

2013

2012-2014.

An [organoid](#) is a miniaturized and simplified version of an [organ](#) produced [in vitro](#) in three dimensions that show realistic micro-[anatomy](#). They are derived from one or a few [cells](#) from a [tissue](#), embryonic stem cells, or induced [pluripotent stem cells](#), which can self-organize in three-dimensional [culture](#) owing to their self-renewal and [differentiation](#) capacities. The technique for growing organoids has rapidly improved since the early 2010s, and it was named by The Scientist as one of the biggest scientific advancements of [2013](#) ¹⁾.

VNS Therapy or dietary therapies, such as the ketogenic diet, may help many people. Another option is responsive [neurostimulation](#). Known as RNS® Therapy, this new seizure treatment was approved by the U.S. Food and Drug Administration (FDA) in [2013](#).

In 2013, investigators from A Randomized Trial of Unruptured Brain Arteriovenous Malformations (AVM; [ARUBA](#)) reported that interventions to obliterate unruptured AVMs caused more morbidity and mortality than medical management ²⁾.

In 2013, the publication of the Interventional Management of Stroke (IMS III), ³⁾ Synthesis Expansion; A Randomized Controlled Trial on Intra-Arterial Versus Intravenous Thrombolysis in Acute Ischemic Stroke (SYNTHESIS Expansion), ⁴⁾ and Mechanical Retrieval and Recanalization of Stroke Clots Using Embolectomy ⁵⁾ trials reported no significant differences in functional outcome with endovascular therapy compared to standard therapy (ie, intravenous tissue plasminogen activator or tissue-type plasminogen activator [tPA]) alone. As a result, the 2013 American Heart Association (AHA)/American Stroke Association guidelines for the early management of patients with acute ischemic stroke ⁶⁾ advised that the “ability to improve patient outcomes has not yet been established” for thrombectomy devices.

In [2013](#) the [American Association of Neurological Surgeons](#) and the [Congress of Neurological Surgeons](#) released updated management guidelines for the acute [cervical spine injury](#) and [spinal cord injury](#) SCI.

The year 2012 was the 50th anniversary of the [Korean Neurosurgical Society](#), and in [2013](#), the 15th World Congress of Neurosurgery took place in [Seoul, Korea](#)

Multinodular and vacuolating neuronal tumor of the cerebrum (MVNT) is a superficial neuronal tumor in adult that were first documented in [2013](#)⁷⁾.

Chen et al described in [2013](#) an alternate approach involving temporal horn to [prepontine cistern](#) shunting followed by [radiosurgery](#) of the offending lesion. This 41-year-old woman with a history of [meningiomas](#) presented with progressive, incapacitating headache. Magnetic resonance imaging (MRI) showed growth of a right [trigone ventricular meningioma](#), causing entrapment of the right [temporal horn](#). A [ventricular catheter](#) was placed using frame-based stereotaxy and image fusion computed tomography/MRI to connect the entrapped [lateral ventricle](#) to the [prepontine cistern](#). The patient reported complete resolution of her symptoms after the [procedure](#).

Postoperative MRI revealed decompression of the temporal horn. The trigonal meningioma was treated with stereotactic radiosurgery. The patient remained asymptomatic at the 2-year follow-up⁸⁾.

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