

Infographic: Examining shared genetics of different psychiatric disorders

People who have autism, schizophrenia and bipolar disorder may have different challenges, but the ailments might arise from a common set of genes. Researchers compared genetic analyses of 700 human brains from deceased individuals who had one of those three disorders, major depression or alcoholism (columns) with brains of individuals who had none of the conditions. They examined 13 groups of genes thought to function together (rows). The scientists found that five groups had a pattern of overactivity or underactivity across at least three of the five conditions (blue and gray panels). Bipolar disorder, for example, was more similar to schizophrenia than to major depression even though clinicians may link bipolar disorder and depression, based on their symptoms. These insights could possibly reveal new treatments, says neurogeneticist Daniel Geschwind of the University of California, Los Angeles, one of the investigators. He adds that one path to that result, which has not yet been tested, could be to “put the different groups of genes in lab dishes and see which drugs reverse any overexpression or underexpression of the genes.”

Each column is a psychiatric condition. Each row is a group of genes that typically act together in the brain. Circle size reflects level of gene expression compared with brains that had no disorder.

 Overactive  Similar  Underactive

Gene Groups: Certain genes in the brain tend to work as a preferred unit and together become more or less active in particular types of brain cells, such as astrocytes, neurons, microglia or endothelia. Researchers identified 13 groups (rows A–M). Each one might have between 100 and 1,100 genes. Groups in rows H–M show no preference for any cell type.

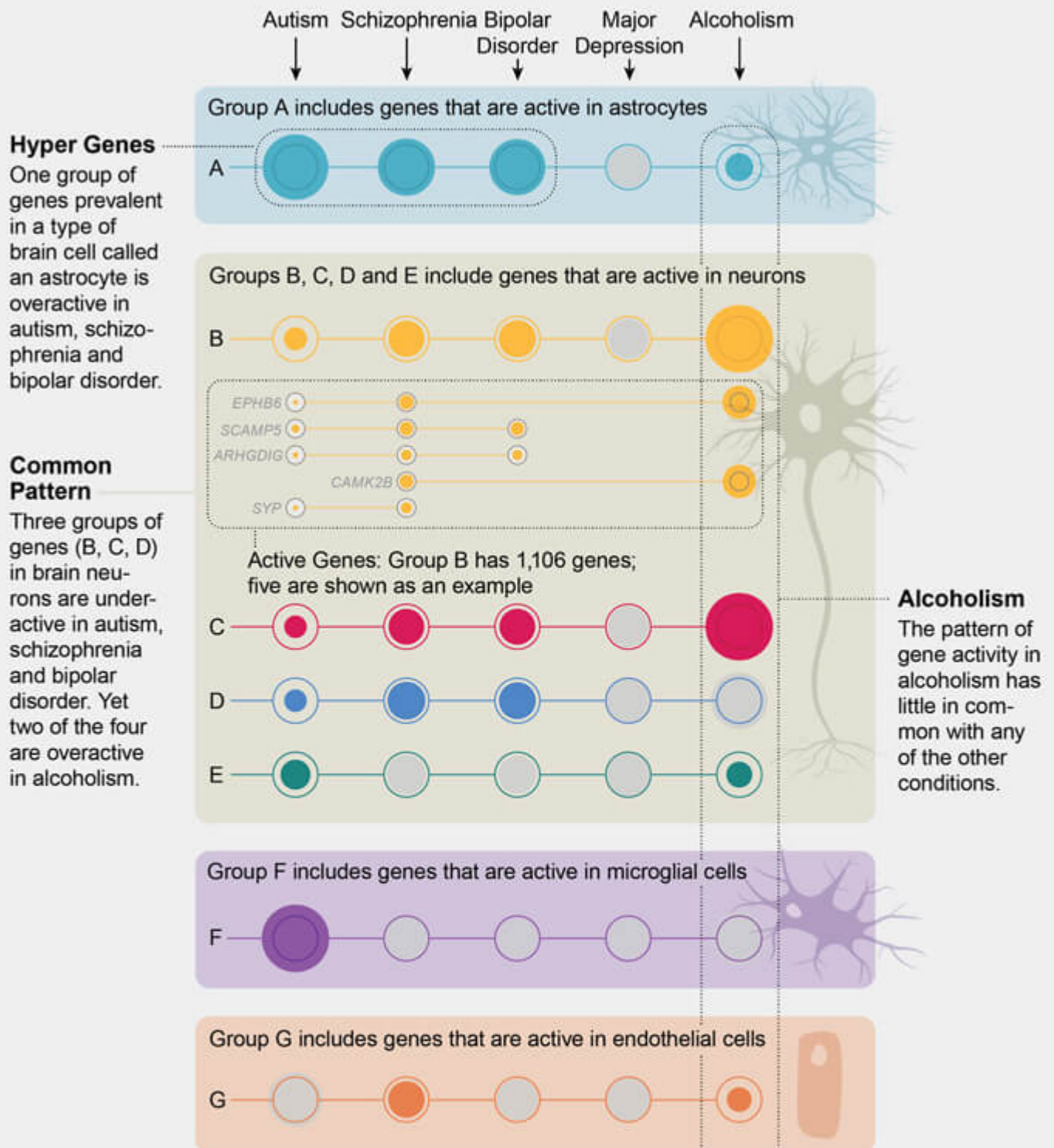


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