

# SLOWING THE AGING PROCESS WITH NATURAL PROGESTERONE

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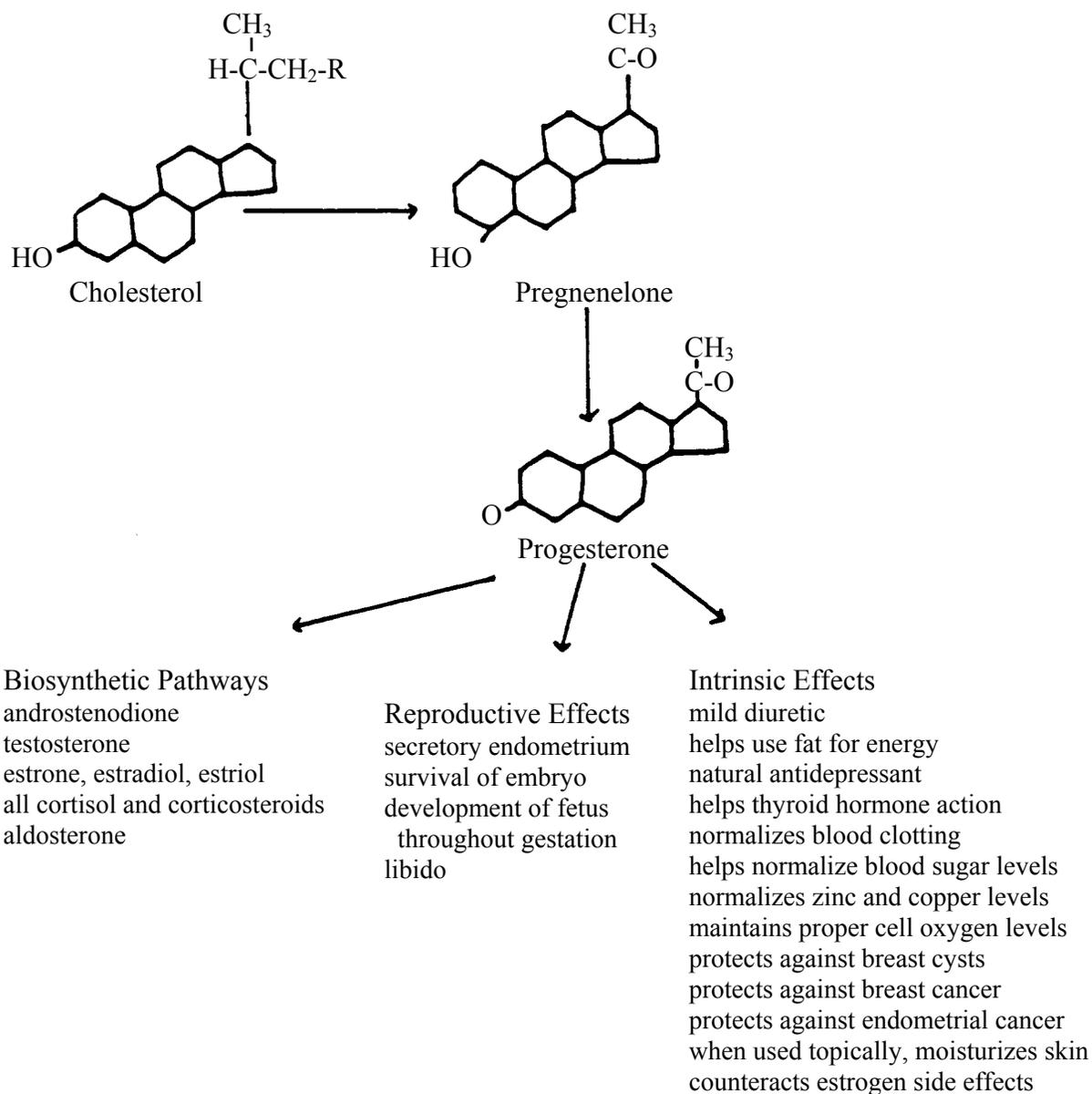
## Overview of Progesterone

Aging is as inevitable as death and taxes, but prevention of premature aging is a goal to which we all should (and can) aspire. In this regard, the role of natural progesterone should be re-examined. In women, progesterone and estrogen are produced primarily by the ovary during normal menstrual cycles. Progesterone maintains the secretory endometrium and, in the case of a fertilized ovum, is necessary for the survival of the embryo and the development of the growing fetus throughout gestation. Also, progesterone is an important precursor in the biosynthesis of adrenal corticosteroids and of all the sex hormones, and provides many important intrinsic physiological functions, the lack of which can lead to symptoms often associated with aging as well.

