

## On the cover

# Hormone Therapies to Cure Female-Related Disorders: Practical Tips by Thierry Hertoghe, MD

*Prevention and cure of breast cysts, under- and overdeveloped breasts, breast ptosis, amenorrhea, hypomenorrhea, and menorrhagia, poly- and spaniomenorrhea, irregular menstrual cycles, ovulatory pains, spasmodic and constant dysmenorrhea, premenstrual and menstrual migraines, ovarian cysts and polycystic ovarian syndrome, vaginal dryness, dyspareunia, endometriosis, lichen sclerosis, hirsutism, etc.*

Most female-related disorders are caused by deficiencies, excesses, or imbalances of the two important types of female hormones – estrogens and progesterone. In this article, we will review the most typical female-related disorders and suggest how to correct them with hormone supplements.

To determine which female hormone deficiencies and excesses are causing female-related disorders, and which hormone supplements to provide as a treatment, I recommend physicians train their skills in recognizing the differences in actions and deficiency signs and symptoms between estrogens and progesterone.

**Estrogens** increase progesterone production by stimulating ovulation through the production of a high preovulatory peak that stimulates a peak secretion of LH, the pituitary hormone that triggers ovulation.

- Estrogens stimulate the (ortho)sympathetic nervous system directly and through conversion into catechol estrogens, making women **excited and enthusiastic**, but excess estrogens render women nervous, aggressive, and anxious.
- Estrogens also cause a person to **retain fluid** and benefit from adequate hydration of the skin and mucosa, but in

excess they lead to painful swelling of breasts and lower abdomen.

- Estrogens also stimulate **healthy epithelial cell proliferation**, particularly in the genital areas (breasts, ovaries, and endometrium), however, at excessive levels, they stimulate excessive cell proliferation in these areas producing enlarged breasts or breast cysts, ovarian cysts, endometrial glandulocystic hyperplasia, and fibroids.

**Progesterone** has in these domains opposite actions that protect against estrogen excess. Progesterone reduces estrogen activity by reducing the levels of estradiol, the most potent estrogen, through a stimulation of the conversion of estradiol into the three to 10 times less active estrone.

- Progesterone stimulates the parasympathetic nervous system, making women **calm and in control**.
- Progesterone is **diuretic**, increases water excretion through urine, protecting in this manner against excessive fluid retention. This diuretic action is not shared by all progestogens. High doses of synthetic derivatives of bioidentical progesterone can cause fluid retention, particularly when they derive from androgens.
- Progesterone also stops estrogen-induced epithelial cell proliferation and **differentiates epithelial cells** into more functional cells. For example, progesterone stops estrogen-induced anarchic proliferation in the endometrium, differentiating these cells so that the endometrium of the uterus can accept implantation of a fertilized egg cell and nourish it.

Table 1 shows the differences in actions of the two types of female hormones.

Excesses (predominance) in these female hormones will accentuate these effects. **Estrogen predominance** produces nervousness, water retention, and excessive cell-proliferation.

Estrogen predominance is frequently encountered in premenopausal women who are not supplemented with female hormones. In contrast, postmenopausal women usually show estrogen predominance only when taking an imbalanced female hormone treatment (e.g., the medically unsafe, treatment with estrogen alone without progesterone) usually prescribed to women after hysterectomy.

Progesterone supplementation is necessary to keep not only the uterus tissues but also the ovarian, breast, and brain tissues well-balanced and safe. **Progesterone dominance** with depression and dehydration is rarely encountered, generally only when excessive doses of progesterone or progesterone derivatives are given.

Deficiencies in female hormones will provide opposite effects to their actions. In **estrogen deficiency**, low mood and energy, dehydration, and atrophy prevails. In cases of **progesterone deficiency** associated to adequate estrogen levels, nervousness predominates; and, in the genital areas, swelling and excessive epithelial cell proliferation. Table

**Table 1. Estrogens and progesterone: Differences in actions**

Affected areas	Estrogens	Progesterone
Sympathetic nervous system	Stimulates	Calms down
Body water in genital areas	Water retention	Water excretion in urine
Epithelial cell proliferation	Stimulates	Inhibits and differentiates
Hormone levels	Tend to increase progesterone levels	Reduces estradiol levels, increases estrone levels

2 reviews the most typical and pathognomonic signs and symptoms of each female hormone deficiency, enabling physicians to quickly detect which female hormone deficit(s) a patient is suffering from.

