TEST: TESTOSTERONE, TOTAL WITH FREE ANDROGEN INDEX

PRINCIPLE:

Free Androgen Index (FAI) or the Free Testosterone Index (FTI) is an indirect method used to determine androgen status. FAI is used to assess circulating physiologically active testosterone which includes “unbound free testosterone” and albumin-bound “bioavailable” testosterone. Testosterone that is bound to Sex Hormone Binding Globulin (SHBG), >50% of circulating testosterone, is not bio-active due to the high binding affinity of SHBG. Therefore, higher amounts of circulating SHBG reduce the levels of bio-active testosterone. Calculating the FAI requires the measurement of total testosterone and SHBG concentrations. The FAI is calculated using the equation: \( \frac{\text{Testosterone, Total } \text{ ng/ml} \times 3.47}{\text{SHBG mmol/L}} \). See laboratory information sheets for Testosterone, Total and SHBG regarding specific information for these analytes.

The FAI is generally considered useful in estimating free testosterone in women with hirsutism or hyperandrogenism. FAI may correlate better with clinical symptoms in comparison to total testosterone alone.

SPECIMEN REQUIREMENTS:

2ml serum collected in a red top tube with no additive or in a serum separator tube (gel barrier). Serum should be separated from the clot as soon as possible to avoid hemolysis. Store/transport sample at room temperature (15-30°C) for no longer than 8 hours or at 2-8°C for up 48 hours. If testing is further delayed, sera should be frozen at -20°C or lower. Avoid repeat freeze-thaw cycles.

METHOD: Enhanced Chemiluminescence

REFERENCES:


Note: This test includes reported measurements for Testosterone, total and SHBG.

Normal Range:

Normal Males (age 20 - 50): 24.3 - 110.2 % nmol/L
Normal Females (age20 - 46): 0.65 - 10.93 % nmol/L
Post-menopausal Females (age 47-91): 0.23 - 6.80 % nmol/L

Turnaround Time: 3 days