Our individual genetic makeups drive how we respond to a COVID infection

Since the start of the COVID-19 pandemic, the heterogeneity of individuals who progress toward severe disease or death, along with the fact that individuals directly exposed to the virus do not necessarily become sick, supports the hypothesis that genetic risk or protective factors are at play.

In an interview with *Medscape Portuguese* edition, Mayana Zatz, PhD, head professor of genetics and coordinator of the Human Genome and Stem Cell Study Center at the University of São Paulo (USP), São Paulo, Brazil, explained, “The first case that caught my eye was the case of my neighbors, a couple. He presented COVID-19 symptoms, but his wife, who took care of him, had absolutely no symptoms. I thought that it was strange, but we received 3000 emails from people saying, ‘This happened to me, too.’”

Twin studies are important for investigating the contribution of genetics vs that of the environment in the susceptibility or resistance to infectious diseases, as well as their pathology. Zatz’s team analyzed the case of a 31?year?old Brazilian MZ twin brother pair who presented simultaneously with severe COVID?19 and the need for oxygen support, despite their age and good health conditions. Curiously, they were admitted and intubated on the same day, but neither of the twins knew about the other’s situation; they only found out when they were extubated.

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