

The “Popping” Sound

What is that “popping” sound? Many people are unfamiliar with the mechanism of the popping sound that occurs during a chiropractic adjustment. Some people are actually scared or nervous thinking that it is causing harm or that it will hurt or it is just “gross”. I have actually had people ask if the bone was breaking. The answer of course is a resounding no! Otherwise I wouldn’t have any patients.

Here is the mechanism: [synovial fluid](#) in your joints contains oxygen, nitrogen and carbon dioxide gases, approximately 80% is carbon dioxide. When a chiropractor adjusts, the joint capsule is rapidly stretched, which in turn increases the volume of the joint by 15-20%. This creates a sudden and rapid [partial vacuum](#) which causes the internal joint pressure to decrease. With this decreased pressure the gases rapidly release from the synovial fluid. As they reverberate through the fluid it causes the “popping sound”.

For you physic buffs this is [Robert Boyle's Law](#) from 1662.

This is the exact same phenomenon that occurs when you open up a bottle of soda or champagne, except with the joint it is a closed system (gases do not escape into the atmosphere) and with the soda or champagne it is considered an open system as the gases do go into the atmosphere. Once a joint “pops” it takes the gases about 20 minutes to return into the synovial fluid.

Try this: Crack a knuckle in one of your finger joints. Now immediately try it again at the same angle. It doesn’t pop. Wait 10-20 minutes and try again, this time it will pop.

What if the joint doesn’t “pop”?

Some patients think this means that the joint didn’t need to be adjusted, or that the joint didn’t move at all.

Imagine this:

A joint normally moves an inch when perfectly healthy.

Due to muscle tightness, adhesions and inflammation the joint only opens 1/4 of an inch.

To have the joint “pop” it must open 3/4 of an inch.

The chiropractor adjusts and opens the joint 1/2 an inch. No “pop”. But the joint still moved.

The result:

There is still benefit as the muscles will relax, adhesions will be broken and [inflammatory chemicals](#) will move out of the surrounding tissues, just not as efficiently as if the joint had been opened more. The more a joint is adjusted the more likely it will “pop” and thus increase the benefits of joint motion.

By the way:

Currently there are no studies that suggest “cracking” your knuckles or joint “popping” will cause [arthritis](#).