



TREATMENT WITH DRUGS CONTAINING GLUCOCORTICOIDS

- A) Hormone *replacement* treatment
(e.g. with Hydrocortone® tablets)

- B) Therapy for inflammatory conditions
= "*pharmacotherapy*"
(e.g. with Prednisone® tablets)

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WHAT YOU SHOULD KNOW IF YOU ARE TAKING A DRUG CONTAINING GLUCOCORTICOIDS:

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WHY AM I TAKING GLUCOCORTICOIDS?

The pituitary gland, also known as the hypophysis, induces the production of the hormone cortisol in the adrenal glands. Its production augments significantly during stressful situations in order to cover the body's increased requirements.

A) If there is a disorder of the **adrenal glands**, it may produce too little cortisol or none at all (for example due to an auto-immune destruction of the glands or due to tuberculosis). This disorder is also called Addison's disease, named after the doctor who first described it.

The problem may also be caused by the **pituitary**. Due to a tumor or after an operation, the pituitary gland may cease to control the production of cortisol. If the adrenal glands or the pituitary fail, then hormone replacement treatment becomes necessary.

B) The **regulatory system** between the pituitary and the adrenal glands may be affected during and particularly after pharmacotherapy; in other words, higher doses of cortisol or Prednisone, taken to treat a concomitant inflammatory disease, can disturb the regulatory system. Your pituitary and adrenal glands, respectively, "shut down", because your body is receiving the cortisol it would usually produce itself from outside.

This means that, especially in stressful situations, your body no longer has enough of the vital hormone cortisol.

A) Hormone replacement treatment

WHAT IS HYDROCORTISONE?

When required, Hydrocortisone (cortisol) is produced on command of the pituitary by the adrenal glands.

If there is insufficient production of cortisol, luckily natural hydrocortisone can be taken as Hydrocortone® tablets.

WHAT ARE THE SIDE EFFECTS OF HORMONE REPLACEMENT TREATMENT WITH HYDROCORTISONE?

Each of us requires 15 to 30 milligrams (mg) of cortisol every day. If production slows down or stops completely, the hormone must be replaced. This is known as **hormone replacement treatment**. The dosage corresponds to your body's basic requirement. Consequently, **no side effects** are to be expected. On the contrary, if your body does not receive sufficient cortisol, this can lead to life-threatening signs and symptoms of cortisol-deficiency, especially in stressful situations.

B) Pharmacotherapy

WHAT IS PREDNISONE?

Prednisone is a steroid hormone with an effect four or five times stronger than cortisol. Corticosteroids are an important mainstay in the treatment of numerous inflammatory conditions, for example, in the treatment of rheumatism and asthma. Thereby, disease related morbidity can be dramatically reduced and patients can live an almost normal life free of signs or symptoms of the disease.

There are a number of other potent steroids, e.g. Dexamethason, Betamethason or Triamcinolon.

WHAT ARE THE SIDE EFFECTS OF PHARMACOTHERAPY WITH PREDNISONE?

One risk of a high-dosage long-term therapy¹ is that it may impair the regulatory system between the pituitary and the adrenal glands. Production of cortisol in your adrenal glands is suppressed, and eventually "shuts down". In stressful situations, the "sleeping" adrenal glands fail to produce the additional cortisol required by the body in sufficient amounts. The following pages will tell you what to do in situations like this.

The danger of undesired effects during short-term use is slight, but can occur in different forms during long-term use. In order to prevent the risk of osteoporosis (fragile bones), make sure you take sufficient calcium and vitamin D, for example one liter of milk or two liters of calcium-enriched mineral water (e.g., Valser or Eptinger) each day. Your doctor can also prescribe you tablets to substitute calcium and vitamin D.

Like all drugs, steroid hormones also have other side effects. Please ask your doctor more about these side-effects.