At what time of the day are female hormone deficiency complaints the worst? Contrary to hypothyroidism and cortisol deficiencies where symptoms are more severe at specific times in the day (upon awakening for hypothyroidism and in stressful moments for adrenal deficiency), women with estrogen and progesterone deficiencies find that most complaints appear at the same intensity at any time of the day, with the exception of vasomotor disorders (hot flushes and



**Table 2. Sex hormone deficiencies: Typical signs and symptoms in women**

Effect factors	Estrogen deficiency	Progesterone deficiency	Testosterone deficiency
<b>Complaints</b>	Fatigue	Nervous	
	Low mood, depressed	Anxious, aggressive	
	Hot flushes	Insomnia	
	Lack of sexual desire		Lack of sexual desire
	Vaginal dryness	Vaginal leucorrhea	
	Menstrual syndrome (with fatigue, depression, spasmodic dysmenorrhea, and migraine during periods)	Premenstrual syndrome (with irritability, ovulatory pain, constant dysmenorrhea, migraine, insomnia before the periods)	
	Hypo- and amenorrhea	Menorrhagia	
	Changes in menstrual cycle length: poly- and spaniomenorrhea		
<b>Time of worse complaints</b>	Follicular phase, especially menstruation	Luteal phase, particularly during the 5 to 14 days before menstruation	
<b>Physical signs</b>	Flat hair		
	Pale face		Muscle atrophy
	Dry eyes		
	Droopy breasts, insufficient breast volume and tone	Swollen breast, mastalgia	
	Vaginal atrophy		
<b>Long-term adverse consequences</b>		Breast cysts	
	Small, underdeveloped breasts	Enlarged breasts	Nipple atrophy
		Ovarian cysts	Clitoris atrophy
		Fibroids	
		Endometriosis	Lichen sclerosis

## Hormone Therapies

➤ sweats), which tend to occur more at night and in stressful conditions. In premenopausal women, estrogen deficiency symptoms are worse during menstruation and in the follicular phase, whereas progesterone deficiency symptoms predominate in the luteal phase, during the 5 to 14 days before the period.

What are the most efficient and safest female hormone treatments? The **most efficient and safest treatment** consists, in my experience, of transdermal estradiol and oral or vaginal progesterone, in accordance with the current scientific literature. Estriol is interesting as an estrogen but does not absorb well through the transdermal route and has insufficient effects for the brain, bones, and cardiovascular system. The data are not all conclusive about its cancer safety or protection (the risk of endometrial cancer is several times higher in women taking estriol alone without progesterone). It is efficient for the vaginal mucosa and reduces ocular dryness. For this reason, I consider 1-2 mg/day oral estriol as a worthwhile adjuvant estrogen, but it does not replace the essential estradiol.

From what age do women need female hormone supplements? As soon as female hormone deficiency is diagnosed. Some women with weak ovaries may already need female hormones **at the end of puberty** because their ovaries never succeed in producing sufficient amounts of female hormones to be fully healthy. In most women, however, the need for estrogen and progesterone supplementation starts **between 30 and 35 years old**, as confirmed by research that shows that the levels of both hormones start progressively and significantly to decline at these ages.<sup>1-2</sup>

Which conditions can accelerate the natural age-related decline in female hormone production long before menopause? Pregnancies also weaken the ovaries. Research demonstrates that women who have been pregnant have significantly lower serum levels and urinary excretion rates of estrogen metabolites than women of the same age who have never been pregnant.<sup>3</sup> In my experience, most women after pregnancy show premature signs of estrogen and progesterone deficiencies and look like older mothers rather than the energetic and young-looking ladies they were before. To keep their health and good looks, they need small doses of estrogen and progesterone. Practice of intensive sport (reduced estrogen and progesterone metabolites),<sup>4-5</sup> stress (estrogen and progesterone deficits),<sup>5</sup> malnutrition,<sup>5</sup> overweight (decreased progesterone and its metabolites), smoking (decreased estradiol),<sup>6</sup> a history of induced abortion,<sup>3</sup> uterine tubal ligation<sup>7-8</sup> also reduce production of female hormones and their metabolites. These deficits make it necessary for women to get additional estrogen and progesterone therapies to correct the hormone deficits long before menopause.

### Female-Related Disorders That Can Quickly Be Corrected in Days or Weeks

**Droopy breasts** (breast ptosis) are signs of significant estrogen deficiency. For this reason, in **premenopausal**

**women** add estrogen daily during most of the menstrual cycle (follicular and luteal phases) but administer the protective progesterone only in the second half of the cycle, the luteal phase. In **postmenopausal women**, I usually prescribe both transdermal estradiol and oral or vaginal progesterone on the same days: from the 1st to the 25th day of the month. This usually and safely blocks menstruation, a relief for most older women.

The estradiol should be taken upon awakening because it increases energy, and progesterone at bedtime because it induces sleep. An efficient dose to bring back the breast volume and tone is 1.5 to 3 mg/day of transdermal estradiol (upon awakening) and 100 mg/day of oral or vaginal progesterone (at bedtime). If the breasts remain droopy, increase the estradiol dose further until the breasts regain their normal tone and volume.

