



Surgical Guidelines for Cortisol Deficiency

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During a surgical procedure, the body will require an increase in steroid dosing. Surgery is one of the most prominent activators of the HPA axis. Researchers¹ have reported HPA axis function during and after surgical procedures that plasma cortisol levels increase significantly. In patients without the presence of adrenal insufficiency, cortisol production rates increased to 75–150 mg/day after major surgery. In cortisol deficient patients, the recommendations differ deepening on the length and severity of the procedure being performed. Cortisol deficiency patients will always require additional glucocorticoid supplementation during surgery, but there is no uniform standard accepted regimen for glucocorticoid replacement therapy. It is the best clinical practice to treat the patient instead of following a textbook response. If a patient with cortisol deficiency is declining, the administration of more cortisol should be a first line treatment protocol.

However, there are suggested recommendations:²

For Minor Surgery: Double or triple the usual daily dose of glucocorticoid until recovery. Intravenous hydrocortisone 25 mg or equivalent at start of procedure. Usual replacement dose after procedure.

For Dental Procedures: Under local anesthesia, double the daily dose of glucocorticoid on day of procedure. Inject 100mg emergency cortisol injection if patient presents with adrenal crisis symptoms.

For Moderate Surgery: Intravenous hydrocortisone 75 mg/day on day of procedure (25 mg 8-hourly). Intravenous hydrocortisone 25 mg 8-hourly until recovery. Taper over next 1–2 days to usual replacement dose in uncomplicated cases.

¹ JUNG, C. AND INDER, W. J.

Management of adrenal insufficiency during the stress of medical illness and surgery: Jung, C. and Inder, W. (2008). Management of adrenal insufficiency during the stress of medical illness and surgery. [online] Australasian Medical Publishing Company. Available at: <https://www.mja.com.au/journal/2008/188/7/management-adrenal-insufficiency-during-stress-medical-illness-and-surgery> .

² COLLARD MD, C. D., SAATEE, M.D, S., REIDY, M.D, A. B. AND LIU, M.D, M. M. Perioperative Steroid Management: Approaches Based on Current Evidence: Collard MD, C., Saatee, M.D, S., Reidy, M.D, A. and Liu, M.D, M. (2017). Perioperative Steroid Management: Approaches Based on Current Evidence. [online] Anesthesiology: Trusted Evidence Discovery in Practice. Available at: <https://anesthesiology.pubs.asahq.org/article.aspx?articleid=2626031>

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For Major Surgery:

Intravenous hydrocortisone 150 mg/day (50 mg 8-hourly) Taper over next 2–3 days only once clinical condition stabilizes.

For critical illness/intensive care/major trauma or life-threatening complications:

200 mg/day intravenous hydrocortisone (50 mg 6-hourly, or by continuous infusion)

Note: There is no universally agreed upon standard dose or duration of exogenous steroids used to treat adrenal insufficiency. Clinicians must be observant of a patient's vital signs, empirical evidence and quality of life. It is also imperative clinicians be aware of the symptoms of adrenal crisis, which can widely vary in patients. In the event these symptoms should arise, an immediate dose of glucocorticoids should be administered until patient stabilizes.

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