

stress or pressure. Sometimes calcium and vitamin D are used to prevent bone breaks, as is the case with osteoporosis.

Some medications, such as estrogen (or hormone) replacement therapy (ERT), inhibit bone resorption of calcium and can reduce the extent of osteoporosis. However, this type of treatment has side effects, such as breast and uterine cancer and blood clots. For this reason, these drugs are used with caution. If a patient prefers not to take ERT, she may choose to take a **bisphosphonate**, which is a similar medication without the side effects. These drugs are similar to bisphosphate salts, which are found naturally in the body. An example of a bisphosphonate is alendronate sodium (Fosamax).



CRITICAL THINKING

Why would a woman choose to take ERT? Why would she choose not to take it?

Although too little bone calcium can cause fractures, too much bone calcium is a problem as well. Paget's disease is a chronic disease that debilitates patients by enlarging the bone. A patient with Paget's disease resorbs bone excessively, but the new bone is weak and fragile. The bones are deformed (e.g., bowing of the lower legs), leading to pain and fractures. Paget's disease can be diagnosed by a blood test. X-ray studies show irregular bones. Treatment for Paget's disease consists of calcitonin and bisphosphonates, which encourage strong bone formation; supplemental calcium and vitamin D may also be taken as needed.

MEDICATIONS FOR BONE AND JOINT INFLAMMATION

Arthritis and gout can cause inflammation of the bones and joints. Arthritis, as indicated in Table 12-1, can be one of two types: osteoarthritis or rheumatoid. In **osteoarthritis**, erosion of bone occurs where the bones meet at the joint. Those affected are mainly middle-age or older persons and also those who are either extremely sedentary or extremely active.

Rheumatoid arthritis is slightly different in that it is an autoimmune condition, in which the joints are affected by inflammation caused by a negative reaction from the immune system. Rheumatoid arthritis usually affects women 30 to 50 years of age or children. Nonsteroidal anti-inflammatory drugs (NSAIDs), such as Advil, Motrin (ibuprofen), and Aleve (naproxen), are the most common type of medications used to treat osteoarthritis and rheumatoid arthritis.

Gout is a form of arthritis characterized by a sudden, severe attack of pain, redness, and joint tenderness, most commonly at the joint of the big toe and foot. Before middle age, gout primarily affects men, but after women reach menopause, the numbers of men and women affected by gout start to equalize. Risk factors include excessive alcohol use, hypertension, diabetes, hyperlipidemia, and arteriosclerosis. In addition, certain medications and family history are risk factors. Gout is caused by a buildup of uric acid in the joints. Uric acid is a natural by-product of food metabolism

TABLE 12.1 Types of Arthritis

Type	Cause	Age Affected
Osteoarthritis	Degeneration (erosion) of bones where they meet, or articulate, at the joints	Strikes middle-age or older persons; extremely sedentary and extremely active persons are at increased risk
Rheumatoid arthritis	Autoimmune reaction: the body's immune system attacks the joints and causes inflammation	Can affect children, but mostly affects women 30 to 50 years of age at symptom onset