



The most complete line of endocrine testing

Hormone Assessment

Specimen Selection

	URINE	SALIVA	BLOOD
Are reported hormones bound or unbound?	Urine reflects unbound (bioavailable) fraction of hormones.	Saliva reflects unbound (bioavailable) fraction of hormones.	Serum generally reflects total hormones (bound and unbound), although "free testosterone", free T3 and T4 are available. Sex hormone-binding globulin (SHBG) infers the amount of unbound testosterone, calculated as 'Free Androgen Index'.
Can estrogen metabolites be measured?	Yes. Only urine provides all estrogen metabolites (2-OHE1, 16-OHE1, 4-OHE1, 2-MeOE1, 4-Me-OE1, ratios)	No, estrogen metabolites are not measureable in the saliva.	Yes, although serum testing is limited to estrogen metabolites 2-OHE1 and 16-OHE1.
What is the advantage of each specimen type?	<ul style="list-style-type: none"> • Provides most comprehensive array of hormones and their metabolites. • Provides best reflection of tissue hormone utilization and metabolism. • Provides average of hormone fluctuations over several hours. • Easy home collection (24 hr or FMV). 	<ul style="list-style-type: none"> • Best way to evaluate diurnal patterns of cortisol and melatonin. • Provides evaluation of menstrual cycle in premenopausal women, unless current or recent use (within past year) of progesterone cream, which raises salivary levels above normal reference range. • Easy home collection. • Reflects circulating levels of hormones. 	<ul style="list-style-type: none"> • Reference ranges are well-established and in agreement between labs. • Well-represented in the literature.
What are some aspects of each specimen type to be aware of?	<ul style="list-style-type: none"> • Urine assessment should not be used with diuretics or abnormal renal function. • In urine, steroid hormones are partly represented as their downstream metabolites, due to extensive metabolism (e.g., the need for DHEA and testosterone are inferred by 'Total 17-ketosteroids'; progesterone is not measurable and is represented by downstream metabolites.) 	<ul style="list-style-type: none"> • Transdermal hormone creams tend to result in salivary levels above the normal reference range, which do not reflect what is occurring physiologically. • Bleeding from the gums can falsely elevate androgens such as testosterone and DHEA. • Should not be used in conjunction with sublingual hormone treatments. 	<ul style="list-style-type: none"> • Single 'snapshot in time' does not account for hormone fluctuations. • Timing with luteal peak of menstrual cycle may be hard to gauge when cycling is irregular. • Stress of blood draw may influence hormone levels. • Transdermal hormone creams tend to be under-represented in serum samples.

	URINE	SALIVA	BLOOD
Can I use this for a baseline assessment of hormones (i.e., before starting HRT)?	<ul style="list-style-type: none"> • Yes, urine provides a good baseline assessment of hormone levels. <p>Note: Avoid under- or overhydration during urine collection. Aim for fluid consumption of ~2 qts/day for an average adult, spread out evenly over the day.</p> <p>Note: (For FMV collections): If you need to urinate during the night within 6 hrs of your rising time, collect this urine and refrigerate; add to sample in the morning.</p>	<ul style="list-style-type: none"> • Yes, saliva provides a good baseline assessment of hormones, unless patient has used a transdermal cream hormone within the past year (elevated levels in the saliva may persist after stopping the HRT for at least 3-12 months). • For past use of transdermal gel HRT, wait at least 1 month before using saliva for baseline assessment. • For past use of sublingual drops or troches, wait ~1 week. 	<ul style="list-style-type: none"> • Yes, blood provides a good baseline assessment of hormone levels.
What about monitoring HRT?	<p>Urine can be used to monitor any form of bio-identical form of HRT. We recommend 24 hr collections to average HRT peaks and troughs. Due to metabolism, HRT dosing should be based upon parent hormones, and their metabolites:</p> <ul style="list-style-type: none"> • For Testosterone & DHEA, refer to Total 17-ketosteroids; • For Progesterone, refer to Pregnanediol; • Normal or high levels of Total 17- hydroxycorticosteroids do not rule out adrenal insufficiency. 	<p>Transdermal creams produce abnormally high salivary levels. IF the decision is made to still monitor with saliva, note that:</p> <ul style="list-style-type: none"> • Current reference ranges are not based on transdermal HRT; • Testing may be employed for initial monitoring of transdermal cream HRT, or when dose is increased; • Salivary testing is not reliable when dose is decreased, due to persisting elevations in the saliva for an indefinite period of time. 	<p>Blood provides reliable monitoring of most forms of bio-identical hormones, with possible exception of transdermal cream hormones, which are somewhat under-represented in serum.</p>
Will all types of HRT be reflected on the report?	<ul style="list-style-type: none"> • All bio-identical forms of HRT are reflected on report. • Conjugated equine estrogens (e.g., Premarin™) are only partially represented as estrone; other estrogens are NOT represented. Medroxyprogesterone acetate (e.g., Provera™) is synthetic and NOT represented. 	<ul style="list-style-type: none"> • All bio-identical forms of HRT are reflected on report. • Conjugated equine estrogens (e.g., Premarin™) are only partially represented as estrone; other estrogens are NOT represented. Medroxyprogesterone acetate (e.g., Provera™) is synthetic and NOT represented. 	<ul style="list-style-type: none"> • All bio-identical forms of HRT are reflected on report. • Conjugated equine estrogens (e.g., Premarin™) are only partially represented as estrone and estrone- sulfate; other estrogens are NOT represented. Medroxyprogesterone acetate (e.g., Provera™) is synthetic and NOT represented.
When should specimen be collected relative to HRT dosing?	<p>24 hour urine collections should be used with HRT, in order to average hormone peaks and troughs with once or twice a day dosing.</p> <p>Once/week patch → collect ~3 days after applying. Twice/week patch → collect 1 day after applying.</p>	<p>Collect saliva 8-12 hours after last dose of HRT (all forms except patch).</p> <p>Once/week patch → collect ~3 days after applying. Twice/week patch → collect ~19 hours after applying.</p>	<p>Collect blood 8-10 hours after last dose of HRT (all forms except patch).</p> <p>Once/week patch → collect ~3 days after applying. Twice/week patch → collect ~19 hours after applying.</p>
Can the test be run on a patient using oral contraceptives?	<p>No. The hormones in the pill will not be represented and the patient's own hormone production will be suppressed for those supplemented hormones.</p>	<p>No. The hormones in the pill will not be represented and the patient's own hormone production will be suppressed for those supplemented hormones.</p>	<p>No. The hormones in the pill will not be represented and the patient's own hormone production will be suppressed for those supplemented hormones.</p>

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