

Dr. Sinatra's

HEART SMART ZONE



What Your Bloodwork Numbers
Mean & How to Improve Them

STEPHEN SINATRA, M.D.

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NOTE: Stephen Sinatra, M.D., has extensive experience in the areas of preventive medicine and natural healing. The alternative therapies in this report have met stringent criteria for safety and effectiveness; however, they have not been reviewed by the Food and Drug Administration. The recommendations in this report are not intended to replace the advice of your physician, and you are encouraged to consult competent medical professionals for your personal health needs.

Meet Dr. Sinatra

Stephen Sinatra, M.D., is a highly respected and sought-after cardiologist whose integrative approach to treating cardiovascular disease has revitalized patients with even the most advanced form of cardiovascular disease.

His expertise is grounded in more than 40 years of clinical practice, research, and study beginning as an attending physician at Manchester Memorial Hospital (Eastern Connecticut Health Network). His career there included 9 years as chief of cardiology, 18 years as director of medical education, 7 years as director of echocardiography, 3 years as director of cardiac rehabilitation, and a year as director of the weight loss program.

In 1987, Dr. Sinatra founded the New England Heart Center. Through it, he became a well-known advocate of combining conventional medical treatments for heart disease with complementary nutritional, anti-aging, and psychological therapies.

Today, he brings this knowledge to the world as an author and lecturer, revealing groundbreaking therapies that are safe and effective. His health protocols place a strong emphasis on nutrition, supplements, and lifestyle choices—including his Pan-Asian Modified Mediterranean (PAMM) diet, a combination of Mediterranean and Asian cuisines.



Introduction

Dear Reader,

Bloodwork is one of the best windows into what is happening in the body. Hundreds of different things can be measured by looking at blood, but unfortunately many doctors still focus on the wrong ones when it comes to heart health. Cholesterol is the best example of this. While a few doctors are now enlightened about this topic, far too many patients still have their cardiovascular health judged and treated according to total cholesterol and LDL levels.

Twenty years ago, I, too, gave cholesterol more credence than it deserved. But clinical practice and a review of the research showed me that other factors provide an infinitely more accurate and comprehensive picture of heart health.

This pocket guide includes the most important heart health numbers to track, along with my suggested scores—which I refer to as the “Sinatra Smart Zone.” These are the scores I consider to be the optimal targets for preventive cardiology and smart medicine.

I encourage you to share this information with your doctor to ensure that you’re getting the most comprehensive blood workup possible. Then, fill in your own blood test results in the spaces provided on page 13, and compare your scores against the Sinatra Smart Zone for optimal heart health.

If your scores don’t fall within the Sinatra Smart Zone, I have included specific lifestyle interventions you can discuss with your doctor. You can select lifestyle changes and nutritional supplements from the list. You may need one or more to get your level into the Sinatra Smart Zone range. Retest blood levels as recommended by your M.D. Then, you can track your progress and watch the improvements!

From my heart to yours,

A handwritten signature in black ink that reads "Stephen Sinatra M.D." in a cursive script.

Sinatra Smart Zone Heart Test Scores

Coenzyme Q10 (CoQ10)

Smart Zone Target: 1.0–1.8 ug/mL for those in good health

One of my core nutrients for cardiovascular health, CoQ10, functions as both an antioxidant and a catalyst for the production and use of ATP in cellular mitochondria. Our bodies produce CoQ10 naturally; however, levels begin dropping around age 40. A CoQ10 level is not a common blood test (you'll probably have to ask your doctor order it), but it will reveal whether your cells have enough of this nutrient to function at their best.

Aim to reach or improve your CoQ10 blood levels to the following ranges when these medical conditions are present:

- 2.0–2.5 ug/mL if you have high blood pressure, mitral valve prolapse (MVP), arrhythmia, diabetes, or periodontal disease
- 2.5–3.5 ug/mL if you have mild to moderate congestive heart failure (CHF), angina, or chronic fatigue syndrome
- 3.5 ug/mL or more if you have severe CHF or are waiting for a heart transplant

Sinatra Solutions:

Take a highly bioavailable, hydrosoluble CoQ10 supplement, preferably one that's been clinically studied for absorption—meaning how well it raises your blood levels of CoQ10. Start with 100 mg CoQ10 twice daily, and increase that amount according to your blood level, which can be assessed 2–3 times a year.



