



# Here's To Your Health!

A Phoenix Fire Department Health Center Publication

[www.phoenixfirehealth.com](http://www.phoenixfirehealth.com)



## Supplements use on the Rise: Beware of the Risks

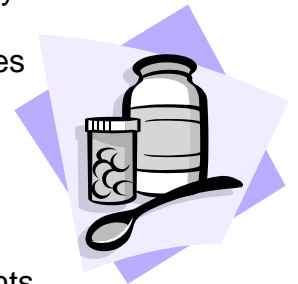
The clinicians at our Health Center have seen a rise in supplement use among firefighters and, consequently, a rise in lab results that are concerning to them. There are far too many supplements to name in this article but here are a few.

Body building products such as NO Explode are being marketed as "nutritional supplements." They are not really dietary supplements and often contain unapproved drugs that have not been reviewed by the FDA. Unlike pharmacies producing prescription medications, supplement makers currently do not have to provide the FDA with proof of safety or efficacy prior to marketing them. There are a variety of compounds in these over-the-counter products and two of these are of special concern. 1) Anabolic steroids: When these drugs are taken orally, they leave a characteristic footprint on the lab tests we do for routine physicals. Liver tests are elevated indicating inflammation of the liver. When these drugs are taken by mouth, they are metabolized by the liver and cause inflammation. HDL (good) cholesterol is greatly reduced. An average value is in the 40s and when HDLs come back under 15, it is obvious that anabolic steroids are involved. HDL cholesterol helps to reduce plaque in arteries and without it, deposition of plaque is accelerated and risk for heart attacks and strokes increase. Occasionally, blood counts (hemoglobin and hematocrit) are elevated beyond the normal range which creates thickening of the blood and increased risk of stroke. On physical examination, testicles are often reduced in size, acne may be increased and on occasion we see breast enlargement. 2) Stimulants: Drugs in this category are chemically related to epinephrine(adrenaline), amphetamines, and cocaine. They increase blood pressure, heart rate and risk for arrhythmias, stroke and heart attack. We have had one heart attack and several arrhythmias (including atrial fibrillation) in firefighters taking these supplements. Caffeine may be included to augment the affect of the other stimulants.

Source: Dr. Tim England, D.O.

## So...What exactly do we know or NOT know about supplements?

People are always questioning which supplements are the best or which ones work or don't work. The answer to this question is very complicated for a number of reasons. First of all, many nutritionists would argue that there is nothing the body needs that we can not get from real food by itself or with the addition of a quality multi-vitamin. Having said that, most Americans do not eat adequate diets and are always looking for short cuts to help fuel their bodies to perform at a specific level or to lose weight.



The down and dirty on supplementation is that in the United States, supplements are NOT regulated or tested by the FDA, unless the FDA has absolute proof that a specific supplement has actually caused harm to an individual. In addition, it's difficult to identify the harmful element because many people take multiple supplements. So the question then continues as to which supplement is causing the problem or what ingredient in the supplement is causing the harmful affect.

In 1994, the Dietary Supplement Health and Education Act of 1994 also known as (DSHEA) was passed. Under the DSHEA law, supplements are no longer regulated like other products such as drugs, additives, cosmetics, foods (animal and human) and medical devices. The American people supported this law so that there would be more opportunity for individuals to try certain supplements without needing a prescription. In passing this law, the freedom to use supplements was obtained. However, the safety "gate-keeper" was taken out of the equation, namely the FDA. This allowed supplement manufactures the freedom to market and sell supplements without much regulation.

*Supplements* continued on page 2

Given this history, it is easy to see now why the diet industry is a \$54 billion industry with a 95% failure rate to the consumers taking their products. A supplement company can produce and sell a product having spent more money on marketing than researching the effectiveness or side effects. ABC's *20/20* did a special in 2000 titled *What's Really in the Bottle?* Out of the different products tested most did not contain what was on the label. Examples of products tested were chondroitin, SAM-e, and ginseng. Not only did these products not have what it was suppose to have, many had other additives such as pesticides that were obviously not listed in the ingredients. To date, the laws have not changed since this was aired. As a result, companies continue type this labeling and manufacturing process.

The moral of this story is Buyer Beware! There are a few certifying agencies that do test supplements, however the process varies for each company. These independent certifying agencies are asked by the supplement manufacturer to test their product. These agencies include Consumerlab.com, National Safety Foundation, and USP. If the supplement you're taking has one of these testing agencies on its label, you can be assured that it was tested for quality and truth in marketing.

In summary, it may be smart for your health and your pocket book to ask these questions:

1. Is the product safe?
2. If safe, is it effective?
3. If effective, is it necessary for health?
4. Finally, include yourself in the small percentage of serious side effects that could occur from taking a particular supplement.

Source: JoEllen Caldwell, P.T., A.T.C.,

## DIESEL EXHAUST

This time of year, the inversion layers increase levels of pollution. The last thing we need to do to our system is add the toxins present in diesel exhaust. Diesel exhaust is made up of hundreds of different chemical compounds and particulate matter. Some of these compounds are known carcinogens, and many of these compounds have unknown effects on the human body.