*Tip:* The patient should **avoid consuming (unsprouted) whole grains** as the fiber contained in grains prevents intestinal reabsorption of female hormones. About 60% of the female hormones are attached (conjugated) by the liver to a glucuronate or a sulfate. These glucuron- and sulfo-hormone conjugates are secreted then by the liver into the bile, which flows into the small intestine. In the gut, bacteria break off the bonds between the glucuronates and sulfates and the estrogen and progesterone, permitting reabsorption of the latter through the intestinal wall and reutilization as hormones. This enterohepatic cycle is interrupted by the non-absorbable cereal fiber that strongly binds to the hormones and drags them into the stools, almost tripling the net loss of these hormones in the stools and lowering the female hormone levels 20 to 40% in the serum.

**Amenorrhea and hypomenorrhea in premenopausal women** who are not yet menopausal (FSH is still well below the 30 mIU/ml threshold for menopause) and still have healthy egg cells result from severe estrogen deficiency. Normal menstruation is restored by adding estradiol and progesterone as mentioned above (usually 2 to 3 mg/day of transdermal estradiol gel from the 5th to the 25th day of the menstrual cycle) and 100 mg (usually not more) progesterone from the 15th to the 25th day of the cycle. In **postmenopausal women** treated with both estradiol and progesterone on the same days (typically from the 1st to the 25th day of the month), amenorrhea is generally the rule and is safe because the progesterone blocks the proliferation of endometrium by estradiol and the possibility of having periods. I recommend stopping the treatment during 3-5 days at the end of the month as the interruption decreases the breast cancer risk and permits an abnormal endometrial cell that might have developed to die during the estrogen-free interval.

*Tip:* Amenorrhea and estrogen deficiency may be caused by low-protein and low-fat intakes as in low-calorie diets, for example. Recommend the patient eat at least 200 g/day (a little less than a half pound/day) of meat or fish and take a daily soup spoon of butter (preferably ghee, butter that has been clarified (cleaned) from its proteins) or an egg yolk. Eating more animal protein and fat boosts female hormone production.

**Menorrhagia:** How to reduce heavy menstrual bleeding by adding progesterone. Progesterone deficiency allows



excessive menstrual bleeding by permitting an excessive proliferation of the endometrium under impulse of estrogens. Once progesterone treatment is administered at a sufficient dose, it stops any further production of endometrium. By this inhibition, it reduces the material for bleeding as endometrium is what bleeds away during periods. In case of mild menorrhagia, 100 to 150 mg/day from the 18th to the 25th day of the cycle should be sufficient to reduce the bleeding back to normal. In case of heavier bleeding, 150 mg to 200 mg/day from the 15th to the 25th day of the cycle may be necessary. In extreme cases of severe menorrhagia, 50 mg/day from the 5th or the 10th day to the 14th day and then 150 mg to 200 mg/day from the 15th to the 25th day of the menstrual cycle can be required.

*Tip:* Check for hypothyroidism or adrenal (cortisol) deficiency as they both can cause insufficient ovulation, which results in progesterone deficiency. Check also for vitamin K, B3, etc., as well as thyroid (again), as these deficiencies are associated with insufficient production of coagulation factors and treat those deficits whenever they are confirmed.

**Polymenorrhea, spaniomenorrhea, and irregular menstrual cycles:** How to restore a 28-day menstrual cycle. Short (26 or less days), prolonged (30 or more days), and irregular (mixing of short and long) menstrual cycles are mainly due to estrogen deficiency. To treat them, a higher estrogen dose is useful (e.g., 2-4 mg/day of transdermal estradiol with a moderate 100 mg/day dose of progesterone given in premenopausal and postmenopausal women on the same days of the menstrual cycle or month, respectively) as suggested above.

In some premenopausal women with short menstrual cycles, progesterone deficiency symptoms, and not symptoms of estrogen deficit, predominate with severe premenstrual syndrome and tension, mastalgia, etc. In this case, I recommend treating with slightly lower doses of transdermal estradiol (1.5 - 3 mg/day) and higher doses of progesterone 150 to 200 mg/day.

*Tip:* Recommend the patient eat **sufficient animal protein-rich foods (> 200 g/day)** to support female hormone production and **avoid whole grain foods** to avoid hormone loss in the stools. There is a fivefold higher risk of irregular menstrual cycles in women regularly eating whole grain bread.

**Spasmodic dysmenorrhea, menstrual migraine, and hot flushes:** How to get rid of severe cramps, hot flushes and migraines. Heavy cramps in the lower abdomen alternated with pain-free periods during the day and hot flushes in premenopausal women occur generally during menstruation when estrogen levels are at their lowest levels. As for menstrual migraine, these

