
Functional Endocrinology Philosophy for the Practicing Internist

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Functional Endocrinology Philosophy

In order to truly understand the philosophy of functional endocrinology, we must first compare and contrast functional endocrinology to standard pathological-centered models. Secondly, we must compare the functional endocrinology model to the pharmaceutical-based models and models of hormone replacement therapy. To put it simply, the functional endocrinology approach does not determine future clinical management based on the name of the condition, but rather on the unique physiologic expression of the patient. In addition, the functional endocrinology approach does not simply identify deficiency of hormones and prescribe replacement, but rather it attempts to find the mechanism of the hormone imbalance and change its expression with diet, nutrition, and lifestyle change whenever possible.

The functional endocrinology approach is physiology-based, not condition-based. The functional endocrinologist does not determine treatment based on the ICD-9 diagnosis, but rather the patient's unique phenotypic expression. For example, if a male has low libido and erectile dysfunction in standard healthcare, he would be diagnosed with erectile dysfunction (799.89) and placed on medications to stimulate the body to increase blood supply to the genitals. He would follow the established and published standard of care with a pharmaceutical protocol. In the functional endocrinology approach, the name and identification of the condition would be considered in the clinical work-up, but the mechanism for their condition would be evaluated. A male with low libido may have depressed testosterone, elevated estrogen, depressed luteinizing hormone (LH), elevated dihydrotestosterone creating androgen receptor site resis-

tance, or elevated androstenedione competing with testosterone receptor sites. Each one of the patterns would dictate different clinical management for the patient.

The traditional healthcare system is based on identifying pathology or naming the condition. The name given to the set of symptoms will then establish treatment. The treatment is focused on the diagnosis, not on the patient's specific physiological expression. On the other hand, the functional approach is not based on treating the name given to the set of symptoms, but rather on the specific physiological shifts expressed by the patient.

The goal of functional endocrinology is to assess the endocrine system and find the mechanisms for imbalance. If a patient demonstrates a hormone imbalance, to functional endocrinologists the first step is to identify the mechanism. For example, if a 28-year-old female presents with depressed progesterone levels, the mechanism for the deficiency must be evaluated rather than immediately considering progesterone replacement. The functional endocrinologist will evaluate basic physiological mechanisms first, identify the mechanism for the pattern, and then consider the appropriate treatment. The patient that presents with low progesterone may have depressed LH levels, defects of the corpus luteum, a diminished estradiol peak, suppressed follicle-stimulating hormone, or she may have an autoimmune response against her follicles. The goal of the functional endocrinologist is to identify the mechanism. Let's say further evaluation of the 28-year-old patient identifies depressed LH. Since the LH is depressed, the possibility of corpus luteum defect is unlikely. The next question must be, "Why is the LH low?" A healthy estradiol peak midcycle triggers normal LH release. If the estradiol peak is normal, then the focus is on the failure of the pituitary to release LH. If the estradiol peak is abnormal then the functional endocrinologist must continue his or her assessment and find out why the estradiol peak is abnormal. Let's say that in this patient we determine that the estradiol peak is normal and the LH and progesterone are depressed. This pattern clearly indicates that the low progesterone is related to the release of LH. The next step would be to identify why the LH is suppressed, followed by strategies to increase LH output. LH suppression is most commonly related to cytokines such as interleukin-6 released during a chronic stress response, or a previous history of exogenous progesterone overload. In this example, let's say the patient is in an active stress response because she is hypoglycemic and has adrenal exhaustion. Therefore clinical management will include lifestyle changes to stabilize blood sugar imbalances and supplements to help support adrenal function and glycemic stability. The

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