For many years, neuroscience has focused on studying the brain and its functions in great detail but in isolation from the context in which humans live. Meanwhile epidemiology and social sciences have studied behavior and environment and population characteristics while treating the brain like a “black box.” Population neuroscience marries these two approaches and leverages interdisciplinary expertise to develop interactional models which allow us to investigate moderators of brain-behavior links and predictors of relevant outcomes. Potentially, we can use not only the traditional tools of epidemiology and biostatistics but integrate them with neuroimaging and multi-level brain omics at the population level. Examples will be provided of recent epidemiological contributions to neuroscience, and future directions will be discussed.

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