elite
HEALTH BLENDS

GLUCOMANNAN SUPPLEMENT GUIDE

Glucomannan is a common ingredient in many weight loss and other dietary supplements. Elite Health Blends put together this guide to help you learn more about the fiber so you can separate the hype from the reality before you decide to use it in your diet. You'll see everything from the background and claimed benefits, to the clinical research and medical professional opinions, so you can make a truly educated purchasing decision.

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BACKGROUND

Glucomannan is a polysaccharide found primarily in the Amorphophallus konjac, a type of tuber plant similar to a yam. It grows on the steep, temperate mountainous regions of East and Southwest Asia, the same regions native to panda bears.

Glucomannan is a staple food in Asian cuisine. Its texture is similar to a noodle or pasta, and it is often sliced paper thin and used in soup, stir-fry or as a replacement for rice or noodles. It is available in noodle-like form for cooking or in extract form used in health supplements.[1]

CLAIMED BENEFITS

Glucomannan supplement research suggests these primary benefits.

- Cholesterol Treatment
- Diabetes Treatment

Clinical studies, referenced below, cite dosage amounts of glucomannan at 3 to 5g per day to promote control blood glucose and lower LDL (bad) cholesterol levels.

Many users have also claimed weight loss benefits when using this product. Few studies have been conducted to support this claim.

OUR STANCE

Elite Health Blends believes there is substantial evidence to support that glucomannan helps control diabetes* and lowers LDL (bad) cholesterol*. More research needs to be done to determine its affect on blood pressure, as preliminary research indicates it makes no change. Weight loss research looks promising, but further research is necessary*. We would like to see more extensive human clinical trials with positive results to support these claims, before we endorse such claims.

PROFESSIONAL OPINIONS

JAMES BARBER, M.D.

Glucomannan is known to be one of nature's richest sources of soluble fiber. When glucomannan was tested scientifically, fasting blood sugar levels were lowered by 13 points. This fiber rich product has been shown to lower total cholesterol levels by an average of 29 points.

Once blood sugar levels and cholesterol levels were stabilized, the blood pressures of those in the study were also stabilized. Additionally, there was an average weight loss of 5.5 pounds within the study participants during the eight-week study. This is an early indicator that glucomannan may be a viable weight loss product option.

PAMELA B. SMITH, R.N.

The research presented supports the typical patient recommendation of a high fiber, low fat diet. This type of diet has been shown to reduce instances of obesity, high blood pressure, diabetes, and high cholesterol. As a nurse of 30 years, I believe glucomannan is an excellent source of fiber, and used when in either dietary or supplement forms, it can help patients reach their daily recommended values to support overall health.

CLINICAL RESEARCH

HUMAN TRIALS

A double-blind placebo controlled Canadian study conducted by: Vladimir Vuksan, Ph.D, John L. Sievenpiper, BASC, Robin Owen, RD, MSC, Jeffery A. Swilley, MD, Peter Spadafora, MD, MSC, David J.A. Jenkins, MD, DSC, Edward Vidgen, BSC, Furio Brightenti, PHD, Robert G. Josse, MBBS, Lawernce A. Leiter, MD, Zheng Xu, MD, and Renato Novokmet examines a variety of diabetic subjects to determine how well using the glucomannan fiber can help the condition.

278 subjects between the ages of 45 and 65 were screened for inclusion in this study. Out of those 278, only 38 subjects met the study criteria:

- Impaired glucose tolerance (IGT);
- Clinical absence of coronary heart disease (CHD);
- BMI 30 kg/m2;
- not taking medications for high blood sugar, high levels of cholesterol in the blood or high blood pressure;
- not smoking and not consuming more than two alcoholic drinks per day.

These subjects were further screened for the presence of the full insulin resistance syndrome. This included moderate high blood pressure (135/85 and 145/95 mmHg), dyslipidemia (low HDL—good--cholesterol [0.9 mmol/l for men and 1.2 mmol/l for women], and elevated triglycerides [2.3 mmol/l and 4.5 mmol/l]).

