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MECHATRONIC/ ROBOTIC STATIONARY DEVICES FOR UPPER LIMB NEUROMOTOR DEFICITS' REHABILITATION CURRENTLY USED IN CLINICAL SETTINGS

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Abstract

Introduction
Robotic rehabilitation is a growing field as both interest and implementation in current clinical use of mechatronic (including stationary – especially appropriate for employment in medical settings) devices, designated to the approach of neuromotor deficits in the upper – but lower, as well – limb.

Materials and methods
Being rather new and still quite rare the inner avail of necessary related complex and costly apparatus, we have carried out in this work, a presentation of the own expertise: based on literature review for the specific adult pathology and respectively, emphasizing the practical use of some advanced such devices in a children rehabilitation clinic.

Results
We have structured this endeavor on the following topics: background, main targeted pathology, main evaluation tools, therapeutic goals, main stationary mechatronic/ robotic medical devices to approach upper limb neuromotor deficits' rehabilitation, together with examples of their clinical usefulness.

Conclusions
In order to settle best possible interventions, it is important to focus on correct identification of all issues' priorities in each patient, considering also personal and environmental factors. Analyzing body function and structure, activity and level of participation helps to elaborate/ implement the therapeutic/ rehabilitative action plan. Thus, the complex capabilities of such mechatronic/ robotic stationary devices can be optimally valorized in adequate dedicated methodologies, including with avoiding possible inconveniences, inevitably afferent to any advanced medical intervention.