Thus, natural progesterone is one of the body's most important hormones and has benefits far beyond its role in menstrual cycles and pregnancy. As menopause approaches and the number of ovarian follicles decrease, progesterone levels also decrease. With menopause, progesterone levels fall close to zero, whereas some estrogen continues to be synthesized within fat and muscle cells. The pre and postmenopausal loss of progesterone can be correlated not only with osteoporosis, but with many bodily changes commonly interpreted as aging. Proper supplementation with natural progesterone prevents and commonly reverses these supposed aging effects. Good health during the latter half of one's life is not a forlorn hope; it can become a reality if we learn to support rather than impair or neglect our natural health giving capabilities. In this regard, natural progesterone has a key role.

[Natural progesterone should not be confused with the synthetic progesterone promoted by the pharmaceutical industry and so often prescribed by physicians as progesterone substitutes. The truth is that these synthetic versions do not duplicate natural progesterone's full spectrum of benefits, and all carry multiple potential undesirable side effects. This will be more fully discussed later in the paper.]

Diagram 1. The multiple roles of natural progesterone



### Comparing Estrogen and Progesterone

Our present preoccupation with supplemental estrogen and our neglect of natural progesterone is a medical oddity peculiar to the past 3-4 decades. The reasons for this are complex, but include incomplete knowledge among most physicians and the pressures on research funds driven by pharmaceutical profits. At this time, it is important to understand the known physiological effects of these two important hormones.

## Comparison of Estrogen's and Progesterone's Physiologic Effects

### Estrogen effects

breast stimulation  
creates proliferative endometrium  
salt and fluid retention  
increased fat in body  
depression and headaches  
interferes with thyroid hormone  
increased blood clotting  
decreases libido  
impairs blood sugar control  
loss of zinc and retention of copper  
reduced oxygen levels in all cells  
causes endometrial cancer  
increased risk of breast cancer  
slightly restrains osteoclast function

### Progesterone effects

protects against breast fibrocysts  
maintains secretory endometrium  
natural diuretic  
helps use fat for energy  
natural anti-depressant  
facilitates thyroid hormone utilization  
normalizes blood clotting  
restores libido  
normalizes blood sugar levels  
normalizes zinc and copper levels  
restores proper cell oxygen levels  
prevents endometrial cancer  
helps prevent breast cancer  
stimulates osteoblast bone building  
necessary for survival of embryo  
precursor of cortisone and sex hormones

Further, estrogen is an end-product hormone and does not participate in the biosynthesis of other hormones or active compounds; whereas progesterone, while active in its own right, also is a precursor to other vital hormones in the body.

When one observes the many benefits of progesterone, one must wonder why this valuable hormone has been so long neglected. Let us more closely review the various roles of natural progesterone.

### Progesterone in the Menstrual Cycle

The female role in the propagation of the human species includes, of course, the menstrual cycle. Both sets of ovarian hormones, estrogens and progesterone, are part of a complex, interconnected and closely coordinated system of hypothalamic brain centers and pituitary hormones involving feedback controls designed to produce a wide array of physiological effects, the purpose of which is to prepare the uterus (and the body as well) for pregnancy and to produce an ovum ready for fertilization by sperm. Simply put, hypothalamic nuclei within the limbic brain monitor serum levels of estrogen and progesterone; when levels fall (bringing on menstruation), the hypothalamic nuclei produces gonadotropin releasing hormone (GnRH) which causes the pituitary secretion of follicle stimulating hormone (FSH) which stimulates the ovary to synthesize estrogen which (a) initiates proliferation of the endometrium, and (b) initiates ovarian follicles to prepare an ovum for ovulation. As the follicle matures in this activity, pituitary luteinizing hormone (LH) rises to a peak

coinciding with ovulation. With ovulation, the successful ovarian follicle becomes the corpus luteum which then synthesizes progesterone, often as much as 20-25 mg per day. Progesterone transforms the proliferative endometrium into the secretory form necessary for successful implantation of a fertilized ovum, should one occur. If fertilization does not occur in a week or so, the levels of both ovarian hormones decline, leading to menstruation, and the cycle begins anew.