¹Generally, more than 5mg of Prednisone or more than 20mg of Hydrocortone per day over a period longer than one or two weeks

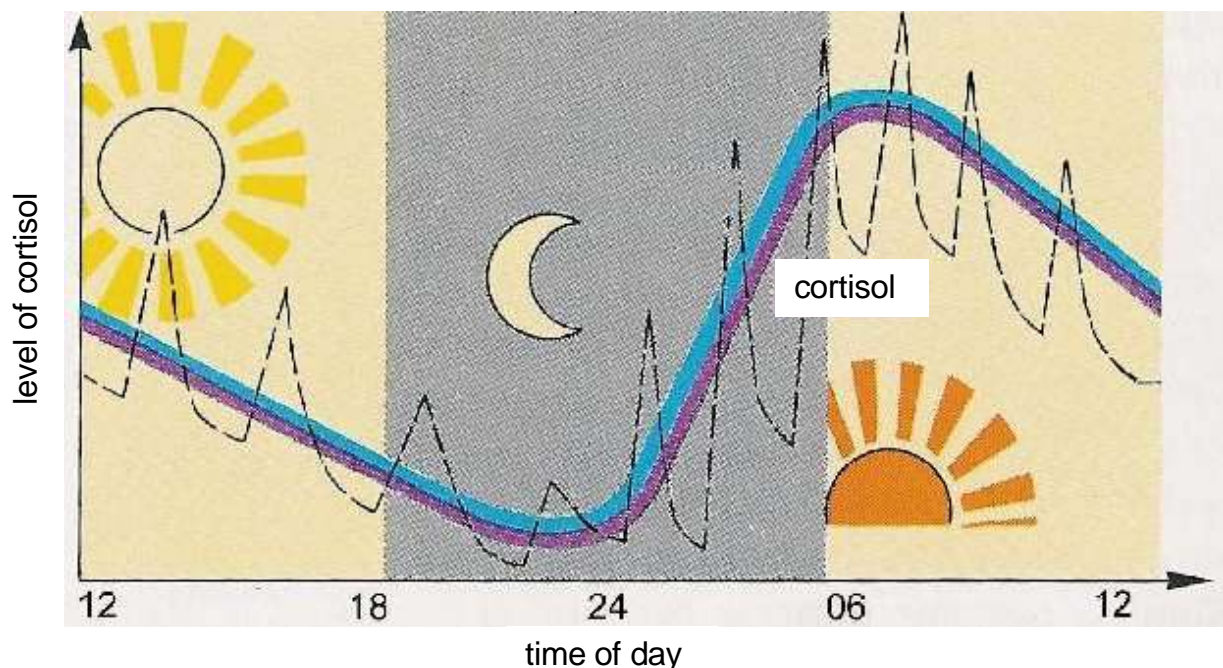


HOW DOES A HEALTHY PERSON'S BLOOD CORTISOL LEVEL BEHAVE?

The daily requirement in normal situations is as follows:

A healthy person's body produces and requires 15 - 30 mg of cortisol (equivalent to 4 - 7.5 mg of Prednisone) every day. Life is not possible without cortisol, because it helps our bodies to adapt to stress situations.

The illustration below shows the typical rhythm of cortisol production during daytime and at night:



- Take your tablets regularly

A) Hormone replacement treatment:

- Take your first dose when you wake up, and the second dose at midday or in the afternoon

WHAT ARE THE SIGNS OF CORTISOL DEFICIENCY?

- At first, there are very few signs
- Later, tiredness and general exhaustion, especially in the afternoon and evening
- Dizziness on getting up
- Weakness
- Aching muscles and joints
- Feeling unwell, fever

In unusually stressful situations, these symptoms can culminate in a **crisis** (known as an Addison's crisis):

- Vomiting, diarrhea
- Stomach cramps
- Low blood sugar levels
- Dehydration, low blood pressure, shock
- Delirium, coma

If these symptoms occur, patients undergoing therapy with a drug containing cortisol must assume that they are suffering from cortisol deficiency and increase their dosage.

WHAT IS THE EFFECT OF STRESS?

Cortisol is a typical stress hormone.

The pituitary causes cortisone to be produced as required in the adrenal glands, and converted to cortisol in the liver. Cortisol enables the body to deal with stress in the following ways:

- It provides blood sugar as an energy source
- It increases the blood pressure
- It protects the body with its anti-inflammatory effect

In stressful situations, production doubles or triples, and in rare cases increases to four or five times the normal daily requirement.

Patients undergoing therapy with a drug containing cortisol must learn to adapt to the situations they find themselves in.

WHAT IS STRESS?

- Physical stress
- Illness, operations
 - Accidents
 - Physical exertion
 - Strenuous sporting activity
 - Heat, loss of fluid
 - Altitude difference (for example between Basel and Engadin)
- Mental stress
- Examinations
 - Problems at work
 - Happy events

In stressful situations like these, the healthy body produces extra cortisol in the quantity required. Note that the increase in cortisol demand is more pronounced in physical than mental stress.

