# Muscle weakness a common side effect of long stays in intensive care units

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After decades of focusing on the management of respiratory failure, circulatory shock and severe infections that lead to extended stays in hospital intensive care units, critical care researchers are increasingly turning attention to what they believe is a treatable complication developed by many who spend days or weeks confined to an ICU bed: debilitating muscle weakness that can linger long after hospital discharge.

In a supplement to the current issue of the journal *Critical Care Medicine,* an interdisciplinary research group - from Johns Hopkins and across the world — propose a new classification scheme for helping physicians to uniformly and precisely identify a variety of muscle-wasting disorders acquired in the ICU, a framework that came out of a meeting of leaders in the field in Brussels, Belgium in March 2009.

Getting doctors on the same page with common definitions and awareness is a big first step in preventing and treating ICU-related debility, the researchers say.

"Patients who develop muscle weakness while they're critically ill do much worse," says Robert D. Stevens, M.D., associate professor of anesthesiology and critical care medicine, neurology, neurosurgery and radiology at the Johns Hopkins University School of Medicine. "They have higher mortality, their stay in the ICU is prolonged, their stay in the hospital is prolonged. They incur serious costs. Some of these patients in the long run remain weak and are unable to resume physical activities as

before."

Some form of muscle weakness affects nearly half of patients with serious illness treated in intensive care units, or ICUs, the researchers say. But prevention or treatment of ICU-acquired weakness has been slowed, doctors say, by a lack of agreement on the definitions of what constitutes these disorders and an inadequate framework for properly classifying them. New treatments which might be effective in reducing weakness in the ICU include enduring better control of blood sugar levels and promoting early mobility.

Standard practice in ICUs, where patients are often hooked up to ventilators, dialysis machines and infusion pumps, has been to keep patients in bed until they recover from their critical illness. Stevens calls it the "classic paradox" in the treatment of many illnesses: Stay in bed and rest until you're better. It is now recognized, however, that muscle weakness is significantly worsened by being immobilized in ICU, Stevens says, and "that whole idea of bed rest as being something beneficial is being turned on its head." Other hospital units, including those that treat patients coming out of surgery, have adopted the practice of getting patients up and moving again as soon as possible. Only recently has critical care begun to move slowly in that direction. Recognizing the muscle wasting and weakness associated with extended ICU stays, Stevens says new research is promoting reduced levels of sedation and early mobilization and exercise among those patients. Some recent efforts - including work being done at Johns Hopkins - have been to get patients cycling in bed, standing, sitting in a chair and even walking while they are still on respirators.

Along with intensive care unit-acquired weakness (ICUAW), Stevens and his colleagues also define critical illness polyneuropathy (CIP), critical illness neuromyopathy (CINM) and critical illness myopathy (CIM). All of these are disorders that the patient may pick up in the

ICU, not something he or she had upon admission.

Source: Johns Hopkins Medical Institutions