Kommunikation und Medien

Bianca Hermle
Leitung

Hoppe-Seyler-Straße 6
72076 Tübingen

Steven Pohl
Tel. 07071 29-88494
Fax 07071 29-25024
Steven.patrick.pohl@med.uni-tuebingen.de
www.medizin.uni-tuebingen.de

Presse Release

New pathways for research and treatment of mental illnesses

Innovative research project investigates how our brain makes decisions

Tübingen, 15.07.2025

Why is it that some people make life-changing decisions in the blink of an eye while others feel completely paralysed when faced with choices? This behaviour is particularly pronounced in schizophrenia and obsessive-compulsive disorder (OCD) and causes significant distress for those affected. An international research team aims to decipher the underlying brain mechanisms and thus pave the way for more targeted therapies. Led by Professor Dr Tobias Hauser at the Department of General Psychiatry and Psychotherapy at Tübingen University Hospital, the project has been awarded research funding of nearly €6 million by the renowned Wellcome Trust.

Whether we are choosing something trivial like a TV series or making an important life decision – gathering and evaluating information is a central part of our thinking. But what happens when this process gets out of balance? Some people tend to act rashly and take too little information into account. Others, in contrast, gather endless amounts of data but never manage to reach a decision.

Decision-making distortions in schizophrenia and OCD

These difficulties can become dramatically worse in mental illnesses such as schizophrenia and OCD. People with schizophrenia often make hasty decisions and place excessive trust in them – a phenomenon known as ‘jumping to conclusions’ (JTC), which is linked to the development of delusions. In contrast, the opposite occurs in OCD: those affected are plagued by constant doubt and may spend hours gathering information about even the simplest matters, severely disrupting their daily lives.

Existing therapies fall short

Although these distortions in thinking have a major impact on patients’ lives, they are hardly ever targeted directly in treatment, and the underlying neural mechanisms in the brain remain largely unexplained. The standard therapies for schizophrenia and OCD usually focus on other symptoms and neglect these specific decision-making issues. This is precisely where Professor Hauser’s team wants to intervene: “Our goal is to decode the neural mechanisms that lead to these distorted thought patterns and to develop new therapies for treating the symptoms using state-of-the-art computational models,” explains Professor Hauser. “We want to find out whether the symptoms in both conditions are caused by similar neural changes,” he adds. “By exploring the similar symptom patterns in both mental disorders, we also hope to help break the stigma that surrounds schizophrenia and OCD.”

A new research approach

The research project, which will begin in February 2026, is taking a novel approach. Using functional magnetic resonance imaging (fMRI), the researchers plan to collect the largest dataset to date on indecisiveness in OCD and jumping to conclusions in schizophrenia. A total of 150 schizophrenia patients and 150 OCD patients will undergo MRI brain scans to identify the neural and computational processes behind these distortions in thinking. A special focus will be placed on the role of the neurotransmitter dopamine, which plays a key role in decision-making processes in the brain. The researchers aim to examine this further using mouse models to determine how changes in dopamine function during information gathering affect the brain's decision-making networks.

Goal: Better therapies for a better quality of life

In the long term, the project aims to help develop targeted therapies that directly address the disrupted decision-making processes. This could benefit people who tend to jump to conclusions as well as those who get stuck in endless loops of doubt.

The University Medical Centre Hamburg-Eppendorf (UKE) is leading the clinical and therapeutic part of the project. Professor Dr Lena Jelinek, Head of the Neuropsychology and Psychotherapy Research Unit at UKE, emphasizes: "By better understanding the mechanisms behind these decision-making distortions, we can lay the foundation for new treatment approaches – with the aim of providing more targeted and effective help in the long run."

The research project is planned to run for five years. In addition to Tübingen University Hospital, the Max Planck Institute for Biological Cybernetics in Tübingen, the University Medical Centre Hamburg-Eppendorf, the National Institute of Mental Health & Neuro Sciences in Bangalore (India), and the Fundació de Recerca Clínic Barcelona (Spain) are also involved.

University Hospital of Tübingen
Corporate Communications Department
Hoppe-Seyler-Straße 6, 72076 Tübingen
Tel. 07071 29-88548, Fax 07071 29-25024
presse@med.uni-tuebingen.de

Expert:

Prof. Dr. Tobias Hauser
Professor of Computational Psychiatry
Department of General Psychiatry and Psychotherapy with Outpatient Clinic

About Wellcome
Wellcome supports science to solve the urgent health challenges facing everyone. It supports discovery research into life, health and wellbeing, and it is taking on three worldwide health challenges: mental health, infectious disease and climate and health.