

Hormone improves long-term recovery from stroke

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Scientists at the Sahlgrenska Academy have discovered an explanation of how stroke patients can achieve better recovery. A hormone that is associated with the growth hormone system has proved to benefit recovery during the later phases of rehabilitation after a stroke.

Insulin-like growth factor I, IGF-I, is a [hormone](#) that is found in the blood and contributes to, among other things, growth and [bone mass](#). The levels of this hormone are higher in people who exercise regularly and those with good health. Scientists at the Sahlgrenska Academy have shown for the first time that high levels of this hormone are associated with better long-term recovery after a stroke. The study has been presented in an article in the [Journal of Clinical Endocrinology and Metabolism](#).

"This study is interesting for two reasons. The first is that we show that a hormone is associated with improved long-term recovery, and thus there is still the prospect of improvement – even after three months after the stroke. The second is that levels of this hormone are known to be elevated in those who exercise often", says Associate Professor David Åberg at the Sahlgrenska Academy, who has led the study in collaboration with Professor Jörgen Isgaard.

"It is, however, important to add that the levels of IGF-I are controlled also by other factors such as other growth hormones, heredity and nutrition", emphasises David Åberg.

The study is based on 407 patients who are participating in the SAHLSIS study at the Sahlgrenska Academy, in which people aged 18-70 years who are affected by stroke are followed up for two years after the event. SAHLSIS is an acronym for "The Sahlgrenska Academy Study on Ischemic Stroke".

Scientists have measured the levels of IGF-I in these 407 patients and seen that increased levels are associated with better recovery, when the degree of recovery is determined between 3 and 24 months after the stroke. Previous research (Bondanelli et al) has also shown a positive effect of high IGF-I levels in the early phase after a stroke, while the scientists at the Sahlgrenska Academy have now demonstrated that the positive effects on recovery remain long after the stroke event.

"Our results may explain why patients who exercise more actively, with physiotherapy and physical exercise, demonstrate better recovery after a stroke. Unfortunately, we do not know how much our patients exercised after the stroke. This means that we need to carry out further studies in which we measure both the amount of physical activity and the levels of IGF-I, in order to understand the exact relationships better", David Åberg points out.

These results pave the way for further studies on whether drug treatments that raise IGF-I levels can improve long-term recovery after stroke. David Åberg believes that two avenues are open: either to treat with IGF-I, or to treat with the better known [growth hormone](#) (GH). This can stimulate the body's own production of IGF-I.

"Of course, these possibilities must be tested in carefully constructed clinical trials, so that we discover any undesired effects that must be considered. This is particularly true during the acute phase of a [stroke](#), while treatment during the [recovery](#) phase is probably easier and has greater benefit", says David Åberg.

Provided by University of Gothenburg

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