Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Multidisciplinary research priorities for the COVID-19 pandemic

In *The Lancet Psychiatry*, Emily A Holmes and colleagues[1] set a formidable and very important challenge to "explore the psychological, social, and neuroscientific effects of [coronavirus disease] COVID-19 and spell out the immediate priorities and longer-term strategies for mental health science research". We absolutely must answer their call to action, but the authors[1] have not addressed the next generation who are in utero during the outbreak in their Article.

The COVID-19 pandemic might have enormous costs for a worldwide generation who are not yet born. There is extensive evidence that prenatal exposure to a viral infection, which causes maternal immune activation, acts as a so-called disease primer. Maternal immune activation increases the risk of adverse neurodevelopmental and psychiatric outcomes in later life, including autism spectrum disorder, schizophrenia, bipolar disorder, ADHD, epilepsy, cerebral palsy, depression, and anxiety.[2]

Preclinical studies[3] have shown that maternal immune activation, which causes and increase interleukin-17A from Th17 cells, can establish an ongoing fetoplacental inflammatory response. This inflammation could persist into postnatal life and have adverse effects on brain development. When studied in the lab, these neurodevelopmental difficulties in exposed offspring are modifiable, including by nutritional strategies, making it imperative that we translate this work to the clinic.

We now know that severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) elicits a type 17 immune response[4] and has already infected a substantial portion of the pregnant women worldwide.[5] However, in humans the relationship between any risk factor and later neurodevelopmental and psychiatric difficulties is complicated by the gene-environment interaction profile of the individual. Therefore, we assume that the advice of Holmes and colleagues[1] on the need for longitudinal studies to establish "complex biological pathways between infection and mental health outcomes",[1] includes prospective studies of fetuses exposed to SARS-CoV-2.

The authors want the effects of SARS-CoV-2 infection on the human brain to be clearly defined. In the UK we can harness established longitudinal research programmes, which track typical and atypical development from perinatal life into childhood. Combining these programmes with the UK's comprehensive antenatal and child health infrastructure can turn the COVID-19 crisis into an opportunity to understand this important mechanism of disease and secure the future of children exposed to this virus and other prenatal inflammatory events. It is a clear responsibility to ensure that the impact of SARS-CoV-2 exposure on fetus brain development and postnatal outcomes becomes part of the multidisciplinary research priority.

We declare no competing interests.

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