## Hormone Therapies

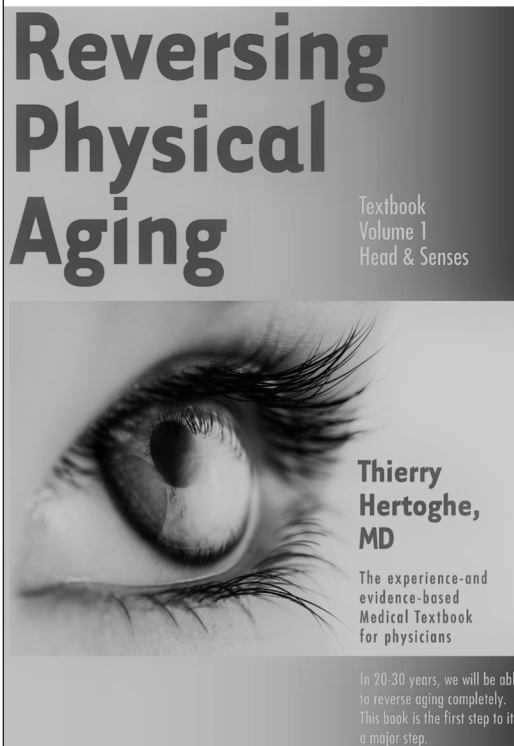
menstrual abdominal cramps are due to estrogen deficiency and relieved by estrogen supplementation. In case one of these three complaints is the only bothersome complaint, the estrogen deficiency is probably only present during menstruation and 0.75 to 1 mg/day of transdermal estradiol during the first four days of the menstrual cycle may be sufficient as a therapy.

When a patient suffers from other estrogen deficiency complaints appearing at other times of the menstrual cycle, then a typical premenopausal female hormone treatment is required to relieve the patient from all her symptoms. It typically consists of 2-4 mg/day of transdermal estradiol gel from the 5th to the 25th day of the menstrual cycle with progesterone from the 15th or 18th day to the 25th day. If some spasmodic dysmenorrhea would persist, add a smaller (0.75 to 1 mg/day) dose of transdermal estradiol during the first 4 days of the menstrual cycle.

*Tip:* Avoid smoking and caffeinated beverages because even if they may help relieve some of the spasmodic dysmenorrhea or migraine, they usually accelerate the upcoming next painful period and increase its intensity. Note that for migraines, thyroid therapy may help, too, as it eliminates the myxedema, which compresses brain structures inside the non-extendable skull. Thyroid therapy also increases estrogen production, another way by which it can reduce migraine.



## Discover Dr. Hertoghe's new book!



« A **practical and complete** guide on the aging of the head and the senses.»

«*Reversing Physical Aging* shows the **best way to make patients healthier.**»

«A textbook **full of innovative information** on the reverse-aging process.»

«Soon, **we will be able to reverse aging completely.** This book is the first step to it, **a major step.**»

«A textbook that every **physicians needs.**»

More information on [www.hertoghemedicalschool.eu](http://www.hertoghemedicalschool.eu)

## Hormone Therapies



**Ovulatory pains, constant dysmenorrhea, and premenstrual migraine:** All three symptoms are due to progesterone deficiency and require progesterone for treatment during the luteal phase, the second part of the menstrual cycle. To prevent **ovulatory pains**, progesterone treatment should start at a smaller dose of 50 mg/day before the normal time of ovulation (from the 10th to the 14th day of the cycle), usually from the 10th to the 14th day of the menstrual cycle, and then continue at higher doses of 100 to 200 mg/day from the 15th or 18th day to the 25th day

### The ovaries in hypothyroid women produce insufficient amounts of progesterone because of a lack of thyroid hormone stimulation.

of the cycle as there are usually many other complaints of progesterone deficiency when ovulatory pains occur.

When a patient suffers from **permanent lower abdominal pain** and **recurrent migraine** in the premenstrual period, starting progesterone from the 15th or 18th day of the menstrual cycle to the 25th day of the cycle may suffice and deliver the patient from her pain. However, frequently estrogen deficiency complaints may also be found in these premenopausal women and require small (not high) doses of 0.75-2 mg transdermal estradiol from the 5th to the 25th day of the menstrual cycle. Whatever the case, a relatively higher progesterone dose than the estrogen dose should be given when constant dysmenorrhea and premenstrual migraine are the predominant complaints, otherwise there is a risk of aggravating these stressful complaints with estrogen supplementation.

*Tip:* Check for **hypothyroidism** whenever progesterone deficiency complaints predominate, particularly in young women (below age 30). The ovaries in hypothyroid women produce insufficient amounts of progesterone because of a lack of thyroid hormone stimulation. In young women, thyroid therapy usually restores ovulation and progesterone levels and may make the complaints of progesterone deficiency disappear on their own without exogenous female hormone supplements. In hypothyroid women above age 35-40, the number of functional oocytes has dropped to levels that are too low, and progesterone supplementation is almost always necessary next to thyroid therapy.

**Vaginal dryness and dyspareunia:** The dryness and atrophy of the vaginal mucosa and its almost inevitable consequence of pain at penis penetration during intercourse are due to estrogen deficiency.

