A Guide to Calculate the
True Age of Your Heart & Arteries

I watched my father work miracles as a vascular surgeon. Although I was too young to drive, I donned oversized scrubs and entered the operating room where he repaired diseased arteries in patients with cardiovascular disease. Afterward, I walked the hospital floors with him and was amazed by the technology and tubes extending from every orifice in their bodies. These treatments seemed needed by the thousands of eternally grateful patients. Yet their ordeals made a strong impression on me. Weeks later, these patients still required dressing changes to recover from their hospital-acquired wounds. I dreamed that one day I might be able to help patients avoid such invasive medical care. And, over the years that dream has become a reality.

The first step to avoiding cardiovascular disease--the #1 killer of Americans today—is to understand how your heart and arteries really age. Most of us have encountered cardiovascular disease, if not personally then with a relative or friend. But the true internal state of your cardiovascular system is a mystery to most everyone. The
traditional approach to evaluating heart disease does not address what’s actually happening within your arteries. So often, the tests we take are inadequate.

Here’s why: The single factor that causes most heart problems is not cholesterol per se, but the growth of plaque in your arteries. To get to the heart of the matter, we need to look at the growth of plaque. That’s how you can determine your heart’s true age.

How do we gauge plaque growth? It is simple and safe using ultrasound equipment similar to what monitors a fetus. This new carotid intimal-medial thickness testing (carotid IMT) precisely calculates arterial plaque growth and reliably estimates my patients’ arterial age.

The carotid arteries are the large ones that carry blood from the heart to the brain. The thickness of the plaque growth within the artery can be measured without radiation or needle sticks, just by a touch of gentle pressure on the neck. Research has shown that more than 90% of the time, the carotid arteries, the coronary arteries, and even the arteries in your legs grow plaque at the same rate. Therefore, the thickness of plaque in the carotid artery reflects growth everywhere, including the arteries that feed the heart. Several studies have shown that carotid IMT is an excellent and safe predictor of risk for future cardiovascular events.

The carotid arteries are much easier to get to than the arteries in your heart. To receive a carotid IMT test in my office, my patient simply lies on an exam table. I apply warm ultrasound gel to their neck. I gently pass a measuring device from the ultrasound machine over the skin and take pictures of the carotid arteries, which are just beneath the surface. The whole process usually takes 10 minutes. I transfer the images to my computer, enlarge them, and use fancy software to measure the plaque thickness. These measurements are accurate to hundredths of millimeters.
Studies in major medical journals have determined average plaque thickness in thousands of men and women. So once I’ve calculated my patient’s score, I use these figures to project their arteries’ average age. A 50-year-old woman, for instance, might have the plaque of a 40-, 50-, or 60-year-old . . . or even older.

We monitor artery age every year or two to clarify whether my patient’s plaque is growing, staying the same, or even shrinking. Repeated carotid IMT scans can project the age at which one will become high risk for a heart attack or stroke and, most importantly, can give us time to undertake therapy that prevents and reverses this aging process. I am now working with over 500 physicians who offer this type of testing across the United States.

As ideal as the Carotid IMT test is, however, it may be unavailable in your community. But there are other good ways to predict your heart’s true age and reverse your plaque score.

I have studied over 600 patients and compared nearly 100 lifestyle factors to identify which factors predict the age of your arteries, and which help patients shrink their arterial plaque. If you answer the quiz questions below and follow recommendations for each, you should be able to prevent arterial plaque growth over time. If you already have heart disease, these factors will help you shrink plaque.

**Guide to Assess the Health and Age of Your Arteries:**

1. **Aerobic fitness:** Use the fitness testing recommendations in *The 30-Day Heart Tune-Up*. Or, schedule a fitness test with a trainer at the gym. It doesn’t matter how many minutes you exercise a week. What matters is how fit you are. Getting fit is the best way to get trim, healthy, and sexy in less time.
2. **Fiber**: Eat at least 30 grams daily from veggies, beans, nuts, and fruits. Most Americans consume only 12 grams of fiber per day, which is tragic, as fiber is nearly miraculous for your health. Fiber has nutrients that slow aging, improve blood sugar and blood pressure levels, and improve your cholesterol profile. Fiber makes you feel full and satisfied, so you can reach your ideal weight. Fiber is awesome. Use the fiber table in *The 30-Day Heart Tune-Up* to calculate your fiber intake. Then identify fiber rich foods you can add to reach at least 30 grams daily. Most of your fiber should come not from grains (especially not from cereal and bread), but from vegetables, beans, nuts, and fruit.

