MP 2.04.502
Salivary Hormone Testing

Last Review: 03/21/2019
Effective Date: 06/14/2019
Section: Medicine

DISCLAIMER/INSTRUCTIONS FOR USE

Medical Policy provides general guidance for applying Blue Cross of Idaho benefit plans (for purposes of Medical Policy, the terms “benefit plan” and “member contract” are used interchangeably). Coverage decisions must reference the member specific benefit plan document. The terms of the member specific benefit plan document may be different than the standard benefit plan upon which this Medical Policy is based. If there is a conflict between a member specific benefit plan and the Blue Cross of Idaho's standard benefit plan, the member specific benefit plan supersedes this Medical Policy. Any person applying this Medical Policy must identify member eligibility, the member specific benefit plan, and any related policies or guidelines prior to applying this Medical Policy. Blue Cross of Idaho Medical Policies are designed for informational purposes only and are not an authorization, explanation of benefits or a contract. Receipt of benefits is subject to satisfaction of all terms and conditions of the member specific benefit plan coverage. Blue Cross of Idaho reserves the sole discretionary right to modify all its Policies and Guidelines at any time. This Medical Policy does not constitute medical advice.

POLICY

Salivary hormone testing is considered investigational for all indications, including but not limited to the screening, diagnosis and/or monitoring of aging, endocrine conditions, and menopause. Salivary hormone tests include, but are not limited to:

- Cortisol
- DHEA
- Estrogen
- Melatonin
- Progesterone
- Testosterone

POLICY GUIDELINES

Not applicable.

BENEFIT APPLICATION

BLUECARD/NATIONAL ACCOUNT ISSUES

State or federal mandates (e.g., Federal Employee Program) may dictate that certain U.S. Food and Drug Administration–approved devices, drugs, or biologics may not be considered investigational, and thus these devices may be assessed only by their medical necessity.

BACKGROUND

There remains interest in testing various hormone levels using saliva as the specimen rather than blood, plasma, or urine. Salivary testing has been viewed as potentially more advantageous due to its
noninvasive nature and the relative ease and convenience of sample collection, which can be done in
the home. Most steroid-based hormones, such as estrogen, progesterone, androgens,
dehydroepiandrosterone (DHEA) and cortisol, are bound to carrier proteins which carry them through
the blood stream, about one to five percent are present in the blood unbound or free. The free
hormones are able to enter into target tissues as well as accumulate in saliva. Thus, salivary hormone
levels may reflect “free” (active) blood hormone levels.

Consumers now have the ability to order home saliva tests over the Internet for some hormones such as
estrogen, progesterone, testosterone, melatonin, cortisol, and dehydroepiandrosterone (DHEA). A
physician's prescription is not required for these saliva tests, which are primarily promoted for the
evaluation of menopause and aging.

RATIONALE

Hormone concentrations in saliva are subject to a number of factors, which influence their correlation
with the total plasma concentration, or the unbound ('free') fraction of hormone. Such factors include:
binding affinity for specific protein carriers; saliva flow; use of pharmacologic agents, which may disturb
the ratio of free to bound hormone by displacing the bound hormone; metabolism of the hormone by
salivary gland epithelial cells or oral bacteria; circadian rhythms; and contamination of the saliva
specimen with blood, food, gingival fluid, or tissue debris. [1,2]

Despite these variables, the technical feasibility of measuring some salivary hormone levels has been
demonstrated in some published studies. However, it is not clear that standardized protocols for
measuring salivary hormone levels are used. [1,3] There also continues to be a need for a protocol for
sample collection and handling. Whembolua and colleagues studied the saliva sample of 19 healthy
adults who provided saliva samples upon rising in the morning, rinsed their mouths with water, and
donated a second specimen 10 minutes later. [4] Samples were either left untreated or passed through
a 0.22-micron filter and then frozen at -80°C or incubated at room temperature for 10 days. Aliquots of
each sample were cultured on agar to determine baseline and post-incubation (or freezing) bacteria
load. Bacteria counts were not significantly influenced by rinsing (with water), were substantially
reduced by filtration, and increased by incubation at room temperature.

