

Cola Drinks and Bone Density

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Bottom Line at the Top: Drink water.

Carbonated cola drinks increase risk of bone fractures in teenage girls. Women of child-bearing age who drink 3 or more colas per week have lower bone density, even if calcium and vitamin D intake are adequate. In older adults, colas are associated with lower bone density. So what is it in colas that is the culprit?

We like to blame things on sugar and artificial sweeteners, but these studies have proven that bone density is unrelated to soda's type or amount of sweetener. It's not the carbonation that causes bone loss, either. People who drink carbonated waters, selzers and sodas that aren't colas don't have any worse bone density than non-fuzzy water drinkers.

Scientists have narrowed the bone problem down to cola drinks, like Coke and Pepsi, as beverages that cause calcium to leach out of bones and impair bone strength. Lose enough calcium over time and your bone density falls, increasing the risk of fracture. This is often attributed to the caffeine content, though colas usually have only about 50 mg caffeine per can, about 1/5th the amount in a cup of coffee, and colas also contain phosphoric acid.

Soda manufacturers add phosphoric acid to colas to add a tangy flavor and help keep the carbonation bubbles from going flat. Long ago "phosphates" were a popular soft drink (back when Coca Cola contained real cocaine). Citric acid would work as

an alternative, but it's more expensive and has a different flavor.

Phosphorus is essential for health, and a diet of meat, beans and nuts contains quite a bit of it. The body does best when phosphorus intake matches that of calcium, but when excess phosphate circulates in blood, particularly as an acid, bone releases calcium to the blood to bind it. Both are then lost in the urine. Lose enough, and bone density declines.

So is it the caffeine or phosphoric acid? Katherine Tucker at Tufts University found that women who consume decaffeinated cola (with phosphoric acid) had lower bone density, but not as low as those who drank caffeinated colas. Robert Heaney of Creighton University found that decaffeinated cola, drunk in one sitting, did not increase urinary calcium excretion. Two good scientists, using different measures, came up with different conclusions. Perhaps the caffeine and phosphoric acid together exert a synergistic effect on bone.

Until someone can definitively determine the culprit, we should avoid colas and probably avoid beverages with either caffeine or phosphoric acid. Read labels to detect both, since some non-cola sodas contain a lot of caffeine (Mountain Dew) and there may be non-colas with phosphoric acid.

Of course, sodas aren't the whole issue with bone: We also need adequate protein, calories, weight bearing exercise, calcium, vitamin D, and a slew of other nutrients. Plenty of things to eat and drink besides colas.