In most women, correcting the underlying estrogen deficiency with a typical pre- or postmenopausal treatment consisting of **transdermal estradiol and oral or vaginal progesterone** such as explained above is efficient. In some women, the vagina has remained in estrogen deficiency for too long a time and addition of **a vaginal gel or tablets of estriol** is necessary the first six months to make the

symptoms completely disappear. In rare cases, the adjuvant vaginal estriol treatment should be continued for a longer time, perhaps indefinitely.

### Female-Related Disorders That Need Months and (for some) 1-2 Years for Correction

**Breast cysts:** How to make breast cysts disappear naturally. It takes approximately six to 15 months to make cysts totally disappear in women, regardless of the age or severity of the breast cyst, even in Reclus disease. The main treatment here is not hormonal but nutritional: iodine. One to three drops per breast of a 5% iodine-containing **Lugol's solution** daily applied (no interruption) on the area overlapping the breast cysts permits 12% penetration of the iodine into the skin and cysts. The solution stains the skin yellow-brown, but this is transitory. After 20 to 30 minutes almost all iodine that has remained on the skin has outgassed into the atmosphere. Iodine blocks proliferation of tumor cells so that in the cysts drenched with iodine no new cells appear while the old cells die and disappear one after the other. In severe fibrocystic breast disease, I recommend reinforcing the efficacy of the topical iodine treatment by having the patient take an additional 3-5 drops/day orally of the same Lugol's solution mixed with water to reach cystic areas within the breast that are poorly accessible topically. As progesterone also helps to prevent and reduce breast cysts, I also prescribe the patient a **progesterone gel 1%** to apply daily on the breast before placing the iodine solution.

*Tip:* Recommend the patient **avoid drinking coffee, tea, and alcohol** as the caffeine or ethanol these drinks contain promotes breast cysts formation. Make them also take progesterone orally or vaginally in the second phase of the menstrual cycle in case the breasts swell painfully.

**Small breasts:** How to stimulate underdeveloped breasts (micromastia) to grow to a normal adult size. In **young women** using female hormone treatment, it takes about 12 to 15 months to fully develop breasts from one of the lower Tanner puberty stages (stages 2 to 4) to a full adult stage 5 breast development. The typical treatment consists of administering upon awakening 2 to 4 mg/day of a transdermal estradiol gel from the 5th to the 25th day of the menstrual cycle and at bedtime 100 to 150 mg/day of progesterone from the 15th to the 25th day of the cycle. The higher the estradiol levels are, the bigger the breasts become.

In **older peri- and postmenopausal women**, growth hormone therapy may be necessary in addition to estrogens (and progesterone) to make the breasts grow.

*Tip:* Breast enlargement requires sufficient animal protein intake. Suggest the patient eat at least 200 grams/day of meat, fish, or chicken.

**Enlarged breasts:** How to prevent and treat over-sized breasts. Prevention of over-sized breasts is simple: Treat any progesterone deficiency as soon as possible as it is long-term progesterone deficiency that allows excessive mammary cell proliferation to make the breasts too big. In general, the treatment consists of administering 100 to 200 mg/day of micronized progesterone from the 15th or 18th day to the 25th day of the menstrual cycle.

Once the breasts have become excessively enlarged (macromastia), further enlargement can be hindered by administering progesterone alone in the same manner and at the same doses used for prevention of breast enlargement. Reduction of breast size is usually not very efficient with progesterone or other hormone therapies without surgery, and if so, it results in breast ptosis rather than breast reduction.

**Tip: Avoid coffee, tea and alcohol** as they increase breast epithelial cell proliferation.

**Ovarian cysts, polycystic ovarian syndrome, and hirsutism:** How to make ovarian cysts disappear. **Ovarian cysts** are facilitated by one of the following deficiencies: iodine, thyroid, cortisol, or progesterone deficiencies. Toxins (chlorine, etc.) may facilitate the development of cysts, but it is usually by producing one or more of these four deficiencies. Correction of one or two of these deficits is generally sufficient to correct the problem.

In case of iodine deficiency, 3 to 5 drops a day of a **5% Lugol's solution** may be sufficient to make the ovarian cysts disappear in 3-6 months. Hypothyroidism is, in my experience, best corrected with 30 to 150 mg/day of **desiccated thyroid extracts** from pork origin as they contain not only T4 (thyroxine, four iodine atoms), but also T3 (three iodine atoms, by far the most active thyroid hormone), T2 (two iodine atoms), T1 (one iodine atom), and T0 (zero iodine atoms), which all may have some additional benefit. These different T0 to T4 hormones are delivered by thyroid extracts imbedded in a big thyroglobulin protein. Absorption and digestion of this protein is slow and progressive, permitting progressive release of the different thyroid hormones out of this long protein. In this way, a more persistent 24-hour thyroid activity is achieved and, thus, better correction of the hypothyroidism than treatments containing only purified T4 or T3.

