

# PRONIA - Personalised Prognostic Tools for Early Psychosis Management

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Affective and non-affective psychoses have a major negative impact on human society. They account for 6.3% of the global burden of disease and cost €207 billion per year in Europe alone, making them the most expensive brain-related disorders and even more expensive than cardiovascular diseases. This socioeconomic burden is largely caused by two core disease features: onset in adolescence and early adulthood and long-term disabling disease courses. Both factors lead to enduring social and vocational exclusion and contribute to 8-20 times higher suicide rates in affected patients.

Reliable and accessible prognostic tools will alleviate this burden by enabling individualised risk prediction, thus facilitating the targeted prevention of psychoses. Thus, we will first use routine brain imaging and complementary data to optimise our candidate biomarkers for the prediction and staging of psychoses and generate a prognostic system that generalises well across mental health services.

Secondly, we will implement new multi-modal risk quantification tools to predict mental health-related disability in young help-seekers. The fusion of these tools with clinical knowledge will produce cybernetic prognostic services that accurately identify help-seekers at the highest risk of psychosis, poor functioning and suicide-related mortality.

During this project we will secure our intellectual property rights and transform into a European company to commercially exploit these prognostic services through internet-based telemedicine applications. This will provide psychosis risk profiling tools to diverse target groups in the healthcare markets, including care-givers, the pharmaceutical industry and research institutions. By disseminating objective risk quantification, these products will provide firm diagnostic grounds for preventive therapy, improving outcomes and reducing costs. Thus, they will offer a unique selling proposition to the mental health sectors in Europe and beyond.

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