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The Heat, the Pause, the Possibility

SAUNA & HEALTH



NOVEMBER 2026

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Sauna, human evidence, and the difference between a promising signal and a proven benefit

The Arising · Sauna · November 2026

A warm room can offer something immediately recognizable: a pause. Away from a screen, a schedule or a demanding day, the experience may be valuable without having to prove that it adds years to life. The science asks a separate question. What does repeated heat exposure change in the body, and do those changes improve outcomes that matter?

Sauna is a particularly useful subject for learning how to read health evidence. Studies that watched people’s habits have found striking links with health. Small trials have tested shorter-term changes in the body. Laboratory research offers possible explanations for how the body adapts to heat. Those are complementary kinds of information, but they are not interchangeable.

This standalone issue follows the evidence from groups followed in Finland to a trial that assigned people by chance to exercise with or without sauna, then to emerging work and practical safety questions. It treats hormesis as a possible framework for understanding adaptation, not a promise that discomfort creates health. It also keeps Finnish sauna, infrared exposure and other forms of heating distinct.

This is general education, not clearance to use a sauna or a personal heat protocol. The temperature, duration and frequency described in studies are research exposures, not recommendations for readers. Health conditions, medication effects, heat tolerance and the setting can change what is appropriate.

1. First identify the heat

“Sauna” can refer to different experiences. Traditional Finnish-style sauna, infrared sauna and steam bathing differ in how heat reaches the body and in their surrounding conditions. Hot-water immersion is another exposure again. A finding from one should not silently become a claim about all of them. [4,5]

The temperature printed on a display is only part of an exposure. Duration, humidity, repeat sessions, cooling practices and the person using the room all matter to interpretation. The purpose here is not to calculate a universal dose. It is to ask whether the intervention in a paper resembles the product or practice being discussed.

For example, a trial that places a sauna after supervised exercise tests a combination. A single infrared session in a selected clinical group tests what happens soon after exposure. A Finnish cohort that asks about usual habits describes what happened among people with different patterns of use. None of those

designs alone establishes which device to buy, how long to stay or whether a particular person should enter a sauna.

A useful first question is therefore very plain: **what exactly was studied?** The second is equally important: **what happened, and over what timescale?** A lower blood-pressure reading after heat exposure, a change after eight weeks, and fewer deaths over two decades are different results, and they answer different questions.

2. The long view: what the Finnish cohort found

The 2015 Kuopio study followed 2,315 middle-aged men from eastern Finland. They were 42 to 60 years old when the study began. Researchers asked about their sauna habits at the start and followed them forward in time. The midpoint of the follow-up periods was 20.7 years: half were followed for longer and half for less time. Researchers watched an existing group, called a cohort; they did not assign people to sauna schedules. [1]

The most frequently discussed comparison is between men reporting one session per week and those reporting four to seven. Sudden cardiac death was less common in the more-frequent group. Researchers used a calculation that considers when deaths happened and tries to account for measured heart-disease risk factors. It gave a hazard ratio of 0.37, where 1 would mean no difference. The 95% confidence interval, 0.18 to 0.75, describes statistical uncertainty around that estimate under the study's assumptions. It suggests a lower rate, but leaves uncertainty about the size of the difference. In the two-to-three-session group, the ratio was 0.78 and the interval was 0.57 to 1.07. That range crosses 1, so this comparison did not clearly distinguish a lower rate from no difference. [1]

A hazard ratio describes a relative comparison of event rates over follow-up. It is not the percentage of individual users whose lives were saved. The observed sudden-cardiac-death counts were 61 of 601 in the once-weekly group, 119 of 1,513 in the two-to-three group, and 10 of 201 in the four-to-seven group. Those are observations in this cohort, not personalized forecasts. [1]

More-frequent sauna use was also linked with fewer deaths from coronary heart disease, from heart and blood-vessel disease more broadly, and from all causes combined. The finding is worth investigating. It is not enough to conclude that choosing a higher sauna frequency caused the full difference or that a reader would reproduce it. [1]

What adjustment cannot settle

People with different habits may also differ in health, fitness, social circumstances and other exposures. Researchers can use calculations to try to account for differences they measured, such as known health risks. They cannot be sure they measured or fully accounted for everything that mattered. Health can also influence whether someone uses a sauna, rather than sauna use being the only influence on health.

Habits were recorded at the start and may have changed later. Who took part also matters. A pattern recorded in Finnish men several decades ago is not a universal experiment in all ages, sexes, climates and sauna types. The study is a strong reason for further research, but its frequency categories should not become a prescribed weekly target.