Average levels of salivary testosterone and cortisol, but not DHEA, were significantly lower in samples
stored at room temperature than samples frozen the day of collection. The change in bacteria count
induced by storing samples at RT was associated with a change in testosterone but not cortisol or DHEA.
When samples were passed through a 0.22-micron filter bacteria counts were reduced, and the
association between bacteria and testosterone was reduced to nonsignificant. These findings contribute
to a growing body of literature revealing that the process of sample collection, storage, and handling can
dramatically influence the accuracy of information generated when salivary biomarkers are integrated
into research and clinical diagnostics. Normal and abnormal values as studied in different clinical
situations must be established. For accurate interpretation of study results, sensitivities, specificities,
and positive and negative predictive values compared to a gold standard must be known.

There are no published studies documenting sensitivity, specificity, or positive and negative predictive
values for any salivary hormones when used to diagnose, treat, or monitor menopause or aging.

The clinical utility of both positive and negative tests must be established. The clinical utility of a
diagnostic technique is related to how the results of that study can be used to benefit patient
management. Relevant outcomes of a negative test (i.e., suspected pathology is not present) may be
avoidance of more invasive diagnostic tests or avoidance of ineffective therapy. Relevant outcomes of a
positive test (i.e., suspected outcome is present) may also include avoidance of a more invasive test plus the institution of specific, effective therapy.

There are no published clinical trials that demonstrate how the results of salivary hormone testing can be used clinically to direct patient treatment of menopause or aging. In addition, clinical practice guidelines from the North American Menopause Society and the Institute for Clinical Systems Improvement consider evidence to be insufficient to consider salivary hormone testing reliable. [5,6] The American College of Obstetrics and Gynecologists states that 'salivary hormone level testing used by proponents to “tailor” this therapy isn't meaningful because salivary hormone levels vary within each woman depending on her diet, the time of day, the specific hormone being tested, and other variables'. [7] There are no published national practice guidelines that advocate the use of salivary hormone testing in the diagnosis, treatment or monitoring of menopause or aging.

In summary, there is insufficient evidence in the published scientific literature to permit conclusions concerning the use of salivary hormone testing for the diagnosis, treatment or monitoring of menopause and aging.

**ESSENTIAL HEALTH BENEFITS**

The Affordable Care Act (ACA) requires fully insured non-grandfathered individual and small group benefit plans to provide coverage for ten categories of Essential Health Benefits (“EHBs”), whether the benefit plans are offered through an Exchange or not. States can define EHBs for their respective state.

States vary on how they define the term small group. In Idaho, a small group employer is defined as an employer with at least two but no more than fifty eligible employees on the first day of the plan or contract year, the majority of whom are employed in Idaho. Large group employers, whether they are self-funded or fully insured, are not required to offer EHBs, but may voluntary offer them.

The Affordable Care Act requires any benefit plan offering EHBs to remove all dollar limits for EHBs.

**REFERENCES**

MP 2.04.502
Salivary Home Testing

CODES

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<thead>
<tr>
<th>Codes</th>
<th>Number</th>
<th>Description</th>
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<tr>
<td>CPT</td>
<td>84999</td>
<td>Unlisted chemistry procedure</td>
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<tr>
<td>HCPCS</td>
<td>S3650</td>
<td>Saliva test, hormone level; during menopause</td>
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ICD-10 Codes not covered

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<td>All diagnoses are considered investigational and not covered.</td>
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POLICY HISTORY

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<tr>
<th>Date</th>
<th>Action</th>
<th>Reason</th>
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<tr>
<td>03/21/11</td>
<td>Add to Medicine section</td>
<td>New policy</td>
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<td>10/09/14</td>
<td>Update only</td>
<td>Policy given new number 2.04.301 from 2.04.95</td>
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<tr>
<td>06/23/15</td>
<td>Replace policy</td>
<td>Blue Cross of Idaho annual review; no change to policy.</td>
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<tr>
<td>04/07/16</td>
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<td>04/25/17</td>
<td>Replace policy</td>
<td>Blue Cross of Idaho annual review; no change to policy.</td>
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<tr>
<td>03/21/19</td>
<td>Replace policy</td>
<td>Blue Cross of Idaho adopted the following changes, effective 06/14/2019. Policy statement regarding Cushing’s disease removed. No change to investigational policy statement.</td>
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Original Policy Date: March 2011