C-Reactive Protein (CRP)

Smart Zone Target: <0.8 mg/dL

C-reactive protein (CRP) is a marker for inflammation that is directly associated with atherosclerotic plaque. Multiple studies have identified CRP as a potent predictor of cardiovascular events, and one that is far more reliable than elevated cholesterol levels. When testing CRP, make sure your doctor uses the high-sensitivity test (hs-CRP).

Sinatra Solutions:

- Weight Loss
- Exercise
- Low-dose aspirin (1–2 baby aspirin daily)
- Fish, squid, or algae oil, 1–2 g daily*
- Antioxidants with mixed forms of vitamin E daily
- Nattokinase, 100 mg daily
- Hydrosoluble CoQ10, 50–100 mg daily

**Both squid and algae oil contain higher amounts of DHA omega-3s than EPA in their natural state.*

Serum Ferritin

Smart Zone Target: Women <80 ug/L; Men <90 ug/L

This test is a measure of your iron levels. Though necessary for stimulating the production of hemoglobin that carries oxygen to our cells, too much iron can contribute to cardiovascular disease risk. One study found that people with excessive levels of ferritin were more than twice as likely to have heart attacks, and that every 1 percent increase in ferritin translated into a 4 percent increase in heart attack risk. Excessive levels of ferritin are one reason why postmenopausal women are at greater risk for heart attack than women who are still menstruating and losing blood each month.

Sinatra Solutions:

- If more than 100 ug/L, donate blood one to three times a year
- Do not take more than 500 mg vitamin C a day until your ferritin level has decreased to within normal limits
- If your level is more than 400, ask your doctor to check you for genetic hemochromatosis

Fibrinogen

Smart Zone Target: 180–350 mg/dL

Fibrinogen is a protein that influences the ability of your blood to clot. When fibrinogen levels are too low, blood won't clot; when they are too high, the opposite is true. In fact, a high fibrinogen level can contribute to inflammation, which can cause plaque, and the abrupt formation of a coronary thrombosis—the old-fashioned diagnosis we used to write down for a heart attack. The tendency toward a high fibrinogen level can be a genetic trait, so you must check this factor if you have a family history of cardiovascular disease. Women who smoke, take oral contraceptives, or are postmenopausal usually have higher fibrinogen levels and should also have this test done.

Sinatra Solutions:

- Drink ginger and/or green tea
- Fish, squid, or algae oil, 1–2 g daily*
- Garlic or bromelain, 500–1,000 mg daily
- Nattokinase, 100 mg daily

**Both squid and algae oil contain higher amounts of DHA omega-3s than EPA in their natural state.*



TSH

Smart Zone Target: 0.5–1.5

Your thyroid is a butterfly shaped gland that sits at the front of your neck. The thyroid gland receives a chemical message called thyroid stimulating hormone (TSH) from a part of your brain called the pituitary gland, which tells the thyroid how much thyroid hormone to secrete. Since thyroid hormones regulate your body's metabolism, low thyroid can affect every cell and system in your body including your heart. The TSH test helps determine if your thyroid is working properly.

Sinatra Solutions:

If you're not in the healthy range, work with your doctor to manage the situation.

Homocysteine

Smart Zone Target: 7 to 10 umol/L

Homocysteine is an amino acid produced by the body when it cannot effectively break down methionine, a component of protein. Some homocysteine is normal, but an excess causes your body to lay down sticky, artery-hardening platelets in blood vessels. In fact, some research shows that 42 percent of strokes, 28 percent of peripheral vascular disease, and approximately 30 percent of premature cardiovascular disease are directly related to excessive levels of homocysteine. If you've had a heart attack, stroke, or other cardiovascular event, ask your doctor to test your homocysteine levels. Also, if you take drugs that tend to elevate homocysteine—theophylline (for asthma), methotrexate (for cancer or arthritis), or L-dopa (for Parkinson's)—you should be tested.

Sinatra Solutions:

- Eat more beets, broccoli, and garlic
- Folic acid or Metafolin (MTHFR), 400 mcg daily
- Vitamin B6, 40 mg daily
- Vitamin B12, 200 mcg daily

NOTE: For individuals with genetic defects in folic acid metabolism, use Metafolin (MTHFR), a patented and highly absorbable form of folic acid.

Fasting Insulin

Smart Zone Target: <17 uU/mL

Similar to the fasting blood sugar test, this test measures how much insulin is in your blood at the time of collection. Insulin can have an inflammatory effect on the cardiovascular system, and elevated insulin levels may be a sign of insulin resistance.

