

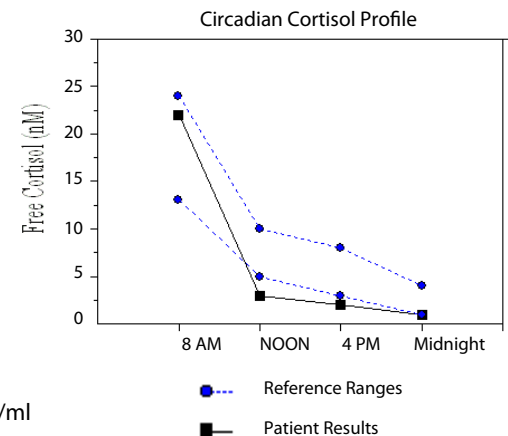
Diagnos-Techs, Inc.

Clinical & Research Laboratory
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Test	Description	Result	Ref Values
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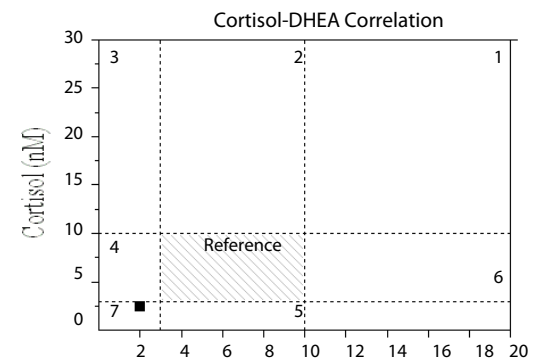
NLASI	CUSTOM ASI
TAP	Free Cortisol Rhythm
07:00 - 08:00 AM	22 Normal 13-24 nM
11:00 - Noon	3 Depressed 5-10 nM
04:00 - 05:00 PM	2 Depressed 3-8 nM
11:00 - Midnight	1 Normal 1-4 nM
Cortisol Burden:	28 23 - 42

DHEA	Dehydroepiandrosterone	2 Depressed DHEA	Adults (M/F): 3-10 ng/ml
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KEY: CORTISOL-DHEA CORRELATION

- Adapted to stress.
- Adapted with DHEA slump.
- Maladapted Phase I.
- Maladapted Phase II.
- Non-adapted, Low Reserves.
- High DHEA.
- Adrenal Fatigue.



Patient Result Interpretations

Marginal HPA axis performance during the day may be associated with suboptimal hypothalamic pacing of adrenals.
Adrenal support suggested.

Minimal cortisol rhythm; cortisol augmentation and anabolic support suggested.

Day time glycemic control & adrenal support suggested: Anabolic enhancement suggested: DHEA or Pregnenolone augmentation.

Diagnosis Code: Not Provided To The Lab.

Please Note: All examples of patient treatment or therapy are for illustrative and/or educational purpose. Use this report in context of the clinical picture before initiating hormone or other therapies.

COURTESY INTERPRETATION of test and technical support are available upon request, to Physician Only

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PHP1. Postmenopausal Hormone panel -- Short

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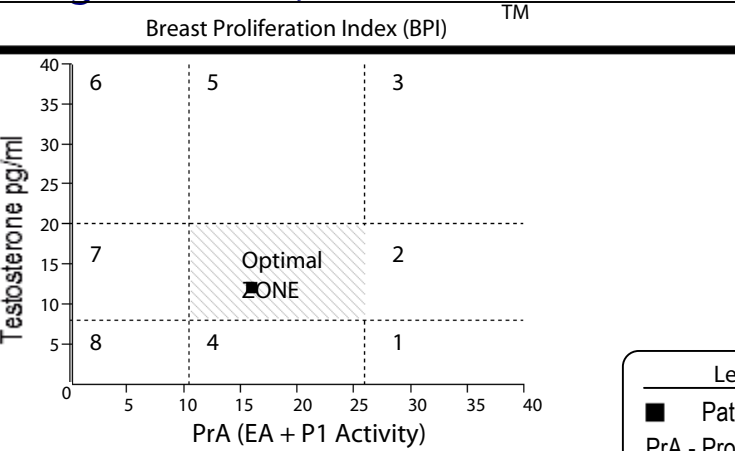
Hormone	Result	Notes	Reference Ranges
TTF - Testosterone	12	Normal	Borderline: 5-7 pg/ml Normal: 8-20 pg/ml
E1 - Estrone	43		Normal for Age 40-49: 38-68 pg/ml
E2 - Estradiol	7		Postmenopause-No HRT: 1-4 pg/ml HRT Target Range: 5-13 pg/ml Follicular: 5-13 pg/ml Luteal: 7-20 pg/ml
E3 - Estriol	27		Postmenopause-No HRT: 7-18 pg/ml HRT Target Range: 14-38 pg/ml Cycling Female: 12-25 pg/ml
P1 - Progesterone	522		Postmenopause-No HRT: 5-95 pg/ml HRT Target Range: 100-300 pg/ml Follicular: 20-100 pg/ml Luteal: 65-500 pg/ml

