

# Supplements to help manage total cholesterol, LDL and HDL

## Psyllium

COMMON NAME: Blond psyllium, ispaghula husk

SCIENTIFIC NAME: *Plantago ovata*

### RECOMMENDED

#### LEVELS OF EVIDENCE



##### **Recommended:**

Several well-designed studies in humans have shown positive benefit. Our team is confident about its therapeutic potential.



##### **Recommended with Caution:**

Preliminary studies suggest some benefit. Future trials are needed before we can make a stronger recommendation.



##### **Not Recommended - Evidence:**

Our team does not recommend this product because clinical trials to date suggest little or no benefit.



##### **Not Recommended – High Risk:**

Our team recommends against using this product because clinical trials to date suggest substantial risk greater than the benefit.

#### Evaluated Benefits

- Lower total and LDL cholesterol.
- Reduce cardiovascular risk in patients with abnormal lipid profiles.
- Reduce LDL cholesterol in patients unable to tolerate a statin, whether due to history of side effects, pregnancy, drug interactions, age, or comorbid conditions.
- Reduce statin dose requirement to achieve treatment goals (combined low-dose statin + psyllium is comparable to higher-dose statin).

## Source

Psyllium is a form of fiber that comes from the seed husk of a plant called *Plantago ovata* (blond psyllium). *Plantago*, a broad, green flowering plant grown especially in China, India, and the Mediterranean, is known for the mucilaginous properties of its seed husks. While psyllium is soluble, meaning that it dissolves in water, it is not fermentable, so the risk of gastrointestinal symptoms (such as gassiness and bloating) is reduced in comparison with fermentable fibers.

## Indications/Population

Lower elevated levels of LDL and total cholesterol Patients with hyperlipidemia

## Mechanism of Action

The LDL cholesterol-lowering action of psyllium fiber is attributable to its soluble, viscous gel-forming properties. The psyllium gel trap bile in the small intestine and eliminates it via stool. This reduction in the bile acid pool stimulates the liver to synthesize more bile. Since cholesterol is a component of bile, the liver expresses LDL-receptors to take up LDL-cholesterol from the blood, thereby effectively lowering circulating LDL-cholesterol and total cholesterol.

## Side Effects

- Gastrointestinal side effects, such as abdominal cramping, nausea, vomiting, and difficulty swallowing (See second entry in Dosing, below.) Itching (rare) Difficulty breathing (rare)

## Dosing

- Clinical data at doses from 6 to 15 g/day show LDL cholesterol reduction of 6-21% versus placebo and total cholesterol reduction of 2-20% versus placebo. Psyllium efficacy tends to be greatest in studies assessing patients with higher baseline cholesterol levels and in studies with uncontrolled diet.
- Psyllium is thought most effective when consumed at each mealtime with food. Taking one third of the prescribed daily dose at the start of each of the three main meals a day is recommended.

## Drug Interactions/Cautions

- Patients with difficulty swallowing or unexplained abdominal pain, nausea, or vomiting should avoid psyllium.
- Taking psyllium with antidiabetic agents may increase the risk of hypoglycemia. Psyllium may delay the absorption of glucose from meals, thereby reducing the likelihood of postprandial hyperglycemia, improving overall glycemic control, and possibly necessitating a dose adjustment for selected medications, especially in individuals whose blood sugar are already well controlled.
- The addition of psyllium to a regimen that includes chitosan may increase fecal excretion of dietary fat.
- Psyllium should be avoided in individuals with a documented or suspected allergy.
- It is recommended to take fiber supplements at least 2 hours before or 2 hours after oral prescription medications.

## Notes

Psyllium is recognized by the U.S. Food and Drug Administration (FDA) as having benefits for cholesterol lowering and cardiovascular health.

Psyllium has been shown to be safe for individuals of all ages.

Patients must take psyllium with an adequate volume of fluids. Inadequate fluid intake can lead to choking and/or esophageal or bowel obstruction. A minimum of 240 ml (8 ounces) is recommended per 5-gram dose of blond psyllium husk or 7-gram dose of blond psyllium seed.

## References

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