Cortisol deficiency is best corrected by hydrocortisone (bioidentical cortisol) 10 to 15 mg in the morning and 10 mg at midday. Remember to always supplement DHEA in equivalent doses (15 to 25 mg/day) whenever cortisol is given as the DHEA protects against any excessive catabolic effects of cortisol.

In **polycystic ovarian syndrome** with typical hyperandrogenism and hirsutism, the treatment is more complex as, in my experience, all of the aforementioned thyroid, cortisol, and progesterone deficiencies exist simultaneously with some degree of estrogen deficiency. These deficits trigger a compensatory increase in production of testosterone and adrenal androgens. Correction of these aforementioned deficiencies usually reduces and normalizes the androgen excesses and associated hirsutism, although slowly. After confirmation of the deficiencies by laboratory tests, administer to your patient hydrocortisone, desiccated thyroid, and a combination of 2-4 mg/day of transdermal estradiol from the 5th to the 25th day of the menstrual cycle and a maximum of 100 mg/day (not too high) of oral progesterone from the 15th to the 25th day of the cycle.

How do these hormones reduce **hirsutism**? The **hydrocortisone** reduces the secretion of ACTH, the pituitary hormone that stimulates the adrenal cortex to

produce cortisol and adrenal androgens, thereby reducing the secretion of DHEA, androstenedione, and other adrenal androgens. In case of severe adrenal hyperandrogenism with important hirsutism, correct in the first six to nine months the cortisol deficiency with a potent synthetic derivative such as 0.25 to 0.35 mg/day of dexamethasone, which lowers the adrenal androgen levels more than the bioidentical cortisol. However, it is important not to lower the adrenal androgens too much, so regular control of the 17-ketosteroids, the metabolites of the adrenal androgens, in a 24-hour urine collection is recommended every six months. If a hirsute patient wishes only to take bioidentical hormones, then provide hydrocortisone in four divided doses of 5 mg taken at regular four-to-five-hour intervals: upon awakening, at lunch, at 4 PM, and before bedtime. The spreading of the dose permits better suppression of excessive adrenal androgen production. **Thyroid therapy** increases the conversion of testosterone into estradiol rather than into the masculinizing dihydrotestosterone. **Estradiol** blocks the masculinizing effects of androgens and progesterone amongst others by inhibiting the conversion of the harmless testosterone into the body hair-promoting dihydrotestosterone.

Without aesthetic hair removal, it takes 2-4 years after normalization of androgen levels for slow disappearance of the excessive body hair. For this reason, I suggest women with hirsutism get their excess body hair removed. After hair removal, the hirsutism should not grow back if all hormone levels are in the meantime normalized.

**Endometriosis:** Can a patient get rid of endometriosis without surgery? The development of endometrial mucosa inside the abdominal cavity is also, in my experience, due to a multiple hormone deficiency syndrome with thyroid, cortisol, and progesterone deficiencies. Hypothyroidism and cortisol deficiency do not allow good ovulation, resulting in progesterone deficiency. One of progesterone's roles is to relax the uterine wall and prevent unwanted uterine contractions. It is very useful during a pregnancy, for example, as otherwise excessive contractions could lead to a miscarriage. It is also useful to avoid endometriosis. With progesterone deficiency, the uterine body and tubes contract too frequently and anarchically so that islets of endometrium detach from the inner wall of the uterus, penetrate the fallopian tubes, and from there enter into the abdomen and implant themselves in places where they do not belong. Additionally, cortisol deficiency increases the inflammation around the endometrial islets inside the abdominal cavity, increasing pain and suffering.

In my experience, the best treatment is to correct the hormone deficiencies in the same way as for polycystic ovarian syndrome by using hydrocortisone, desiccated thyroid, and progesterone. If pain and inflammation predominate, I prefer using a synthetic cortisol derivative such as prednisolone (5 mg/day) with 15-20 mg/day of DHEA for the first six to nine months of treatment and then later switch to bioidentical hydrocortisone.



**Table 3. Female-related disorders** requiring as treatment a relatively **higher estrogen** and **lower progesterone dose**

Female-related disorders	Treatment	Type of Patient	Doses	Days
<ul style="list-style-type: none"> <li>Menstrual migraine</li> <li>Spasmodic dysmenorrhea</li> <li>Hot flushes</li> </ul> as <b>sole symptoms</b> during menstruation only	<b>Transdermal estradiol</b> alone	Pre-menopausal women	0.75-1 mg/day of estradiol	1st - 4th day of the menstrual cycle
<ul style="list-style-type: none"> <li>Menstrual migraine</li> <li>Spasmodic dysmenorrhea</li> <li>Amenorrhea and hypomenorrhea</li> <li>Poly- or spaniomenorrhea, irregular cycles</li> <li>Droopy breasts</li> <li>Underdeveloped breasts</li> <li>Vaginal dryness, dyspareunia</li> </ul> + Many <b>other symptoms of estrogen deficiency</b> appearing at other times than the periods	<b>Combination of:</b> <ul style="list-style-type: none"> <li><b>Transdermal estradiol</b> gel</li> <li><b>Oral or vaginal progesterone</b> capsules</li> </ul>	Pre-menopausal women	2-4 mg/day of estradiol	5th - 25th day (+ possibly 0.75-1 mg/day estradiol 1st - 4th day) of the menstrual cycle
			100 mg/day of progesterone	15th or 18th day - 25th day of the menstrual cycle
		Post-menopausal women	2-3 mg/day of estradiol	1st - 25th day of the month
			100 mg/day of progesterone	

