

AUDIO SCRIPT

[F1: Female Student; M1: Male Student]

F1: What's your presentation about, Clyde?

M1: Oh, hi, Melissa. It's about embedded technology.

F1: You mean like a smart watch?

M1: No, I mean technology that's actually embedded in your body, for example, a computer chip in your arm. So, instead of carrying a device like a smartphone or a tablet, the device will be *in* your body.

F1: That's a really dumb idea.

M1: Well, it isn't really, Melissa. Imagine how convenient it would be. People are already connected to their smartphones 24/7, so the next logical step is to embed them in our bodies. We wouldn't have to worry about them being lost or stolen.

F1: Yeah, that would be convenient. I'm always losing my phone.

M1: Plus, we already have augmented reality glasses. Why not embed the technology right in our eyes?

F1: No way. No one's putting anything in my eyes. I can't even wear contact lenses.

M1: Well, first of all, engineers are already working on a lens that contains tiny devices. One of the things it will do is project images onto a tiny screen in the eye. Soon people will have the ability to check email, search the Internet, watch movies, and play games, right in their eyes.

F1: Eww.

M1: Well, it's not just for fun. There are also many medical benefits. For instance, the lens will be able to monitor things like temperature and blood pressure. It turns out that many chemicals that are in the blood are also on the surface of the eye. Let's say you have diabetes. The lens could do a chemical analysis to check your glucose level. The implants we have today are usually attacked by the body's immune system and have to be taken out after a while. That wouldn't happen with the eye lens. In fact, the lens could stay in the body for the duration of a person's life.

F1: I'm still trying to decide if embedded technology is a good idea.

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M1: Also, scientists are working on a brain implant system. It's designed to help people who've lost the use of their body, for instance people with spinal cord injuries or soldiers who've been injured in military action. The idea is that a small sensor consisting of 96 tiny electrodes is implanted in the region of the brain known as the motor cortex. That's the part that controls voluntary movements of the arm and hand. The electrodes are close to individual neurons so they can detect the neural activity associated with a person's intended movement. Then the electrodes interact with an external computer that translates the impulses into commands to operate a robotic arm. So far, two participants in the study have been able to send signals to robotic arms and actually hold things. Another participant was able to use a robotic arm to drink from a bottle. It was the first time in 15 years that she was able to drink without someone's help.

F1: I don't understand all that, but I kind of agree that this technology is great for helping people.

M1: Finally, I'm going to talk about the benefits to the environment. Right now, the average household has seven Internet-connected devices. Multiply that by the billions of households worldwide. Most of these devices are thrown out as new products come onto the market. If people substitute all these devices for one embedded device, imagine how much less toxic e-waste there would be in the world.

F1: I have to agree with that idea. You know what, Clyde? I've changed my mind. I really like your ideas.