

PLENARIES

PLENARY 6: Rehabilitation Robotics and Assistive Technology: Shaping Tomorrow's Care

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Rehabilitation robotics and assistive technologies are transforming contemporary rehabilitation by expanding opportunities for intensive, repetitive, task-specific, and function-oriented interventions for individuals with disabilities and functional limitations. The integration of advanced technology with clinical expertise has the potential to enhance rehabilitation delivery, promote functional independence, and facilitate greater participation in daily activities and community life.

Robotic and assistive technologies can complement conventional rehabilitation approaches by supporting movement, mobility, task-specific practice, gait training, upper and lower limb function, and performance of meaningful activities. Their clinical application requires careful consideration of individual functional abilities, rehabilitation goals, safety, technological suitability, and the specific requirements of the clinical environment.

Effective implementation extends beyond the selection of appropriate technology. Clinical reasoning, patient engagement, therapist expertise, accessibility, usability, cost-effectiveness, and integration within existing rehabilitation pathways are essential considerations for achieving meaningful outcomes. Technology should therefore be positioned as an adjunct to, rather than a replacement for, professional clinical expertise and therapeutic interaction.

The evolving landscape of rehabilitation robotics and assistive technology highlights the importance of technology-enabled, patient-centred care that supports personalised rehabilitation, optimises therapeutic opportunities, and promotes independence and participation. Strategic integration of these innovations into clinical practice may contribute to more accessible, efficient, and outcome-focused rehabilitation services.