1 Synopsis

Title	Early rehabilitation of intensive care unit patients - a multinational prospective observational study on dosage and outcome
Abbreviation	ERUPT Study
Study design	Prospective, multicentre observational study
Background and Rationale	Early mobilisation is generally recommended in recent guidelines although its evidence according to meta-analysis is weak and its realization personnel-intensive. Randomized controlled trials have only investigated patients who were functionally independent before intensive care unit admission and the TEAM RCT demonstrated the importance of dosing.
Objectives	The main objectives of the study are: 1. The description of the variety of different mobilisation practices worldwide 2. The analysis of the association between mobilisation dosage and patient outcomes 3. The evaluation of the association between prehospital functional status or invasive mechanical ventilation and patient outcomes 4. The development of a model for decision support using reinforcement learning.
Methods	***Sample Size:*** We aim to recruit > 6000 patients internationally from a minimum of 200 ICUs including at least 30 consecutive patients each (strata: (1) mechanically ventilated functionally independent, (2) mechanically ventilated functionally dependent before hospital admission and (3) without invasive mechanical ventilation independent of functional status at study inclusion) ***Inclusion criteria:*** Adults (≥ 18 years) who are expected to stay > 24 hours in the ICU, within 48 hours of ICU admission ***Exclusion criteria:*** Patients who receive end-of-life care at the time of screening, patients with language barriers, patients whose treatment plans are still under discussion and/or not all team members are committed to full active treatment, patients who had been enrolled in the ERUPT study before or patients whose functional status is unlikely to be obtainable. ***Data collection:*** Baseline data will be collected after study inclusion. Mobilisation data (frequency, duration, level) together with organ support, interventions (e.g., tracheostomy) and sedation will be recorded daily until ICU discharge, day 28 or death.
Outcomes	***Primary outcome*** will be physical function at ICU discharge. ***Secondary outcomes***: ICU mortality, hospital mortality, ICU length of stay, hospital length of stay, and 90 day follow up for mortality, global function using

	WHODAS 2.0 and driving capability as well as and functional status including the trajectory of functional status over time.
Duration of study	***Screening and recruitment*:** Participating ICUs will screen and collect data for all newly admitted patients with the aim of sets of 30 (targeted strata: 5 consecutive functionally dependent, 15 functionally independent patients, 10 patients without invasive mechanical ventilation). Per ICU a maximum of 3 complete sets (90 patients) will be allowed. ***Follow up*** will be collected at 90 days. ***Duration:*** Not all ICUs may be able to start on the same day, so given the large number of ICUs, we aim to collect data over a 21-month period.
Study registration	The study was prospectively registered on Clinicaltrials.gov (NCT06960642).