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SCHIZOPHRENIA Factsheet

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How are infectious agents related to schizophrenia?

This topic summarises the available evidence on markers of earlier infection (antibodies) in adults with schizophrenia. The Herpesviridae are a family of viruses which cause latent, recurring, and sometimes lifelong infections. These include Herpes simplex virus (HHV1 & 2) which causes oral and/or genital herpes; the Varicella Zoster Virus (VZV, HHV3) which causes chicken pox, shingles and rarely, encephalitis; the Epstein-Barr Virus (EBV, HHV4) and Cytomegalovirus (CMV, HHV5) which cause neurological complications; and the Herpes lymphotropic virus (HHV6), which causes roseola (skin rash and fever). Borna Disease Virus (BDV) is the key causative component of Borna disease, a neurological syndrome primarily affecting animals (particularly horses, cattle, sheep, dogs and cats). However, human infection with BDV has been linked to some psychiatric illnesses through its neurological interactions. Human Endogenous Retroviruses (HERVs) are fragments of ancient viral infections that became embedded within the germ cells (sperm and eggs), and are passed on to subsequent generations, making up a large proportion of the human genome. HERVs are proposed to have involvement in some autoimmune diseases. The Human T-lymphotropic virus Type I (HTLV-1) is a human retrovirus that integrates into immune cells and is associated with an increased risk of developing cancers such as adult T-cell leukemia, myeloma, and lymphoma. The Chlamydiaceae family of bacteria can cause a range of infections in humans, including chlamydia and trachoma (*Chlamydia trachomatis*) and pneumonia (*Chlamydia pneumoniae*, *Chlamydia psittaci*). *Toxoplasma gondii* is a parasitic protozoa, hosted by domestic cats and other warm-blooded animals including humans. *Toxoplasma gondii* infection is usually of minor consequence to an adult but can have serious implications for a foetus.

What is the evidence for infectious agents in people with schizophrenia?

Moderate to high quality evidence suggests higher levels of markers for Human Herpesvirus-2 (small effect); Borna Disease Virus (small to medium effect); Human Endogenous Retroviruses (HERV-W: large effect); *Chlamydia pneumoniae* and *Chlamydia psittaci* (large effects); and *Toxoplasma gondii* (small to medium effect).

Moderate quality evidence indicates a medium-sized increase in antibodies to *Toxoplasma gondii* in people with recent-onset schizophrenia, and a small increase in antibodies to *Toxoplasma gondii* prior to illness onset.

For more information see the technical table



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NeuRA (Neuroscience Research Australia) is one of the largest independent medical and clinical research institutes in Australia and an international leader in neurological research.

Diseases of the brain and nervous system pose the greatest health, economic and social burden of any disease group because they are chronic, debilitating and have no known cures.

Medical research is the cornerstone of efforts to advance the health and wellbeing of families and the community. Our dedicated scientists are focussed on transforming their research into significant and practical benefits for all patients.

While we hope you find this information useful, it is always important to discuss any questions about schizophrenia or its treatment with your doctor or other health care provider.

HOW YOUR SUPPORT HELPS

We are able to make significant advances due to the generosity of countless people. Your donation allows us to continue to work towards transforming lives. For information on how you can support our research, phone **1300 888 019** or make a secure donation at neura.edu.au/donate/schizophrenia.