What Hormone Levels Are Optimal?

> The healthiest hormone-producing years for most women are generally from the late teens through the early 30s. During these years, the ovaries consistently produce the highest amounts of estradiol and progesterone.

Not all women experience hot flashes or night sweats during menopause. The absence of these symptoms does not mean that a woman is protected from the effects of hormone deficiency.

Hot flashes and night sweats typically occur when estradiol levels fall below a critical threshold. Relatively small increases in estradiol are often sufficient to relieve these symptoms. As a result, the disappearance of hot flashes does not necessarily indicate that hormone levels have been restored to those typically seen in healthy younger women.

The goal is not merely to eliminate symptoms of severe hormone deficiency, but to restore a healthier physiologic hormone environment that supports long-term health and function.

WHY YOUNGER PHYSIOLOGY IS THE BENCHMARK

It is well established that estrogen deficiency, together with the associated loss of progesterone, contributes to many of the degenerative changes associated with aging. The hormone environment of healthy women in their 20s and 30s is often used as a physiologic benchmark because this period is associated with:

- Lowest rates of osteoporosis
- Lowest rates of dementia and cognitive decline
- Best cardiovascular health
- Greatest muscle mass and strength
- Highest levels of sexual function
- Strongest connective tissue integrity

> *There is no single "optimal" estradiol or progesterone level that applies to every woman. Individual factors such as absorption, metabolism, receptor sensitivity, body composition, and hormone breakdown influence the hormone levels at which a woman feels and functions her best.*

ESTRADIOL

Estradiol production is age-dependent. Following the peak reproductive years, ovarian estradiol production gradually declines over time. By menopause, only a small fraction of previous production remains.

After menopause, average estradiol levels are typically around 20 pg/mL or lower. During the peak reproductive years, estradiol levels fluctuate throughout the menstrual cycle, ranging from brief lows below 50 pg/mL to peaks that may exceed 500 pg/mL around ovulation.

Women vary considerably in their personal optimal estradiol levels. Most women appear to thrive when estradiol levels are restored toward the higher end of their personal physiologic range, provided progesterone levels are also adequate. As a general guideline:

- For women over age 65–70, I prefer to see estradiol levels at least above 100 pg/mL, with levels above 200 pg/mL often associated with greater benefits.
- Many younger women, as well as women over age 50 who began hormone therapy early, thrive with estradiol levels approaching 300 pg/mL.

The optimal level for any individual woman depends on symptoms, clinical response, and overall health goals.

PROGESTERONE

During the first half of the menstrual cycle (the follicular phase, before ovulation), progesterone levels are very low, typically below 1 ng/mL. After ovulation, during the second half of the cycle (the luteal phase), the ovaries begin producing large amounts of progesterone, causing blood levels to rise to approximately 10–20 ng/mL.

Even when a high-quality topical progesterone preparation is used and absorbed well, measurable blood levels are typically lower than those seen in women producing progesterone naturally after ovulation. Despite these lower blood levels, significant amounts of progesterone may be taken up by tissues throughout the body and produce meaningful biologic effects.

With a high-quality topical progesterone preparation, women experience typical progesterone-responsive benefits with serum progesterone levels above approximately 5 ng/mL.

Progesterone is absorbed and utilized by many tissues throughout the body, including:

- Brain
- Uterus
- Breasts
- Bones
- Skin
- Blood vessels
- Smooth muscle tissues

Because progesterone is readily taken up by these tissues, tissue concentrations may be substantially higher than those reflected by a standard blood test. As a result, serum progesterone levels may underestimate the biologic effects achieved with topical therapy.

TESTOSTERONE

Premenopausal women typically maintain total testosterone levels in the range of approximately 20–50 ng/dL. Testosterone plays an important role in:

- Sexual desire and responsiveness
- Energy and motivation
- Muscle maintenance
- Bone health
- Overall sense of well-being

While higher testosterone levels may sometimes produce short-term benefits, excessive testosterone exposure may increase the risk of:

- Unfavorable cholesterol changes
- Insulin resistance
- Acne and oily skin
- Excess facial or body hair growth
- Scalp hair thinning
- Voice deepening (which may be irreversible)
- Clitoral enlargement (which may be irreversible)

THE GOAL

For these reasons, the goal is to maintain testosterone within a physiologic female range rather than pursuing supraphysiologic levels.

Have questions about hormone therapy?

Speak with Dr. Selma Rashid and our team about whether hormone replacement therapy is appropriate for you.

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