In this system, estrogen is the dominant hormone during the first two weeks of the cycle (prior to ovulation) and, after ovulation, progesterone soon becomes the dominant hormone. If fertilization does not occur, progesterone declines after day 26 or 27 of the typical menstrual cycle, bringing on menstruation.

In the event of a successful fertilization of an ovum and its implantation in the uterus, progesterone secretion by the corpus luteum is enhanced by a hormone (chorionic gonadotropin) produced by the developing zygote (fertilized ovum). As the placenta develops, it takes over production of progesterone, increasing the production greatly. During the third trimester of pregnancy, for example, placental progesterone production reaches 300-400 mg per day.

Interestingly, all the ovarian follicles from which future ova will spring are present in the ovaries at birth. In fact, there may be 300,000 follicles initially present. With the onset of puberty (menarche) and the monthly surges of follicle stimulating hormone (FSH) and luteinizing hormone (LH), the monthly development of ova begins. One would think that the plentiful initial supply of follicles would yield ova sufficient to last until the cessation of menstrual cycles (menopause) at age 50-55. This, however, is not the case in North America. It has become quite common that unusual follicle "burn-out" occurs as early as age 35 and thus many women have anovulatory (and thus, lacking progesterone) cycles for 15 years or more before actual menopause. This results in sustained monthly estrogen dominance, leading to a wide variety of medical problems stemming from unopposed estrogen side effects. Such women present with water retention, increased fat deposition about the hips and lower abdomen, hypertension, lack of libido, irritability and depression, fibrocystic breasts, endometrial cancer and breast cancer.

Since these complaints are far less common in "undeveloped" countries, it is natural to speculate that the cause of follicle burn-out is environmental, probably a toxic contaminant to which we are exposed, or possibly some dietary deficiency. The leading candidates for this endemic malady at this time are our pervasive petrochemical derivatives, principally the petrochemically derived insecticides and herbicides which, being fat-soluble, become concentrated in animal fat food chain products. Many of these compounds act as estrogen mimics and, in this regard are amazingly potent, being active at nanogram (one-billionth [ $10^9$ ] of a gram) levels. They include pesticides such as DDT, DDE, Kepone, dieldrin, dicofol, and methoxychlor; and polychlorinated biphenyls (PCB's), anthracene, alkyl phenols and bisphenol A (the monomer that is condensed to make polycarbonate plastic). These

estrogen mimics are highly lipophilic (fat soluble), very persistent (not biodegradable or well excreted), and accumulate in fat tissue of animals and humans over a lifetime.<sup>1,2</sup>

The toxicity of DDT was recognized sometime ago and its use has been severely restricted in the US and European countries. However, it is still being used in third world countries, especially for mosquito control, and new DDT production plants are still being funded by the World Bank. The DDT does not remain in the country where it is used. It, or its metabolite, DDE, can be carried by the wind to incorporation in the food chain of all sea life, including the fish we eat; and its use on food crops becomes international when the foods are sold worldwide. The other pesticides, PCB's, and plastics are particularly prevalent in our society today and the full panoply of their toxic results is yet to be revealed.

Thus, it should be clear that anovulatory cycles, whether created by environmental toxins or other causes, lead to progesterone deficiency and estrogen dominance, with all its potential for undesirable side effects. When this hormone imbalance is present, supplementation with natural progesterone is paramount.

### Progesterone and Menopause

Menopause, were it only the cessation of menses and the loss of fecundity, would be viewed with relief by most women. In the US and most "advanced" nations, however, menopause is viewed as a portent of disagreeable symptoms and progressive physical deterioration. The prospect of unpredictable hot flushes, night sweats and mood swings, and the seemingly inevitable progress of osteoporosis with its ultimate consequence of fracture is troublesome, if not downright fearsome. Estrogen supplementation may reduce hot flushes and can, for a while, slow osteoporotic bone loss. However, estrogen also increases one's risk of fibrocystic breast, edema, uterine fibroids, endometrial cancer, and most probably, breast cancer. Menopause is a continental divide in a woman's life beyond which the view is one of trouble and eventual disaster. In large part, this bleak outlook is due, in reality, to our present neglect of using natural progesterone.

