

Surgeon promising first human head transplant makes US pitch

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Sergio Canavero, who leads the Turin Advanced Neuromodulation Group, first announced his project in 2013, saying at the time that such a procedure could be possible as soon as 2016.

But this timeline seems extremely unlikely given the numerous obstacles and gaps in knowledge.

Canavero, who made a 2.5-hour presentation Friday at a conference of the American Academy of Neurological and Orthopedic Surgeons in Annapolis, Maryland, met for the first time there a man who volunteered for the world's first head transplant.

Russian-born Valery Spiridonov, 30, suffers from Werdnig-Hoffmann disease, which is a progressive and incurable wasting ailment. He was among the 150-some conference participants.

Invited to speak at the start of the conference, Canavero described at length how he would mend a severed [spinal cord](#)—a crucial factor in any such surgery—and described advances in the field, especially on animals.

The secret is to use a nano blade to cut the cord, then polyethylene glycol and an electrical current to accelerate the reconnection of severed nerve fibers.

But he admitted his knowledge was incomplete and didn't go into much detail about the profusion of other major problems that could be expected with such an unfathomably drastic operation.

Among those issues is how to maintain and restore blood flow to the brain, or how to reconnect the parasympathetic nervous system, a key component of an organism's automatic functions.

'Be Americans'

Marc Stevens, an orthopedic surgeon from Smithfield, North Carolina who was attending the conference, said Canavero's presentation was intriguing but more research should be done on healing spinal cord injuries instead of attempting a head transplant.

Jerry Silver, a Case Western Reserve University neurosciences professor, cautioned that spinal reconnection science touted by Canavero was far from ready, noting the difficulties involved in reattaching the vagus nerve, which controls a variety of functions including digestion and heart rates.

At the end of his presentation, Canavero asked his US peers for help—both with the science and the cash needed for the project.

"I did my homework and now I am asking you to help," he said.

"Let's suspend all judgment. What you have been taught is wrong.

"I need your help and I need your assistance. Be Americans," he added.

Likening his project to former president John F. Kennedy's Apollo mission to send men to the moon in the 1960s, he called on "billionaires like Bill Gates to give money for this project."

He has previously said he needed about \$100 million for his work.

Animal experiments in the 1970s in America saw Robert White transplant heads on monkeys, but he was unable to restore spinal function and the creatures soon died.

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