More interpretation and the action plan on following pages.

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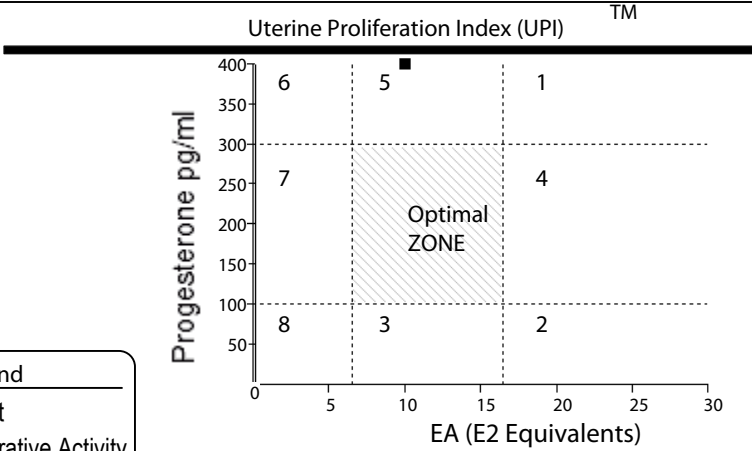
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- | | |
|----------------------------------|-------------------------------|
| 1. Enhanced Proliferation. | 5. Mild Androgen Dominance. |
| 2. High Proliferative Potential. | 6. Frank Androgen Excess. |
| 3. Hormone Overload. | 7. Female Hormone Deficit. |
| 4. Pro-Proliferative. | 8. Hypogonadism with Atrophy. |

👉 Your hormone values are in the Optimal Zone.

Explanation:
OPTIMAL ZONE
This zone indicates balanced estrogen, progesterone and testosterone levels. Unless otherwise indicated on this report, patients in this zone are encouraged to maintain the current hormonal regime when applicable, and refrain from hormone supplementation. If patient is symptomatic further investigation is merited and should include an adrenal axis evaluation (e.g. Adrenal Stress Index profile).



- | | |
|-----------------------------------|--------------------|
| 1. Enhanced Proliferation. | 5. Mild Imbalance. |
| 2. High Proliferative Potential. | 6. Pre-Atrophic. |
| 3. Potentially Proliferative. | 7. Pro-Atrophic. |
| 4. Accentuated Hormone Imbalance. | 8. Atrophic. |

👉 Your hormone values are in Zone 5.

Explanation:
ZONE 5: MILD IMBALANCE
Zone 5 represents normal estrogenic activity and hyperphysiologic progesterone levels. This favors excessive genomic and non-genomic progesterone activity including depression, weight gain, infertility, mild proliferation of target tissue etc.

What Next?
Readjustment or fine tuning of hormone intake is worth consideration. This may entail dose reduction and/or changes in the route of administration.

Need a more complete explanation of the Indexes?
See respective sections on the following page.