Menopause results from lowered estrogen levels such that monthly blood-rich endometrial development and its shedding does not occur. It does *not* mean that estrogen levels have fallen to zero. Estrogen continues to be produced, in somewhat lesser amounts, by conversion of a sterol, androstenedione, which is found in fat, including the fat in our muscle cells. Menopause merely means that ovarian production of estrogen declines to levels which do not induce endometrial response. It is a natural phenomenon indicating only that one's period of fertility is over.

Of greater importance is the fact that, in the US, it is common that women's production of progesterone falls to near zero at least 6-8 years before actual menopause, due to the anovulatory periods described above. This is rarely recognized by typical physicians who more or less automatically prescribe estrogen for many "menopausal" symptoms which, in

actuality, result from progesterone deficiency, not estrogen deficiency. Not only are women subject to estrogen dominance and its attendant symptoms, but they arrive at menopause with osteoporosis well underway, a clear indication that osteoporosis is *not* due to estrogen deficiency, but more likely due to progesterone deficiency (see below). All this could be prevented by timely supplementation during the menstrual cycle of natural progesterone during the pre and peri-menopausal period.

## Progesterone and Osteoporosis

The doctor is told that estrogen helps delay osteoporosis, is good for hot flashes, and may help prevent cardiovascular disease; and that these benefits outweigh the various estrogen risks such as fibroids, breast fibrocysts and/or cancer, and endometrial cancer. He is further told that synthetic progesterone will decrease estrogen's risk of endometrial cancer and that it is up to the patient to decide if she is willing to accept the risks of progestin's side effects. The fact is, there is a degree of falsity in each of these claims. For now, let us focus on the osteoporosis problem.

Bones are living tissue, constantly being made, unmade (resorbed), and made anew. They can be broken and then healed; they can grow as we grow; and they can restore their minerals when such are taken from them. Within bones are cells (osteoblasts) that make new bone; and there are cells (osteoclasts) that resorb bone previously made. Bone mass and bone mineral density represent the relative contribution of osteoclast-mediated bone resorption and osteoclast-mediated new bone formation. Others factors remaining equal, bones remain stable when osteoblast and osteoclast actions are in equilibrium. Osteoporosis is a condition involving relative osteoblast deficiency.

The only proven bone function of estrogen is to deter osteoclast-mediated bone resorption.<sup>3</sup> Progesterone, on the other hand, stimulates osteoblast-mediated new bone formation.<sup>4</sup> At menopause, the decline of estrogen levels allow a temporary increase in bone resorption; estrogen supplementation will retard this accelerated bone loss but it will not stimulate new bone formation and thus can not correct the loss that has occurred. Five years after menopause, this benefit of estrogen disappears; with or without estrogen supplements, bone loss progresses at the same rate (of approximately 1.5% per year).<sup>5</sup>

Bone formation in the adult woman is the function of progesterone, not estrogen. In my clinical experience since 1982, I have found that osteoporosis can be reversed in many women by restoring adequate natural progesterone, along with a program of diet, a few vitamin and mineral supplements and exercise. Several of the synthetic progestins have a modest effect<sup>6,7</sup> (at most a 5% increase bone mass in two years), but none are as effective as natural progesterone is (typically a 15% increase in 2-3 years), depending on degree of previous bone loss) with or without supplemental estrogen<sup>8,9</sup>. Further, the progestins are known to cause many side effects, whereas natural progesterone has no known side effects.

## Progesterone and Hot Flushes

Hot flushes (or flashes) are vasomotor disturbances emanating from homeostatic control centers within the hypothalamus leading to inappropriate dilation of skin capillaries and/or sweating. During menopause, they correlate with high levels of pituitary follicle stimulating hormone (FSH), resulting from low estrogen and progesterone levels. When estrogen is supplemented, FSH levels fall and so does the incidence of hot flushes. The most likely scenario for this phenomenon is that low hormone levels stimulate the hypothalamic centers resulting not only the FSH elevation, but also the activation of nearby hypothalamic neural nuclei controlling vasomotor responses. Although estrogen supplementation is effective in reducing hot flushes, later attempts to reduce estrogen supplementation often results in recurrence of the symptoms.

There are other ways to deal with hot flushes. Experience shows that a diet rich in fresh vegetables and low in sugar and refined carbohydrates, along with vitamin E and aerobic exercise, will often decrease the intensity and frequency of these symptoms. Also, replacement of natural progesterone alone and in sufficient doses will frequently result in elimination or decreased severity of hot flushes. Since the hypothalamic centers monitor both estrogen and progesterone, it should not be surprising that sufficient natural progesterone will be effective in treating hot flushes. Because of the inherent toxicity of unopposed estrogen, these methods should be thoroughly tried before resorting to estrogen supplements.

