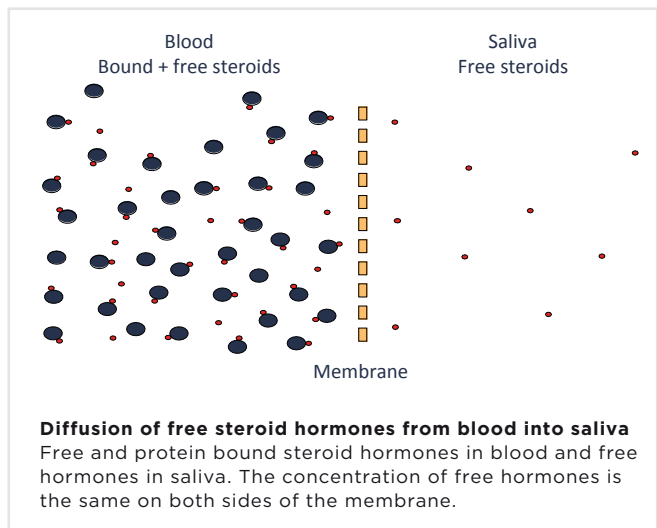


Innovative Saliva Diagnostics.





Steroid hormone assessment from saliva allows the specific determination of the biologically active or “free” fraction of target hormones. IBL International provides you with highly sensitive luminescence immunoassays and ELISAs which have been specially developed and validated for saliva.



ALL ABOUT SALIVA

Working with saliva has many advantages: sample collection is non-invasive, painless and stress-free. Multiple specimens may be collected anytime, anywhere, with no need for medical staff. It is so simple that even special patients such as children and the elderly can easily manage it themselves. Saliva sampling can be performed during physical exercise and rest periods, so athletes can be monitored during training.

IBL International has introduced a special ultrapure polypropylene sampling device called SaliCap, which ensures excellent recovery of progesterone in the saliva.

APPLICATIONS FOR SALIVARY DIAGNOSTICS

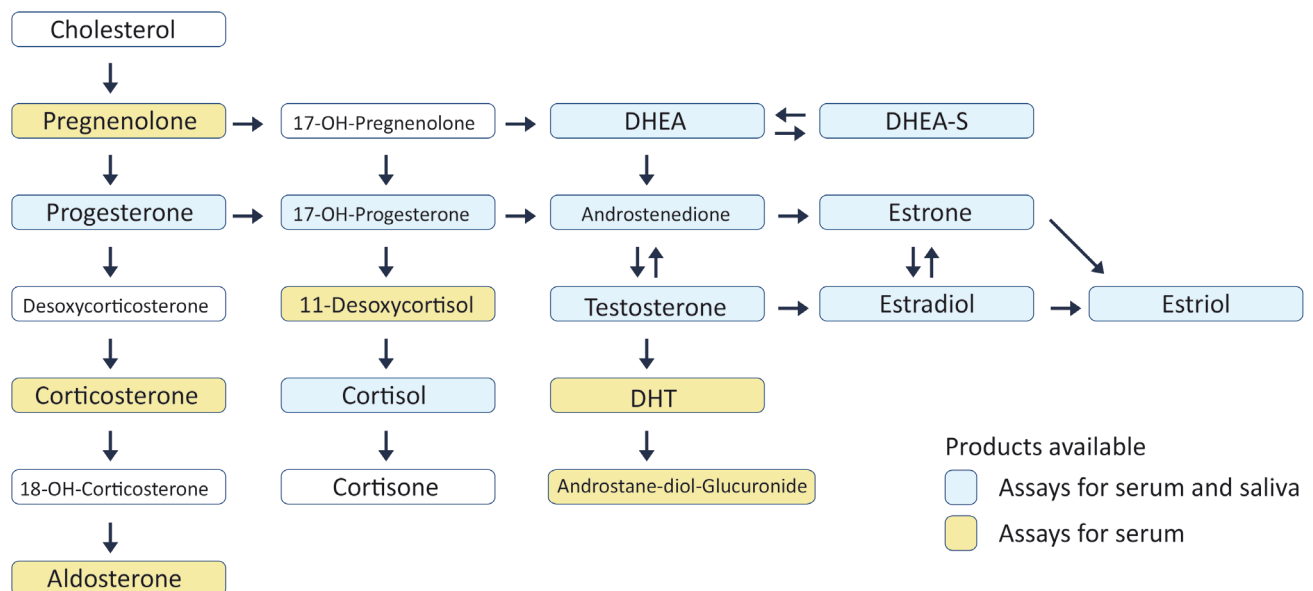
Saliva is the specimen of choice in a variety of traditional medical care situations as well as in the emerging areas of health measurement and monitoring. With the ability to evaluate a pooled saliva sample from multiple collections it is possible to get a reliable assessment of hormone concentration even in cases of marked diurnal fluctuation.

