THE ARISING

Preventing Heart Attacks and Strokes

CARDIOVASCULAR HEALTH



NOVEMBER 2026

The future often arrives quietly

A prevented stroke has no dramatic before-and-after photograph. Neither does a heart attack that never happens. Prevention leaves its most important evidence in the ordinary days that remain available: a walk, a conversation, a project, another season of familiar pleasures.

That can make it easy to undervalue. An experimental treatment arrives with a name and a promise. A well-run prevention plan may look like a cuff on a kitchen table, a prescription that is affordable enough to refill, and a conversation about a side effect before it becomes a reason to stop treatment.

Cardiovascular research offers a useful standard for longevity claims. Identify the people being studied. Compare defined strategies. Measure events that matter. Count harms alongside benefits. The intervention may be familiar and the result may still be consequential.

This issue follows that standard through blood pressure, cholesterol, food, aspirin and emerging prediction tools. It is a guide to interpreting evidence and preparing better conversations, not a prescribing manual. The studies describe different populations, so their results cannot be assembled into a single personal risk forecast.

Begin with the right question

“Is this good for the heart?” is usually too broad. A more useful question is: “Compared with what, for whom, and for which outcome?” A medicine may lower a laboratory measurement without yet having shown that it prevents a heart attack. A risk score may predict illness without proving that acting on the score helps. A treatment can reduce one outcome while increasing another.

Three distinctions recur throughout this issue. **Primary prevention** aims to prevent a first cardiovascular event. **Secondary prevention** concerns people with established disease. A **surrogate endpoint** is a measurement used to stand in for a clinical outcome. These distinctions are practical tools: they help stop a promising result from being stretched beyond the people and outcomes actually studied.

The hopeful message is that prevention can be tested. Its value does not have to rest on a compelling mechanism or a persuasive story. There are trials with heart attacks, strokes and deaths in the outcome column. Reading those trials carefully helps turn hope into a decision that can be discussed, monitored and revised.

Blood pressure: a number with a method behind it

Blood pressure deserves attention partly because measurement seems so simple. A cuff inflates, two numbers appear, and the result looks precise. Yet the reading belongs to a setting: the cuff size, posture, recent activity and the moments before measurement all matter. A number without that context can mislead.

For home measurement, the American Heart Association recommends an automatic, validated upper-arm monitor with a correctly fitting cuff. Avoid smoking, caffeine and exercise for 30 minutes beforehand; empty your bladder and rest quietly for at least five minutes. Sit with your back supported, feet flat and arm supported at heart level. Measure on bare skin without talking. Take two readings one minute apart and record them. Bring the monitor to an appointment so your team can check its use and accuracy. Home monitoring does not replace medical follow-up, and readings are not instructions to change medication independently. [6]

What SPRINT actually tested

SPRINT assigned 9,361 adults at increased cardiovascular risk, without diabetes or previous stroke, to systolic targets below 120 or below 140 mm Hg. In the final report, the primary composite outcome occurred at rates of 1.77% versus 2.40% per year during the trial, with median follow-up of 3.33 years. The hazard ratio was 0.73 (95% confidence interval 0.63-0.86). All-cause mortality was also lower in the intensive group. [1]

The composite included myocardial infarction, other acute coronary syndromes, stroke, acute decompensated heart failure and cardiovascular death. Some serious adverse events were more frequent with intensive treatment: hypotension, electrolyte abnormalities, acute kidney injury or failure, and syncope. [1]

Those findings support a studied strategy in a defined population. They do not make “lower at any cost” a sensible personal goal. The annual event-rate difference was 0.63 percentage points, calculated as 2.40 minus 1.77. That is not a 0.63-point cumulative risk reduction, nor is the hazard ratio a person's probability of benefit. [1]

Make the measurement useful

A record becomes more useful when it is attached to a plan. Ask your clinician what schedule to follow, which readings should prompt a call, and how symptoms such as dizziness should be handled. Discuss barriers plainly: the monitor is confusing, the tablets are difficult to afford, or the medication schedule collides with work. A sophisticated target is of little use if the system around it cannot be sustained.

Cholesterol: connect the laboratory to lived outcomes

A laboratory report invites attention to the highlighted number. The more important question is what changing that number accomplishes. LDL cholesterol is a familiar example, and drug trials make it possible to distinguish biochemical change from clinical benefit.

In FOURIER, 27,564 people with established atherosclerotic cardiovascular disease, LDL cholesterol of at least 70 mg/dL and background statin treatment were assigned to evolocumab or placebo. Over a median 2.2 years, the primary composite outcome occurred in 9.8% versus 11.3%, respectively: hazard ratio 0.85 (95% confidence interval 0.79-0.92). That endpoint combined cardiovascular death, heart attack, stroke, hospitalization for unstable angina and coronary revascularization. [4]

The observed proportion difference was 1.5 percentage points, calculated as 11.3 minus 9.8. This is a trial-level description, not an individualized forecast. Injection-site reactions were more frequent with evolocumab, 2.1% versus 1.6%. The trial was funded by Amgen. [4]

The important boundary is the population. These participants already had disease and were receiving statins. The result cannot simply be transferred to a young person with a mildly abnormal result, or to a different medicine because it acts on a related biological pathway.

