

# Daily Aspirin — Healthy or Harmful?

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✓ Fact Checked

November 17, 2022

## STORY AT-A-GLANCE

- › Prophylactic aspirin use in adults over the age of 70 is potentially harmful, primarily due to the increased risk of bleeding in this age group. Long-term low-dose aspirin therapy nearly doubles your risk for gastrointestinal bleeding
- › In adults younger than 40, there is insufficient evidence to judge the risk-benefit ratio of routine aspirin for the primary prevention of heart disease
- › While daily aspirin is still recommended for people with heart disease to lower the risk of another heart attack or stroke, previous studies have cast doubt on the effectiveness of this approach as well
- › You may be able to achieve the same kind of cardiovascular protection by donating blood. The bleeding caused by aspirin may be part of why it lowers your risk of heart attack and stroke, as bleeding will lower your iron level. People taking seven aspirins per week have been shown to have 25% lower mean serum ferritin than nonusers
- › Other aspirin alternatives include nattokinase and lumbrokinase, both of which are potent thrombolytics, comparable to aspirin without the serious side effects. They break down blood clots and reduce the risk of serious clotting by dissolving excess fibrin, improving circulation and decreasing blood viscosity

In decades past, a daily low-dose aspirin regimen was frequently recommended as a primary prevention strategy against heart disease. However, the evidence in support of it was rather weak, and kept getting weaker as time went on.

I stopped recommending daily "baby aspirin" use for the prevention of heart disease over two decades ago, due to the growing evidence of harmful side effects.

The primary justification for a daily aspirin regimen has been that it inhibits prostaglandin production,<sup>1</sup> thereby decreasing your blood's ability to form dangerous clots. However, in more recent years, most public health authorities have reversed their stance on the practice of using aspirin for primary prevention.

## **'Baby' Aspirin No Longer Recommended as Primary Prevention**

The U.S. Food and Drug Administration reversed its position on daily low-dose aspirin as primary prevention for heart disease in 2014,<sup>2</sup> citing clearly established side effects — including dangerous brain and stomach bleeding — and a lack of clear benefit for patients who have never had a heart attack, stroke or cardiovascular disease.

In 2019, the American Heart Association (AHA) and American College of Cardiology updated their clinical guidelines on the primary prevention of cardiovascular disease,<sup>3</sup> spelling out many of the controversial findings on prophylactic aspirin use.

Importantly, studies have found that prophylactic aspirin use in adults over the age of 70 is potentially harmful, primarily due to the increased risk of bleeding in this age group. As noted in one 2009 paper,<sup>4</sup> long-term low-dose aspirin therapy nearly doubles your risk for gastrointestinal bleeding.

Older people are, of course, more likely to be at high-risk for heart disease, and thus more likely to be put on aspirin therapy. In younger adults, the risks are less clear-cut.

As noted in the AHA guideline, in adults younger than 40, "there is insufficient evidence to judge the risk-benefit ratio of routine aspirin for the primary prevention of atherosclerotic cardiovascular disease."<sup>5</sup>

That said, the conventional recommendation to avoid a daily aspirin regimen only applies to primary prevention of heart disease in those with no history of heart problems, or those with low or moderate risk for heart disease. As reported by the AHA:<sup>6</sup>

*"The new recommendation doesn't apply to people who already have had a stroke or heart attack, or who have undergone bypass surgery or a procedure to insert a stent in their coronary arteries.*

*These individuals already have cardiovascular disease and should continue to take low-dose aspirin daily, or as recommended by their health care provider, to prevent another occurrence ..."*

## **Is Aspirin Regimen Safe for Heart Disease Patients?**

While daily low-dose aspirin continues to be recommended for patients who already have heart disease, there's evidence suggesting it may not be an ideal solution for them either.