Sinatra Solutions:

See fasting blood sugar solutions, page 8.



Fasting Blood Sugar

Smart Zone Target: <90 mg/dL

The fasting blood sugar test measures how much glucose is in your blood at the time of collection. It can be an early warning sign that your body is developing insulin resistance, which is a precursor to diabetes, and a cardiovascular risk factor.

Sinatra Solutions:

- Weight loss and exercise
- Restrict carbohydrates, especially sugary, high-glycemic carbs
- Pycnogenol, 100 mg daily
- Alpha lipoic acid, 100–300 mg daily
- Hydrosoluble CoQ10, 50–90 mg daily
- Cinnamon, 1,000 mg daily
- Gymnema leaf extract, 200–400 mg daily
- Crominex® 3+ chromium, 400 mcg daily
- Citrus Bergamot, 500–1,000 mg daily



Hemoglobin A1C

Smart Zone Target: <5.8% of total HGB

I recommend having an HbA1C test and a fasting insulin test to determine your level of insulin sensitivity. Both of these tests measure how much glucose is in your blood, but the HbA1C test measures the average amount of glucose in your blood over the previous several weeks. Together, the tests provide the most comprehensive picture of your blood sugar and insulin sensitivity.

Sinatra Solutions:

See fasting blood sugar solutions, above.

NOTE: If weight reduction, exercise, and supplements do not improve percentage, consider pharmaceutical therapy. Ask your physician about metformin, a glucose-lowering medication.

Lp(a)

Smart Zone Target: <30 mg/dL (Standard blood test)
<10 mg/dL (VAP test)

Lp(a), short for Lipoprotein(a), is a specific type of LDL cholesterol particle that can cause inflammation and clogging of blood vessels. Under normal circumstances, Lp(a) is a highly effective repair molecule in your artery walls. But when Lp(a) is elevated, it becomes one of the most dangerous risk factors for atherosclerosis and heart attack. That's why I consider Lp(a) to be a significant indicator of cardiovascular health and the most important form of cholesterol to monitor. Unfortunately, the amount of Lp(a) in your blood is entirely hereditary, so it is difficult to control.

To determine if you have elevated Lp(a) cholesterol levels, ask your physician to order the VAP test (www.thevaptest.com) or the LPP test from Spectracell (www.spectracell.com/lpp/). Quest Diagnostics also now offers a test that measures Lp(a). Unlike the generally useless standard lipid tests, these new-generation “fractionation” tests can monitor your cholesterol particle patterns in addition to and evaluating your Lp(a) level.

Sinatra Solutions:

- Fish, squid, or algae oil, 1–2 g daily*
- Avoid foods with trans fatty acids
- Nattokinase, 50 mg twice a day
- Lumbrokinase (Boluoke), 20 mg one to two times daily
- Niacin, 250–500 mg three to four times daily[†]
- Vitamin C, 500–1,000 mg
- Women: Consider natural estrogen therapy
- Men: Avoid soy and consider testosterone therapy



**Both squid and algae oil contain higher amounts of DHA omega-3s than EPA in their natural state.*

[†]You need to use regular niacin, nonflush niacin won't work. When you take niacin, particularly at such high doses, you may experience a hot, tingly sensation—the famous “niacin flush.” The best way to deal with the flush is to start at a very low level like 100 mg, and then very slowly increase the dosage, and take it right after a meal to ease the intensity.

LDL

Smart Zone Target: 80-140 mg/dL; also test for the prevailing particle pattern

Low-density lipoprotein (LDL) is one of the proteins that manages the movement of cholesterol. It has been traditionally referred to as “bad,” but that is misleading. Cholesterol is a vital material needed to repair damage inside arteries and blood vessels, and it is essential to the production of vitamin D and many hormones. LDL is simply the vehicle that takes cholesterol to the locations where it’s needed. There are two things to remember with regard to LDL: (1) LDL is only dangerous when it becomes oxidized, and (2) how much LDL you have is far less important than your dominant particle pattern. That is, are your LDL particles small and dense or light and fluffy? Small, dense LDL is more inflammatory and must be managed more closely. A cholesterol fractionation test can reveal which pattern you favor.

For small particle B >1000, you can add more saturated fats to your diet, like coconut oil, and more unsaturated fats like extra virgin olive oil to help make the particle size B more fluffy like particle A, which is less inflammatory.