Read the endpoint, not just the headline

Composite outcomes help trials count related events, but the components are not interchangeable experiences. A hospital admission and a death are different. A headline that says “cardiovascular benefit” needs the endpoint definition beneath it.

Likewise, percentages need a denominator and a time horizon. A relative effect can sound large while the absolute difference is modest. Both can be true. The absolute benefit may still be worthwhile, particularly to someone at higher baseline risk, but it must be weighed against cost, burden, side effects and personal priorities.

A useful consultation does not need to become a statistics seminar. Ask which outcome the proposed treatment has been shown to improve, whether the evidence includes people like you, and what follow-up would show whether the plan is working. If a clinician recommends another test, ask what decision its result could change. Curiosity is most valuable when it leads somewhere concrete.

Food: the pattern, the support, the evidence

Food is both biology and daily life. Advice that ignores taste, time, culture or cost may be elegant on paper and unworkable at dinner. A useful eating pattern has to fit a household as well as a hypothesis.

The corrected 2018 PREDIMED report studied 7,447 adults aged 55-80 in Spain who were at high cardiovascular risk but had no cardiovascular disease at enrollment. Participants were assigned to a Mediterranean diet supplemented with extra-virgin olive oil, one supplemented with nuts, or advice to reduce dietary fat. They received educational sessions; the intervention groups received the assigned foods. [2]

Over median follow-up of 4.8 years, the primary outcome of heart attack, stroke or cardiovascular death occurred in 3.8%, 3.4% and 4.4%, respectively. Adjusted hazard ratios versus control were 0.69 (95% CI 0.53-0.91) and 0.72 (0.54-0.95). The original report was withdrawn and replaced after allocation irregularities were identified. The revised analyses addressed those problems, but the history remains part of the evidence. [2]

This was a supported dietary intervention in a particular population, not a trial of an isolated “superfood” or supplement. Adding olive oil to an otherwise unchanged routine is not the same intervention. [2]

Build something repeatable

For a reader, the practical starting point can be a discussion of the eating pattern already in place. What meals recur? What is convenient on difficult days? What changes would the household actually enjoy? These are implementation questions, not claims that one menu guarantees protection.

The same discipline applies to activity, smoking cessation and sleep concerns: bring them into the prevention conversation rather than treating a laboratory result as the whole story. Ask for help that fits the obstacle. Someone may need a gradual activity plan, someone else support for stopping tobacco, and another person an assessment of symptoms that are interfering with sleep.

A prevention plan should be specific enough to try and flexible enough to revise. “Be healthier” offers no useful feedback. “Discuss a feasible walking routine and review what got in the way” does. Progress is easier to recognize when the next step is small, explicit and connected to a follow-up conversation.

More treatment is not always better

Aspirin illustrates why a familiar medicine still needs a specific reason. Its role after a cardiovascular event cannot be assumed to establish benefit for a person who has never had one.

ASPREE enrolled 19,114 community-dwelling older adults without cardiovascular disease, dementia or disability. Participants were generally at least 70 years old, with a lower age threshold of 65 for Black and Hispanic participants in the United States. They received low-dose aspirin or placebo. [3]

Over median follow-up of 4.7 years, cardiovascular disease rates were 10.7 versus 11.3 events per 1,000 person-years: hazard ratio 0.95 (95% confidence interval 0.83-1.08). Major hemorrhage rates were 8.6 versus 6.2 per 1,000 person-years, with hazard ratio 1.38 (1.18-1.62). The study did not find a statistically significant reduction in cardiovascular disease and did find more major bleeding. [3]

This does not mean that nobody should take aspirin. It means that this primary-prevention population had a different balance of benefit and harm from the one readers may imagine. Do not start or stop prescribed aspirin on the basis of this article; discuss why it was recommended for you. [3]

Count the burdens that matter

Trial reports quantify selected harms. Life adds others: appointments, inconvenience, uncertainty, financial pressure and the effort of keeping a regimen organized. These burdens are not reasons to dismiss effective care. They are reasons to design care that can actually be followed.

A useful review asks whether each medicine still has a clear purpose, whether the intended benefit applies to the person taking it, and whether the follow-up plan is realistic. Bring an accurate medication list, including nonprescription products, rather than relying on memory. Questions about interactions and side effects deserve professional review, not trial and error at home.

The central idea is proportionality. Prevention should address meaningful risk with an intervention that has a reasonable chance of helping, at an acceptable burden. There is no award for having the longest list of treatments.

