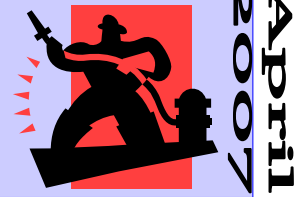




Here's To Your Health!

A Phoenix Fire Department Health Center Publication

www.phoenix.gov/fire/wellness.html



It's All About The Heart!

According to a new study published by the *New England Journal of Medicine*, firefighters face up to 100 times the normal rate of death by heart attack when battling a blaze. In addition, the chances of a heart attack are significantly increased when firefighters are responding to an alarm, returning from an alarm, or engaging in physical training.

The following information highlights 5 important factors regarding heart attacks and ways for preventing them.

1) Your Heart's Mortal Enemy is Often Invisible to Doctors

"I was taught in medical school that when a heart attack happens, vessels have closed gradually, like pipes filling up with sludge," says Arthur Agatston, M.D., author of *The South Beach Heart Program*. "We now know that blockages occur suddenly, from soft-plaque ruptures, which often go undetected by standard cholesterol tests and exercise stress tests." The soft plaques resemble pimples in the arterial walls, except instead of pus, they're filled with cholesterol.

Why it's so dangerous: When those pimples pop, a small blood clot forms to heal the injury, followed by scar tissue and tiny calcifications along the arterial wall. By then, you're already incubating an attack, which strikes when a violent explosion of one of the pustules creates a clot big enough to block an artery.

How to ID the problem: If you have a family history of heart disease, schedule a 64-slice CT scan. It's the only test that snaps pictures of the heart quickly enough to reveal minute calcifications in the coronary arteries. Just make sure the scanner has ECG dose modulation, the latest radiation-limiting technology. If trouble's spotted, you may need statins.

How to defend yourself: Toss pecans onto your salad or into your oatmeal. Loma Linda University researchers had 24 people replace 20 percent of their daily calories with pecans for a month, and found the nuts lowered levels of lipid oxidation (the process that turns cholesterol into plaque) by 7 percent, enough to help ward off arterial damage. "Pecans are rich in gamma-tocopherol, a form of vitamin E that isn't in supplements," says lead author Ella Haddad, Dr.P.H., R.D. Even a handful a day can help, she says.

2) An Untrained Heart Won't Reach the Finish Line

Not every heart test needs to take place in a cath lab. In a 23-year study of 6,000 men in the *New England Journal of Medicine*, researchers revealed that the greatest predictor of death from heart attack was the ability of a man's heart rate to adapt during and after a workout. "The faster your heart rate goes down after exercise, the healthier you are," says Steven Nissen, M.D., chairman of cardiovascular medicine at the Cleveland Clinic.

Why it's so dangerous: Those men whose heart rates didn't drop by at least 25 beats per minute (bpm) within 1 minute of finishing an intense workout were more likely to suffer a fatal heart attack than those whose heart rates dropped efficiently. The reason? How your heart adapts to exercise is a good indication of how well it will respond to the extreme stress produced before and during an actual infarction.

How to ID the problem: Attend your yearly physical at the Health Center.

How to defend yourself: Work on your aerobic base conditioning. Working 70% - 80% of your maximum heart rate builds an aerobic base which conditions your heart to respond to stress loads with a gradual increase in beats per minute. It also leads to a more efficient heart that is evident by a lower resting heart rate and a lower working heart rate.

3) You've Never Even Heard of the Cholesterol that Wants You Dead

Researchers now realize that the size of cholesterol particles is even more important than their number. Small particles of LDL, called Lp (a), are a particularly damaging form of cholesterol, according to Michael Ozner, M.D., medical director of the Cardiovascular Prevention Institute of South Florida. These particles aren't only smaller, they have a tail, says Dr. Ozner, making it easier for them to sneak into the arterial wall. On the flipside, the larger your HDL particles, the more easily they can usher LDL cholesterol out of your arteries.

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Why it's so dangerous: A recent study in the *Journal of the American College of Cardiology* reveals that people with high Lp (a) were 10 times more likely to suffer a heart attack than those with lower levels.

How to ID the problem: Ask your doctor to schedule a Vertical Auto Profile (VAP) test. (Check it out at www.thevaptest.com. It's covered by most insurance plans.) This detailed blood profile includes a measure of Lp (a)--an ideal level is below 10 milligrams per deciliter--as well as big and small HDL particles.

How to defend yourself: Diet, exercise, and even statins have proven ineffective against Lp (a). But in a review of 8 years of studies on prescription niacin, Dutch researchers determined that swallowing 2 grams of this potent B vitamin lowered Lp (a) by 17 percent and raised the number of large HDL particles by 18 percent. Ask your doctor for a slow-release version of niacin. Research has shown that these formulations produce fewer side effects.

4) Carbohydrates, Not Fat, are the Real Heartbreakers

The more carbohydrates you consume, the higher your blood sugar and, in turn, your levels of insulin, a hormone that lets us use sugar as energy. But excess insulin may also increase your risk of heart disease, according to a review in *Preventive Medicine*. "The inflammatory process leading to hardening of the arteries is mediated through insulin," says Wolfgang Kopp, M.D., the study's lead author. Translation: High levels of insulin boost your body's production of stress hormones, which send blood pressure skyrocketing. That increased pressure damages the arterial wall, making it easier for cholesterol to slip inside.

Why it's so dangerous: Insulin may not act alone. It's theorized that the excess carbohydrates that cause insulin to increase to an unhealthy level are turned into triglycerides in your liver. And the more triglycerides you have circulating in your bloodstream, the more Lp (a)--the lethally small cholesterol--you're likely to have.

