Scientists are racing to understand why a small number of people develop a mysterious clotting disorder after receiving a COVID-19 vaccine. But despite their fervent work, the mechanism that links the vaccines and the condition known as vaccine-induced immune thrombotic thrombocytopenia (VITT) remains uncertain. Establishing a mechanism could reveal ways to prevent and treat VITT and improve the design of future vaccines. But studying such a rare outcome is a challenge. "You can have your hypothesis, but how do you find which is the one that caused an event in maybe 1 in 100,000 people?" asks haematologist John Kelton. "It's really, really hard." (F: Nature Briefing 25.08.21)