on the patient's job and lifestyle. For example, the justice will want to stay away from antiepileptic drugs that are likely to cause cognitive side effects but may put up with weight gain.

Could someone with epilepsy drive a truck?

States routinely take away the drivers' licenses of those who have had seizures. People with epilepsy must respect their state driving regulations. Most states require that a person be seizure free for six to 12 months before driving. A person who has had even one seizure cannot obtain a pilot's license or commercial driving license, and may be ineligible to become a police officer, firefighter, or paramedic.

What if the person at issue were pregnant?

Women with epilepsy must consider the possibility that some antiepileptic drugs can cause birth defects. Pregnancy plans are an important consideration in antiepileptic medication selection.

What are you working on?

New treatments are needed for the 30% of people with epilepsy who continue to have seizures despite antiepileptic drugs. Some people can have surgery to remove the area of the brain causing the seizures.

For others, such surgery is too risky or is unlikely to work.

The RNS™ System is an investigational device that is now being tested in adults with medically uncontrolled partial onset seizures.

The RNS Neurostimulator is placed in the skull and attached to electrodes that are located near the seizure focus in the brain.

The device monitors brain electrical activity, and then delivers small pulses of electrical stimulation when seizure activity is detected. The intent is to stop the abnormal electrical activity before seizure symptoms occur. More information about the device and the investigational trial can be obtained at seizurestudy.com or by calling 1-866-903-3678.

What kind of life might your product eventually yield?

What every person with epilepsy wants is a life that is not limited by seizures. New treatment options such as new medications and devices like the RNS™ System bring hope to those whose seizures are not currently controlled. Better public understanding of this chronic neurological condition also brings people with epilepsy closer to that goal.

Thank you, Dr. Morrell.

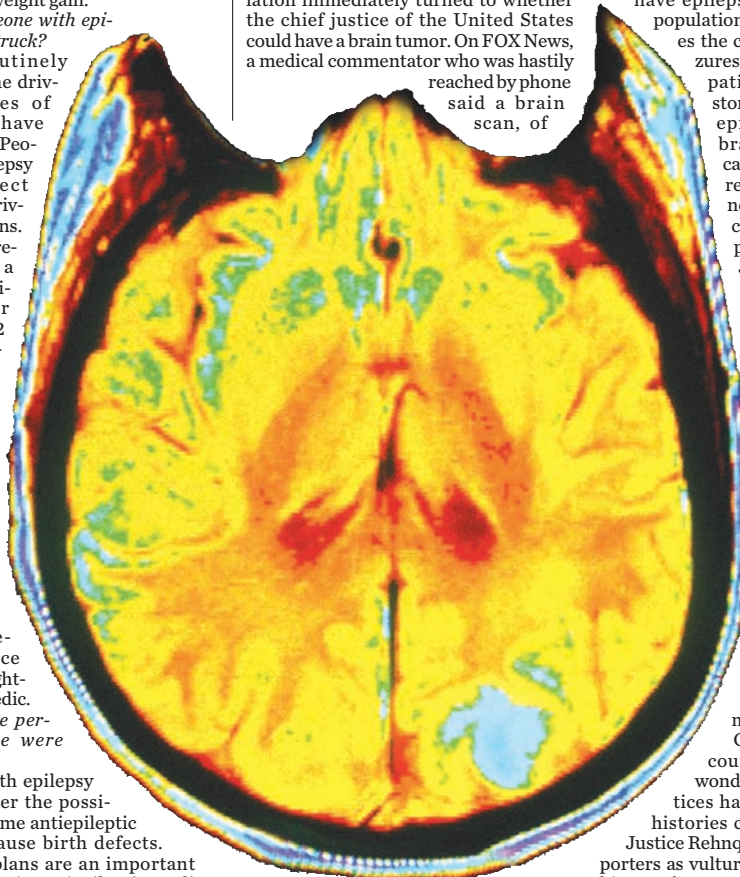
By SCOTT GOTTLIEB
 Did he have a seizure and then fall as a result, or did he fall and then have a seizure?

It depended on which network you were watching on Monday, and yet this simple detail could make a world of difference in uncovering the truth of what really happened to Chief Justice Roberts.

When the dazzling John Roberts wooed senators during his confirmation hearing, it was clear that his synapses fired smartly. But it seems few were told they could all fire at once.

The first news reports of Justice Roberts' seizure gave new meaning to the phrase "media frenzy." On CNN, speculation immediately turned to whether the chief justice of the United States could have a brain tumor. On FOX News, a medical commentator who was hastily

reached by phone said a brain scan, of



seizure disorder it is clear that something changed irrevocably following the 52-year-old chief justice's momentary loss of consciousness on a vacation island dock on Monday afternoon," the writer opined.

Translated: If Justice Roberts was being straight with the American public, then were his hick doctors plucked from the backwaters of Maine playing it straight with Justice Roberts?

Because the seizure was his second — Justice Roberts had a similar one in 1993 — the chief justice meets the strict criteria for epilepsy. Justice Roberts and his doctors will have to decide whether he should take medication to prevent further seizures.

About 2.7 million people in America have epilepsy, roughly 1% of the population, and in 70% of the cases the cause is unknown. Seizures are often described to patients as an electrical storm in the brain, a brief episode of heightened brain activity that can cause mild symptoms, or result in lost consciousness and even full-blown convulsions, as happened in the case of Justice Roberts.

Most patients with epilepsy can manage their episodes safely with medicines that have minimal or virtually no side effects. The risk of having a single seizure in one's lifetime is 9% and about 3% of people will go on to have a second seizure. Infantile seizures, often the result of high fevers, can be even more common than first-time seizures in adults, but most babies won't have a second seizure, or remember their first.

Given the press accounts this week, it's no wonder Supreme Court justices have kept their medical histories closely guarded. Chief Justice Rehnquist once described reporters as vultures for their interest in his use of a prescription pain reliever.

Justice Marshall, hospitalized in 1987 for treatment of a blood clot, declined a reporter's request to review his medical records. "I don't think it's anybody's business," he said. And Justice Blackmun didn't discuss his recurrence of prostate cancer in the late 1980s, calling press inquiries about his health "reprehensible." Justice Ginsburg was more forthcoming about her treatment for colon cancer while serving on the court.

Nobody knows the cholesterol level of Justice Alito, and who would trust it anyway after the Roberts' affair? It's still a good bet though that regardless of Justice Alito's lipids, as the youngest Supreme, Justice Roberts still is among the healthiest. One hopes reporters get to the bottom of this soon.

Of course, the Supreme whose health garners the most interest is 87-year-old John Paul Stevens, whose reports of stumbling are followed closely by sunny courthouse reporters, some of whom openly wonder when his mental faculty will wane.

The good news for now is that as facts trickle out about Justice Roberts, all of the television doctors finally agreed that with modern care and medicines, the chief justice should be just fine. That's a relief.

Dr. Gottlieb, practicing physician and resident fellow at the American Enterprise Institute, was a deputy commissioner of the Food and Drug Administration between 2005 and 2007 and was a senior official at the Centers for Medicare and Medicaid Services.