Brain atlas: First large-scale map of more than 3,000 human brain cells opens door to personalized medicine

We’re closer than ever to mapping the entire brain to the microscopic level. Hundreds of neuroscientists across the world recently characterized more than 3,000 human brain cell types as part of the National Institute of Health’s BRAIN Initiative Cell Census Network, publishing almost two dozen papers in four Science journals today. This super-focused attention to detail could unlock many mysteries surrounding that complex organ, such as what happened in our brains to distinguish us from other primates.

“This is the first large-scale, detailed description of all the different kinds of cells present in the human brain,” says Rebecca Hodge, an assistant investigator at the Allen Institute in Seattle who co-authored multiple studies in the paper package. Her hope is that this brain atlas provides a community resource for scientists to explore how the wide variety of brain cells contribute to health and disease.

“A detailed brain atlas can help us understand what successful brain function looks like so we can maximize brain cells and circuits that promote brain health,” [neurologist Mark] Mapstone says. “Addressing brain disease and promoting brain health can be more easily accomplished if we know how these cells are organized. “

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