Diesel exhaust is a major contributor to the carcinogens expelled into the air we breathe. We need to minimize our exposures to this exhaust.



### Components of Diesel Exhaust

**PARTICULATES (soot)** - Carbon based, these particulates are a major threat to our health because they are carriers of toxins. These particulates can be inhaled deep into the lungs where they can stay for days, releasing the attached toxins before they are eliminated. Studies have shown that these particulates are eliminated from the lungs and are then swallowed, causing damage to the gastro-intestinal and lymphatic systems.

**CARBON MONOXIDE (CO)**- Chronic exposure to CO causes narrowing of the coronary arteries which can lead to an MI. Chronic exposure to low levels of CO can cause decreased muscular strength, decreased alertness, headache, dizziness, light headedness and nerve damage to the ear. Due to the elevated levels of CO in the air this time of year, these additional exposures can be highly detrimental. Additional exposures include CO produced at fires and during overhaul.

**SULFUR OXIDES (SO<sub>3</sub>, SO<sub>2</sub>)** - Combined with the moisture in the respiratory tract, these sulfur compounds form sulfuric acid (H<sub>2</sub>SO<sub>4</sub>), causing tissue irritation. Studies also show that the sulfur oxides act as a catalyst for the benzo-a-pyrenes carcinogenic properties.

**NITROGEN DIOXIDE (NO<sub>2</sub>)** - A compound of nitrogen and oxygen and a readily soluble gas. That rusty brown haze in the air is not only the particulates but also NO<sub>2</sub>. This is the stuff that makes your eyes and throat burn. NO<sub>2</sub> is emitted by diesels in quantities far greater than that which is in the air. NO<sub>2</sub> is toxic to lung tissue. When inhaled, it combines with the moisture in your respiratory tract and forms nitric acid. This is very irritating to the tissues, causing damage to the upper airways and alveolar sacs.

*Diesel* con't. on page 3

HYDROCARBONS - Produced by incomplete combustion of diesel fuel. POLYCYCLIC AROMATIC HYDROCARBONS (PAH's) are carcinogenic benzene containing compounds contained in diesel exhaust. These are the compounds that produce that distinct diesel exhaust odor. These compounds are not only carcinogenic to lung tissue, but studies have found that when you eliminate these particles from your lungs you swallow many of them. There is a potential concern that this may be a source of cancers of the gastro-intestinal and lymphatic systems.

OKAY! By now you're saying "So what! How do I prevent this exposure?" You can minimize it by being aware and adhering to these recommendations:

**Do not leave apparatus running in the bay.**

**Do not leave doors and windows open leading from the bay to station while the apparatus is running.**

**Do not stand next to exhaust while on-scene.**

There is no acceptable level of exposure. In our world today, toxins are constantly bombarding us in our everyday life, but you can minimize many of them.

Source: Captain Steve Podzielny E-37 C

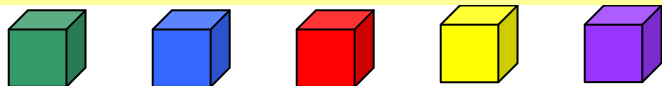


Need (another) reason to keep your vitamin D intake up? New research suggests that low levels of this essential nutrient can increase the risk of heart disease and stroke. Researchers in Utah followed 27,000 men and women over the age of 50 who had no history of heart disease. After a year, they found those with the lowest levels of vitamin D were:

1. 77 percent more likely to die than those with adequate levels of vitamin D.
2. 45 percent more likely to develop coronary artery disease than those with adequate levels of vitamin D.
3. 78 percent more likely to have a stroke than those with adequate levels of vitamin D.
4. Twice as likely to develop heart failure than those with normal levels of vitamin D.

The study, from the Intermountain Medical Center, was presented at the Nov. 16, 2009, session of the American Heart Association's Scientific Conference. Dr. Weil recommends 2,000 IU of vitamin D per day.

Source: [www.drweil.com](http://www.drweil.com)



## Drink This At Breakfast and You'll Eat Less Later



The key to not overeating at lunch is to choose carefully at breakfast. And here's a beverage choice that may help: skim milk. In a study, overweight people who drank skim milk instead of fruit juice at breakfast ate about 9 percent fewer calories at their midday meal.

### The Skinny on Skim Milk

The group of overweight men and women had a couple of slices of toast with margarine and jam along with their milk or juice. And even though both breakfasts supplied an equal number of calories, the milk drinkers still ate less at lunch. They simply felt more satisfied.

### Protein Power

So what's so special about the moo? Could be several things. Milk has 8 grams of protein per serving (juice has less than 1), and protein controls appetite better than carbs do. Protein may also dial down hunger-related hormones better than carbs or fats, and protein's appetite-suppressing abilities peak several hours after you've consumed it. Yep, just in time for your next meal. Finally, milk's more viscous than juice, which helps make it more satisfying.

Source: [www.RealAge.com](http://www.RealAge.com)