**Female-related disorders** requiring as treatment a **lower or no estrogen dose** and a relatively **higher progesterone dose**

Female-related disorders	Treatment	Women	Doses		Days	
<ul style="list-style-type: none"><li>• Premenstrual migraine</li><li>• Ovulatory pains, constant dysmenorrhea</li><li>• Menorrhagia</li><li>• Breast cysts</li><li>• Ovarian cysts, polycystic ovarian syndrome</li><li>• Fibroids</li><li>• Endometriosis</li><li>• Enlarged breasts</li></ul> <b>+ No estrogen deficiency signs or symptoms</b>	<b>Oral or vaginal progesterone</b> capsules alone	Pre-menopausal women	100-200 mg/ day of progesterone		15th or 18th day - 26th day of the menstrual cycle	
<ul style="list-style-type: none"><li>• Premenstrual migraine</li><li>• Ovulatory pains, constant dysmenorrhea</li><li>• Menorrhagia</li><li>• Breast cysts</li><li>• Ovarian cysts, polycystic ovarian syndrome</li><li>• Fibroids</li><li>• Endometriosis</li><li>• Enlarged breasts</li></ul> <b>+ Estrogen deficiency signs and symptoms</b>	<b>Combination of</b> <ul style="list-style-type: none"><li>• <b>Transdermal estradiol</b> gel</li><li>• <b>Oral or vaginal progesterone</b> capsules</li></ul>	Pre-menopausal women	1-2 mg/day of estradiol		5th - 25th day of the cycle	
			Moderate	100-200 mg/ day of progesterone	15th - 25th day of cycle	
				Important	50 mg/day	10th - 14th day
			150-mg/day		15th - 25th day of cycle	
			Severe symptoms	50-100 mg/day	5th - 14th day	
				150-200 mg/ day of progesterone	15th - 25th day of the menstrual cycle	
		Post-menopausal women	1-2 mg/day of estradiol	1st - 25th day of the month		
			100-200 mg/ day of progesterone			

**Female-related disorders** requiring as treatment **testosterone** under protection of an estroprogestative treatment

Female-related disorders	Treatment	Women	Doses	Days
<b>Clitoris atrophy</b>	Topical testosterone cream in very thin layer	0.5% cream	1x/day on the clitoris	For 6-15 weeks
<b>Lichen sclerosus</b>			2x/day on the vulvar lips	For 2-6 months



**Tip:** Insist that the patient follow a healthy diet that makes her have a flat belly free of bloating and inflammation and does not irritate the gastrointestinal system. A bloating abdomen is sick, inflamed, and aggravates the endometriosis. Suggest that the patient eat boiled vegetables and ripe fruits. Make her eat fruits in the first half of the day at a distance from the meals (1/2 an hour before or 3 hours after meals). Suggest she consume protein-rich foods such as meat and fish as early as possible in the day so that with gravity and movement the foods go down in the gut quicker and get digested in the different parts of the gastrointestinal system. Proteins should not be consumed in the evening as they then unnecessarily stagnate the whole night in the stomach, overloading the gastrointestinal system and causing inflammation in the same abdominal cavity where the islets of endometriosis are located. The patient should also avoid junk foods: not only fast foods, sweets and soft drinks, but also unsprouted grains (bread, muesli, porridge, pasta, and rice) and dairy products (milk, yoghurt, and cheese) that are too irritating for the human digestive tract.

**Fibroids** are mainly due to progesterone deficiency, by allowing excessive tumor cell proliferation, although iodine deficiency (hypothyroidism) by causing progesterone deficiency may contribute to fibroid formation. The best treatment is to **prevent fibroid** development by correcting progesterone deficiency on time (100 to 200 mg/day from the 15th or 18th day to the 25th day of the menstrual cycle).

What to do when **major fibroids** are already developed? Prevent further aggravation. In premenopausal women, further aggravation can be prevented by providing 50 (to rarely 100) mg/day of micronized progesterone from the 5th to the 14th day of the menstrual cycle, and then 100 to often 200 mg/day from the 15th to the 25th day of the cycle. If a patient needs estradiol, too, then do not exceed 1.5 mg/day of transdermal estradiol. In postmenopausal women, a smaller dose of estradiol is recommended such as 0.75 to 1.5 mg/day and a relatively higher progesterone dose such as 150 mg/day. It works better with synthetic derivatives of progesterone because of their more prolonged 24-hour action (whereas bioidentical progesterone has an average 16-hour action). Dydrogesterone (Duphaston®) is the only safe one I know of, but is, to my knowledge, not available in North America.

