

# EDITORIAL

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Dear Reader,

Artificial intelligence will bring about fundamental changes to many aspects of social coexistence, social cohesion, and the economy, including the field of medicine. Consequently, AI forms a central part of the Focus section of this edition: “Therapies of Tomorrow.” But as the field of medicine makes particularly clear, just as this technology brings opportunities, it also presents challenges. Namely, when algorithms take on tasks that were previously carried out by humans. With the right training they can, in some cases, make a diagnosis more reliably than many doctors and also assist with treatment. But who is liable if mistakes are made? And can AI demonstrate the empathy that is expected of medical professionals? These issues also play a role when it comes to using chatbots to treat mental health conditions, particularly when psychotherapists are unavailable. Researchers at various Max Planck Institutes are working on this and developing relevant apps.

AI is also a great help when it comes to the development of new medicines. Researchers at the Max Planck Institute for Terrestrial Microbiology use it to search for new antibiotics, for example. They hope to produce promising substances using biochemical reactions based on the metabolic pathways of microorganisms.

That said, it's important to remember that medical progress is still possible even without AI. This is the focus of work carried out by a group at the Max Planck Institute for Dynamics and Self-Organization. The team has investigated the electromechanical causes of cardiac arrhythmias and, based on these findings, has developed a treatment method that is a lot gentler than the extremely painful electric shocks delivered by a conventional defibrillator.

The developments we describe in this issue are a testament to continued progress within the field of medicine. The fact that healthcare is constantly improving is sometimes overlooked in the debate about the healthcare system, where the focus is often on costs.

We hope you enjoy reading this issue!

Your Editorial Team