



Specialty Medicine Compounding Pharmacy

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Evaluation of Hormones Levels, Saliva vs. Serum Testing

“What is wrong with me?” This is a common question among patients who are ill and suffering from various ailments. All these patients are looking for is a definitive answer to validate their symptoms associated with their condition. The same is true for people who experience symptoms related to hormone imbalances.

Increases or decreases in hormone levels effect individuals in many different ways a few examples include aches and pains, mood disorders, libido, cognition, fatigue, obesity, post-menopausal symptoms and quality of sleep. The major steroid hormones that play a role in causing these symptoms are estrone, estradiol, estriol, progesterone, dehydroepiandrosterone (DHEA), testosterone, and cortisol. However, measuring levels of hormones to explain and treat symptoms is not always reliable by traditional serum testing methods. It is possible for an individual to have laboratory values that are within normal limits and still

complain of a diminished quality of life. Therefore, the challenge is to offer a method to individuals that would be accurate and reflect the fluctuations of his or her hormone levels.

Currently, serum and salivary tests are the two tests that are most frequently used to assess hormone levels. Serum and salivary tests have been able to produce good quantitative levels of hormones. However, in addition to their advantages both testing methods have their limitations.

Serum testing was the traditional gold standard used to evaluate levels of hormones. This method has been typically used because physicians and other healthcare professionals were trained to interpret laboratory values taken from serum, standard reference ranges have been established, and Medicare and private insurances readily reimbursed for these services. However, phlebotomy is an invasive procedure. A disadvantage of this procedure is that it is stressful and may lead to altered

hormone levels. Also, serum testing is not convenient to follow an individual’s hormonal pattern throughout the day, this requires multiple specimen samples to be taken at regimented times during the day.

The greatest disadvantage to serum testing is its inability to provide an accurate marker of levels in target tissues. Steroid hormones in blood are normally attached to carrier proteins such as Sex hormone-binding globulin (SHBG), cortisone-binding globulin (CBG) and albumin. Because carrier proteins bind their respective hormones, only the free hormones are bioavailable to cross from blood tissues into their target cells. Serum tests measure the total level of a hormone including those bound to carrier proteins and from there the free fraction is extrapolated. Therefore it has been reported that serum levels of hormones have been unreliable in predicting the concentration of hormone in tissues. In addition, because SHBG and bioavailable levels

are in equilibrium, when a patient begins hormone replacement therapy a lag time exists before levels may be re-evaluated.

Saliva tests have emerged as a better alternative to serum testing. Because carrier proteins only exist in blood, this method is superior to conventional testing and studies have shown that it is a more reliable assessment of hormone levels. It is noninvasive and a more convenient method of testing. Compliance has increased due to patients’ ability to conduct the test at home and at multiple times a day. Furthermore, saliva testing is cheaper than serum testing. However, reported data conflict about reimbursement through Medicare and private insurances. There are limitations associated with this procedure. First, reference standards have not yet been well established. Second, if instructions are not carefully followed by the patient during collection there is a chance of specimen contamination.

Hormone tests are tools to assess an individual’s hormone levels. They should be used as an adjunct to a patient’s medical history, physical exam and reported symptoms. If used in combination with other diagnostic tools healthcare providers should be able to properly determine correct therapy and outcomes for patients.

References:

For a list of references please contact the pharmacy at compounders@specialty-medicine.com

Specialty Medicine Compounding Pharmacy

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hormone replacement therapies and veterinary medicine, to name a few. We have all the facilities and equipment needed to make anything from topicals to capsules and sterile injectables. We do not accept insurance, but do provide claims

forms with prescriptions we fill. So, next time a patient wants a compound you’re unsure of - we’d be happy to serve