The session-duration analysis has the same boundary. Longer sessions were associated with lower sudden-cardiac-death risk in the cohort, but this does not show that remaining in the heat longer is safer or more beneficial for a particular person. An observed association is not an endurance challenge.

3. Brain health: another question in the same population

A later report examined dementia and Alzheimer's disease in 2,315 Finnish men with the same baseline age range and a median follow-up of 20.7 years. It recorded 204 dementia diagnoses and 123 Alzheimer's diagnoses. Dementia was diagnosed at a lower rate among those reporting four-to-seven weekly sessions than among those reporting one. The hazard ratio was 0.34, with a 95% confidence interval of 0.16 to 0.71. As with the heart findings, this describes a relative difference over time, with uncertainty about its size. It does not mean sauna prevented dementia in 66 out of every 100 people. [2]

This is not a randomized dementia-prevention trial. It should not be presented as evidence that sauna prevents Alzheimer's disease, treats an existing memory disorder or replaces established care. The association may suggest questions about how heart health, heat exposure and brain health fit together. It does not tell us whether sauna caused the difference.

There is also an important counting lesson: publications examining different outcomes in the same cohort do not represent entirely independent populations. Several headlines can arise from one group of participants. Repetition across articles is not the same as replication in a new setting.

For a reader concerned about memory, the practical value is a better question about the evidence, not a new obligation to use a sauna. Interest and uncertainty can coexist without either dismissing the research or overstating it.

4. What happened when researchers assigned an intervention?

A 2022 randomized study tested eight weeks of exercise with or without postexercise sauna, alongside a control group. Participants had low activity levels and at least one traditional cardiovascular risk factor. Forty-eight people entered the groups. One left early, leaving 47 people in the analysis. Only six of those analyzed participants were men. [3]

Both exercise groups followed a supervised program that included strength training and aerobic exercise, such as activity that raises breathing and heart rate. The combined group then had 15 minutes of sauna after exercise. There were three exercise sessions per week. These details describe the trial, not a general heat prescription. [3]

The exercise-plus-sauna group improved more on an estimate of aerobic fitness, the ability to sustain activity using oxygen. Compared with exercise alone, the difference was 2.7 mL/kg/min. This unit expresses oxygen use per kilogram of body weight each minute. The 95% confidence interval ranged from 0.2 to 5.3, so the size of the extra improvement remained uncertain. The combined group also had an 8-point greater drop in systolic blood pressure, the top number in a blood-pressure reading. The reported difference was minus 8.0 mmHg, with an interval from minus 14.6 to minus 1.4. Both results favored the combined program, but neither tells us whether people avoided illness later. [3]

“Estimated” matters. Researchers estimated fitness from a cycling test below maximum effort. They did not directly measure oxygen use while participants exercised to their maximum. The blood-pressure result is a group comparison over an eight-week intervention, not a promise that a reader's pressure will fall by eight points. [3]

What the trial can and cannot tell us

Assigning groups by chance makes the comparison more reliable, but the study was small and short. There was no sauna-only group, so it does not tell us what sauna alone would have done. Diet was not controlled throughout the trial. The selected population and supervised setting also limit how broadly the results can be applied. [3]

The exclusions are especially relevant to safety. Participants with diagnosed or symptomatic cardiovascular disease, previous coronary heart disease or diabetes, certain blood-pressure levels, or cardiovascular medication use were excluded. A trial in selected adults with risk factors is not clearance for people taking blood-pressure medicines or living with heart disease. [3]

The outcomes were fitness estimates and cardiovascular measurements, not heart attacks, dementia or lifespan. The study provides a useful signal that sauna may add to exercise under particular conditions. It does not establish that sauna replaces exercise, medication or a comprehensive prevention plan.

