

# Rethinking the approach to CNS research

**Mental illness is one of the biggest health, social and economic challenges of our time and...**

- Affects the daily lives of millions of people and can have a devastating impact on how a person feels about themselves and the world.<sup>1</sup>
- Remains the leading cause of disability worldwide.<sup>1</sup>
- Can make everyday tasks seem impossible – for example, getting dressed, cooking a meal, reading a magazine or socialising with friends become challenging.<sup>1</sup>
- Can place huge emotional strain on a person's family and friends, who may experience anger, guilt, and shame or may even blame themselves.<sup>2</sup>
- Results in a global economic burden larger than that of cancer, cardiovascular disease and diabetes combined.<sup>2</sup>
- Delivery of treatment and services remain inadequate.<sup>3</sup>

With medical advances in the treatment of many of the world's most common and serious diseases, solutions to mental illness remain comparatively inaccessible and progress hard to achieve.

The nature of CNS research poses challenges for researchers and innovators, particularly in relation to two important factors:

- 1. Current psychiatric classification of mental illness does not reflect the underlying neurobiology**
- 2. R&D is complex due to the nature of the target organ with a high risk of failure**

Consequently, many researchers and companies have downsized or stopped their research.

The reality is that despite the progress of technology and understanding of the brain **in the last 25 years, standard pharmacological treatment approaches for mental illness have barely changed.**<sup>4</sup>

Prior research approaches in mental illness have not delivered sufficient solutions that truly improve people's lives.

**But things are beginning to change**

**Growing public and government interest** in mental health research reflects the acknowledged healthcare priority for effective treatments, care and services for mental illness.

Comprehensive mental health services and care is a priority set out by the WHO.<sup>5</sup>

**Boehringer Ingelheim aims to bring a fresh-thinking, systematic, neurobiological approach to CNS research.**

Mental illness comprises a wide range of disorders including: depression, Alzheimer's disease and schizophrenia – areas that **Boehringer Ingelheim** is investigating.



The **central nervous system (CNS)** – which includes the brain – controls the behaviours that make us human, such as language, memory and emotion. **Malfunctions in the brain can result in mental illness that impacts many of these behaviours...**

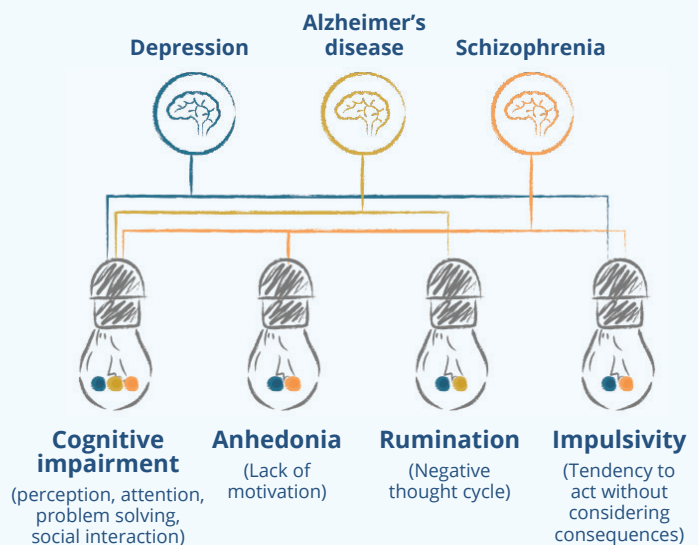
**And we're exploring new territories beyond traditional pharmaceutical treatments...**

#### Technologies

- Optogenetics
- Brain mapping
- Genetic profiling
- Biomarkers

#### Approaches

- Research Domain Criteria (RDoc)
- Innovative Medicine Initiatives (IMI)
- European Medical Information Framework (EMIF)
- European Prevention of Alzheimer's Disease (EPAD)
- Psychiatric Ratings using Intermediate Stratified Markers (PRISM)
- Work with European Brain Council



Boehringer Ingelheim has a collaborative philosophy. To complement our own research and innovation, we seek partners at the forefront of neuroscience (such as academic, clinical and biotech experts and research organisations).

We are proud to work in the CNS field. We are optimistic that our systematic neurobiological approach, coupled with our collaborative philosophy, will lead to the development of treatments that people with mental illness truly need.

## References

1. Whiteford, H., Ferrari, AJ, Degenhardt, L. *et al*/ The global burden of mental, neurological and substance use disorders: an analysis from the Global Burden of Disease Study 2010. PLoS One 2015; 10(2).
2. Our Healthy Minds. Impact of mental illness on family members. 2010. Available at:  
<http://ourhealthyminds.com/family-handbook/you-and-your-family/impact-of-mental-illness-on-different-family-members.html>.
3. World Health Organization. Mental disorders. Fact sheet no. 396, updated October 2015. Available at:  
<http://www.who.int/mediacentre/factsheets/fs396/en>.
4. Roiser, J. What has neuroscience ever done for us? *The Psychologist*. 2015; 28; 284-287. Available at:  
<https://thepsychologist.bps.org.uk/volume-28/april-2015/what-has-neuroscience-ever-done-us>
5. World Health Organization, Investing Mental Health: Evidence for Action. 2013, [http://www.who.int/mental\\_health/publications/financing/investing\\_in\\_mh\\_2013/en/](http://www.who.int/mental_health/publications/financing/investing_in_mh_2013/en/). [Last accessed Sept 2017].