Chit-O-Gram

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Experience is a Great Teacher

My first experience with Chitosan Oligosaccharide (CO) was well over 5 years ago. I owned a 2-year old smooth-haired dachshund that could not walk. After numerous vet visits and medications, there seemed to be no hope in site. Then a friend of mine told me to contact Arlene Otaguro about this natural substance called CO. Arlene suggested that I give the dog 100mg Chit-O-Power twice per day. Upon doing so and after one week the dog began to walk.

Seeing the results of my dog and having had back pain for years I decided to try the CO also. So, I began taking the 500mg daily. Once again, Chit-O-Power came through and I no longer have back pain.

Finally, a breeder from New Zealand entered their long-haired dachshund into a dog show in Hawaii and won! Afterwards, however, the dog became very ill and indications were that it had been poisoned. The dog could not open its mouth and for the next three weeks it was hand fed and given water through a syringe. It developed open wounds in its mouth and on its legs and could not walk. Chit-O-Power to the rescue. The owner began to put the CO on the open wounds on the legs and in the animal's food (100mg). Within a week it was able to open its mouth; within a year the sores were gone, it was eating on its own and walking. But what was even more amazing is that is was able to have puppies.

Is CO a "cure-all"? Absolutely not, but my experience has shown that it seems to give the body what it needs to heal itself.

Aloha!
Charlotte Vieira, Hilo, Hawaii

Benefits of Oligosaccharide Ingestion

A number of health benefits result from ingestion of oligosaccharides.

• **Proliferation of Bifidobacteria and Reduction of Detrimental Bacteria.** Human studies have shown an increase in bifidobacteria resulting from oligosaccharide ingestion and a reduction in detrimental bacteria such as *Clostridium perfringens* (Hidaka et al., 1986; Takahashi et al., 1986; Masai et al., 1987; Benno et al., 1987; I to et al., 1990; Wada et al., 1991). Ingestion of 2-10 g/day for several weeks effectively increased bifidobacteria population in the human intestine an average of 7.5 times and decreased C. *perfringens* an average of 81%; with some oligosaccharides, lactobacilli also increased 2-3 times. *C. perfringens* decreased by 0.5— 0.06 times ($p<0.05$). Bifidobacteria prevent the growth of exogenous pathogenic microbes and the excessive growth of indigenous detrimental microflora through production of short-chain fatty acids (mainly acetic acid and lactic acid at a 3:2 mole ratio) and an ability to produce some antibiotic materials. The growth-inhibiting and destructive effects of acetic and lactic acids on undesirable bacteria are known (Rasic and Kurmann, 1983). The suppressive effects of these acids against *Salmo- nello.* (Chung and Goepfert, 1970) and *E. coli* (Tamura, 1983) were reported. Bifidin, an antibiotic produced *byBifi-dobacterium bifidum*, is effective against *Shigella dysenteriae, Salmonella typhosa, Staphylococcus aureus, E. coli*, and other bacteria (Anand et al., 1984, 1985). A high-molecular-weight substance from *Bifidobacte-rium infantis* is also effective against *Shigella flexneri* 5503-01, S. *faecalis, E. coli*, and others (Nakaya, 1984; Okamura et al., 1986).

• **Reduction of Toxic Metabolites and Detrimental Enzymes.** Reduction of toxic metabolites and detrimental enzymes by oligosaccharide ingestion has been shown in human tests and in-vitro human-feces culture tests (Takahashi et al., 1986; Masai et al., 1987; Wada et al., 1991; Kato et al., 1992; Saito et al., 1992; Mutai, 1978). The ingestion of 3-6 g/day or the • equivalent addition of oligosaccharide to human feces in in-vitro culture reduced intestinal toxic compounds and detrimental enzymes an average of 44.6% and 40.9%, respectively, in about 3 weeks.

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Did you know...

In 1994 the Japan's Ministry of Health declared Chitosan Oligosaccharide a functional food. One of the attributes of a functional food is to aid in fortifying the immune system.

THREE CONVENIENT SIZES:

- **100 MG (30 CAPSULES / 3GRAMS)**
- **250 MG (30 CAPSULES / 7.5 GRAMS)**
- **500 MG (60 CAPSULES / 30 GRAMS)**

(SEE YOUR DEALER FOR DETAILS)

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• **Prevention of Pathogenic and Autogenous Diarrhea.** Ingestion of oligosaccharides or bifidobacteria prevents pathogenic and autogenous diarrhea by the same mechanisms as described in the reduction of detrimental bacteria. For example: (1) Ingestion of 8.0 g of fructooligosaccharides per day by 6 aged patients who had loose stools improved the stool conditions to normal after 8 days in all subjects (Hidaka et al., 1986). (2) Ingestion of 3.0 g/day of a bifidobacteria preparation containing 10 x 10°° *Bifidobacteria breve* cells/g, by 15 patients ages 1 mo—15 yr with in-tractable pediatric diarrhea (caused by administration of antibiotics) dramatically improved stool frequency and appearance within 3-7 days in all patients (Hotta et al., 1987). (3). "Omniflora," a medicine made up of a lyophilized preparation *ofBiftdobacte-rium longum, Lactobacillus gasseri,* and *E. coli,* is being prescribed for stomach and intestinal disturbances in Germany CRenner and Munzner, 1991). (4) A well-recognized fact that breastfed infants are anti-infective and healthier than those fed by formula is attributed to the difference in bifidobac-tena count in total intestinal bacteria, the former 99% and the latter 50% or less (Haene!, 1970, Frisell, 1951; Mata et al., 1969; Roberts et al., 1985; Benno and Mitsuoka, 1986; Kurmann and Rasic, 1991).

