Supplements to help manage total cholesterol, LDL and HDL

Probiotics

COMMON NAME: Probiotics

SCIENTIFIC NAME: *Lactobacillus reuteri NCIMB 30242, L. reuteri*

RECOMMENDED WITH CAUTION

LEVELS OF EVIDENCE

1

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

2

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

3

Not Recommended - Evidence:
Our team does not recommend this product because clinical trials to date suggest little or no benefit.

4

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

Lowered LDL and total cholesterol

Variety of bacterial strains and species in a person's gut correlates with longevity (more variety, longer life). They are also effective in decreasing illness after a course of antibiotics in adults.

Not all probiotics are the same. Effects are strain – not genus or species – specific.

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Source
Lactobacillus refers to a group of lactic-acid-producing, gram-positive, rod-shaped bacteria that are obligate and facultative anaerobes. These bacteria are indigenous to the intestinal tract and perineal flora of humans.

Indications/Population
Lowering of LDL and total cholesterol in patients with hyperlipidemia

Mechanism of Action
Overall mechanism of action of probiotics is uncertain, and this is an emerging area of research. Cholesterol-lowering research is based on data from *L. reuteri* NCIMB 30242.

Lactic acid bacteria may alter the serum cholesterol by directly absorbing and assimilating cholesterol into the cell membrane and decreasing HMG-CoA reductase activity and cholesterol micelle formation.

Probiotics are involved in bile acid metabolism due to ability of some bacterial strains, such as L. reuteri NCIMB 30242, to hydrolyze bile salts. Bile salt hydrolase (BSH) is an enzyme produced by bacterial species of several genera associ-ated with the gastrointestinal tract. Probiotic strains containing BSHs participate in the deconjugation of bile salts. The main role of BSH enzymes is bile detoxification, together with the gastrointestinal survival and persistence.

BSH-active probiotic strains exert their hypocholesterolemic effect through reaction of deconjugation, since this reaction leads to decreased solubility and lower reabsorption of bile salts, resulting in the excretion of larger amounts of free bile acids in feces. Therefore, deconjugation of bile salts could lead to a reduction in serum cholesterol levels, either by increasing *de novo* synthesis of bile acids from cholesterol to replace that lost in feces or by reducing the cholesterol solubility and subsequent absorption of cholesterol through the intestinal lumen.

Side Effects
In general, probiotics are well tolerated. There are typically few adverse effects. Side effects, if they occur, tend to be mild and self-limiting. In general, the most common side effects appear to be gas, bloating, and abdominal discomfort, and probiotics may decrease these as well.

Dosing
2 billion CFU of L. reuteri NCIMB 30242 have been shown effective in clinical studies.

Drug Interactions/Cautions
Use with caution in patients with pancreatitis and underlying immune conditions (immunocompromised).

Notes
No increase of HDL
Separate taking of probiotics and antibiotics by 2 hours

References

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