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New Approaches for Treatment-Resistant Disorders

The German Center for Mental Health (DZPG) conducts nationwide research on individualized treatments for depression, anxiety disorders, and addiction. Its approach combines established therapeutic methods with innovative strategies to enhance overall treatment efficacy. The primary beneficiaries are patients for whom conventional therapies have so far proven insufficiently effective.

Preparing the brain for learning processes - Augmented Psychotherapy

One line of research at DZPG focuses on pharmacological interventions designed to specifically support therapeutic processes, referred to as "Augmented Psychotherapy." Results from a recent large-scale study in Mannheim and Berlin indicate that psilocybin, a compound found in certain mushrooms, can exert significant antidepressant effects. Crucial for both treatment success and safety, however, is the integration of such interventions into comprehensive psychotherapeutic preparation and follow-up. "Psychedelics could become an important therapeutic tool in the future," states study leader Prof. Gerhard Gründer. "They enhance neural plasticity and alter cognitive flexibility, creating opportunities for psychotherapeutic processes." Research in this area is progressing intensively, with regulatory approval procedures and larger clinical trials already underway internationally. In addition to psilocybin, Gründer and his team are investigating LSD and 5-MeO-DMT to improve therapeutic outcomes in depression, generalized anxiety disorder, and addiction.

At the DZPG partner site in Halle-Jena-Magdeburg, studies are examining how ketamine and esketamine can temporarily open a "window" during which the brain forms new connections, thereby enhancing the effectiveness of psychotherapy administered the following day. Unlike conventional antidepressants, these substances act within a very short time frame. Consequently, the research in Jena focuses particularly on timing: "We do not conduct therapy during altered states of consciousness, but when the brain is again more receptive," explains Prof. Martin Walter. "This allows us to make better use of established methods." Patients with treatment-resistant depression may benefit most, but applications may also extend to addiction, trauma, anxiety, and obsessive-compulsive disorders. "Wherever automated patterns need to be relearned, augmentation can be helpful," adds Prof. Walter.

Magnetic stimulation as an amplifier - Enhanced Psychotherapy

The term "Enhanced Psychotherapy" refers to interventions that render brain regions, whose activity is diminished in mental disorders, more amenable to change. Prof. Andreas Fallgatter, site director in Tübingen, explains: "With repetitive transcranial magnetic stimulation (rTMS), the targeted brain region is stimulated daily in short sessions using magnetic impulses. This enables the formation of new neural connections and increases flexibility, thereby helping to restore normal function. It is now well established that TMS alone has therapeutic effects comparable to those of high-quality pharmacological or psychotherapeutic treatments. Through combination approaches, we aim to further enhance these effects."

Such methods may open new avenues where standard treatments reach their limits. Early clinical applications show promise in depression, eating disorders, and anxiety disorders.

The foundation for personalized medicine

"Whether through enhancement via neurostimulation or pharmacological augmentation, the aim of our research is to increase therapeutic efficacy and make treatments more individualized," says Prof. Peter Falkai, DZPG spokesperson. "This involves integrating research, technology, and clinical care."

Dr. Heike Stecklum, representative of relatives in the Central Trialogical Board, welcomes this research direction: "Relatives often witness firsthand when therapies show minimal effect in their loved ones. They may experience particularly prolonged and severe courses of illness, often accompanied by substantial distress. Consequently, they hope for new research insights and individually tailored therapies."

Edmund Bornheimer, patient representative on the Central Trialogical Board, emphasizes the importance of involving experiential experts from the outset of all studies to ensure their perspectives are incorporated.

Prof. Silvia Schneider, DZPG spokesperson, adds: "Our therapy research at DZPG aims to develop personalized treatment approaches. We leverage innovative findings from mechanistic basic research to enable sustainable therapeutic success."

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