Out of these subjects, only 11 of the remaining 38 were qualified to complete the study. Five men and six women were included in the study. These 11 subjects also:

- Moderately high serum cholesterol (5.2–6.7 mmol/l)
- were sedentary, with a mean (± SD) age of 55 ± 4 years (range: 46–61);
- a BMI of 28 ± 3 kg/m2; a waist-to-hip ratio of 0.98 ± 0.2
  - (waist: 96 ± 12 cm) in men and 0.91 ± 0.4
  - (waist: 87 ± 19 cm) in women

The study started with an eight week long baseline period. During this time, study participants followed a National Cholesterol Education Program (NCEP) Step II diet at their pleasure. This is documented with three non-consecutive days of food records, every two weeks. This beginning phase was part of the study meant to eliminate the effects of changing the diet on metabolic parameters.[3]

The NCEP Step II Diet is designed to reduce cholesterol levels and risk for heart disease in people who do not achieve normal cholesterol levels within three months on the NCEP Step I Diet. The standard diet guidelines are:

- Less than 30% of total caloric intake can come from total fat
- Less than 7% of total caloric intake can come from saturated fat.
- Polyunsaturated fats can account for up to 10% of total caloric intake.
- Monounsaturated fats can account for up to 15% of total caloric intake.
- Carbohydrates can account for up to 55% of total caloric intake.
- Proteins can account for up to 15% of total caloric intake.
- Daily cholesterol intake cannot exceed 300mg.[4]

The next stage of the study was the experimental phase. This phase was two successive three week long treatment periods which were separated by a two-week "washout" interval where the NCEP Step two diet was again followed and documented with another three day record.

In the first treatment period, study subjects were randomly assigned to the glucomannan group (using a step two metabolically controlled diet enriched with glucomannan) or the control group (using the same diet with wheat bran fiber in place of glucomannan.)

In the second treatment period, subjects were switched from their original group into the opposite. Weight, blood pressure, blood collection, waist and hip measurements were taken at the start and finish of each three week period. The study started with five people using the glucomannan treatment, and six people using the control.

In terms of diet, both the glucomannan and the control group used a three-day rotating step two diet with three meals per day, under metabolic conditions. All the foods were pre-weighed, pre-packaged, and sent to the participants via courier to eat whether they were at home or at work.

The average diet consisted of 30% calories from total fat with 7% from saturated fat. The cholesterol intake was limited to 300mg/day. The caloric amounts for intake were provided according to the Lipid Research Clinics, and adjustments were made for activity. The total dietary fiber intake was given at 1.5g per 100 calories. This provided a range of 24 grams to 40 grams a day. The participants eating 40 grams of fiber a day consumed 2800 calories a day. The two treatments only differed in terms of the fiber used.

Those in the glucomannan group received biscuits enriched with glucomannan fiber, and the control group received the same biscuits with an equal amount of wheat fiber. The biscuits were indistinguishable in taste and appearance, and contained similar nutrient profiles. Participants were told to eat an equal amount of biscuits with an eight-ounce beverage, three times a day as a snack, and once should be at bedtime.

Participants were instructed to add more fiber on foods such as cereal and yogurt to help improve the fiber's palatability. Any foods from the metabolic diet and remaining study biscuits that the participants did not eat were brought back to the clinic for weighing to measure compliance.

Dietary changes found to occur during the first 3-week treatment period were duplicated in the diets for the second treatment period for each subject.

The results of this study showed:

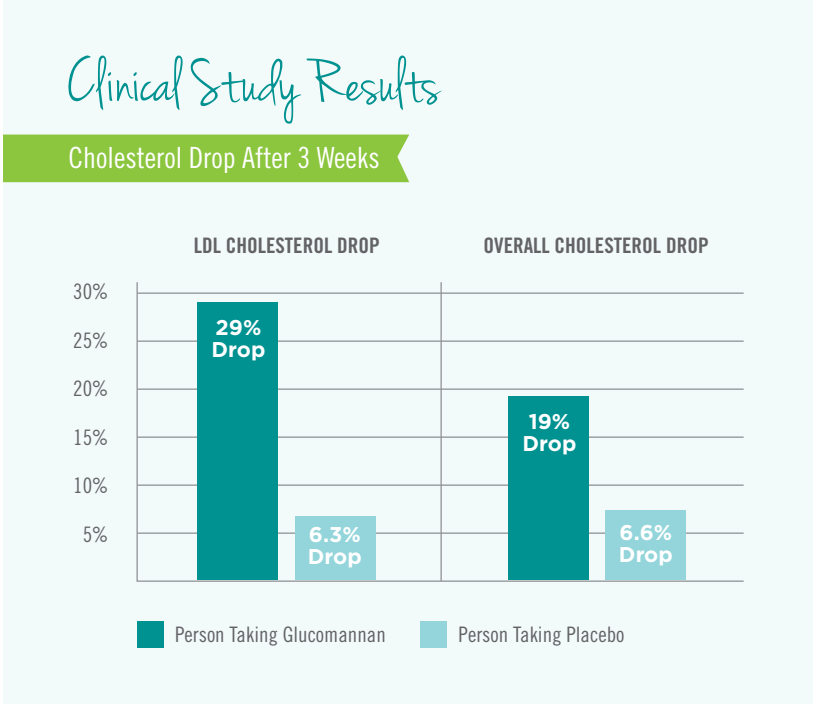
All participants followed the experimental diet without much difficulty. The returned food indicated the participants ate 96% of the food on the glucomannan diet, and 95% of the food on the control diet. The returned biscuits showed the participants ate 81% (97g/day) of the glucomannan biscuits and 86% (103g/day) of the control biscuits. These patterns translated to an insignificant weight loss during both treatment periods, with no difference between the two treatment periods. Some participants complained of flatulence and soft stools but this side effect did not cause of them to stop participating in the study.

