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What is dopamine?

Dopamine is a neurotransmitter that is important for emotional and cognitive processing in the brain, particularly rewarding and pleasurable stimuli or experiences. Alterations of the dopamine system have been suggested in schizophrenia. This may be assessed as changes in levels of dopamine or its metabolites, or as changes in levels or activity of the mechanical components of the dopamine system, such as the receptors that receive dopamine, or the transporters that remove it.

What is the evidence for dopamine?

Moderate to high quality evidence suggests a large effect of increased striatal presynaptic dopamine function, and a small effect of increased striatal dopamine receptor availability in people with schizophrenia compared to controls, particularly in associative and sensorimotor regions. There are no differences in striatal dopamine transporter levels.

Moderate quality evidence suggests no differences in D2/D3 receptor availability in the thalamus or the temporal cortex of unmedicated people with schizophrenia compared to controls, although after excluding two studies results showed reduced availability in the thalamus. Moderate to low quality evidence suggests no differences in D2/D3 binding potential in the substantia nigra.

Moderate to low quality evidence suggests an association between dopamine receptor occupancy and clinical improvement following treatment with antipsychotic medications. Greatest D2 receptor occupancy occurs with haloperidol (91.9%), then risperidone, olanzapine, clozapine, quetiapine, aripiprazole, ziprasidone, and then amisulpride (85%).

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.