How to ID the problem: Johns Hopkins University researchers showed that for every 1 percent increase in hemoglobin A1c (HbA1c), an indicator of long-term blood-sugar levels, patients experienced a 14 percent increase in heart-disease risk. If diabetes appears anywhere on your family tree, schedule an HbA1c test. A level higher than 4.6 percent of total hemoglobin often warrants dietary changes and sometimes blood-sugar-lowering drugs.

How to defend yourself: Pour yourself a cabernet. According to a recent study in the *Annals of Epidemiology*, small amounts of alcohol may help control your blood sugar, and, by extension, your insulin. Researchers studied the drinking habits of people with type-2 diabetes and found that compared with teetotalers, those who indulged in just one alcoholic beverage per night had levels of HbA1c that were 1.3 percentage points lower on average.

5) Your Heart Might Be Misfiring

One in four men will develop an irregular heartbeat, or arrhythmia, by the time they reach 40. Yet they often don't experience obvious symptoms until they're clutching their chests during cardiac arrest or they suffer a stroke. Your heartbeat originates in the sinoatrial (SA) node, a collection of specialized heart cells that acts as your heart's control center, says Jennifer Cummings, M.D., director of electrophysiology research at the Cleveland Clinic. "It reacts to information from your body and brain about how much blood needs to be pumped, then sends an electrical impulse telling your heart when to beat."

Why it's so dangerous: "When an arrhythmia occurs, the heart stops listening to the SA node, turning its attention to other electrical signals," says Dr. Cummings. One form of arrhythmia, called atrial fibrillation, or AFib, can occur even in young athletic men. "It's like there are 300 voices inside the heart telling it what to do," says Dr. Cummings. Chaotic heartbeats cause the blood to swirl and eddy instead of flowing smoothly through the ventricles, and clots form as a result.

How to ID the problem: One telltale sign of an arrhythmia is a dramatic decline in endurance. If your regular cardio workout is suddenly a lot more exhausting, ask your doctor for an EKG. If that comes up clear, request a Holter monitor. It records your heart rhythm for 24 hours to detect more infrequent missed beats. Passing out may also be a sign of serious heart-rhythm trouble.

How to defend yourself: One of the most common causes of arrhythmia is high blood pressure, so keep yours under 120/80 millimeters of mercury. A massage may provide pleasurable stress relief. In a recent University of South Florida study, people who underwent three 10-minute massages a week experienced an 18-point drop in their systolic blood pressure and a 5-point drop in their diastolic blood pressure after just 10 sessions.

Source: Erin Hobday, "Young at Heart - 5 secrets to turning back the clock on your ticker", www.menshealth.com

Fitness Equipment Request Process



The process to request fitness equipment for your station is a fairly simple one. Like anything, it is budget-driven, which means that approval for your request is primarily based on the amount of money your station has in its fitness fund. Your station budget is dependant on a couple of things: 1) the number of people assigned to your station and 2) what you have purchased in the past.

Here's how you get your station money: Each sworn member of the department contributes \$1 a month into the fitness fund. The city then doubles that, contributing \$2 per month, per person into the fitness fund. So each member's total contribution into the fund is \$3/month, \$36/year. You can now calculate your station's yearly contribution based upon the number of people you have working.

Equipment request forms are available on the Health Center's web page located on Firewire. It requires signatures from all the captains working at that station to process. We advise that the captain's talk to all members on their shift about the equipment they are ordering. Once the equipment order sheet is filled out, it must be forwarded to Captain Jim Newman at fire station #35-C shift. He is the only person that facilitates this paperwork. He then will check your station budget and present it to the Fitness Fund Committee for approval. The Fitness Fund Committee meets regularly and processes the requests on a per-station basis. Often times, stations won't have the entire funds for a piece of equipment, but the Fitness Fund Committee will still purchase the equipment. This is done so that the members can stay fit and healthy. Consequently, it puts that station in the "negative" and will take them longer to build funds. This can cause some confusion in the future.

As our department continues to grow, station assignments play a role in the purchase of equipment. There are many times when crewmembers have requested certain equipment, and then are re-assigned shortly after. As members fill those vacant assignments and submit their own equipment requests, they often are disappointed because of the lack of funds in their station budget. For a small station, it may take a very long time to replenish the funds that were exhausted by the purchase of the previous crews. No one is to blame; it is just a fact of the process. This is why the Fitness Fund Committee urges all members to choose their purchases carefully and with the consent of all members at that station.

Lastly, it is important for all stations to maintain an inventory of all the equipment assigned to them. In order for the equipment request to be processed and delivered, all equipment at the station must be accounted for. Missing equipment should be documented by filling out an LSD. It is also the policy of the Fitness Fund Committee to not place electric equipment (mainly cardio equipment) outdoors. This wrecks havoc on these pieces of equipment and dramatically decreases their longevity. You should ensure that you have enough room in your station gym for the equipment requested. If you need equipment removed, simply send a request signed by all the captain's assigned to that station to Jim Newman, and he will facilitate the removal process.

Dumbbell front Squat with Arnold Press

Hold a pair of dumbbells in front of your chest with your palms in. Bend at the hips and knees to lower yourself until your thighs are parallel to the floor. Stand and press the weights overhead, rotating your wrists so that your palms face forward. Lower the dumbbells in front of your chest so your palms face you again. Do 12 reps.



Dumbbell Lunge with Biceps Curl

Stand holding a pair of dumbbells at arm's length at your sides. Step forward with your left foot until your right knee is an inch or two off the floor and your left thigh is parallel to the floor. Then do a biceps curl. Push back up to the starting position and repeat, this time stepping out with your right foot. That's one rep. Once you've completed 12 curls, place the weights on the floor and continue lunging for 12 more repetitions.





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