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Medical robotics: Reshaping future in synergy with technology**Bojan Jerbić¹ and Darko Chudy²**¹University of Zagreb, Croatia²University Hospital Dubrava, Croatia

Modern medicine relies profoundly on the application of high technology, where information technology emerges as a critical complementary area that significantly contributes to the development of medical science and medical practice. Digitalization is unavoidable direction in the evolution of modern medicine. However, we are at a turning point of the development of IT, a changing from virtual to cyber-physical. Therefore, it is necessary to adopt new approaches and new understanding of science and culture from data driven to AI things driven concept. This means that we are entering the era of the new technological revolution, which is characterized by smart things, actually by the systems that convert information into action. Such systems are commonly referred to as robots. The use of robots in medicine seems like a huge potential for improving various technically and/or physically demanding medical procedures and specific skills that physicians must possess in addition to theoretical and experiential knowledge in the scope of his profession. However, the use of robots in medicine, despite numerous tangible benefits, is faced with a number of scientific and technical challenges. The presentation will highlight the main directions of the development of medical robotics, possible advantages of application, as well as problems. Special attention will be given to the Croatian projects RONNA and NERO - robotic systems for stereotactic neurosurgical operations, as well as its clinical application.

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