A Summary of a Cochrane Review: Green and Black Tea for the Primary Prevention of Cardiovascular Disease

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INTRODUCTION

Review authors in the Cochrane Collaboration conducted a review of the effects of green and black tea to prevent cardiovascular disease (CVD), such as heart attack and stroke. After searching for all relevant studies, they found 11 studies in 821 people who were healthy or at high risk of CVD. The findings of the review are summarised below.

TEA AND CARDIOVASCULAR DISEASE

CVD refers to many diseases that affect the heart and blood vessels. CVD includes cerebrovascular disease (such as stroke); peripheral arterial disease, in which arteries become blocked with plaque; and coronary heart disease, which can lead to a heart attack. Because CVD causes almost 30% of deaths around the world, there is research into ways to prevent and lower the risk of CVD. Preventing CVD can involve ways to lower blood pressure, lower triglyceride levels, lower total cholesterol levels, and lower the “bad” cholesterol (LDL) but raise the “good” cholesterol (HDL). Researchers have been testing whether certain foods or drinks could help prevent CVD.

Tea has been used as medicine in many countries, and different types of tea have become popular. The two most popular types of tea are black and green. These teas are produced from the same leaves but using different methods. This means they contain different vitamins and minerals and different amounts of flavonols (a type of flavanoid) and caffeine. The question is, could drinking tea or taking tea extract prevent CVD?

WHAT DOES THE RESEARCH SAY?

There were 11 studies that tested the effects of tea on the risk of CVD after 3 to 6 months. People who were healthy or who already had a high risk of CVD were in the studies. Green tea and black tea were tested sometimes as tea and sometimes as pills that contained tea extract.

The evidence from the research was moderate quality or low quality. “High quality” means something will happen, moderate quality means it probably will happen, and “low quality” means it may happen. “Very low quality” evidence means it is uncertain.

The studies show that after 3 to 6 months, green or black tea • may lower diastolic and systolic pressure slightly • probably lowers bad cholesterol (LDL) • probably has little or no effect on good cholesterol (HDL) • may lower total cholesterol • probably has little to no side effects

### Table Summary of Findings

| What Was Measured | Without Tea | With Tea | Quality of the Evidence | What Happens After 3-6 mo |
|-------------------|-------------|----------|-------------------------|--------------------------|
| Diastolic blood pressure (4 studies, 290 people) | 2 mmHg lower | Lower by 2.8 mmHg more (from 1.9 to 3.8 more) | ⊕⊕⊝⊝ low | Tea may lower diastolic blood pressure slightly |
| Systolic blood pressure (4 studies, 290 people) | 1 mmHg lower | Lower by 2.3 mmHg more (from 1.1 to 3.4 more) | ⊕⊕⊝ low | Tea may lower systolic blood pressure slightly |
| Bad cholesterol (LDL) (8 studies, 474 people) | From 0.2 lower to 0.3 mmol/L higher | Lower by 0.6 mmol/L more (from 0.6 to 0.4 more) | ⊕⊕⊕ moderate | Tea probably lowers “bad” cholesterol (LDL) |
| Good cholesterol (HDL) (8 studies, 473 people) | From 0.04 lower to 0.2 mmol/L higher | Change of 0 mmol/L (from 0.04 more to 0.04 less) | ⊕⊕⊕ moderate | Tea probably has little or no effect on “good” cholesterol (HDL) |
| Total cholesterol (7 studies, 446 people) | — | Lower in 4 out of 6 studies | ⊕⊕⊝ low | Tea may lower total cholesterol |
| Side effects (4 studies, 290 people) | — | — | ⊕⊕⊕ moderate | Tea probably has little or no side effects |

Death, heart attack, or stroke Not measured in these studies

a Details about the quality of the evidence: Evidence was moderate quality due to the risk of bias in studies because there may not have been random sequence generation or allocation concealment. Evidence was low quality due to risk of bias and the imprecise results from the small number of participants in the studies or because the studies could not be combined statistically.

b The numbers in the brackets show the range in which the actual effect could be.

Abbreviations: HDL, high-density lipoprotein; LDL, low-density lipoprotein.
None of the studies measured whether having tea would lead to fewer deaths, heart attacks, or strokes. It is also not clear what is the best amount of tea or whether drinking tea or taking tea extract in pill form is better.

WHERE DOES THIS INFORMATION COME FROM?

This summary is based on a Cochrane systematic review: Hartley L, Flowers N, Holmes J, Clarke A, Stranges S, Hooper L, Rees K. Green and black tea for the primary prevention of cardiovascular disease. Cochrane Database Syst Rev. 2013 Jun 18;6:CD009934.

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