CHOLESTEROL LEVELS

Blood lipids (fat in the blood) improved during the glucomannan treatment compared to the control treatment. Total and LDL (bad) cholesterol were significantly reduced by 19 ± 2.7% and 29 ± 3.4% during glucomannan treatment compared to 6.3 ± 3.4% and 6.6 ± 5.0% on the control treatment.

To put this in perspective, on average, a person taking Glucomannan with an LDL (bad) cholesterol reading of 300 would lose 87 points –their cholesterol would go down to 213 in just 3 weeks.

In the same time frame, a person with the same cholesterol level taking the placebo -a different type of fiber, wheat bran- would lose 19 points and wind up with an LDL reading of 281.



During the second three-week period, the results were repeated. Throughout the trial, there was no significant change to tryglicerides or HDL (good) cholesterol in either group.

The between-treatment differences were 12.4 ± 3.1% and 22 ± 3.9% respectively. The combined fall in total cholesterol from 6.2 ± 0.3 to 5.0 ± 0.2 mmol/l and LDL from 3.9 ± 0.2 to 2.8 ± 0.2 mmol/l on glucomannan treatment indicated 8 of 11 subjects were reclassified from high cholesterol to normal cholesterol levels.

Similar results were observed for apo B. During glucomannan treatment, apo B fell significantly by 19 ± 2.8% compared to 4.5 ± 4.5% on control, for a significance difference of 15.1 ± 4.3% (P 0.0004) between treatments. In contrast, such effects were not seen in apo A-1 or triglycerides.

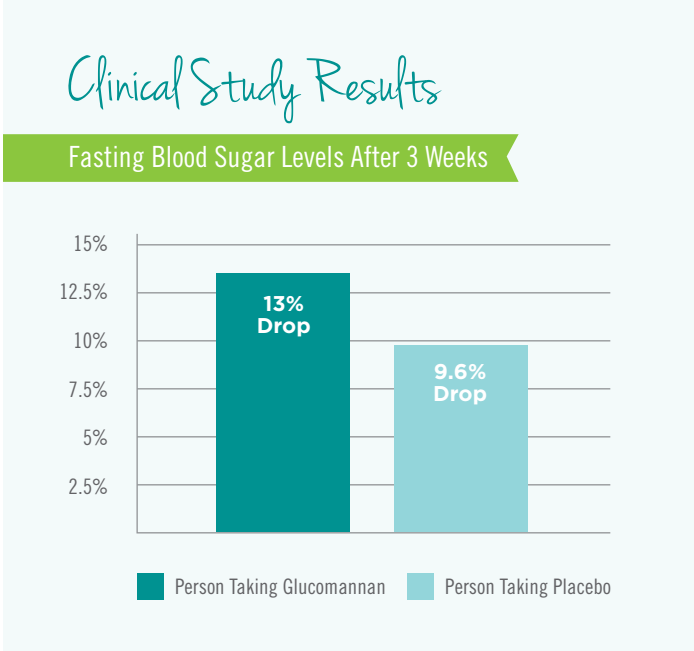
During glucomannan and control treatments, HDL cholesterol decreased significantly on both treatments: 8.5 ± 2.2%, P 0.04 on KJM diet and 9.6 ± 2.2%, P 0.003 on WB-control, with an insignificant between-treatment change. Similarly, during both treatments, triglycerides increased insignificantly, with no significant difference between treatments.

Despite this lack of effect of KJM treatment on HDL cholesterol, apo A-1, or triglycerides, the decreases in total cholesterol and apo B were sufficient to improve lipid ratios. During glucomannan treatment, total/HDL, LDL/HDL, and apo B/A-1 ratios decreased by 11 ± 3.0%, 22 ± 3.7% and 13 ± 3.0% respectively.

This compares to an insignificant increase of 4.1 ± 4.1% in total/HDL ratio, 0.2 ± 6.3% in LDL/HDL ratio, and 0.7 ± 3.6 % in apo B/A-1 on the control. The resulting between-treatment differences were 15.2 ± 3.4% for total/HDL cholesterol, 22.2 ± 4.1% (P 0.002) for LDL/HDL cholesterol, and 13.1 ± 3.4% for apo B/A-1.

