

group of doctors and nurses gathered in a room at Massachusetts General Hospital to diagnose a new patient that had just arrived—a 33-year-old man with growths all over his face. He was suffering from a rare disease that caused tumors to grow in his brain and limbs and on his skin. He also had difficulty with walking, talking and sensation.

The man's face was contorted in pain, but his mother explained to the assembled doctors that her son Josh could not feel pain the way healthy people do. If Josh did feel any discomfort he would not be able to express it.

One of the doctors present, neurologist Joel Salinas, drew a reflex hammer from the pocket of his white lab coat and tapped it on Josh's left knee. "Do you feel anything?" he asked. The patient did not respond and his foot gave no more than the slightest motion.

But Salinas himself was feeling something. As he tapped on the patient's knee he felt someone tapping his knee with a hammer. He wasn't imagining what such a knock would feel like; he actually *felt* it.

Salinas suffers from an extremely rare condition that is virtually the opposite of what the patient he was examining suffered from. While Josh could not feel his own pain or any sensation, Salinas feels the sensation of others. When he sees someone hit another person in the face, Salinas will actually feel the slap on his own face. Even seeing another person being touched will leave Salinas with the feeling that he has been touched.

This extraordinary condition is known to the medical world as mirror-touch synesthesia. Scientists only learned about the existence of this condition recently, and an estimated 1.6% of the population experiences it.

Actually, every human being experiences some minimal reaction to seeing what happens to others. When you see someone fall and hurt themselves, your mirror-neurons are activated in your brain. Sometimes you may even feel some trace of the pain experienced by the other person



Dr. Joel Salinas.

in the same part of your own body. For most people this is a mild sensation that is so minimal it will usually go unnoticed. For people like Salinas with mirror-touch synesthesia, however, their mind reproduces the actual pain felt by the other person. They can genuinely feel along with the people around them.

It may sound like Salinas is supremely intuitive. The reality is, though, that Salinas is not reading the other person's brain telepathically. He could not tell whether or not Josh felt the tapping of the reflex hammer on his knee. The tap he felt on his own knee was the product of his own internal nervous system, not some sort of extrasensory perception of another person's sensations.

Mirror-touch synesthesia is more of a hindrance than a benefit. Mirror-touch synesthesists (or synesthetes)—the people who suffer from this extremely rare condition—suffer along throughout their day. One woman in London fainted behind the wheel of her car when she witnessed one man strike another with his fist. She felt the punch and was knocked unconscious by it! Another sufferer locked himself into his home and refused to step outside because it became too intense to continue feeling on his body everything he saw happening

to others. A third synesthesist was forced to give up his career as a physical therapist because he felt along with all of his patients' suffering.

Salinas, though, finds himself in an exceptional situation. As a neurologist, he is in a better position than others to understand the strange condition he suffers from. At the same time, he faces an overwhelming amount of pain and suffering on a daily basis as he deals with others. His patients are victims of strokes, spinal injuries, multiple sclerosis and other serious conditions. Some of them are nervous, depressed or suffering from extreme pain.

When Salinas performs a spinal tap (a procedure in which a hypodermic needle is introduced into the spine) he feels the needle entering his own back. When a psychotic patient becomes enraged Salinas feels himself also becoming angry. And when a patient dies, Salinas feels a deep emptiness, as though he is no longer there.

There are different levels of mirror-touch synesthesia. Some people report feeling the exact sensation felt by the person they are watching. If someone in the room is hot, they will feel hot as well. Others will only feel a stab or tickle.

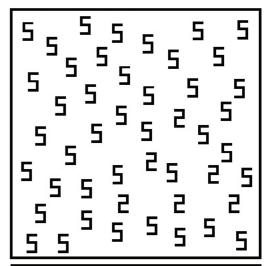
## **A New Condition**

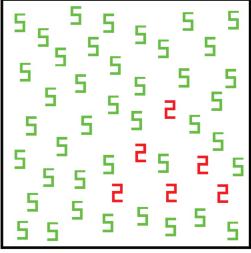
Mirror-touch synesthesia is an extreme form of synesthesia, a more general condition that has been known to doctors for centuries. People with synesthesia have unusual ways of seeing, hearing or otherwise experiencing the world around them. For example, they may associate letters or numbers with specific colors (one with red, two with orange, etc.). Others will associate words or sounds with a certain taste. Some synesthesists will actually see colors dancing before their eyes when they listen to music.

The word synesthesia is the antonym of anesthesia. Anesthesia is the lack of sensation, which is why it is the term used for being put to sleep before an operation.

Synesthesia, by contrast, means two or more of the person's senses are working together. A person with synesthesia will not only hear your voice but also see, taste or otherwise experience it.

Around 4% of people have synesthesia and it does not adversely affect them in any way. To the contrary, many of them enjoy unusually sharp memory since the shade of color or specific sound they associate with something assists them in identifying it. For example, when they try to recall the name of a person they met 20 years earlier they





Look at the top box: How quickly can you discern the numbers 2 among the numbers 5? People with synesthesia can sort them instantly, thanks to their color visualization as demonstrated by the bottom box.

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