Induced Pluripotent Stem Cell Research

Video description: Opening screen: Kevin (a male with short brown hair and grey collared shirt) sits in front of a dark blue background, looks into the camera and signs.

TRANSCRIPT: Hi! First of all, I want to thank all of you for spreading the word and donating. We hope to go viral and raise even more money for the Coalition. Thank you. Today's topic is induced pluripotent stem cells or "IPSC." Let's start with the basics first. The human body is made of millions of cells. Your eyes have 2 important types of cells: "cones" and "rods." They're in the back of your eye, in the retina. In the previous video about retinitis pigmentosa (RP), we described progressive vision loss. RP causes the rods and cones to die, These dead cells can be seen as black spots on the retina. As the cells die, it causes the loss of peripheral vision. Years back, researchers discovered "stem cells." Let's do a quick review of stem cell research.

They learned that stem cells from one person could be used to treat eye diseases in other people. However, there was a risk! The body recognized the injected stem cells were not theirs, and they rejected them. So, researchers went back to the lab and created IPSCs. Using a person's own skin, they take a very small sample of cells and add a special growth factor. They put this mixture in a plastic dish and wait for new retinal cells to grow. It takes about 150 days. When the cells are fully formed, they inject these healthy cells into your own eye. Amazingly, there is an 80% chance of those cells surviving because they are your own cells.

How cool is that!? The goal of this therapy is to maintain the current level of vision or to improve vision. This technique is still being tested, mainly with people who are blind or have significant vision loss. Research teams are hoping that current testing proves that IPSCs can successfully restore vision. If so, they can move on to the next phases of clinical trials. Stay tuned!