5. Emerging clinical work needs its own boundaries

A 2026 pilot studied supervised sauna in stable outpatients with heart failure with preserved ejection fraction, a form of heart failure in which the fraction of blood pumped out with each beat remains preserved. The preserved fraction does not mean that heart function is normal. Eighteen patients completed the program. The report described improved exercise measures after ten weeks and no reported harmful events among those who completed it. It also reported that some benefits diminished after the program stopped. [8]

Those observations are preliminary. The study was not a large randomized controlled trial, and a before-and-after change cannot fully separate an intervention effect from other influences. “No reported harmful events” in a small selected group does not establish safety for everyone with heart failure. The

supervised setting, stability of the participants and monitoring are part of the evidence, not optional details. [8]

A separate small 2026 study tested one far-infrared sauna session in ten people with chronic kidney disease, ranging from mildly to severely reduced kidney function (stages G2-G4). It used a crossover design, in which the same people take part in different test conditions. Researchers reported short-term changes in blood-vessel measurements and walking performance. They did not find clear changes in the kidney measurements they tracked, but a study this small and brief could miss important effects. This does not establish long-term kidney safety, justify self-directed heat therapy in kidney disease or show that repeated sauna improves disease outcomes. [9]

These studies illustrate why “human research” is only a beginning description. Sample size, design, selection, monitoring and duration remain essential. An encouraging pilot can justify the next trial without becoming a clinical recommendation today.

6. Hormesis: an idea worth understanding carefully

Hormesis is a framework in which a limited stress can stimulate an adaptive response, while greater or differently timed exposure can be harmful. Heat is discussed within this framework because the body responds to it through temperature-control systems and other processes in the body. A 2021 review connects sauna with possible heat-adaptation and cellular-protection mechanisms. [5]

The appealing story is that a manageable challenge prompts maintenance and adaptation. The scientific task is to test each part of that story: what changed, in which tissue or population, under what exposure, and whether the change produced a meaningful benefit.

Cells respond to heat by activating protective processes, often called a heat-shock response. Seeing that response does not establish that someone will have fewer heart attacks or other illnesses. A proposed mechanism does not establish an optimal temperature or duration. Nor does the word hormesis prove that more stress is better. Dose, recovery, baseline health and context remain central questions rather than details to be filled in later.

This is the appropriate connection between the Sauna issue and the wider topic of hormesis. It is a shared scientific question about adaptation, not proof that every form of heat, cold, fasting or exercise works through an identical pathway or delivers the same benefit.

7. Safety belongs beside the promise

The sauna literature contains reassuring observations, but it also contains limitations in how harms were measured and reported. A 2018 review that searched for and assessed relevant research included 40 studies. Most were small, and only 13 assigned treatments by chance. The reviewers called for better information on harms and on which kinds of heat exposure suit which people. The review also identified one small study of ten men with changes in sperm production that reversed after sauna use stopped. This is not a measurement of pregnancy outcomes or proof of permanent infertility, but it is another reason not to assume that all effects are beneficial. [4]

A 2026 review of short-term blood-pressure changes after heat treatments found that safety remains uncertain for frail older adults and people taking beta blockers, medicines often used for heart conditions or high blood pressure. Different studies used different heat treatments and methods, and few studied these groups well. Even a brief drop in pressure can matter for someone prone to dizziness or fainting. [6]

A study looking back through injury records identified 209 patients treated for sauna-related injuries at one trauma center over 2005-2021. Slips, falls, dizziness and fainting were prominent. Because the study began with injured patients, it cannot tell us the risk per sauna visit or the proportion of all users who are injured. It does remind us that the surrounding environment and the ability to leave safely matter alongside what heat does inside the body. [7]

Practical questions before entering

If you have cardiovascular disease, a history of fainting or heat intolerance, kidney disease, pregnancy, or medicines that may affect pressure or heat responses, ask an appropriate clinician whether sauna is suitable. This is a precautionary conversation, not a claim that every person in those groups must avoid heat. Do not stop or alter prescribed medicines to fit a sauna plan.

An older clinical review identifies conditions in which sauna should be avoided: unstable angina, meaning new, worsening or unpredictable chest pain from reduced blood flow to the heart; a recent heart attack; and severe aortic stenosis, a serious narrowing of the valve through which blood leaves the heart. Its broad safety statements should not be used as personal clearance; current clinical assessment matters. The same review warns against combining alcohol with sauna because of risks involving low pressure, abnormal rhythms and sudden death. [10]

Avoid treating heat tolerance as a competition. Leave if you feel unwell, dizzy or faint, and do not rely on a wearable score to dismiss symptoms. Chest pain, collapse or severe breathing difficulty require urgent medical help. Follow facility safety instructions and consider slip and fall hazards when moving or cooling down.

Fluid needs differ. Do not copy a universal drinking target, especially if a clinician has prescribed fluid restriction. Discuss hydration and heat exposure together when medical conditions or medicines

complicate either. Cold plunges are a separate exposure; their safety and benefits cannot be assumed from the sauna studies discussed here.