## Cardiovascular Risks of Estrogen

Recent pharmaceutical advertisements claim that estrogen supplementation reduces the risk of cardiac death. Despite the evidence of numerous studies showing otherwise,<sup>10-13</sup> this claim is based on a nurses questionnaire report which found a slightly lower incidence of cardiac deaths in estrogen using nurses, compared to non-estrogen using nurses. In this report,<sup>14</sup> the total number of cardiac deaths among the nurse population constitutes less than 0.5% of the total number in the study. Further, it is revealed that among the nurses for whom estrogen had *not* been prescribed, there was a higher proportion of nurses with diabetes, obesity, cigarette smoking and little or no exercise. These are all risk factors for heart disease, and therefore the doctors for these nurses had wisely refrained from prescribing estrogen for them. The claim of lower relative risk for estrogen users is based solely on the statistical “adjustment” of the risk factors listed above. With a slightly different “adjustment”, the putative estrogen benefit disappears.

Furthermore, the pharmaceutical advertisements do not mention the fact the ischemic (thrombo-embolic) stroke death incidence was *higher* among the estrogen users. This is entirely understandable since estrogen increases the tendency of blood to form clots. If one is offered estrogen supplements, shouldn't he/she be told that such treatment increased the chance of dying from a stroke? Natural progesterone, on the other hand, normalizes blood

clotting. The message to be learned is that, if estrogen is to be prescribed, it should always be accompanied by natural progesterone.

### Ovarian Hormones and Fibroids

Fibroids are non-malignant nodules or masses of connective tissue within or extending from the walls of the uterus. They tend to develop during the pre or peri-menopausal phase when estrogen is dominant; they atrophy after menopause when estrogen levels fall. Proper supplementation with natural progesterone during these critical times of estrogen dominance will prevent or reduce the size of uterine fibroids. If a woman can prevent or reverse osteoporosis by using natural progesterone instead of estrogen replacement therapy (ERT), she need not risk the development of fibroids.

### Progesterone Prevention of Fibrocystic Breasts and Mastodynia

Estrone and estradiol, the two estrogens most often prescribed in ERT, both stimulate breast tissue, especially if unopposed by natural progesterone. Thus, during the premenopausal estrogen-dominant phase, breast fibrocysts and painful breast swelling (mastodynia) are common. These problems are perpetuated after menopause by ERT. The presence of fibrocystic breasts in the premenopausal phase is sufficient evidence of unopposed estrogen and should be treated with adequate natural progesterone supplementation. When this is done, the fibrocystic problem usually disappears in 2-3 months, as does mastodynia. Very few medical conditions are this easy to treat. It is staggering to consider the many women who suffer needlessly from these problems.

### Ovarian Hormones and Breast Cancer

The cause of causes of breast cancer are not known. Some argue that dietary fats (such as the trans-fatty acids) are involved, but the available references are mixed. More recently, a correlation between certain environmental pesticides (especially the fat-soluble ones) and other petrochemical derivatives with breast cancer incidence has begun to attract attention. Many of these chemicals act as extremely potent estrogen mimics, are lipophilic, and accumulate in fat tissue in animals and humans. The importance of these chemicals in explaining the rising incidence of breast cancer may be appreciated by understanding the worrisome connection between estrogen and breast cancer. Consider the following evidence:

1. Early pregnancy conveys protection against breast cancer; women bearing their first child after age 30 have a higher risk than nulliparous women.
2. Only the first, full term, early pregnancy conveys protection; aborted or interrupted pregnancies do not afford protection.

3. Married women without children are at a higher risk than those with one or more children; unmarried women and nuns are a higher risk than women who have experienced pregnancy.
4. The risk of breast cancer is significantly less in women subjected to oophorectomy prior to their fortieth year.
5. Protective effect of early oophorectomy are negated by supplemental estrogen (ERT).
6. Treatment of males with estrogen (for prostate cancer or after trans-sexual surgery) is associated with an increased risk of breast cancer.
7. Survival time after mastectomy for cancer is improved by Tamoxifen, a weak estrogen that acts as an anti-estrogen to inhibit estrogen receptors.