BREAST PROLIFERATION INDEX (BPI)

Explanation:

Several reproductive hormones exert trophic effects on the breast tissue i.e. cellular division and differentiation. **Unchecked trophic stimulation can lead to undesired proliferation of the tissue.** Over time, breast cysts, hyperplasia and lesions are promoted. Estradiol (**E2**), Estriol (**E3**) and Estrone (**E1**) in descending order of potency exert proliferative influences on breast tissue. **Progesterone also exerts a proliferative influence with increasing concentration.** On the other hand, testosterone, in the normal to mildly hyper-physiologic range, **exerts a significant estrogen antagonizing and anti-proliferative effect which modulates and reduces estrogenic proliferative effects.**

Note:

Chronic exposure to high concentration of proliferative hormones is usually required to promote the initial proliferative stages of estrogen-sensitive lesions. However, the maintenance of the lesions **may not require high concentrations** of proliferative hormones. This phenomenon explains the difficulties and prolonged time required to reverse tissue proliferation that has already taken place.

What does the BPI Index mean?

The **BPI** is a graphical comparison of the proliferative and anti-proliferative hormone activity of the patient. The combined proliferative activity of the three estrogens plus the concentration-dependent contribution of **progesterone** is represented on the **horizontal graph axis (X-axis)**. The **testosterone** anti-proliferative activity is represented on the **vertical axis (Y-axis)**.

The **BPI** graphic grid has 8 distinct numbered zones with an explanatory key below the graph. The patient values of E1, E2, E3, progesterone and testosterone are used to calculate indices and plotted as a solid square that appears one of the numbered zones.

UTERINE PROLIFERATION INDEX (UPI)

Explanation:

It is established that estrogens including Estradiol (**E2**), Estriol (**E3**) and Estrone (**E1**) in descending order of potency can **induce proliferative changes in the endometrium** at any age. Endometrial hyperplasia with rapid blood vessel formation is one of the major outcomes of estrogen hormone replacement therapy in postmenopausal women. On its own, the estrogen proliferative effect is additive and cumulative over time and is manifested clinically as breakthrough bleeding. Estrogens help organize and capacitate the endometrial cells to respond to progesterone-mediated functionalization with view of constructing an embryo-receptive lining.

Progesterone helps transform the rapidly growing cells into mature ones. It prevents the endometrium from rapidly outgrowing its developing blood supply. Progesterone inhibits uncontrolled endometrial cell growth that otherwise would lead to proliferative lesions.

What does the UPI Index mean?

The **UPI** is a graphical comparison of the correlation between the proliferative hormone activity (Measured Estrogenic Activity-EA) and the Anti-proliferative activity (Measured Progesterone levels). The EA takes into account the genomic and non-genomic proliferative activity of the three main estrogens. The EA is represented on the **horizontal axis (X-axis)**. The progesterone anti-proliferative activity is represented on the **vertical axis (Y-axis)**.

The **UPI** graphic grid has 8 distinct numbered zones with an explanatory key below the graph. The patient values of E1, E2, E3 and progesterone are used to calculate indices and appear as a solid square in one of the numbered zones.

Why Choose Grid Analysis over Hormone Ratios?

Proper hormone balance is not achieved at all concentrations. It is only achieved within matched physiologic concentration ranges of the respective hormones. The use of arithmetic ratios of sex hormone concentrations for the purpose of reference range analysis, as used by other laboratories, is usually deceiving. The absolute concentrations of the hormones are extremely important and are not included in arithmetic ratio analysis.

For more accuracy in interpretation, a two dimensional **Zoned Grid Method** is used in this report. **The following example** will illustrate the inadequacy of the arithmetic ratio method. At high concentrations of the respective hormones (**Zone 3** in the **BPI**, and **Zone 1** in the **UPI**), you may have a perfect arithmetic ratio between the estrogens and testosterone which other labs consider normal. However, the following adaptive processes may come into play:

- I.** At high hormone concentrations, receptor involution takes place blocking the binding of hormone to receptors. This may lead to unpredictable or paradoxical effects.
- II.** At high hormone concentrations there is receptor confusion, i.e. one hormone cross-reacts non-specifically with the receptors of another leading to unpredictable effects.
- III.** At high concentrations certain hormones inhibit the synthesis of other antagonistic hormones, or promote the production of synergistic ones.

