

Once-weekly steroid dosing can promote muscle repair without atrophy

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Glucocorticoid steroids are used to treat a variety of conditions, including chronic inflammatory diseases and autoimmune diseases. Their effects on muscle recovery and repair make them particularly effective therapies for muscle injury and muscular dystrophies. However, chronic systemic exposure to glucocorticoid steroids also accelerates the breakdown of muscle tissue, which can lead to muscle wasting and weakness after long-term use.

In this issue of the *JCI*, a study led by Elizabeth McNally at Northwestern University's Feinberg School of Medicine reports that some unwanted side effects of glucocorticoid steroids might be avoided by reducing the frequency of the treatment regimen. In a mouse model of Duchenne muscular dystrophy and in normal mice, both daily and weekly steroid dosing improved the rate of [muscle recovery](#) from injury.

However, daily dosing also led to muscle atrophy that counteracted the benefits of enhanced muscle repair. In contrast, mice that received a once-weekly treatment with glucocorticoid steroids experienced improvements in muscle function and pathology that were not compromised by muscle atrophy.

The findings of this study suggest that reducing the frequency of glucocorticoid dosing may prevent their debilitating side effects while preserving therapeutic effects on [muscle function](#). Further work is needed to determine how intermittent dosing regimens affect glucocorticoid therapies in human disease.

More information: Mattia Quattrocelli et al, Intermittent glucocorticoid steroid dosing enhances muscle repair without eliciting muscle atrophy, *Journal of Clinical Investigation* (2017). [DOI: 10.1172/JCI91445](https://doi.org/10.1172/JCI91445)

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