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**Laboratoryreport**

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Sample Material: 2nd EMU stabilised(HCl), saliva

Test	Result	Unit	Initial Result	Norm
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## clinical chemistry











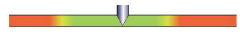


## Note:

The determination of the urinary creatinine concentration serves only as a measure of the individual concentration performance of the kidney. High values indicate urinary concentration, low values indicate strong dilution. The consideration of these conditions allows for the correct assessment of the requested analyte.

Creatinine (2nd morning urine, stab.)	0,78	g/l		0,25 - 2,0 Please mind the altered normal range.
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## endocrinology

**NeuroBalance Profil:**

DHEA (saliva) after getting up	483	pg/ml		78 - 784
DHEA (saliva) after twelve ours	71	pg/ml		21 - 359 Please mind the altered normal range.
cortisol (saliva) after getting up	6135	pg/ml		1850 - 14570
cortisol (saliva) two hours later	<b>11779</b>	pg/ml		1300 - 10290
cortisol (saliva) five hours later	2352	pg/ml		760 - 5690
cortisol (saliva) eight hours later	2132	pg/ml		650 - 4380
cortisol (saliva) twelve hours later	942	pg/ml		330 - 3330
<b>cortisol/DHEA ratio (after getting up)</b>	<b>12,7</b>	Ratio		10,4 - 91,4 Please mind the altered normal range.
<b>cortisol/DHEA ratio (after twelve ours)</b>	<b>13,2</b>	Ratio		3,6 - 78,9 Please mind the altered normal range.
Adrenalin (urine)	<b>2,3</b> µg/g creatinine			5,0 - 15,0
Noradrenalin (urine)	53,8 µg/g creatinine			25,0 - 75,0
<b>Noradrenalin/adrenalin ratio</b>	<b>23,2</b>	Ratio		3,0 - 6,0
Dopamine (urine)	220,0 µg/g creatinine			50,0 - 250,0

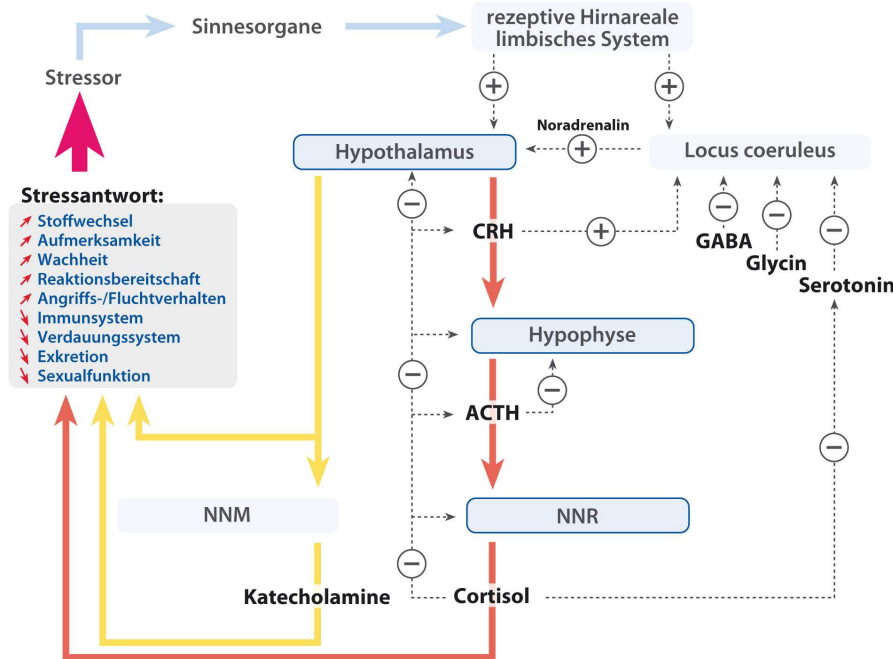


**endocrinology - interpretation of findings**

**Rating of the neurotransmitter disbalance**

Low catecholamine levels and the strongly elevated noradrenaline/adrenaline ratio are an **indication of a decompensated hormonal stress axis** (see graphic below).