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Code	Test Name	Values	Provisional Ranges
<u>STP</u>	Saliva Thyroid Study		
fTSH	Thyroid stimulating hormone	57 Normal	Borderline Low: 20-25 nIU/ml Normal: 26-85 nIU/ml Borderline High: 86-120 nIU/ml
fT4	L-Thyroxine	0.25 Normal	Normal: 0.17-0.42 ng/dl
fT3	Triiodo-thyronine	0.39 Normal	Borderline Low: 0.21-0.27 pg/ml Normal: 0.28-1.10 pg/ml
TPO	Thyroid Microsomal Ab, SIgA	Negative	Normal: Negative

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Code	Test Name	Result / Notes	Reference Values/Key
ISN	Insulin	Fasting: <3 Post-prandial: <3 Depressed	Normal: 3-12 uIU/mL Optimal: 5-20 uIU/mL Low: < 5 uIU/mL High: > 20 uIU/mL

Depressed Post-prandial insulin within four hours after meal. This may be caused by a small carbohydrate load in the preceding challenge meal or a reduction in pancreatic insulin release or synthesis. Consider a closer examination of challenge meal composition to rule out pre-diabetic tendencies.

Why Test for Insulin?

Insulin activity is affected by the stress and cortisol responses. Chronic stress with cortisol elevation antagonizes insulin, and may cause functional insulin resistance. Furthermore, chronic hypercortisol causes hyperinsulin responses to carbohydrate intake. Chronic insulin resistance and overproduction lead to pancreatic exhaustion.

General information about insulin values.

Fasting: This insulin value is elevated in cases of insulin resistance.

Post Prandial: This insulin value varies with type of meal and time of sample collection. See figure 1b.

Adapted, Br. J. Nutr. 2003, 90:853

To obtain the most meaningful results, instruct patient to eat 50g of carbohydrate or what is equivalent to 200 calories about 45-90 minutes before noon sample collection. Examples: 2 slices of white bread and 1 cup of orange juice OR 1 cup of cooked oatmeal and 1 cup of orange juice OR 2 ounces of corn flakes snack.



Figure 1a. Insulin Levels

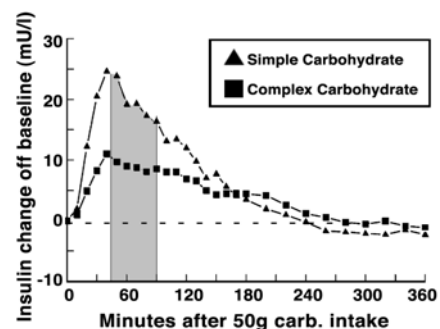


Figure 1b. Serum Insulin - Time Curve

Shaded area is optimal period of post-prandial collection.

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Code	Test Name	Result / Notes	Reference Values/Key
ASC	Roundworm (Ascaris lumbricoides) SIgA A positive finding may indicate (1) a recent or ongoing exposure, (2) or a residual titer. Please use results data in context of the clinical picture.	Detected	Normal Result: Not detected
FSH	Follicle Stimulating Hormone	63	Premenopause: <125 uIU/mL Postmenopause: 90-500 uIU/mL
GP6S	Toxoplasma Ab, SIgA (Saliva)	Equivocal	
GP7S	Ameba histolytica Ab, SIgA (Saliva)	Equivocal	
GP8S	Helicobacter pylori Ab, IgG	>5.5	Negative: < 3 U/ml Borderline: 3-5.5 U/ml Positive: >5.5 U/ml
LH	Luteinizing Hormone	33	Premenopause: 8-30 uIU/mL HRT: 8-30 uIU/mL Postmenopause-No HRT: 25-200 uIU/mL
P17-OH	17-OH Progesterone	96 Normal	Adults Optimal: 22-100 pg/ml Borderline: 101-130 pg/ml Elevated: >130 pg/ml
T-SOL	Tapeworm (T.solium) SIgA	Not detected	Normal Result: Not detected
TRIC	Trichinella spiralis SIgA	Not detected	Normal Result: Not detected

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