

# HORMONES AND YOUR BONES

## WHAT YOU NEED TO KNOW

The endocrine system is a network of glands and organs that produce, store, and secrete hormones. Hormones are really important to bone health and strength. Too much or too little of certain hormones in the body can contribute to osteopenia and osteoporosis. These are conditions in which bones become weak and are more likely to fracture or break.

### WHAT IS OSTEOPOROSIS?

Osteoporosis, which means porous bones, is a progressive condition in which bones become weak and more likely to fracture or break. Osteopenia is the more moderate decline in bone mass than occurs in osteoporosis.

Throughout the early part of your life, the amount of bone lost and the amount of bone gained—called bone turnover—remains balanced. Bone mass (size and thickness) increases during childhood and early adult life. After mid-life, more bone is broken down than is formed, and bone mass slowly declines.

### DID YOU KNOW?

Bone loss is a natural part of aging, but there are things that you can do to help keep your bones healthy.

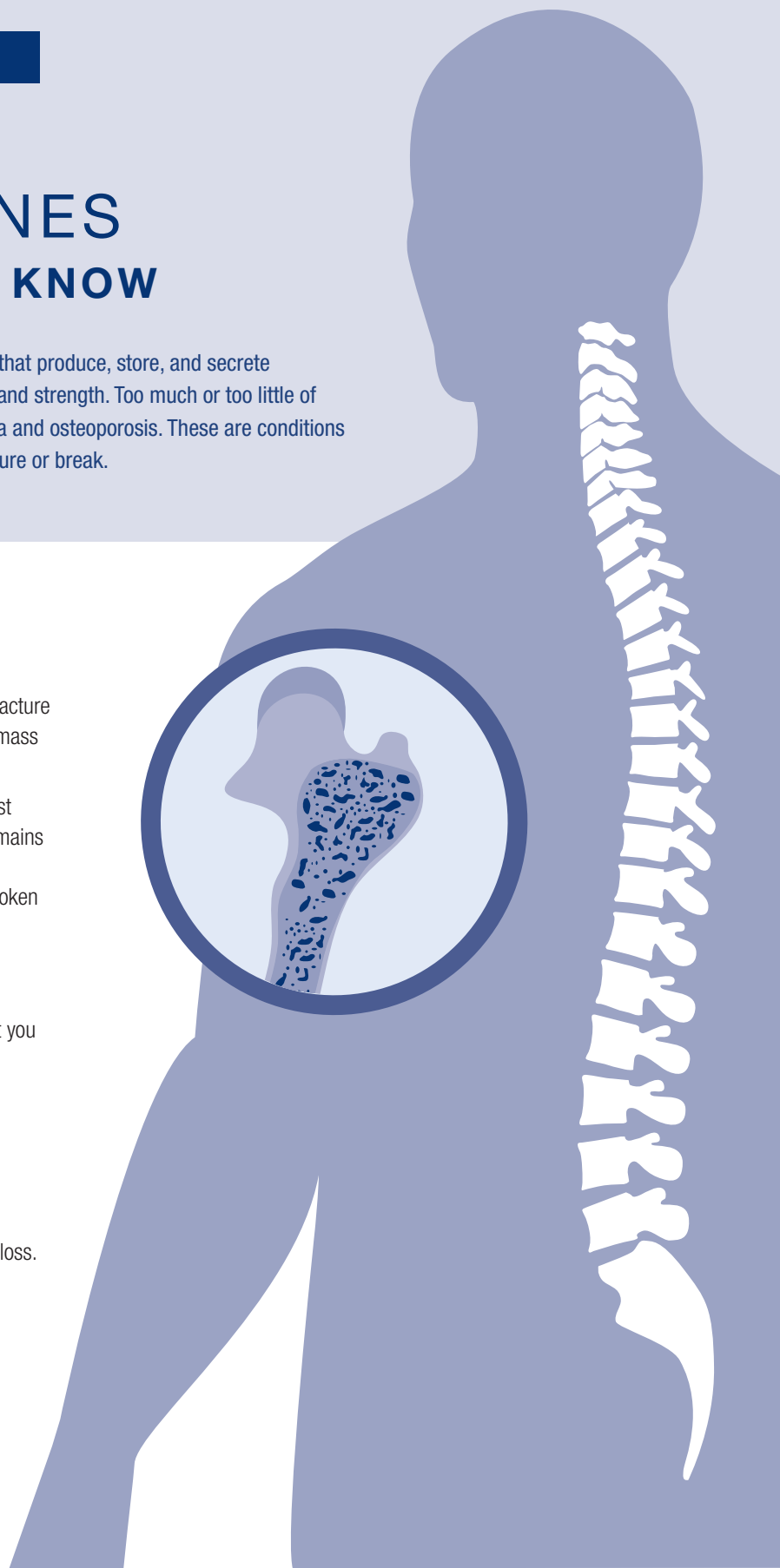
- In the United States, 44 million Americans are at risk for osteoporosis.
- 10 million Americans already have osteoporosis.
- Women make up 80% of osteoporosis cases.
- Each year 1.5 million people suffer a fracture from bone loss.