An alternative is to apply transdermally a 10% progesterone liposomal cream in the morning and evening on the skin areas with the highest hormone absorption such as the zones rich in blood vessels where we flush – the upper chest and the face. One gram of a 10% liposomal cream corresponds to progesterone caps of 100 mg. Liposomal creams are better absorbed than other forms. High-dosed progesterone treatments may also partially reduce the fibroids, but a near-total cure is generally only obtained by using gonadotropin agonists for six months, which put the ovaries in menopause. This artificial menopause can be partially compensated by adding the synthetic tibolone, which relieves menopausal symptoms and does not stimulate fibroid development.

**Vulvar lichen sclerosis:** This type of inflammation of the vulvar lips is very painful and can lead to a fusion of the vulvar lips and an impossibility of having intercourse. It is mainly due to androgen deficiency. If it is in a not too advanced stage, then

the lichen sclerosis may be cured by applying on the vulvar lips a topical testosterone cream. Avoid using gels as the alcohol may irritate the skin of the vulvar lips. Testosterone is a potent anti-inflammatory hormone for genital, muscular, and tendon tissues, not in other areas. A 0.5% testosterone cream twice a day applied in a very thin layer on the vulvar lips may suffice. If the inflammation is very active, addition of a 1% hydrocortisone cream may be necessary. Ideal is even to use the more potent dihydrotestosterone creams, but they are to my knowledge no longer on the market. Studies have also shown that progesterone creams may help improve lichen sclerosis to a lesser degree than androgens, but this is likely due to its conversion into testosterone, and from the testosterone to dihydrotestosterone. After curing the lichen sclerosis, a systemic testosterone treatment should be continued to avoid recurrence (of course, combined with female hormone treatment to avoid virilization).

**Tip:** Recommend the patient wear **loose underwear made of natural fiber** such as cotton. She should avoid wearing underwear made of synthetic fiber to avoid excessive sweating and irritation that would aggravate the vulvar inflammation. Daily application of a **topical vitamin A solution** (e.g., the patient can open and use high-dosed 25,000 IU caps) may help, too, as it reduces lichen sclerosis.

Table 3 reviews the sex hormone treatments of the most important female-related disorders.

### References

- MacNaughton J, et al. Age related changes in follicle stimulating hormone, luteinizing hormone, oestradiol and immunoreactive inhibin in women of reproductive age. *Clin Endocrinol (Oxf)*. 1992 Apr;36(4):339-45.
- Lau WN, et al. The effect of ageing on female fertility in an assisted reproduction programme in Hong Kong: retrospective study. *Hong Kong Med J*. 2000 Jun;6(2):147-52.
- Windham GC, et al. Ovarian hormones in premenopausal women: variation by demographic, reproductive and menstrual cycle characteristics. *Epidemiology*. 2002 Nov;13(6):675-84.
- De Souza MJ, et al. High frequency of luteal phase deficiency and anovulation in recreational women runners: blunted elevation in follicle-stimulating hormone observed during luteal-follicular transition. *J Clin Endocrinol Metab*. 1998 Dec;83(12):4220-32.
- Kaplan JR, Manuck SB. Ovarian dysfunction, stress, and disease: a primate continuum. *ILAR J*. 2004;45(2):89-115.
- Westhoff C, et al. Predictors of ovarian steroid secretion in reproductive-age women. *Am J Epidemiol*. 1996 Aug 15;144(4):381-8.
- Rojansky N, Halbreich U. Prevalence and severity of premenstrual changes after tubal sterilization. *J Reprod Med*. 1991 Aug;36(8):551-5.
- Alvarez-Sanchez F, et al. Pituitary-ovarian function after tubal ligation. *Fertil Steril*. 1981 Nov;36(5)

Born in Antwerp, Belgium, Dr. Hertoghe practices his medicine in his clinic in Brussels. With his sister, Dr. Thérèse Hertoghe, they proudly represent the fourth successive generation of physicians working with hormonal treatments – and this since 1892 (after Eugène Hertoghe, former vice president of the Royal Academy of Medicine in Belgium, and Luc and Jacques Hertoghe, endocrinologists). Dr. Thierry Hertoghe devotes his life to the promotion of a better, patient-oriented, and evidence-based medicine.

Author of numerous books, Dr. Thierry Hertoghe also travels a lot to take part in numerous conferences and congresses throughout the world. He co-organizes many of these specialized gatherings and holds important positions in several international and national medical organizations (which usually tend to fight against aging). He is the president of the International Hormone Society (over 2500 physicians), and of the World Society of Anti-Aging Medicine (over 7000 physicians), as well as the supervisor of two important postacademic trainings for doctors.

<http://www.hertoghe.eu>