It should be recalled that during pregnancy, the dominant estrogen is estriol, rather than estrone and estradiol, which are the major estrogens produced during the menstrual cycle and as given in ERT. Similarly, during pregnancy, placental synthesis of progesterone is extraordinarily increased to levels 10-20 times the amount normally synthesized by the ovary during the menstrual cycle. It is likely that both estriol and progesterone provide protection against breast cancer. This benefit of natural progesterone is further confirmed by the recent finding that pre-menopausal women having mastectomy for cancer suffer fewer metastases and late recurrences if their surgery were performed during the latter two weeks of their menstrual cycle (when progesterone is dominant), rather than during the earlier two weeks (when progesterone is absent).<sup>15</sup> Synthetic progestins do *not* convey this protection and may, in fact, increase the risk of breast cancer, especially when used in conjunction with supplemental estrone or estradiol.<sup>16</sup>

### Ovarian Hormones and Endometrial Cancer

The only known cause of endometrial cancer is unopposed estrogen. Since the mid-1970's, it has been known that estrogen should never be given without being opposed by supplemental progesterone or one of the progestins. The work of Gambrell,<sup>17</sup> for example, is especially important in illustrating this cancer risk of unopposed estrogen and the protection by progestin supplementation. Further, Hargrove<sup>18</sup> showed the superiority of natural progesterone over progestins by comparing the endometrial effects of (a) progestin [medroxyprogesterone acetate] given with estrone, to that of (b) natural progesterone when given with estradiol. He found that estradiol and natural progesterone supplementation in menopausal women resulted in symptomatic improvement, minimal side effects, an improved lipid profile, and *amenorrhea without endometrial proliferation or hyperplasia* (emphasis added). Endometrial proliferation and/or hyperplasia are considered to be early steps in the endometrial cellular changes that can lead to cancer.

From what is already known, one could reasonably hope that if clinicians were alert to the estrogen dominance that can occur in premenopausal women and would supplement them with natural progesterone, the risk of endometrial cancer would be dramatically reduced, perhaps to zero.

### Health Risks of Progestins

Progestin (also called progestagen or gestagen) refers to the class of synthetically created patentable compounds which share the ability to sustain human secretory endometrium and, if given early enough in the menstrual cycle, to prevent ovulation. In this they are similar to natural progesterone, the specific hormone produced by the corpus luteum after ovulation and also by the placenta. Progestins are widely used in oral contraceptives and in hormone replacement therapy (HRT). In medical and lay writing, many authors confuse the two words, progestin and progesterone. This is a great error, since they are not the same and differ in many important aspects. Progestins are foreign to all living things and have atoms introduced at unusual positions in their molecules such that their metabolism and excretion are inhibited and they induce actions not consistent with natural progesterone. Specifically, they lack intrinsic physiologic benefits of progesterone, they can not function in the major biosynthetic pathways as progesterone does, and they carry a wide array of potential undesirable side effects.

One of the most commonly used progestins, medroxyprogesterone acetate (Provera), carries the warning that its use in women during early pregnancy can increase the risk of early abortion or cause congenital abnormalities in the fetus. Since natural progesterone is necessary for the survival of the embryo and the normal development of the fetus throughout pregnancy, it is clear that Provera is not progesterone. A *partial* list of progestin side effects follows:

### **POTENTIAL SIDE EFFECTS OF SYNTHETIC PROGESTINS**

#### Warnings:

- Increased risk of birth defects such as heart and limb defects if taken during the first four months of pregnancy.
- Beagle dogs given this drug developed malignant mammary nodules.
- Discontinue this drug if there is sudden or partial loss of vision.
- This drug passes into breast milk, consequences unknown.
- May contribute to thrombophlebitis, pulmonary embolism, and cerebral thrombosis.

#### Contraindications:

Thrombophlebitis, thromboembolic disorders, cerebral apoplexy, liver dysfunction or disease, known or suspected malignancy of breast or genital organs, undiagnosed vaginal bleeding, missed abortion or known sensitivity.

### Precautions:

- May cause fluid retention, epilepsy, migraine, asthma, cardiac or renal dysfunction.
- May cause breakthrough bleeding or menstrual irregularities.
- May cause or contribute to depression.
- The effect of prolonged use of this drug on pituitary, ovarian, adrenal, hepatic or uterine function is unknown.
- May decrease glucose tolerance, diabetes patients must be carefully monitored.
- May increase the thrombotic disorders associated with estrogens.