For example, the WASH (warfarin/aspirin study in heart failure) study<sup>7</sup> published in 2004 — which assessed the risks and benefits of aspirin and the blood thinner warfarin in heart failure patients — found those who received aspirin treatment (300 mg/day) actually had the worst cardiac outcomes, including worsening heart failure. According to the authors, there was "no evidence that aspirin is effective or safe in patients with heart failure."

Similarly, a 2010 study<sup>8</sup> found older heart disease patients who had a prior history of aspirin use had more comorbidities and a higher risk of recurrent heart attack than those who had not been on aspirin therapy.

Aspirin has also not been proven safe or effective for diabetics, who are at increased risk for heart disease and therefore likely to be put on an aspirin regimen.

For example, a 2009 meta-analysis<sup>9</sup> of six studies found no clear evidence that aspirin is effective in preventing cardiovascular events in people with diabetes, although men may derive some benefit.

Another 2009 study<sup>10</sup> that examined the effects of aspirin therapy in diabetic patients found it "significantly increased mortality in diabetic patients without cardiovascular

disease from 17% at age 50 years to 29% at age 85 years."

On the other hand, it did lower mortality in elderly diabetic patients who also had cardiovascular disease. A meta-analysis<sup>11</sup> published in 2010 also concluded aspirin did not reduce the heart attack risk in diabetic individuals.

## **Why Phlebotomy May Be a Better Option Than Aspirin Therapy**

While the benefits of low-dose aspirin may outweigh the risks for some people, I believe you may be able to achieve similar cardiovascular protection by doing therapeutic phlebotomies.

There's evidence to suggest that the bleeding caused by aspirin may in fact be part of why it lowers your risk of heart attack and stroke, as bleeding will lower your iron level. Aspirin's ability to lower inflammation may be another factor at play.

As shown in a 2001 study,<sup>12</sup> people taking seven aspirins per week had 25% lower mean serum ferritin than nonusers. The effect was most marked in diseased subjects, compared to healthy ones. As explained by the authors:

*"Atherosclerosis, a primary cause of myocardial infarction (MI), is an inflammatory disease. Aspirin use lowers risk of MI, probably through antithrombotic and anti-inflammatory effects.*

*Because serum ferritin (SF) can be elevated spuriously by inflammation, reported associations between elevated SF, used as an indicator of iron stores, and heart disease could be confounded by occult inflammation and aspirin use if they affect SF independently of iron status ...*

*Aspirin use is associated with lower SF. We suggest this effect results from possible increased occult blood loss and a cytokine-mediated effect on SF in subjects with inflammation, infection, or liver disease."*

Most people, physicians included, fail to appreciate that — aside from blood loss, including menstruation — the body has no significant way to excrete excess iron. There are very minor amounts lost through normal bodily processes, but not enough to move the needle on overall iron levels.

Between supplementation, fortification and the iron that occurs naturally in foods, it's very easy to end up with excessive levels. In fact, most adult men and postmenopausal women are at risk for excess iron and need regular blood testing for ferritin.

Excessive iron causes significant oxidative stress, catalyzing the formation of excessive free radicals that damage your cellular and mitochondrial membranes, proteins and DNA. It is a potent contributor to increased risks of cancers, heart disease and neurodegenerative diseases.

While dangerous, iron overload is easy and inexpensive to treat. All you really need to do is monitor your serum ferritin and/or gamma-glutamyl transpeptidase (GGT) levels, avoid iron supplements, and be sure to donate blood on a regular basis.

By doing this, you can avoid serious health problems, and donating blood is a far safer way to lower your iron stores than taking aspirin and losing blood via internal bleeding.

## **Aspirin Linked to Lower Risk of Death**

Interestingly, a 2019 study<sup>13</sup> found prophylactic aspirin use may lower the risk of all-cause cancer, gastrointestinal (GI) cancer and colorectal cancer mortality among older adults.

