

Supplements to help manage Blood Sugar Health

Beta-Glucan

COMMON NAME: beta-glucan

SCIENTIFIC NAME: 1-3, 1-6-beta-glucan; beta-1,3-D-glucan; beta-1-6,1,3-beta-glucan

RECOMMENDED WITH CAUTION

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

Beta-glucan may lower blood glucose and insulin levels for improved blood sugar control in diabetes and metabolic syndrome.

Source

Beta-glucan is a soluble fiber derived from the cell walls of certain algae, bacteria, fungi, yeast, and plants. Yeast-derived beta-glucan is more palatable and easier to incorporate into food products. Oat beta-glucan is soluble in water and may have a higher therapeutic benefit with its increased viscosity.

Indications/Population

Lower post-prandial glucose and insulin levels
Lower HbA1c
Patients with type 2 diabetes and prediabetes
Patients with metabolic syndrome

Mechanism of Action

The mechanism of glucose lowering by beta-glucan is unclear. It may be due to delayed gastric emptying, and/or decreased rates of D-glucose uptake across the small intestine. Beta-glucan fiber is known to ferment in the colon and, thus, increase concentrations of short-chain fatty acids, which may enhance satiety and decrease overall calorie intake.

Side Effects

- Minimal adverse events have been reported.
- Gastrointestinal side effects, such as bloating, flatulence, and abdominal cramping, have been reported.
(See Dosing, below.)
- Studies show tolerance of beta-glucan in doses up to 10 grams.

Dosing

Diabetes: Short-term studies of beta-glucan have been performed for doses ranging from 3 to 15 grams. Assessments of consistent effect for improving blood glucose control with beta-glucan will require additional research to include long-term studies.

Most studies of beta-glucan used oat cereal as the source for a daily dose of 3 grams. Beta-glucan may also be obtained as an isolated supplement.

Dosing at the start of meals is reported to reduce the discomfort that may sometimes occur with initiation of beta-glucan therapy. Recommendation is to take one-third of the prescribed daily dose at the start of each of the three main meals a day.

Drug Interactions/Cautions

- Oat beta-glucan appears to have better efficacy in liquid form than solid.
- Wheat contains the enzyme beta-gluconase, which may inactivate beta-glucan and reduce its reliability as an effective source.
- In mice, severe intestinal damage resulting in bacterial peritonitis has been reported with combined use of beta-glucan and most NSAIDs, including aspirin.

Notes

- Beta-glucan has “Generally Recognized as Safe” (GRAS) status in the United States.
- Beta-glucan is recognized by the U.S. Food and Drug Administration (FDA) as beneficial for cholesterol lowering and improved cardiovascular health.
- Beta-glucan is reported safe for both children and adults, including pregnant and nursing women.
- With regular use/recommendation of beta-glucan for patients with appropriate diagnostic indications, clinicians are encouraged to take into account specific issues raised in the Side Effects and Dosing sections above.

References

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