Prevention is better than cure

If you are expecting stress, take a small extra dose of cortisol (5 to 10mg) 30 minutes beforehand. Cortisol needs 30 to 60 minutes before it starts working.

If you are not sure whether it really will be a stressful situation, increase your dosage of cortisol just in case, especially if you do not feel well.

The exact procedure is described on the following pages.

WHAT DOSAGE SHOULD I TAKE IN TIMES OF STRESS?

General rule: **Minor stress** = **small dose**
 Major stress = **larger dose**

Minor stress

- Long airplane flights
- Very hot or cold weather
- Spring cleaning
- Difficult meetings
- Fever, not more than 38.5 degrees

Once-only dose in addition to the daily dose:

⇒ A) Hormone replacement treatment:
 One or two 10 mg Hydrocortone® tablets

⇒ B) Pharmacotherapy:
 Half a 5 mg Prednisone® tablet or
 Half a 1 mg Fortecortin® tablet

For stress lasting several days:

⇒ **Double the previous daily dosage**



Major stress

- Serious illness
- Acute, life-threatening situations
- Accidents, operations
- Serious diarrhea or influenza
- Fever above 38.5 degrees

Call a doctor! *

Dose, immediately:

- ⇒ A) Hormone replacement treatment:
Five 10 mg Hydrocortone® tablets
- ⇒ B) Pharmacotherapy:
Two 5 mg Prednisone® tablets or
Two 1 mg Fortecortin® tablets

Emergency measures

* If you cannot reach a doctor or ambulance:

- ⇒ A) **Ten 10 mg Hydrocortone® tablets**
- ⇒ B) **20 mg of Prednisone®/4 mg of Fortecortin®**
taken with water

or:

- ⇒ A) + B) **100 mg of SoluCortef®** (one ampoule)
Inject subcutaneous (=under the skin)
or have someone do the injection

WHAT DO I DO IF I SUFFER VOMITING OR DIARRHEA?

Due to the increased passage through the stomach and intestine, there is a risk that not enough of the drug's active substance passes through the membrane of the stomach or intestines into the bloodstream.

In addition to this, the illness itself causes stress, meaning that the body's cortisol requirement is higher than normal.

- **Consult a doctor**, so that the cause of the illness can be identified as quickly as possible, and effectively treated.
- Make sure to take **enough liquid and salt** (for example by drinking broth and eating salty snacks).

What you can do:

- **Regularly take a tablet with tea or cola (your body may be able to absorb some of the active substance)**
- **If you cannot swallow a tablet, inject your self subcutaneous cortisol (SoluCortef ®) or have injected**
- If you frequently suffer from vomiting, you can also ask your pharmacist to make up hydrocortisone suppositories.

HOW DO I RETURN TO MY NORMAL DOSAGE AFTER TAKING AN INCREASED DOSAGE?

After minor stress:

If the stress has passed by the following day

⇒ normal dosage

If your condition does not improve

⇒ call a doctor

After major stress:

⇒ reduce the dose as instructed by your doctor

WHY DO I NEED AN EMERGENCY MEDICAL CARD?

Anyone with an impaired adrenal gland function should always carry an emergency medical card.

If you need medical treatment after an unforeseen event, the emergency medical card tells the person treating you straight away that you need cortisol replacement.

WHAT PRECAUTIONS SHOULD I TAKE?

Every day:

- ⇒ Always carry a **spare packet** of Hydrocortone® or Prednisone® tablets
- ⇒ Always carry your **emergency medical card** with you

On trips or holidays:

- ⇒ Take an **emergency set** (an ampoule of SoluCortef®, (syringes and needles) with you

You can get syringes and needles for the emergency set at the Department of Endocrinology,

KSA Aarau: 062 838 68 15

USB Basel 061 265 50 70.

Ask your medical doctor for the prescription for one ampoule of SoluCortef®.

Please check the expiry date of the ampoule and tablets occasionally and get a new prescription when you need one.