The study included 146,152 individuals with a mean age of 66.3 years who participated in the Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial. The median follow-up time was 12.5 years. Those taking aspirin at least three times a week had a:

- 19% lower risk of death from all causes
- 15% lower risk of death from any cancer

- 25% lower risk of death from GI cancer
- 29% lower risk of death from colorectal cancer

Having a higher body mass index (BMI between 25 and 29.9) lowered these percentages by 1%, with the exception of colorectal cancer. In this group, colorectal cancer death decreased by 34%.

No observable benefit of aspirin use was found in underweight individuals (BMI below 20), which led the researchers to hypothesize that "the efficacy of aspirin as a cancer preventive agent may be associated with BMI,"<sup>14</sup> although this theory needs to be confirmed in future studies. The authors also warn that prophylactic aspirin therapy for cancer prevention would need to be weighed against the increased risk of bleeding.

## **Other Health Risks Associated With Long-Term Aspirin Use**

Overall, there's a lot of evidence against long-term daily aspirin therapy. The risk of internal bleeding is one significant concern, which is further magnified if you're taking antidepressants or blood thinning medications such as Plavix.

Using aspirin in combination with SSRI antidepressants has been shown to increase your risk of abnormal bleeding by 42%, compared to those taking aspirin alone,<sup>15</sup> and taking aspirin (325 mg/day) with Plavix has been shown to nearly double your risk of major hemorrhage and significantly increase your risk of death, while not affecting your risk of recurrent stroke to any significant degree.<sup>16</sup>

Aside from damaging your gastrointestinal tract,<sup>17,18</sup> routine aspirin use has also been linked to an increased risk for cataracts,<sup>19</sup> neovascular (wet) macular degeneration,<sup>20</sup> tinnitus<sup>21</sup> and hearing loss in men.<sup>22</sup>

## **Nattokinase Reduces Clot Formation Without Side Effects**

Aside from donating blood to lower your iron level (provided it's elevated), nattokinase is another far safer alternative to a daily aspirin regimen. Nattokinase, produced by the

bacteria *Bacillus subtilis* during the fermentation of soybeans to produce natto,<sup>23</sup> is a strong thrombolytic,<sup>24</sup> comparable to aspirin without the serious side effects.

It's been shown to break down blood clots and reduce the risk of serious clotting<sup>25</sup> by dissolving excess fibrin in your blood vessels,<sup>26</sup> improving circulation and decreasing blood viscosity. These effects can also help reduce high blood pressure.<sup>27</sup>

As noted in a 2018 paper,<sup>28</sup> nattokinase appears to be a promising alternative in the prevention and treatment of cardiovascular diseases, and has been linked to a reduction in cardiovascular disease mortality.

## Lumbrokinase Is Even Better Than Nattokinase

Yet another alternative is lumbrokinase, a complex fibrinolytic enzyme extracted from earthworms. Like nattokinase, **lumbrokinase** boosts circulatory health by reducing blood viscosity, reducing blood clotting factor activity and degrading fibrin, which is a key factor in clot formation.<sup>29,30</sup>

Some researchers have suggested lumbrokinase could be used "as secondary prevention after acute thrombosis," such as heart attacks and stroke.<sup>31</sup> A 2008 study<sup>32</sup> that explored "the mechanisms involved in the anti-ischemic action of lumbrokinase (LK) in the brain," found it protected against cerebral ischemia via several mechanisms and pathways. As explained by the authors:

*"These data indicated that the anti-ischemic activity of LK was due to its anti-platelet activity by elevating cAMP level and attenuating the calcium release from calcium stores, the anti-thrombosis action due to inhibiting of ICAM-1 expression, and the anti-apoptotic effect due to the activation of JAK1/STAT1 pathway."*

A 2009 pilot study<sup>33</sup> that used lumbrokinase in patients with coronary artery disease and stable angina found it improved angina symptoms in 40% of patients and lowered the summed stress score by 29% (the summed stress score is a risk indicator for a cardiac

event over the next 12 months<sup>34</sup>). According to the authors, "Oral lumbrokinase improves regional myocardial perfusion in patients with stable angina."

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