**Hypothalamus-pituitary-adrenal cortex (HPAC):**



neuroendokrine Stressachse

Legende: → Stressachse → Sympatikus --(+)→ aktiviert --(-)→ hemmt

ACTH: Adrenocorticotropes Hormon CRM: Corticotropin Releasing Hormone NNM: Nebennierenmark NNR: Nebennierenrinde

**Possible consequences of chronic stress**

Unrest	Muscle tension	Immune suppression
States of fear	Mood swings	Sleep disorders
Fatigue	Disturbed concentration	Susceptibility to infects

**DHEA (saliva)**

The **DHEA level is in a normal range**. This steroid hormone is mainly produced in the adrenal cortex. As of the age of 25, the DHEA level decreases by approx. 2% per year. The hormone DHEA is especially important for a sufficient stress tolerance and optimised regulation of the metabolism.

**Effects of DHEA on the metabolism**

- Reduction of fatty tissue
- Regulation of bodyweight
- Increased lipolysis
- Improved immune defence
- Optimised metabolism regulation
- Higher stress tolerance
- Prevention of cardiovascular diseases
- Prohormone for additional sex hormones
- Cortisol antagonist



**Possible associated diseases of the neurotransmitter constellation**

- ▶ Chronic fatigue syndrome (CFS)
- ▶ Burnout syndrome
- ▶ Depression
- ▶ Chronic pain
- ▶ Irritated bowel
- ▶ Cardiovascular diseases



**Adrenal cortex hormones (saliva)**

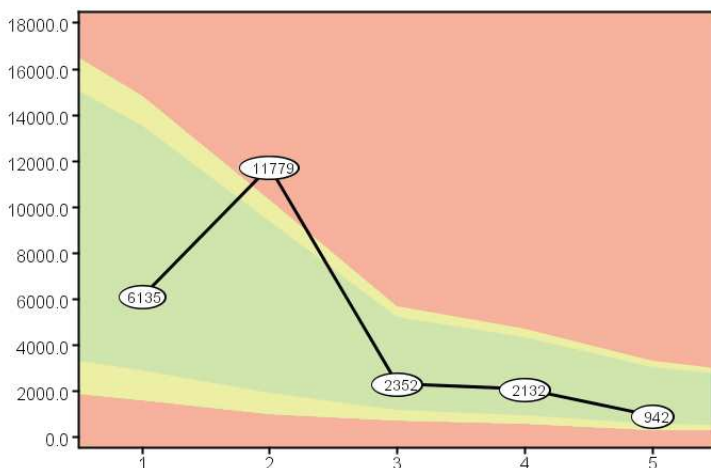
The determination of the adrenal cortex hormones in saliva in the lab allows measurement of the free, bioavailable hormones.

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**Cortisol (saliva)**

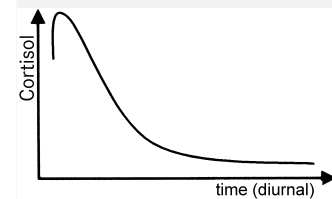
The cortisol level measured in the course of the day is **non-physiological due to the altogether high and not continually decreasing cortisol levels.**

**Intraday cortisol:**

**Possible causes of high cortisol levels**

- ▶ Stress
- ▶ Cortisol substitution
- ▶ Postprandial sampling
- ▶ Hunger (e.g. fasting)
- ▶ Chronic inflammations, infections, hypercorticism (Cushing's disease)


**Indications for a normal, physiological progression of the cortisol level**

- ▶ "Morning peak" (high value)
- ▶ Decrease of the values in the course of the day



The steroid hormone cortisol plays a key role for the body's hormonal stress tolerance.

**Pathophysiology of high cortisol levels**

Stress-induced high adrenaline levels lead to an increased output of ACTH via positive feedback, which stimulates the cortisol synthesis anew.

**Possible consequences of high cortisol levels**

- Susceptibility to infections
- Impairment of the insulin metabolism
- Adiposity
  - Increased deposit of fat on the torso
  - Enlargement of the fat cells (abdominal region)
- Possible symptoms with elevated cortisol levels
  - Muscle weakness (through protein breakdown)
  - Depression
  - Osteoporosis

**Metabolic effects of cortisol**

- Inhibition of inflammation processes
- Stabilisation of the blood sugar level during hunger periods (e.g. fasting)
- Suppression of immunological processes (e.g. autoimmune processes)

**Cortisol antagonists**

- Melatonin coordinates the interaction between hypothalamic and hypophyseal hormones and neurotransmitters as well as sleep induction (especially in the important slow-wave sleep phases). In addition, it has an antioxidant effect and controls regenerative functions via growth hormones (GH).
- Insulin is an antagonist with respect to the carbohydrate metabolism.
- DHEA improves the immune situation, stimulates the cellular defence and