8. What you can do with the evidence

Start with your purpose. Relaxation, social time, curiosity about heat adaptation and management of a diagnosed condition are different reasons to ask about sauna. The evidence needed for a pleasant optional activity is different from the evidence needed to treat a disease.

Then identify the claim being offered. Is it about enjoyment, a measurement taken just after a session, an eight-week change, or an illness or death years later? Does the cited study concern the same sauna type and population? Is the comparison sauna versus no sauna, exercise plus sauna versus exercise, or simply different habits within a cohort?

A fictional example: a reader hears that frequent sauna use “cuts dementia risk.” They trace the claim to the Finnish cohort, notice that it was observational and limited to men, and recognize that the same cohort also generated other health headlines. They may remain interested, but the claim no longer functions as a personal guarantee or a prescribed schedule.

Another reader takes blood-pressure medication and wants to add heat after exercise. The randomized trial's exclusion of cardiovascular medication users becomes useful information for a clinical discussion. It does not answer the question for them; it explains why the answer should not be borrowed directly from that trial.

The strongest next question is often modest: what would make this appropriate, enjoyable and safe in my circumstances, and what benefit can honestly be expected? An optional practice can be worthwhile without being a cure, a substitute for movement or a requirement for healthy aging.

Sources and further reading

[1] Tanjaniina Laukkanen, Hassan Khan, Francesco Zaccardi, et al. Association between sauna bathing and fatal cardiovascular and all-cause mortality events. JAMA internal medicine. 2015 Apr;175(4):542-8. doi:10.1001/jamainternmed.2014.8187. PMID:25705824. Primary publication record.

[2] Tanjaniina Laukkanen, Setor Kunutsor, Jussi Kauhanen, et al. Sauna bathing is inversely associated with dementia and Alzheimer's disease in middle-aged Finnish men. Age and ageing. 2017 Mar 01;46(2):245-249. doi:10.1093/ageing/afw212. PMID:27932366. Primary publication record.

[3] Earric Lee, Iiris Kolunsarka, Joel Kostensalo, et al. Effects of regular sauna bathing in conjunction with exercise on cardiovascular function: a multi-arm, randomized controlled trial. American journal of physiology. Regulatory, integrative and comparative physiology. 2022 Sep 01;323(3):R289-R299. doi:10.1152/ajpregu.00076.2022. PMID:35785965. Primary publication record.

[4] Joy Hussain, Marc Cohen. Clinical Effects of Regular Dry Sauna Bathing: A Systematic Review. Evidence-based complementary and alternative medicine : eCAM. 2018;2018:1857413. doi:10.1155/2018/1857413. PMID:29849692. Primary publication record.

[5] Rhonda P Patrick, Teresa L Johnson. Sauna use as a lifestyle practice to extend healthspan. Experimental gerontology. 2021 Oct 15;154:111509. doi:10.1016/j.exger.2021.111509. PMID:34363927. Primary publication record.

[6] Satoshi Yamasaki, Tomotake Tokunou, Yusuke Kashiwado, et al. Acute blood pressure responses and safety considerations in heat therapy interventions: A narrative review. Complementary therapies in medicine. 2026 Jun;98:103341. doi:10.1016/j.ctim.2026.103341. PMID:41794190. Primary publication record.

[7] Peter Kaiser, Ulrike Seeher, Arbnor Krasniqi, et al. Injuries related to sauna bathing. Injury. 2023 Jul;54(7):110825. doi:10.1016/j.injury.2023.05.056. PMID:37211472. Primary publication record.

[8] Tarek Bekfani, Ammar Abo Hwach, Ricarda Moebert, et al. Effects of Sauna bathing on Exercise Capacity and Muscle Function in HFpEF. European journal of heart failure. 2026 Mar 14:xuag082. doi:10.1093/ejhf/xuag082. PMID:41831305. Primary publication record.

[9] Domenico A Chavez, Ryan S Garten, Paula Rodriguez-Miguelez, et al. Acute effects of passive heat exposure on vascular function and exercise capacity in patients with chronic kidney disease. American journal of physiology. Heart and circulatory physiology. 2026 Jun 01;330(6):H2001-H2013. doi:10.1152/ajpheart.00020.2026. PMID:42113470. Primary publication record.

[10] M L Hannuksela, S Ellahham. Benefits and risks of sauna bathing. The American journal of medicine. 2001 Feb 01;110(2):118-26. doi:10.1016/s0002-9343(00)00671-9. PMID:11165553. Primary publication record.

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