3. **Eat Fish**: Enjoy cold water, small-mouth fish 3 times per week or take a fish oil supplement. If you don’t consume this type of fish 2-3 times per week, take a fish oil supplement. But be very careful with the quality of fish and fish oil you consume. Look for wild caught fish. For shellfish, ensure it is good quality. Always taste the quality of the oil—stick a needle in the capsule and taste it. It isn’t lemonade, but it should taste fresh.

4. **Systolic blood pressure**: It should be less than 120 and total blood pressure should be less than 120/80. If not, *The 30-Day Heart Tune-Up*, will show you how to get your blood pressure controlled naturally. If you do the fitness test with a trainer (highly recommended), assess your blood pressure response to exercise. Do you have young and healthy artery function, arterial dysfunction, or arteries that are sick and growing plaque? Your blood pressure response to exercise will answer you that question.

5. **Body Fat**: This is more important than weight! Go to a clinic or spa that can measure your body fat and lean mass. Typically they use a bioelectrical impedance scale which gives you your percent body fat. Optimal results vary by gender and age, so check the body fat table in *The 30-Day Heart Tune-Up* to clarify your results.
6. **Key Heart Nutrients:** In addition to meeting your fiber and fish oil needs, be sure to take a high quality multivitamin daily. Plus, there are several nutrients that have clear benefits for your heart and arteries, so don’t miss out! A few of the most important include magnesium, vitamin K, and potassium.

i. **Magnesium:** Magnesium is an essential mineral for health that is required for hundreds of anti-aging reactions. Unfortunately, 70% of Americans do not meet their minimal recommended magnesium intake and consequently suffer from the following symptoms:

- Constipation
- Elevated blood pressure
- Elevated blood sugar levels
- Muscle cramps
- Wheezing (asthma)
- Heart arrhythmias (which occasionally includes sudden cardiac death)
- Adequate magnesium intake has also been shown to lower your risk for a stroke

Foods rich in magnesium include nuts and seeds, beans, whole grains, and green leafy vegetables--many of which are an integral part of *The 30-Day Heart Tune-Up* Diet. Most people should consume at least 400 mg of magnesium daily. Check the magnesium table in *The 30-Day Heart Tune-Up* to calculate your typical daily intake to ensure you meet your needs.

ii. **Vitamin K:**

Vitamin K is essential for cardiovascular health because it prevents calcium from shifting from your bones to your arteries. Not surprising then, Vitamin K is essential to keeping your bones strong. It was originally named for its relation to clotting, as in the German word for coagulation begins with a K.
With Vitamin K deficiency, artery walls calcify, blood pressure increases, and the lining of your arteries grows more plaque. The minimum dietary intake for proper clotting is around 100 mcg per day (90 mcg for women, and 120 mcg for men). Yet bones and arteries function much better with at least 250 mcg and preferably 1000 mcg of Vitamin K daily. Check the Vitamin K table in *The 30-Day Heart Tune-Up* to calculate your typical daily intake to ensure you meet your needs.

**i. Potassium:**

Every cell in your body requires potassium to function. In particular, your arteries need potassium to dilate and keep blood pressure levels normally. Very low and very high potassium can cause your heart to stop beating or can lead to irregular heart rhythms that may result in death. Low potassium most commonly occurs as a side effect of medication, but it can also occur with low intake of potassium-rich foods. High potassium levels typically occur with kidney failure or as a side effect from a variety of medications. Unless someone has kidney disease, I have never seen a problem if a healthy person ate too much potassium-rich food.

Food Sources: We require at least 3,500 to 4,000 mg of potassium daily, yet typically most Americans only get half that much. As a consequence, our heart and arteries don’t function properly, which can lead to hypertension and muscle cramps too. Beans, fruits and vegetables, non-fat Greek yogurt, and seafood are good sources of potassium, as are some other lean protein sources. Check the potassium table in *The 30-Day Heart Tune-Up* to calculate your typical daily intake to ensure you meet your needs.
Summary

Following these recommendations to get fit, control body fat, and meet your key nutrient needs will allow you to prevent and even reverse heart disease. You can turn back the clock on your aging heart so that you feel younger, trimmer, fitter, mentally sharper, and sexier than you have in years.

I wish you the very best of health!

Steven Masley, MD

Steven Masley, M.D. is a physician, nutritionist, trained chef, & a fellow with the American Heart Association. His passion is empowering people to achieve optimal health through lifestyle changes. Dr. Masley is a Clinical Assistant Professor at the University of South Florida, and he has published several health books, including The 30-Day Heart Tune-Up, a breakthrough medical program to tune your heart, energy, waistline, and sex life. His work has been featured on Public Television, the Discovery Channel, the Today Show, plus over 250 media interviews. For additional information, visit his website: www.HeartTuneUp.com.