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Gamma-Knife Surgery Halts Growth of World's Tallest Living Human

By Katherine Harmon | March 15, 2012



Leksell Gamma Knife 4C courtesy of Smoothape/Wikimedia Commons

Years of surgeries and medications were unable to stop Sultan Kosen's runaway growth. In 2010 at age 27 and a height of 2.46 meters (**eight feet, one inch**), he became the **world's tallest living man**, according to *Guinness World Records*. But he wasn't done growing.

Kosen had been diagnosed with a growth disorder at age 10 after doctors in his native Turkey found a tumor on his **pituitary gland**. The **tumor triggered the gland to release too much growth hormone**. As a result, he has suffered from both **gigantism**, a condition in which too much growth hormone is secreted during childhood, and **acromegaly**, a condition caused by too much growth hormone in adulthood.

The tumor was technically benign, but it was **lodged near the bottom of his brain, making it difficult to operate on**. Thus ensconced, the tumor—along with Kosen's whole body—continued to grow to dangerous proportions.



(Left to right) - Sophie Yu, Kelly Garrett, Mary Lee Vance, MD, Sultan Kosen and Jason Sheehan, MD; courtesy of UVA Health System

So in May 2010, doctors at the University of Virginia Medical Center put Kosen on new medication to limit growth hormone production. Perhaps more importantly, they were also able to perform [gamma-knife radiosurgery](#) on his hard-to-reach tumor. Guided by MRI, the doctors used this super-precise technique, which harnesses high-power gamma rays, to disable the tumor without having to do more dangerous invasive surgery.

Although the surgery was performed two years ago, its effects were not immediate. Kosen saw 28 come and go as a new record holder at a height of 2.49 meters. But now, at age 29 and 2.51 meters, Kosen and his tumor have at last stopped growing, according to his doctors in Turkey, as [reported by the University of Virginia Medical Center](#).

Aside from making daily life difficult—from shopping for shoes to fit his 14.4-inch-long feet to checking into the hospital, where doctors reportedly had to use two beds to accommodate his long frame—being so tall comes with many medical concerns. The [human heart isn't well suited to pumping blood such long distances](#). And Kosen has a number of joint and spinal abnormalities, rendering walks challenging and often painful. [“His skeleton just can't support him,”](#) Mary Lee Vance, Kosen's endocrinologist at the University of Virginia Medical Center, said in a prepared statement. And his [tumor had gotten so large that it was affecting his vision](#).

Although shoes will still be difficult to come by—roughly a size 21—and Kosen will likely continue to face health challenges due to his height, he is safer at 2.51 meters than any taller, noted his University of Virginia Medical Center neurosurgeon, Jason Sheehan. [“If he had continued to grow, it would have been life-threatening,”](#) Sheehan said in a prepared statement.

Previous record holders for height have died at a younger-than-average age. [Sandy Allen](#), the world's tallest woman, was 2.3 meters (seven feet, seven inches) and died in 2008 at just 53. She also had a tumor on her pituitary gland as a child. The tallest man to have been recorded was Robert Wadlow, who grew to 2.72 meters (eight feet 11 inches) and seemed to still be growing up until his death in 1940 at age 22 from an infection.



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