Sinatra Solutions:

- To prevent LDL cholesterol oxidation, avoid environmental toxins and inflammatory components in our diet including sugar, processed foods, and foods that contain high fructose corn syrup or preservatives
- Squid, fish, or algae oil, 1–2 grams daily*

**Both squid and algae oil contain higher amounts of DHA omega-3s than EPA in their natural state.*



HDL

Smart Zone Target: >35 mg/dL and <95mg/dL

High-density lipoprotein (HDL) is another protein that manages the movement of cholesterol through the body. It is often referred to as “good” because its job is to scavenge excess cholesterol molecules and transport them back to the liver for recycling or removal. Low HDL is common in coronary artery disease.

Sinatra Solutions:

- Assess for insulin resistance if HDL is low
- Reduce weight and exercise
- Extra virgin olive oil (EVOO), 1–2 Tbsp daily*
- Eat fewer high glycemic carbohydrates
- Niacin, 500–1,000 mg daily
- CoQ10, 50–100 mg daily

**Drizzle EVOO on salads or take by mouth. California brands preferred, as some European brands are cut with canola oil, which is inflammatory.*

**You need to use regular niacin, nonflush niacin won't work. When you take niacin, particularly at such high doses, you may experience a hot, tingly sensation—the famous “niacin flush.” The best way to deal with the flush is to start at a very low level like 100 mg, and then very slowly increase the dosage, and take it right after a meal to ease the intensity.*

Triglycerides

Smart Zone Target: <100 mg/dL

Triglycerides are fatty particles that tend to be deposited and stored in body fat (think “love handles”). A high triglyceride level is more dangerous for women than for men, so if you are a woman and your triglycerides are elevated (above 200 mg/dL), put some effort into lowering them, especially if you are a diabetic. If you are a diabetic woman who also has high triglycerides, your risk of developing heart disease increases to 200 times normal.

Sinatra Solutions:

- Weight reduction and exercise
- Reduce alcohol intake
- Restrict carbohydrates

- Fish or squid oil, 2–3 g daily*
- L-carnitine, 1–2 g daily

**Squid oil contains higher amounts of DHA omega-3s than EPA in its natural state.*

AA/EPA Ratio

Smart Zone Target: 1.5–3.0

This test measures your ratio of omega-6 to omega-3 fatty acids by comparing the levels of arachidonic acid (AA) to eicosapentaenoic acid (EPA). If the ratio is too high, there's not enough anti-inflammatory EPA in the body to neutralize the pro-inflammatory AA. Statins unfortunately can worsen (elevate) the AA/EPA Ratio. If you are on a statin, you may need to take additional squid/fish oil.

Sinatra Solutions:

- Fish or squid oil, 2–3 g daily*

**Squid oil contains higher amounts of DHA omega-3s than EPA in its natural state.*

Triglyceride/HDL Ratio

Smart Zone Target: <2.1

We used to look closely at the ratio of LDL/HDL, but that is outdated. I now believe it's far more important to look at your HDL number in relation to your triglyceride level. Ideally, you want to achieve no more than a two-to-one ratio of triglycerides to HDL cholesterol. For example, if your triglycerides are 100 mg/dl, you want your HDL cholesterol to be 50 mg/dl. I don't like to see a blood ratio that's greater than five.

Sinatra Solutions:

See HDL and Triglycerides solutions, page 11.



CHLORIDE	1.04
CARBON DIOXIDE	15
UREA NITROGEN	6.1
CREATININE	3.0
UREA/CREATININE RATIO	9.7
GLUCIC ACID	
PHOSPHORUS	64
CALCIUM	3.7
CHOLESTEROL, TOTAL	
HDL CHOLESTEROL	
CHOLESTEROL/HDL RATIO	
LDL CHOL, CALCULATED	112
See footnote 1	7.6
TRIGLYCERIDES	8
TRIGLYCERIDES, TOTAL	

Track Your Progress

Test	Sinatra Smart Zone	Your Score Date: _____	Your Score Date: _____	Your Score Date: _____
Coenzyme Q10 (CoQ10)	1.0-1.8 ug/mL			
C-Reactive Protein (CRP)	<0.8 mg/dL			
Serum Ferritin	Women <80 ug/L; Men <90 ug/L			
Fibrinogen	180-350 mg/dL			
TSH	0.5-1.5			
Homocysteine	7 to 10 umol/L			
Fasting Insulin	<17 uU/mL			
Fasting Blood Sugar	<90 mg/dL			
Hemoglobin A1C	<5.8% of total HGB			
Lp(a)	<30 mg/dL (Standard blood test) <10 mg/dL (VAP test)			
LDL	80-140 mg/dL; also test for the prevailing particle pattern			
HDL	>35 mg/dL and <95 mg/dL			
Triglycerides	<100 mg/dL			
AA/EPA Ratio	1.5-3.0			
Triglyceride/HDL Ratio	<2.1			
Body Mass Index	<25			
Blood Pressure	<120 over 80 mmHg			

Two More Numbers That Are Important to Track

In addition to your bloodwork, there are two more numbers that are important to watch—your body mass index (BMI) and blood pressure.