Applications

- | | | |
|-------------------------|-----------------------|-----------------------|
| • Psychology | • Anti-aging medicine | • Immunology |
| • Occupational medicine | • Neuroendocrinology | • Research |
| • Endocrinology | • Oral medicine | • Veterinary medicine |
| | • Sports medicine | |

Additional information material and publications are available upon request!

STEROID PATHWAY



PROFICIENCY TESTING

IBL International was the first company to implement a quality control system for salivary steroid measurement. We are happy to invite any laboratories working with saliva samples to participate in this service, free of charge! In this way we intend to provide a foundation for inter-laboratory consistency in saliva diagnostics.

Broad level of diagnostic applications.

ENDOCRINOLOGY

Endocrinology is related to the biology and medicine of the endocrine system, its diseases and specific secretion products, known as “hormones”.

Androgen Status

Free Testosterone is an ideal diagnostic tool for androgen levels in both men and women, but accurate measurement of testosterone remains a challenge. The determination of the blood testosterone concentrations in serum by conventional immunoassays is inaccurate in men, and even more so in women and children. Directly measuring testosterone in saliva is a better alternative to blood measurement: only the free, biologically active fraction is represented in saliva.

The IBL International luminescence immunoassay shows high analytical and functional sensitivity, and allows quantification of the very low concentration in saliva, as well as in diluted serum. Studies show that free salivary testosterone levels in morning samples correlate well with calculated free testosterone in blood, both in healthy men and in patients with androgen deficiency.

Cushing’s Syndrome

Cushing’s Syndrome, for example, results from excessive secretion of one or all of the adrenocortical hormones, mainly cortisol. This disease is characterized by failure to reach the circadian nadir in cortisol secretion late at night. This is quite a difficult endocrine pathology to diagnose because of the very common phenotype: obesity, hypertension, depression, alcoholism, etc. Furthermore it is relatively unusual, though growing increasingly common.

RELATED PRODUCTS

- RE52671**
Androstenedione ELISA
- RE52611, RE62111**
Cortisol ELISA; Luminescence IA
- RE52651, RE62051**
DHEA ELISA, Luminescence IA
- RE52661**
DHEA-S ELISA
- RE52601, RE62141**
17β-Estradiol ELISA; Luminescence IA
- RE52621**
Estriol ELISA
- DB62021**
Estrone Luminescence IA
- DM59171**
IgA Saliva ELISA
- RE54041**
Melatonin ELISA
- RE52271**
17-OH-Progesterone ELISA
- RE52281, RE62021**
Progesterone ELISA; Luminescence IA
- RE52631, RE62031**
Testosterone ELISA; Luminescence IA
- RE69981, RE69985**
Collection Tube Salicaps



Late-night salivary cortisol is now a well-accepted and recommended screening test for Cushing's syndrome. This method shows high specificity and sensitivity, and ELISA or luminescence assays are very easy to handle. The IBL International Cortisol salivary luminescence IVD assay only requires 20µL of saliva, making it easily practicable even with difficult patients such as children or the elderly.

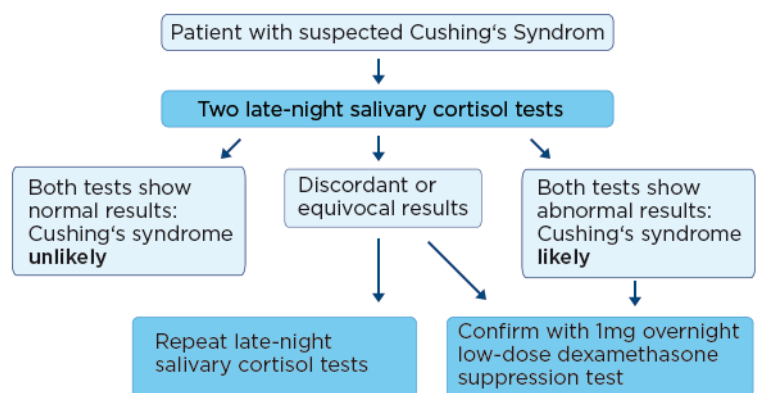


Figure: According to Raff H, Pituitary 2012; 15:64-70

SPORTS MEDICINE

During physical exercise, free salivary cortisol, DHEA and testosterone concentrations all rise with the intensity of the exercise.

It is particularly important in sports medicine to note that hormone levels and exercise-induced hormone changes vary among subjects with different types of training. Monitoring hormone levels during sport sessions is found to be a useful research tool for

optimizing athletes' training status and identifying any excessive exercise liable to result in overtraining syndrome.

Measurement of IgA in saliva samples will also provide information on the athlete's immune status.

ANTI-AGING MEDICINE

A proper hormonal balance of testosterone, progesterone, and estradiol (among others) is a key to good health.

For instance, free testosterone can be an ideal diagnostic tool for androgen levels, both in men and in women. Measurement of free testosterone is recommended for males with primary and secondary

hypogonadism, as well as for women suffering from hirsutism or virilization.

Salivary testosterone is also a good marker for behavioral research, studies of emotional and cognitive functions and their relationships (Ackerman et al. Psychoneuroendocrinology 2012; 37, 1417-1424).