### Adverse Reactions:

- May cause breast tenderness and galactorrhea.
- May cause sensitivity reactions such as urticaria, pruritis, edema or rash.
- May cause acne, alopecia and hirsutism.
- Edema, weight changes (increase or decrease).
- Cervical erosions and changes in cervical secretions.
- Cholestatic jaundice.
- Mental depression, pyrexia, nausea, insomnia or somnolence.
- Anaphylactic reactions and anaphylaxis (severe acute allergic reactions).
- Thrombophlebitis and pulmonary embolism.
- Breakthrough bleeding, spotting, amenorrhea or changes in the menses.

### When taken with estrogen, the following have been observed:

- Rise in blood pressure, headache, dizziness, nervousness, fatigue.
- Changes in libido, hirsutism and loss of scalp hair, decrease in T-3 uptake values.
- Premenstrual-like syndrome, changes in appetite.
- Cystitis-like syndrome.
- Erythema multiforme, erythema nodosum, hemorrhagic eruption, itching.

The reader can note the number of symptoms and medical problems in the list above which are commonly attributed to aging. Natural progesterone, on the other hand, has no known side effects. Need more be said?

### PMS and Natural Progesterone

Premenstrual syndrome (PMS) refers to a group of symptoms occurring consistently during the 10-14 days before menses and clearing 2-3 days after the onset of menses. These symptoms include depression, irritability, anger and other mood swings, headache, fatigue, edema and a consequent weight gain, and loss of libido. The timing of these symptoms corresponds precisely to the time when, under normal circumstances, progesterone should be the dominant hormone. If progesterone is absent, however, then estrogen dominance prevails throughout the menstrual month. Side effects of unopposed estrogen include many of the symptoms listed above. In addition, the lack of progesterone would upset the complex interplay between the hypothalamus and the pituitary, and lead to the full display of PMS

symptoms. Thus, PMS may result in whole or in great part from anovulatory cycles in sensitive women whose emotional and physiological balance is upset by stress and/or improper diet. When sufficient natural progesterone is supplemented during the 10-14 days before menses, along with a diet avoiding stimulants, caffeine and sugar, or highly refined starches, PMS symptoms will disappear or be greatly reduced. In some cases, small supplements of magnesium and vitamin B6 (pyridoxine) are also helpful.

It should be recalled that the word “syndrome” implies that the etiology and mechanism(s) of action underlying the disorder are not completely understood or validated by present scientific research. This should not deter a trial of treatment with natural progesterone. If a patient’s typical pre-menstrual weight gain is found not to occur when on natural progesterone treatment, it is objective evidence that estrogen dominance, due to deficiency of natural progesterone, is playing a strong role, at least in the etiology of the condition. Further, serum progesterone levels can be obtained during day 20-23 of the cycle; a low finding corroborates the progesterone deficiency hypothesis.

#### Other Anti-Aging Benefits of Natural Progesterone

As women approach menopause, they commonly find themselves losing energy, retaining fluids, fighting fat, developing wrinkles and facial hairs, prone to headaches and depression and less interest in sex. They see their doctors, take their diuretics and, occasionally, thyroid medication and face the future with fading enthusiasm. They seek out cosmeticians for their wrinkles, visit their beauticians more often for their thinning hair, and take calcium supplements for their thinning bones. What they are unaware of is the importance of proper hormonal balance, particularly the lack of this singularly important hormone, natural progesterone. Consider the following:

1. Progesterone is a primary precursor in the biosynthesis of the adrenal corticosteroids. Without adequate progesterone, syntheses of the cortisones is impaired and the body turns to an alternative pathway, via adrenal production of dihydro-epiandrosterone (DHEA) and androstenedione, produced by fat in the body. These alternative pathways have androgenic side effects which cause the long facial hairs of elderly postmenopausal women and thinning of their scalp hair. When natural progesterone is supplemented, it is quite common to witness the disappearance of facial hair and the return of healthy scalp hair.

Further, impaired corticosteroid production results in a decrease in one’s ability to handle stress, e.g., surgery, trauma or emotional. With restoration of adequate progesterone, one’s ability to deal with stress improves.

