

DARK CHOCOLATE

And

Its role in Hypertension

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Introduction

Over the past few years, studies have been confirming that eating dark chocolate decreases blood pressure and improves "insulin sensitivity" in healthy individuals (impaired "insulin sensitivity" is a major risk factor for diabetes and reduces the body's ability to process blood sugar (glucose) effectively).

Also, the various studies show that the antioxidant-rich compounds found in cocoa and dark chocolate, known as flavonoids, have a healthy effect on blood vessels as well as glucose metabolism.

Flavonoids are compounds which are found in the seeds and skins of plants, such as grapes, cocoa beans, and citrus fruits. Recent studies have shown that these compounds may be responsible for many of the "heart-healthy" effects associated with red wine and diets rich in fruits and vegetables.

Question - What does this mean?

Answer - Eat a healthy dose of dark chocolate every day to lower blood pressure and reduce the risk of developing diabetes.

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Typical Study

In a typical study, which appeared in the March, 2005, issue of the "*American Journal of Clinical Nutrition*", researchers compared the effects of adding 100 grams of dark chocolate or 90 grams of white chocolate to the normal diets of 15 healthy Italians.

As mentioned previously, dark chocolate is rich in flavonoids because of the high cocoa content; whereas white chocolate contains no cocoa, and, consequently, no flavonoids.

The subjects ate a daily dose of 100 grams dark chocolate for 15 days; followed by a seven-day no-chocolate period; and then ate a daily dose of 90 grams of white chocolate for 15 days.

Result

The researchers found that blood sugar metabolism was significantly improved after the dark chocolate phase, as indicated by reduced insulin resistance and higher insulin sensitivity. However no such healthy effect was noted following the white chocolate period.

The study also showed that the subjects' systolic blood pressure was significantly lower after 15 days of eating dark chocolate - an average of 108 mm Hg compared with 114 mm Hg. However, no such effects were found after eating white chocolate.

Other studies have shown similar effects, on blood pressure, with other flavonoid-containing foods, such as tea and wine.

It is now believed that the antioxidant-rich compounds, in flavonoid-containing foods, improve blood pressure by helping the lining of the blood vessels to expand and contract better, and thus control blood-flow more effectively.

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Dose

15 to 75 grams daily, of a good quality dark chocolate (with high cocoa content) is a typical recommended dose.

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Everyday Foods Rich in Flavonoids

- Adzuki bean (seed)
- Apples
- Asparagus (root)
- Basil (leaf)
- Berries
- Broccoli
- Brussels sprouts (axillary bud)
- Cabbage (leaf)
- Citrus fruits
- Cranberry (fruit)
- Dark Chocolate
- Fennel (fruit)
- Garden pea (shoot)
- Garlic (bulb)
- Kale (leaf)
- Kidney bean (fruit)
- Kohlrabi (shoot)
- Lettuce (whole plant)
- Lima bean (leaf)
- Onion (bulb)
- Pomegranates
- Purple grapes
- Red Wine
- Scarlet runner bean (whole plant)
- Soy Nuts

- Soy (seed)
- Spinach (leaf)
- Tea (black and green)
- Tomatoes

Add variety to your diet. Pick up some pomegranates or blood oranges instead of your average apples. Choose colorful fruits and vegetables, which tend to have the most flavonoids.

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Everyday Herbs Rich in Flavonoids

- Anise (seed)
- Basil (leaf)
- Cayenne (fruit)
- Chamomile (whole plant)
- Coriander (fruit)
- Dill (seed)
- Peppermint (whole plant)
- Tea (whole plant)
- Thyme (whole plant)

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Other Key Food Sources Containing Flavonoids

- Chocolate - Enjoy a portion (15 to 75 grams) of good quality dark chocolate daily. Dark chocolate with a high cocoa content is what is needed.
- Cinnamon is full of flavonoids, so sprinkle it on your apple slices, fruit dishes, smoothies, and your other baked goodies.
- Colour - Five to ten brightly coloured fruits and vegetables daily are the healthy way to go. Look for deep purples, bold blues, and rich reds. A daily glass of purple grape juice is absolutely replete with flavonoids. Throw blueberries into natural yoghurt or onto your morning cereal great. Eat several apples daily; however, always make sure that you eat the peel as well.
- Herbs and Spices - Adding herbs, spices, hot peppers, and onions when cooking.
- Nuts - Enjoy a small portion of nuts each day - almonds, hazelnuts, pecans, and pistachios have the highest flavonoid content.
- Red Wine - Enjoy a glass of good red wine with dinner. Alternately, enjoy purple grape juice instead.
- Soy - Have one to two servings of soy each day. Whip it up in a smoothie with berries, or just snack on roasted soy nuts.
- Tea - Drink three to six cups of black or green tea through the day (avoid tap water and decaffeinated products).

End

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