Body Mass Index (BMI)

Your BMI is a very important number to track since a normal BMI is important for heart health. This is a number you can track right at home without the help of your doctor. BMI is a straightforward calculation based on your height and weight. Even though there is some controversy about the accuracy of BMI for athletes in training, it does offer valuable information for most people. All you need is a measuring stick and scale.

To Calculate Your BMI:

- Divide your weight in pounds by your height in inches squared.
- Multiply that number by 704.5 to get your BMI.

For instance, the BMI of a 154-pound woman who is 5 feet 5 inches tall is computed this way:

- $154 \text{ pounds} / (65 \text{ inches} \times 65 \text{ inches} = 4,225 \text{ inches}) = .0364$
- $.0364 \times 704.5 = 25.6$

Smart Zone Target:

- Less than 18.5 is considered “underweight”
- Between 18.5 and 24.9 is considered healthy
- 25 to 29.9 is “overweight”
- 30 to 39.9 is “obese”
- 40 or more is “extremely obese”



Sinatra Solutions:

If you have a BMI score that's greater than 25, use the following solutions:

- Exercise at least five hours a week.
- Eat natural, high-fiber foods and include healthy fats—monounsaturated fats and omega-3s—as much as possible. Periodically use a juicer to make fresh juices, which are abundant in health-promoting enzymes.
- Nix wheat, white rice, and other white flour carbs.
- Limit carbohydrates to <30% of caloric intake in order to achieve a healthier BMI.
- Include more healthy fats, like extra virgin olive oil and coconut oil.
- Drink water—8 to 12 glasses per day of distilled water or water in glass bottles is preferred.
- Avoid most processed foods, chemicals, trans fats, sugar, caffeine, alcohol, and preservatives (nitrates, benzoates, MSG, etc.).
- Take vitamins, minerals, and phytonutrients, especially magnesium, coenzyme Q10 (CoQ10), L-carnitine, green tea extract, and chlorophyll (green foods).
- Get lots of fresh air.



Blood Pressure

High blood pressure can lead to poor heart, kidney, and eye health and increases your chances of having a stroke. The trouble, though, is that high blood pressure often presents itself with no symptoms, which is why it's referred to as the “silent killer.” The most important thing you can do to keep yourself out of the “danger zone” is to test your blood pressure levels regularly.

To get an accurate blood pressure reading, you want to refrain from talking and try to relax. Posture is also extremely important. You want to position yourself in a seat with back support, with your feet resting on the floor (not dangling). You also want to rest your arm on a table at “heart level” and test both arms since readings can vary.

Smart Zone Target:

Less than 120 over 80 mmHg. Readings of 140 mmHg over 90 mmHg or greater are considered “high blood pressure.” Readings higher than 180 mmHg over 110 mmHg is considered a hypertensive crisis, where emergency care is needed.

Sinatra Solutions:

- Weight loss
- Exercise
- Drink plenty of water, eight 10-oz glasses daily
- Reduce sodium to 2.8 g daily
- Increase potassium to 3,000–4,000 mg daily if you don't have renal (kidney) problems
- Coenzyme Q10, 200–300 mg daily
- Magnesium, 400 mg daily
- Garlic, 500–1,000 mg daily in softgel form
- Hawthorne, 500 mg 2–3 times daily, until you see results
- Reduce stress





It's Easy to Connect with Dr. Sinatra Anywhere, Anytime!

To make sure you stay on top of the latest news and recommendations regarding your heart and your health, keep in touch with Dr. Stephen Sinatra 24 hours a day, 7 days a week, via one of these channels:



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drs Sinatra.com and heartmdinstitute.com empower you with the tools and information you need to take an active role in managing your health. You can easily access a wide range of health conditions, get answers to the most frequently asked questions about heart health, or read Dr. Sinatra's blog where he discusses the latest integrative solutions to keep your heart healthy.



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