



# Hormones, Menopause and Weight loss

Get the real scoop on what goes on with those mysterious hormone levels as we age. These three articles will help you separate fact from fiction and give YOU a good idea of what YOU can do to stay healthy and slim.

## Menopause and the Munchies

*Provided by Psychology Today*

Finally, research bears out what many postmenopausal women have suspected all along: **Menopause can make you hungry.**

For years, researchers have sought to determine whether changes in lifestyle or changes in the body are the driving force behind the sizable, and usually unwelcome, change in appetite that may accompany the end of a woman's fertility. Now, researchers at Oregon Health and Science University in Portland have found that plummeting ovarian hormones may account for the 12 percent jump in the number of women who are overweight in midlife compared to women in their 20s and 30s.



For most women, menopause sets in between the ages of 45 and 55. The body stops producing eggs and diminishes the production of estrogen and progesterone, dominant hormones related to a woman's reproductive system.

To assess the effects of diminished estrogen and progesterone secretion on appetite, researchers studied hunger levels in monkeys with blunted sex-hormone production. Their conclusions, presented at the annual meeting of the Society for Neuroscience, revealed **plunging hormones caused the otherwise healthy monkeys to increase their food intake by 67 percent, resulting in significant and rapid weight gain. By the end of the six-week study, the chubby primates averaged an increase of 5 percent in body weight.**

Lead researcher Judy Cameron, a professor of obstetrics and gynecology at Oregon Health and Science University, believes this study has profound implications for women approaching midlife because from a reproductive perspective, monkeys and humans are virtually identical.

The study also found that just as some women sail through midlife without gaining an ounce, there were a few lucky monkeys in the study. "Some animals ate considerably more, but didn't gain weight, while others gained quite a bit,"

says Cameron. She speculates that estrogen affects not only food intake but perhaps metabolism and activity level, as well.

**Unlike appetite, activity and metabolism are two factors women can at least partially control through regular exercise, especially weight or resistance training.** Women not only have to make up for a greater appetite, they must also contend with a body that burns fewer calories than it did years before. Even thin women aren't immune to this: Studies have shown that women of all sizes are likely to gain weight during menopausal years.

“With menopause and advancing age, women lose muscle mass,” says Cynthia K. Sites, an associate professor of obstetrics and gynecology at the University of Vermont in Burlington. **“Muscle is metabolically active tissue and burns more calories at rest than does fat, so when muscle is lost, metabolism slows.”**

Battling postmenopausal weight gain takes plenty of effort, but it is possible, says Cameron. **The standard weight-loss advice applies here, including eating food that is high in fiber and low in calories, as well as watching portion size. Boosting exercise and paying close attention to eating habits can be enough to stave off some of the extra pounds.**

A recent report in the *Journal of the American Medical Association* found that American women are putting on extra pounds much earlier and faster than did women of previous generations.

## **Menopause and weight gain: Reverse the middle age spread**

From [MayoClinic.com](https://www.mayoclinic.com)

Noticing a few extra pounds around your waist lately? Welcome to midlife expansion — the body changes that plague women between ages 35 and 55. During this time either you gain weight or you find that maintaining your weight becomes more difficult. You also discover that the weight you gain tends to accumulate around your stomach, rather than your hips and thighs.

**But you don't have to accept weight gain as inevitable. Take steps to prevent weight gain before it starts. And if you've already begun adding to your waistline, it's never too late to reverse course through proper diet and exercise.**

### **Causes of middle age weight gain**

For most women, increases and shifts in weight begin during perimenopause — the years leading up to menopause. But these shifting levels of estrogen aren't

the sole source of your weight gain. Aging also plays a part in your changing body composition.

Other possible causes of weight gain during middle age include:

**Reduced physical activity.** Menopausal women tend to exercise less than other women, which can lead to weight gain.

**Increased food intake.** Eating more means you'll take in more calories, which are converted to fat if you don't burn them for energy.

**Slowing metabolism.** The number of calories you need for energy decreases as your metabolism slows and the amount of muscle you have decreases. Because muscle burns more calories than fat, the less muscle you have, the fewer calories you burn.

**Genetics.** Genetic factors may play a role in your weight gain. You might be predisposed to gain weight around your stomach as you age. That means you may have to work harder to maintain your figure.

On average, women gain about a pound a year during the years leading up to menopause.

### **Complications of middle age weight gain**

Weight gain can have serious implications for your health. Excess weight can increase your risk of:

- High cholesterol
- High blood pressure
- Insulin resistance, which can lead to type 2 diabetes

These factors can put you at risk of heart disease.

### **What you can do to prevent or reverse weight gain**

If you've already noticed the extra pounds, take steps to eat a varied diet and increase your daily exercise. If you've yet to reach the weight-gain stage of middle age, you can prepare by taking the same steps to ensure that you won't gain weight in the future.

#### **Exercise**

Aerobic exercise boosts your metabolism and helps you burn fat. By incorporating strength training exercises, you'll increase your muscle mass, raise your metabolism and strengthen your bones.