*Source: Report from the Surgeon General*

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Developed for patients based on *Pharmacological Management of Osteoporosis in Postmenopausal Women: An Endocrine Society Clinical Practice Guideline*



## OSTEOPOROSIS AND HORMONES

- **MENOPAUSE**—during this period, the ovaries make less estrogen; therefore, estrogen-related bone protection is diminished
- **AGING IN MEN**—they produce less testosterone as they age, which can contribute to bone loss
- **PITUITARY OR ADRENAL GLAND TUMOR**—the body is producing excess cortisol and Cushing's syndrome develops, which can damage bones
- **CORTICOSTEROID MEDICATIONS (STEROIDS)**—long-term use of prednisone and cortisone can affect bone health
- **OTHER HORMONE IMBALANCES**—including: an over-active thyroid gland, and hyperprolactinemia, in which the pituitary gland produces too much of the hormone prolactin
- **THYROID CANCER AND HYPOTHYROIDISM**—in which treatment might include high doses of thyroid hormone
- **EATING DISORDERS**—these often lower sex hormone production, which can also result in bone loss and increased risk of osteoporosis

## UNCONTROLLABLE RISK FACTORS

- Being over age 50
- Being female
- Menopause
- Family history
- Low body weight (small and thin)
- Being Caucasian or Asian

## CONTROLLABLE RISK FACTORS

- Diet low in calcium
- Decreased sun exposure, which results in low vitamin D
- Not eating enough fruits and vegetables
- Little or no exercise
- Cigarette smoking
- Drinking too much alcohol
- Losing too much weight

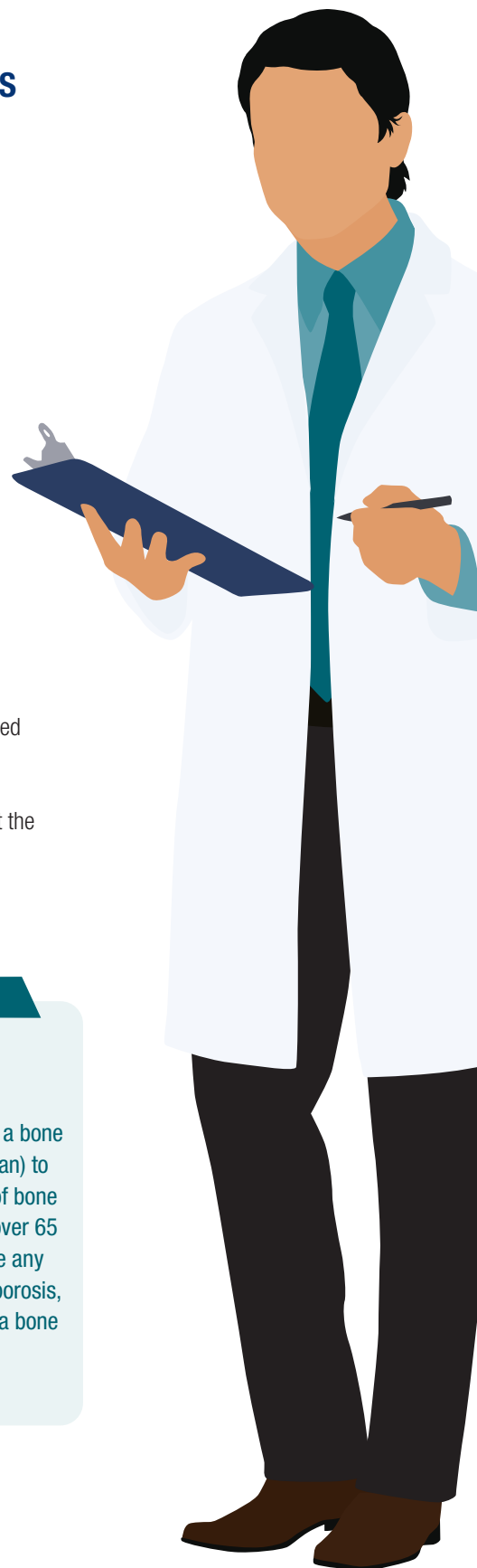
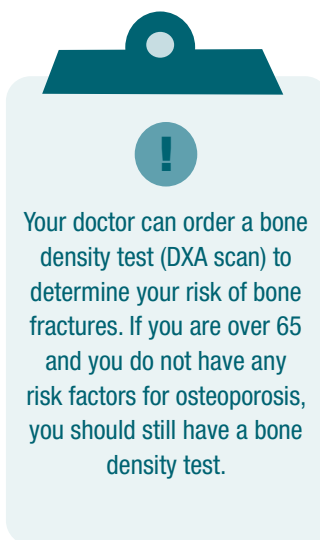
Therapy with a steroid (such as prednisone) for any significant length of time can also increase your risk.

## TREATMENT

Along with prevention and lifestyle changes, you may need medication to stop bone loss and decrease the risk of fractures. Certain drugs slow down bone loss. If you are taking hormone medications, talk with your doctor to get the most appropriate ones to treat your condition.

## PREVENTION

- Get enough calcium and vitamin D, either through diet or supplements (at least 1,000-1,200 mg of calcium; 400-800 IU of vitamin D daily under age 50 or at least 800-1,000 IU after age 50)
- Do weight-bearing exercises and stay physically fit
- Avoid smoking
- Don't drink too much alcohol



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