Eat Garlic? Forget the Mouthwash

By Josh Bloom — August 16, 2016

Garlic. It's not a new health craze, simply because it's not all that new. But, it is crazy. And, five minutes on the Internet will show you how crazy. It will prevent X (where X = any condition on earth), and enhance Y (where Y = anything you want enhanced). Regardless of its health benefit or lack thereof, I think we can all agree on one thing. It's not going to make you smell so good. But, not for the reason you might think. Which is why, by the time you finish reading this, you will still stink, but may have saved a few bucks on Listerine. Here's a rule that organic chemists know all too well. Sulfur stinks. Pretty much any volatile, sulfur-containing chemical is going to smell really bad. A few examples: hydrogen sulfide (rotten eggs), isoamyl mercaptan (skunk), methanethiol (fart odor). Garlic is the poster child for sulfur. It contains about three dozen sulfur-containing chemicals. For whatever reason, it smells rather nice while it is being fried, but then you eat it and things happen, courtesy of your stomach and liver. Did you ever notice that the day after someone eats garlic, they are pretty nasty smelling? And that the odor isn't really like garlic anymore? It's all chemistry. One of the principle odors of garlic is a chemical called allicin. Whatever it has going for it, stability isn't on the list. By the time it has reached your stomach, it is well on the way toward its own demise. Whatever little manages to get as far the liver need not send a letter with a return address label. It won't be around long.

For those of you who may be into S &M (M, really), I invite you to decipher the Rorschach Test below, which is actually the biosynthesis (left) of the stuff, and its metabolism (right). I would rather brush my teeth with a chainsaw than go through this, but feel free. Then, imagine how complex the picture gets when you add the other 35 chemicals to the mix.
Ironically, despite the nightmarish-looking diagram above, the next day odor is really quite simple. It comes down to a single chemical called methyl allyl sulfide. It has just the right properties to ruin your next date, and those same properties make mouthwash useless. You could take a 1.9 PSI power washer to your tongue, and it wouldn't make a bit of difference. This is because the stench
is not coming from your mouth. It is coming from your lungs, via your blood. Maybe even from your sweat.

This occurs because of particular properties of the chemical: (1) It is stable enough to make it to the intestines. (2) Where it is easily absorbed into the blood. (3) It is stable enough to survive metabolism by the liver. (4) It is volatile (boiling point is less than water). (5) It smells awful. (6) But, it does not smell like garlic. This is because garlic does not contain allyl methyl sulfide. It is formed by metabolism. This is the reason why you smell differently the day after you eat garlic. So, guys. I can personally tell you that it is tough enough out there. You might want to lay off the garlic if you have a date the next day. Your already-slim chances may improve a bit. I haven't seen too many of these in the *Times* wedding announcements. Just sayin'