

# Hormones in Cosmetics

## Inadvertent Transdermal Progesterone Intake



“...90-95% of all the submitted creams... tested positive for progesterone.”

John White, MD, CM

In this issue, we highlight an all too frequent finding noted in the results of the Female Hormone™ and ASI™ Panels. Figure 1 is an actual Cycling Female Hormone Panel™ result we recently processed. At first glance, the graphed results might suggest a fairly normal picture. Be alert, however, that for each separate test the computer may reset the plotting values on the estradiol and/or progesterone axes to accommodate the values measured. In the table of actual values that appears above the graph, note the excessively elevated progesterone levels in figure 1 (green shaded area) throughout both the follicular and luteal phases. Compare to the normal ranges

we offered anonymous testing of suspect face creams for our clients. We were not surprised to find that 90%-95% of all the submitted creams, lotions, etc. tested positive for progesterone. In addition, we found considerable contaminating estrogens and androgens. Faced with the futility of this testing, it has been discontinued. The patients we tested were likely dosed unwittingly with progesterone (non-bioidentical) contained within creams or shampoos and for long periods of time. Such extra progesterone exposure prejudices accurate baseline results, and not only confuses the body's essential

hormonal balance, but also proper therapeutic judgement.

Face creams and shampoos are classified legally as cosmetics, and as such, are not under the close purview of the FDA. Not only can manufacturers add progesterone to their products (up to 4%) but they are not required to list it on their labels. Be highly suspect of any product touted as “anti-wrinkle,” “anti-aging,” “rejuvenating” or “our own special formula.” One prominent face cream producer actually acknowledged adding progesterone (“nature’s own anti-wrinkle substance”) on its website; it was rapidly taken down. *Continued on next page*

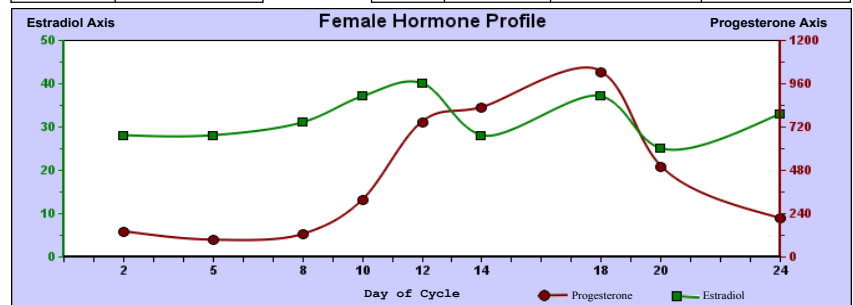


Expanded Female Hormone Panel

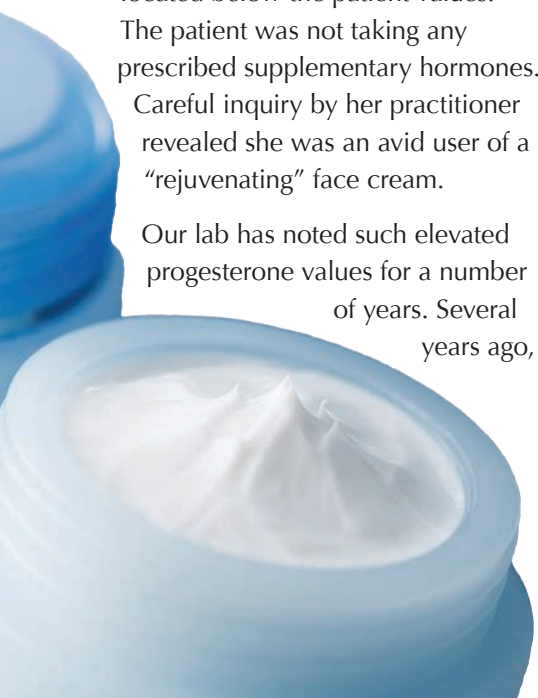
Figure 1

eFHP		Expanded Female Hormone Panel										
Day of Cycle	Day	2	5	8	10	12	14	18	20	24		
Estradiol	pg/ml	28	28	31	37	40	28	37	25	33		
Progesterone	pg/ml	140	93	125	315	748	828	1026	501	213		

Cycle Information	Start	11/27/2010	Ranges	Phase	Estradiol	Progesterone
	End	12/20/2010		Follicular	2 - 10 pg/ml	20 - 100 pg/ml
	Length	23		Preovulatory	7 - 25 pg/ml	
	Average	24		Luteal	3 - 16 pg/ml	65 - 500 pg/ml