2. In many peri or post-menopausal women, symptoms of hypothyroidism occur despite normal serum levels of thyroid hormone. Estrogen interferes with intracellular utilization of thyroid hormone. Thus, many women with clinical signs of hypothyroidism such as fatigue, lack of energy, intolerance to cold, etc., are actually suffering from unrecognized estrogen dominance and will benefit from supplementation with natural progesterone. Women who are already placed on thyroid supplements will find that their dose can be reduced or eliminated when natural progesterone is restored to adequate levels. In this regard, the test for thyroid stimulating hormone (TSH) is a better guide for thyroid dosage than are the T-3 or T-4 tests.

Estrogen and most of the synthetic progestins increase intracellular sodium and water uptake. The effect of this on the aldosterone system is hypertension. Since the true cause is rarely recognized, this condition is called “essential” hypertension by most clinicians and is commonly treated with diuretics. Natural progesterone, on the other hand, is a natural diuretic and prevents the cell’s uptake of sodium and water, thus preventing hypertension. In treating a hypertensive woman taking estrogen and/or a progestin, the first step should be to discontinue the hormones; the second step is to switch to a diet of fresh vegetables, eliminating high sodium processed foods and severely limit red meat from the diet; and the third step is to provide supplemental natural progesterone. In this manner, drug treatment for hypertension is commonly unnecessary.

3. Whereas estrogen impairs homeostatic control of glucose levels, natural progesterone stabilizes them, thus, natural progesterone can be beneficial to both those with diabetes and those with reactive hypoglycemia. Estrogen should be contraindicated in patients with diabetes.
4. Loss of libido is common with menopause. To the surprise (and delight) of many postmenopausal women, progesterone often restores normal libido. Estrogen supplementation, as is known, usually results in a decrease of libido. It is a false assumption that the enjoyment of full sexual activity is not in the province of post-menopausal women; it is merely a matter of a correctable hormone balance.
5. Thinning and wrinkled skin is a sign of lack of hydration in the skin. It is common in peri and post-menopausal women and is a sure sign of hormone depletion. Transdermal natural progesterone is a skin moisturizer. When used as a skin cream, not only is progesterone well absorbed, but it restores skin hydration . The skin becomes more youthful in appearance and most small wrinkles disappear.
6. Recent research has found that recovery from brain injury in male test animals is enhanced by pre-treatment with progesterone. Further, brain cells are well supplied with progesterone receptors and the brain content of progesterone, as well as pregnenolone and DHEA, is normally 20-30 times higher than serum levels. It is suggested, therefore, that

7. progesterone serves a role in keeping brain cells healthy and that disorders such as premature senility (Alzheimer's disease) may be, at least in part, another example of disease secondary to progesterone deficiency.

#### Why Natural Progesterone is so Neglected by Contemporary Medicine

It should not require a PhD in physiology to realize that unopposed estrogen is largely disadvantageous and progesterone is remarkably beneficial. Yet, this view is not shared (or understood) by many physicians and medical writers. Why should this be? One answer is, of course, that many doctors have simply not kept up with advances in medical science. The more sanguine answer is that doctors have come to rely on pharmaceutical advertising as their education sources and do not fully realize that they, themselves, are the targets of clever campaigns inducing them to prescribe what the industry sells. Natural progesterone, though easily and relatively inexpensively derived from plant sterols, (e.g., diosgenin, present in yams and many other plants) is not offered by the major pharmaceutical firms since, being a natural substance it is not patentable, and thus not profitable. Natural progesterone is routinely used by the pharmaceutical industry for synthesis of progestins. The availability and superiority of natural progesterone is a secret carefully kept from physicians.

#### Conclusion:

Premature aging remains a great concern in our present society. It is entirely likely that many factors play a role: nutritional deficiencies, alcoholism, cigarette smoking, environmental toxins and others may all be implicated. But present knowledge suggests a large factor is our misdirected attention to estrogen and our neglect of natural progesterone. Proper understanding and supplementation with natural progesterone promises to restore a healthy zestful life, where before the only prospect was one of early aging and progressive deterioration. It is time for natural progesterone to take its place along with proper nutrition, exercise and a clean environment in the preservation of good health.

Dr. Lee has recently *published Natural Progesterone: the Multiple Roles of a Remarkable Hormone*, BLL Publishing, P.O. Box 2068, Sebastopol, CA 95473, recently reviewed by Townsend Letter for Doctors, April 1994. The reviewer calls it "the most informative and lucid explanation of the female hormone cycle" that the reviewer had ever encountered and that it "contains priceless information for women wrestling with the effects of menopause and hormone imbalance and for the doctors who treat them."

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