Fracture Risk in African Americans

Compared with Caucasians and other ethnic groups, African Americans have a lower risk of breaking a bone in their lifetime.\(^1-3\) The best explanations are genetic differences in bone size, bone density, bone structure and possibly differences in calcium regulation.

Despite the general statement of lower risk, there are two areas of growing concern for African Americans: 1) fracture risk may be rising\(^4\) and, 2) fractures increase dramatically after age 75.

**Ethnic differences in fracture risk**

Many studies dating as far back as 1965 have shown that individuals of African descent have much lower rates of osteoporosis and fractures than Caucasians.\(^5-9\) More recently, the Women’s Health initiative (WHI) found that African American women have less than half of the number of fractures compared to Caucasian women.

In the WHI, the ethnic differences in the number of fractures were less dramatic when the researchers looked at the groups by bone density. Women with greater bone density do not have as many fractures, regardless of ethnicity. Typically, African American women have greater bone density.\(^4\)

The long bones that make up our arm and legs, have a tubular shape in the middle and a bulbous shape at either end. African Americans have long bones that are wider in the middle than other ethnic groups---and that gives the bones considerable more strength to resist breaking. At the ends of the long bones, the bone network structure is thicker and more connected--- again more strength to resist breaking.\(^10-13\) These structural differences in the bones of African Americans begin to appear early in life. African Americans build larger and denser bones in puberty, accounting for fewer fractures later in life.\(^14,15,16,17,18\)

Current research is looking at genetic reasons for ethnic differences in fracture risk. One study has shown that African Americans have a gene that regulates calcium, increasing the amount that is reabsorbed by the kidneys rather than eliminated from the body. Since calcium is the principal mineral that makes bones stronger, this efficiency may explain why and how the bone mass is built and maintained.
Factors that increase fracture risk in African Americans

Although for most African Americans the risk of breaking a bone is low, the occurrence of fractures seems to be on the rise. Women who are at increased risk are taller, have already broken a bone, have a tendency to fall or have a family history of fractures. Other factors that increase risk are medical conditions such as diabetes, heart attacks, arthritis and the use of certain medications including nonsteroidal anti-inflammatory drugs (NSAIDs), steroids (for more than two years) and sedatives.4

Bone health is important for people of all ethnicities. Having a balanced diet with sufficient calcium and vitamin D and being physically activity goes a long way to ensure healthy bones for life. If you have any of the medical conditions or take medications that increase your risk of breaking a bone, talk with your doctor.

References:

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