EMERGENCY MEDICAL CARD

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| <p>1. The treatment must not be stopped. 2. During an illness (especially fever, influenza) take the dosage specified below. When you have completely recovered, return to your usual dose. 3. Inform your doctor immediately 4. If you have vomiting or diarrhoea, consult immediately your doctor to receive a hydrocortisone injection. 5. Remember to show this card when visiting a new doctor, pharmacist, dentist, gynaecologist especially if admitted to hospital (accident, illness, surgery). 6. The dose of Florinef and hormonal treatments other than glucocorticoids does not need to be changed.</p> <p>1. La cura non può essere interrotta: 2. In caso di malattia (febbre, influenza) prendere il dosaggio indicato sopra. Tornare al dosaggio abituale dopo la guarigione. 3. Informare al più presto il medico curante 4. In caso di vomito o diarrea, rivolgersi subito al medico curante per ricevere un'iniezione di idrocortisone. 5. Ricordate di mostrare questa scheda al farmacista, al dentista, al ginecologo. In caso cambio medico e soprattutto in caso di ospedalizzazioni (incidenti, malattia, operazione). 6. Il dosaggio di Florinef nonché il dosaggio di altri eventuali ormoni prescritti non deve essere modificato.</p> <p> <small>Conception Dr. M. Probst Maurice</small> <small>Prüfung und evtl. weitere Frage</small>   </p> | <p>En urgence Im Notfall In case of an emergency</p> <p>Hydrocortisone</p> <p>Insuffisance surrénale/Inno Nebenniereninsuffizienz Adrenal insufficiency</p> <p>Le porteur de cette carte est sous un traitement de glucocorticoïdes qui ne doit pas être interrompu! Karteninhaber unter Glukokortikoidtherapie, darf nicht unterbrochen werden! The card owner is under glucocorticoid therapy, do not stop!</p> <p>Coordonnées personnels Karteninhaber Dati personali</p> <p>Nom Name Cognome _____</p> <p>Prénom Vorname Nome _____</p> <p>Date de naissance Geburtsdatum Data di nascita _____ Tel. _____</p> <p>Personne à prévenir en cas d'urgence Im Notfall zu benachrichtigen _____ informare in caso di emergenza _____</p> <p>Médecin traitant Behandelnder Arzt Medico curante _____</p> |
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|--|---|
| <p>Indication au traitement Behandlungsgrund Treatment indication</p> <p><input type="checkbox"/> insuffisance surrénale/Inno centrale (hypopituitarisme) Zentrale Nebennieren- insuffizienz (Hypopituitarismus) Hypopituitarism</p> <p><input type="checkbox"/> isolée isoliert isolated</p> <p><input type="checkbox"/> atteinte d'autres axes weitere Achsen betroffen other axes affected</p> <p><input type="checkbox"/> sevrage corticothérapie en cours Glukokortikoidentzug im Gang treatment withdrawal ongoing</p> <p><input type="checkbox"/> insuffisance primaire (maladie de la surrénale) Primaire Insuffizienz (Nebennierendefekt) primary insufficiency (adrenal disease)</p> <p>Diagnostic Diagnose Diagnosi: _____</p> <p>Traitement Behandlung Cura _____</p> <p>Glucocorticoïde _____</p> <p>Autres traitements/Weitere Behandlungen Altre cure _____</p> | <p>1. Le traitement ne doit jamais être interrompu. 2. Si vous êtes malade (fièvre, grippe) prenez la dose indiquée ci-dessous. Puis, si vous êtes complètement remis, revenez à votre dose habituelle. 3. Informez en votre médecin rapidement 4. En cas de vomissements ou de diarrhées, consultez immédiatement pour recevoir une injection d'hydrocortisone. 5. Pensez à montrer cette carte lors de visite chez un nouveau médecin, pharmacien, dentiste, gynécologue et surtout en cas d'hospitalisation (accident, maladie, chirurgie). 6. La dose de Florinef n'a pas besoin d'être modifiée de même que les autres hormones que vous prenez éventuellement.</p> <p>1. Die Therapie darf keinesfalls unterbrochen werden. 2. Im Krankheitsfall (v.a. Fieber, Grippe) nehmen Sie die oben angegebene Dosis. Kehren Sie nach Ihrer Genesung zur normalen Dosis zurück. 3. Informieren Sie unbedingt schnell Ihren Arzt. 4. Bei Erbrechen oder Durchfall, wenden Sie sich umgehend an Ihren Arzt um Hydrocortison zur Injektion zu erhalten. 5. Denken Sie daran, diese Karte Ihrem neuen Hausarzt, Apotheker, Zahnarzt, Gynäkologen und v.a. beim Spätabesuch (Unfall, Krankheit, Operation) vorzuzeigen 6. Die Dosis Florinef sowie die Dosis der anderen evtl. Hormontherapien muss nicht modifiziert werden.</p> |
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Notes