#### **Healthy diet**

Deprive yourself of too many calories and you'll go into starvation mode. But carefully choosing a varied diet that's heavy on fruits and vegetables will help you

safely cut back on calories and lose weight. Because your metabolism slows during this time, you need about 200 to 400 fewer calories a day. This shouldn't be a problem if you eat only when hungry and only enough to satisfy your hunger.

### **Dealing with life's changes**

Body changes as you age might make it more difficult to keep that look you had in your 20s and 30s, but it doesn't mean you can't keep your body healthy. Forget about squeezing into your old jeans. Concentrate, instead, on being fit and healthy.

## **Hormones and Weight Loss**

**By: Greg Landry—*Exercise Physiologist***

There are many physical, mental, and physiological benefits to regular exercise. One category of benefits is the impact that exercise has on many of your body's hormones. Hormones are chemical messengers within your body that affect almost all aspects of human function:

### **1. Growth Hormone**

- Stimulates protein synthesis (muscle tone/development), and strength of bones, tendons, ligaments, and cartilage.
- Decreases use of glucose and increases use of fat as a fuel during exercise. This helps to reduce body fat and to keep blood glucose at a normal level which helps you to exercise for a longer period of time. Release of growth hormone from the pituitary gland in the brain is increased with increasing aerobic exercise time, especially more intense exercise such as interval training.

### **2. Endorphins**

- An endogenous opioid from the pituitary gland that blocks pain, decreases appetite, creates a feeling of euphoria (the exercise high), and reduces tension and anxiety.

Blood levels of endorphins increase up to five times resting levels during longer duration (greater than 30 minutes) aerobic exercise at moderate to intense levels and also during interval training.

Also, after several months of regular exercise, you develop an increased sensitivity to endorphins (a higher high from the same level of endorphins), and endorphins that are produced tend to stay in your blood for a longer period of

time. This makes longer duration exercise easier (you're feeling no pain) and it causes your exercise high to last for a longer period of time after exercise.

### **3. Testosterone**

- An important hormone in both males and females for maintaining muscle tone/volume/strength, increasing basal metabolic rate (metabolism), decreasing body fat, and feeling self-confident. It's produced by the ovaries in females and by the testes in males.

- Females have only about one tenth the amount of testosterone that males do, but even at that level in females it also plays a role in libido and intensity of orgasms. Production of testosterone in females begins to decline as a woman begins to approach menopause and in males it begins to decline in his forties. Blood levels of testosterone increase with exercise in both males and females beginning about 20 minutes into an exercise session, and blood levels may remain elevated for one to three hours after exercise.

### **4. Estrogen**

- The most biologically active estrogen, 17 beta estradiol, increases fat breakdown from body fat stores so that it can be used and fuel, increases basal metabolic rate (metabolism), elevates your mood, and increases libido. This hormone is at much higher blood levels in females, but the ovaries begin to produce less of it as a woman begins to approach menopause.

The amount of 17 beta estradiol secreted by the ovaries increases with exercise, and blood levels may remain elevated for one to four hours after exercise.

### **5. Thyroxine (T4)**

- A hormone produced by the thyroid gland, Thyroxine raises the metabolic rate ("metabolism") of almost all cells in the body. This increase in "metabolism" helps you to feel more energetic and also causes you to expend more calories, and thus is important in weight loss.

Blood levels of thyroxine increase by about 30% during exercise and remain elevated for several hours afterward - this period of time is increased by an increase in intensity and/or duration of exercise. Regular exercise also increase thyroxine levels at rest.

### **6. Epinephrine**

- A hormone produced primarily by the adrenal medulla that increases the amount of blood the heart pumps and directs blood flow to where it's needed.

- Stimulates breakdown of glycogen (stored carbohydrate) in the active muscles and liver to use as fuel. It also stimulates the breakdown of fat (in stored fat and in active muscles) to use as fuel. The amount of epinephrine released from the adrenal medulla is proportional to the intensity and duration of exercise.

## **7. Insulin**

An important hormone in regulating (decreasing) blood levels of glucose ("blood sugar") and in directing glucose, fatty acids, and amino acids into the cells. Insulin secretion by the pancreas is increased in response to a rise in blood sugar as is often the case after a meal. Typically, the larger the meal, or the greater the quantity of simple sugars consumed, the larger the insulin response. This is another reason that it's good to eat small frequent meals and to limit consumption of sugar and of processed bread, pasta and rice. The whole grain (non-processed) versions of those products are a much healthier choice.

Blood levels of insulin begin to decrease about 10 minutes into an aerobic exercise session and continue to decrease through about 70 minutes of exercise. Regular exercise also increases a cell's sensitivity to insulin at rest, so that less is needed.

## **8. Glucagon**

A hormone that is also secreted by the pancreas, but its job is to raise blood levels of glucose ("blood sugar"). When blood sugar levels get too low, glucagon is secreted and causes stored carbohydrate (glycogen) in the liver to be released into the blood stream to raise blood sugar to a normal level. It also causes the breakdown of fat so that it can be used as fuel.

Glucagon typically begins to be secreted beyond 30 minutes of exercise when blood glucose levels may begin to decrease.

**So, next time you're exercising, think about all the wonderful things that are happening to your hormones. It might even make you want to do more exercise!**