BLOOD SUGAR CONTROL

An improvement in glycemic control was observed on the glucomannan compared with the control treatment Serum fructosamine was reduced for the group taking glucomannan by 5.6 ± 1.5% (P 0.003), compared with 0.39 ± 1.3% for the control group taking a different fiber supplement, with a between-treatment difference of 5.2 ± 1.4%. No significant between-treatment differences were observed for insulin or glucose concentrations. On glucomannan, however, fasting blood sugar levels fell by 13 ± 2.5% compared with 9.6 ± 4.3% on control.



In perspective, a diabetic study participant with an average fasting blood glucose level of 150 would experience a 19.5 drop to 130.5 on glucomannan within three weeks.

A person with the same average fasting blood glucose level who took the wheat bran would lose 14.4 points to 135.6.

BLOOD PRESSURE

No change in systolic or diastolic blood pressure was observed on either treatment or between treatments. All results remained unchanged after adjustment for multiple comparisons by the Bonferroni-Hochberg procedure.

This study concludes adding glucomannan fiber to your diet may help reduce blood sugar levels as well as reducing the bad cholesterol levels while helping to improve good cholesterol levels. It does not appear to make a difference in blood pressure levels.[3]

ANIMAL STUDIES

A study conducted by Yoshida M, Sawa J, Hozumi T, Mimoto H, Ishida Y, Kazumi T, Doi K, Baba S. at the Hyogo Medical Center for Adults in Japan wanted to take a close look at how a long term high fiber diet would impact the cholesterol and blood sugar levels of diabetic rats.

For the first four weeks of the study, all diabetic rats were supplied with regular food and water. Then, the rats were grouped according to the diet they followed. Group I served as the non-diabetic rat control group. Group II was a no cholesterol added diet without glucomannan. Group III was no added cholesterol, but with the addition of a glucomannan supplement. Group IV was a diet with added cholesterol,

but no glucomannan. Group V was the diet with added cholesterol and a glucomannan supplement. 15% weight of glucomannan and 1.5% weight of cholesterol in traditional rat chow were used as supplements.

At week 18, all the rats were tested. Weight gain, blood sugar levels, total cholesterol, HDL cholesterol, triglyceride, and lipid peroxidase concentrations were calculated.

Results show the rats supplemented with glucomannan gained more weight than those who were not, but the difference is insignificant. Rats supplemented with glucomannan showed lower blood sugar levels. Triglyceride levels were similar in all the rats, but lipid peroxidase was significantly lower in the rats that were fed the glucomannan supplements. LDL (bad) cholesterol was lower and HDL (good) cholesterol was higher in rats that were given glucomannan supplements.[2]

This study indicates that glucomannan supplementation may be a key to keeping cholesterol and blood sugar within a normal and healthy range.

SUMMARY

The two groups were each given different a type of fiber. The benefits of wheat bran have been well documented, but glucomannan is a relative newcomer to the health food/supplement market. Glucomannan outperformed wheat bran for lowering LDL (bad) cholesterol and controlling blood glucose. Additional testing is necessary, but the results are very encouraging, especially for controlling cholesterol.

ADDITIONAL POTENTIAL BENEFITS

A double blind placebo controlled study conducted over an eight-week period tested the effectiveness of glucomannan fiber for weight loss. 20 subjects were provided with 1 gram (two 500 mg capsules) of either glucomannan or a placebo ingredient, with eight ounces of water. This was administered an hour before each meal for three meals every day. Participants were told not to change their diet or exercise routine.

Results indicated an average weight loss of 5.5 lbs. using the glucomannan over the eight weeks without changing diet and exercise routines. Serum cholesterol and low-density lipoprotein cholesterol were significantly reduced (21.7 and 15.0 mg/dl respectively) in the glucomannan treated group. No reports of adverse reactions to glucomannan were made.

More research needs to be conducted to support these claims, but early research indicates that glucomannan may be a viable weight loss option.

REFERENCES:

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ABOUT ELITE HEALTH BLENDS

Elite Health Blends is a health supplement provider that aims to provide top quality products to give customers the elite edge they need to reach their wellness goals. We understand the frustration our customers feel when making lifestyle changes, and know the industry is full of less-than-stellar products and services. Elite Health Blends is different, because transparency is the foundation of our business. By providing key information behind our ingredients, we empower our customers with the knowledge they need to make informed purchasing decisions. Elite Health Blends is headquartered in Sarasota, Florida. For more information, visit http://elitehealthblends.com.