• **Prevention of Constipation**. Through production of high levels of short-chain fatty acids, bifidobacteria also prevent constipation by stimulating intestinal peristalsis (Hosono, 1990) and by increasing fecal moisture with osmotic pressure (Shimoyama et al., 1985; Takahashi et al., 1986; Sumihara, 1987; Ito et al., 1990; Takasoye et al., 1990; Matsunami et al., 1992; Wada et al., 1991; Mutai, 1978; Tanaka and Shimosaka, 1982). In human tests, daily ingestion of 3.0-10.0 g of oligosaccharides achieved an anticonstipation effect within a week. However, the effect was not observed in some heavily constipated patients.

• **Protection of Liver Function**. The reduction of toxic metabolites by the ingestion of oligosaccharides or bifidobacteria alleviates the detoxifying load of the liver. For example: (1) Dosages of 3.0 g/day of soybean oligosaccharides to a liver cirrhosis (non-A, non-B) patient age 69 who had hepatic comatose and constipation symptoms improved both symptoms in about 5 days (Takasoye et al., 1990). (2) Twelve patients with chronic hepatitis or liver cirrhosis without portal hypertension and 8 patients with liver cirrhosis with severe portal hypertension were treated for about 80 days with milk containing a high concentration of *B. bifidum* (as "Engalan forte" in powder form). In both groups, the serum and urinary toxic metabolites decreased significantly to normal or near-normal ranges, and the improvements in the patients' general well-being were noticeable through increased appetite, ""increased protein tolerance, and an average increase of 2.6 kg in body weight (Muting etal., 1968).

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• **Reduction of Serum Cholesterol**. Reduction in serum cholesterol levels by oligosaccharide ingestion has been shown in human tests (Hata et al., 1983; Yamashita et al., 1984; Hidaka, 1985; Takahashi et al., 1986). Ingestion of 6-12 g of oligosaccharides/ day for 2 wk-3 mo reduced total serum cholesterol by 20-50 dL. It has been shown that lactic acid bacteria, including bifidobacteria, or milk fermented with them, reduce total serum cholesterol (Mann and Spoerry, 1974; Hepner et al., 1979), suppress the increase of serum cholesterol (Aoeh et al., 1986), and increase the ratio of HDL-choles-terol to total cholesterol in females but not in males (Bazzarre et al., 1983).

The serum cholesterol reduction is considered due to the changes in intestinal microflora (Hidaka, 1985). Meanwhile, 12 strains of *Lactobacillas aci-dophilus* of human origin have been shown to assimilate cholesterol in in-vitro studies (Gilliland and Walker, 1990), and *L. acidophilus* 2056 is reported to have an inhibitory effect against cholesterol micelles absorption through the intestinal wall (Suzuki et al., 1991). The niacin (nicotinic acid)-forming ability of bifidobacteria (described later) may also be contributing to this phenomenon.

• **Reduction of Blood Pressure**. Ingestion of oligosaccharides is reported to reduce blood pressure. For example: (1) Administration of 11.5 g/ day of fructooligosaccharides for 5 weeks to 46 hyperlipidemic patients reduced average diastolic blood pressure by 6 mm Hg. The fasting blood sugar was also decreased but not significantly (Hata et al., 1983). (2) Administration of 3.0 g/day of soybean oligosaccharides for a week to 6 healthy adult males age 28-48 decreased average diastolic blood pressure by 6.3 mm Hg. There was a significant negative correlation between the diastolic blood pressure and the ratio of fecal bifidobacteria to total bacteria counts (Masai etal., 1987).

• **Anticancer Effect**. A considerable number of reports describe the anticancer effects of bifidobacteria in small animal tests (Atsui et al., 1977; Kohwi et al., 1978, 1982; Yasuda et al., 1981, 1983; Taketomo et al., 1983; Fujiwara et al., 1990; Kanbe, 1992b). These anticancer effects are due to immunity enhancements by the cells, cell wall components, and extracellular components of bifidobacteria (Hirota, 1990; Kanbe, 1992b).

• **Production of Nutrients**. Bifidobacteria produce the vitamins B-l, B-2, B-6, B-12, nicotinic acid, and folic acid (Mutai, 1978; Kanbe, 1992a). Bifidobac-teria-fermented dairy products also improve lactose tolerance, calcium absorbability, and digestibility (Hughes and Hoover, 1991). Bifidobacteria, however, cannot produce vitamin K.