Test	Description	Result	Ref Values
DHEA	Dehydroepiandrosterone	10 Normal	Adults (M/F): 3-10 ng/ml
TTF	Free Testosterone	68 Elevated	Borderline: 6-9 pg/ml Normal: 10-38 pg/ml



Serum levels of progesterone may not reflect salivary levels when progesterone creams are applied; typically salivary values more truly reflect the tissue levels.<sup>(2, 3)</sup> This discrepancy may be due to variance in transport by the body of different products. Although most substances are carried in the blood stream, long chain lipids are transported preferentially by the lymphatics. Progesterone itself is lipophilic, as is any cream base containing it. Thus, lymphatic transport increases progesterone content in the tissue fluid and, consequently, in salivary measurements. Progesterone gels, on the other hand, are water soluble and may possibly achieve serum progesterone levels comparable to saliva values.<sup>(2)</sup>

Such elevated progesterone levels have also been noted in women prescribed progesterone cream, or who use various over-the-counter progesterone creams. Moreover, we have observed higher salivary levels when progesterone cream is used than when progesterone is administered orally or sublingually. This may be due to the intrinsic lipophilic property of the cream base and, possibly, the progesterone itself, which causes a variable amount of the applied progesterone to sequester in fat cells under the skin. Not only is the actual amount of progesterone reaching the blood stream unpredictable, but, if discontinued, it may take several months to leech entirely out of the fat stores beneath the skin.<sup>(1)</sup>

Note as well in *figure 1* (blue shaded area) that, despite very high progesterone values, this patient has elevated estradiol in both follicular and luteal phases of her cycle. In the face of no known estradiol intake, her estrogen dominance state most likely

is the result of inadvertent intake or of inadequate natural or bioidentical progesterone to maintain a normal estradiol/progesterone balance. The high progesterone levels probably reflect the presence of isomers of natural progesterone that are not recognized by the body as truly natural and, hence, do not maintain the proper estradiol/progesterone balance.

*“...elevated progesterone levels have also been noted in women prescribed progesterone cream...”*


This patient's elevated estradiol may have some contribution from her relatively high DHEA (possible exogenous intake), which, in turn, may be a contributor to her elevated testosterone. Inquiry should be made, as well, regarding topical testosterone use by a male partner resulting in passive transfer.

Appropriate therapy in this case consists of stopping any progesterone creams, prescribed or inadvertent, or properly adjusting over-prescribed oral or transmucosal progesterone. Inasmuch as it can take months to rid the body of its subcutaneously stored progesterone, any oral or transmucosal bioidentical progesterone replacement program must be administered gradually up to the full dose to maintain appropriate progesterone balance in the body. A repeat Female Hormone Panel™ is recommended three to four menstrual cycles or months later, once the new replacement program has been established.

As a corollary to the above discussion, if a valid and accurate assessment of a woman's hormone status is desired, inquiry should be made prior to testing

regarding face cream use or other source, of progesterone; if present, the product should be stopped and testing performed at least six to eight weeks later. This advice applies equally for peri- and post-menopausal testing.

A woman with proper progesterone supplementation should not need any progesterone-containing face creams. Pure moisturizers (e.g. cetaphil) or, generally, baby moisturizers, lotions, shampoos are probably safe. The cosmetic industry probably is not adding progesterone to baby products yet!

Because it usually is impossible to gauge the extent of progesterone stores in a patient's body after transdermal use, the progesterone values reported by Diagnos-Techs™ constitute those measured in the laboratory. The ranges provided are not adjusted for any outside factors. Diagnos-Techs™ believes that it is incumbent upon the practitioner to interpret the basic data provided vis-à-vis the clinical picture presented by the patient, without any form of interpretive modification of the ranges by our laboratory. 

## REFERENCES

1. Ilyia, EF; McClure, D; Farhat, MY. Long Term Effects of Topical Progesterone Cream Application: A Case Study. *Intl J Pharm Compounding* (1998)
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3. O'Leary, P; Feddema, P; Chan, K; et al. Salivary, But Not Serum or Urinary Levels of Progesterone Are Elevated After Topical Application of Progesterone Cream to Pre- and Post-Menopausal Women. *Clin Endocrin* (2005) 53:615-620