Prediction must earn its place

New models may find information in measurements already collected for another purpose. Overnight electrocardiography is one example. A 2026 study trained a deep-learning model on sleep-study ECGs from 15,809 patients and externally evaluated it in cohorts of 9,810 and 12,576. Outcomes came from electronic health-record codes. [5]

Model outputs were associated with several later cardiovascular outcomes. But performance was not uniform: for myocardial infarction, one external cohort's hazard-ratio confidence interval included 1. The study reports prediction associations, not a randomized demonstration that model-guided care prevents events. [5]

That distinction matters because a risk label begins a chain of decisions. It may lead to another test, more monitoring, treatment or anxiety. The relevant question is whether that chain improves outcomes enough to justify its burdens. A model that ranks risk is not automatically a treatment strategy.

Four questions for a new test

What would change? Before collecting another number, identify the decision it could influence. If neither a high nor low result changes the plan, the information may have limited practical value.

Who was represented? A model trained in people referred for sleep testing is being evaluated in a particular clinical setting. Applicability elsewhere requires evidence rather than assumption.

How are mistakes handled? A false alarm and false reassurance have different consequences. A useful tool needs a plan for both, including an appropriate clinical response and a clear account of uncertainty.

Has using it helped people? Prediction studies, implementation studies and outcome trials answer different questions. All can contribute, but one should not be substituted for another.

None of this requires pessimism about new technology. It gives promising tools a fair test. The opportunity is not simply to discover more signals; it is to turn a trustworthy signal into a better decision.

A prevention conversation worth having

A good appointment can end with fewer unresolved questions, even when it does not produce a new prescription. Consider bringing a short agenda:

- Which risks deserve attention first in my situation?
- Are we preventing a first event, or treating established cardiovascular disease?
- Which measurements do we trust, and which need confirmation?
- What benefit is expected from the proposed treatment, over what period, and with what uncertainty?
- What side effects, costs or practical obstacles should we plan for?
- When will we review the plan, and what should prompt earlier contact?

These questions are not a substitute for clinical expertise. They help connect it to a person's actual life. A plan that makes sense in the consultation should still make sense on an ordinary Tuesday.

Know when prevention becomes urgent care

Possible heart-attack symptoms include chest pressure or discomfort, discomfort elsewhere in the upper body, shortness of breath, cold sweat, nausea or lightheadedness. Symptoms can start mildly or come and go. If you think you may be having a heart attack, call emergency services immediately, even if you are unsure. In the United States, call 911; elsewhere use the local emergency number. Do not wait for a routine appointment or a better home-monitor reading. [7]

The ordinary future is the point

The aim of cardiovascular prevention is not perfect numbers for their own sake. It is more life available for living. Numbers are useful when they support that aim; treatments are useful when their benefits justify their burdens; emerging discoveries become useful when they improve decisions.

The future of heart health includes new biology and better technology. It also includes the less visible work of reliable measurement, appropriate treatment, accessible follow-up and habits people can sustain. Familiar care can still be a powerful expression of optimism.

Sources & further reading

The following studies examine different populations, treatments and outcomes. Their findings should not be combined into a personal treatment plan.

1. SPRINT Research Group et al. Final Report of a Trial of Intensive versus Standard Blood-Pressure Control. NEJM, 2021. DOI: 10.1056/NEJMoa1901281. Randomized human outcome trial. NIH-funded. Event rates and harms refer to the trial intervention period unless stated otherwise.
2. Estruch et al. Primary Prevention of Cardiovascular Disease with a Mediterranean Diet Supplemented with Extra-Virgin Olive Oil or Nuts. NEJM, 2018. DOI: 10.1056/NEJMoa1800389. Corrected and republished trial report. Allocation irregularities and revised analyses disclosed. Funded by Instituto de Salud Carlos III, the Spanish Ministry of Health and others.
3. McNeil et al. Effect of Aspirin on Cardiovascular Events and Bleeding in the Healthy Elderly. NEJM, 2018. DOI: 10.1056/NEJMoa1805819. Randomized human trial. Cardiovascular disease and hemorrhage were secondary endpoints. Funded by the National Institute on Aging and others.
4. Sabatine et al. Evolocumab and Clinical Outcomes in Patients with Cardiovascular Disease. NEJM, 2017. DOI: 10.1056/NEJMoa1615664. Randomized secondary-prevention outcome trial. Amgen-funded. Evidence is specific to evolocumab added to statin therapy in the studied population.
5. Koscova et al. Prediction of cardiovascular outcomes using electrocardiography from overnight polysomnography. Sleep, 2026. DOI: 10.1093/sleep/zsag229. Model development and external validation using patient cohorts. Association and prediction, not established clinical utility.
6. American Heart Association. Home Blood Pressure Monitoring. Public patient guidance on home measurement.
7. American Heart Association. Warning Signs of a Heart Attack. Public emergency guidance.

Educational information, not individual medical advice. Discuss treatment decisions with a qualified clinician. Do not change prescribed medicines independently.