Hormone replacement therapies may readily be adjusted by assessing salivary hormones.



Psychology and occupational medicine.

Psychological research is related to the science of behavior and mental processes; it includes areas such as biological psychology, cognitive psychology and social psychology. Occupational medicine is the branch of clinical medicine most actively involved in occupational health.

Sleep disorders

Occupational diseases include sleep disorders, occurring mostly in shift workers and leading to psychological and physical stress.

In this kind of disorder it is helpful to evaluate individual circadian rhythms, combining measurements of melatonin and cortisol concentration: both hormones are produced according to a circadian rhythm, with contrary circadian patterns.

Melatonin is the key substance promoting night-time sleep; it is extremely low during the day and rises rapidly around 11-12 p.m. (up to ten or twenty times daytime levels).

Normal cortisol concentration in human saliva during the day is highly dynamic. Cortisol typically peaks in the early morning; the timing of this cortisol peak does not depend on clock time nor is it influenced by daylight: it is set by the individual's time of waking.

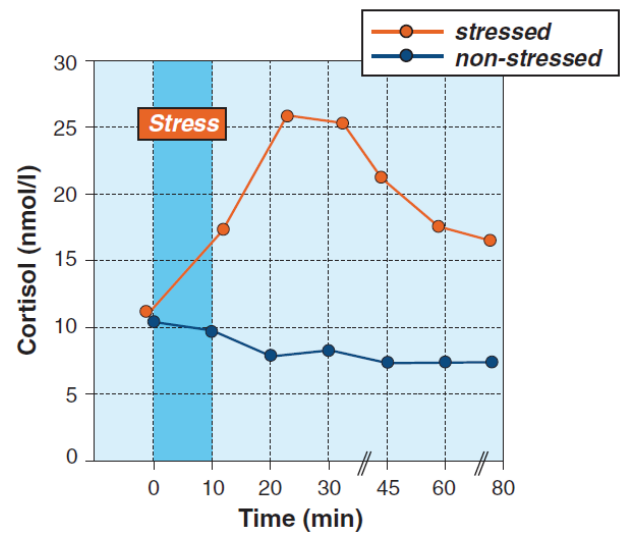
Both hormones are regarded as stress markers. Recent studies have shown that melatonin can influence cortisol levels. These results are useful in the research of sleep disorders.

PRODUCTS
RE80111 Alpha Amylase EA
RE52611, RE62111 Cortisol ELISA; Luminescence IA
RE52651, RE62051 DHEA ELISA, Luminescence IA
RE52661 DHEA-S ELISA
RE52601, RE62141 17β-Estradiol ELISA; Luminescence IA
RE52621 Estriol ELISA
DB62021 Estrone Luminescence IA
DM59171 IgA Saliva ELISA
RE54021 Melatonin ELISA
RE52271 17-OH-Progesterone ELISA
RE52281, RE62021 Progesterone ELISA; Luminescence IA
RE52631, RE62031 Testosterone ELISA; Luminescence IA

Burnout

Recent stress research indicates that more and more people are concerned about work-related stress; this makes occupational stress as important for companies as workplace accidents. The World Health Organization (WHO) has described stress as “one of the major threats of the 21st century”. For this reason more and more institutes and physicians are involved in identifying and measuring biological parameters which can reveal individuals’ psychobiological and physiological status.

Please, visit our homepage www.ibl-international.com for more details of assays of other biological fluids besides saliva, or contact us directly for more information.



Typical profiles for cortisol and melatonin.

Stress research

Stress research in clinical psychology very often relies on questionnaires, but psychologists are always looking for biological parameters; free salivary cortisol is a very well established, non-invasive marker for hypothalamus pituitary adrenal (HPA) axis activity (internal studies; Wittchen, Schönfeld et al, Int. J. Methods Psychiatr. Res. 2012; 21(2): 98-116).

Furthermore, hair cortisol analysis provides a valuable and sensitive retrospective measure of cumulative cortisol secretion over prolonged periods of time (Stalder et al, Psychoneuroendocrinology 2012; 37, 602-610).

Salivary α -amylase, too, seems to be a well characterized indicator for sympathetic nervous system activity. This parameter exhibits relationships with chronic stress, post-traumatic stress disorder, behavior, cognitive functions, and health.

PRODUCTS

RE53971

Chromogranin A ELISA

BE53101

Interleukin-10 (IL-10) ELISA

BE58101

Interleukin-10 high sensitivity ELISA

BE51001

Interleukin-1 alpha (IL-1a) ELISA

BE53021

Interleukin-2 (IL-2) ELISA

BE58061

Interleukin-2 high sensitivity ELISA

BE53061

Interleukin-6 (IL-6) ELISA

BE58061

Interleukin-6 high sensitivity ELISA

RE53171

Insulin ELISA

BE59491

MMP-9 ELISA

RE59321

Neopterin ELISA

RE53141

Osteocalcin ELISA

BE55041

TGF-beta1 ELISA

BE55001

TNF-alpha (TNF- α) ELISA

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