



Fabulesse®

The natural way to eat less

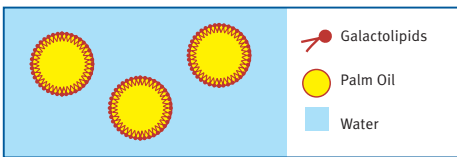


What is Fabulesse®

Fabulesse® is a natural, safe and effective ingredient for weight management.

The structure of Fabulesse® is a proprietary oil-in-water emulsion. The emulsion consists of very fine vegetable oil droplets made of naturally occurring palm oil coated with galactolipids from oat oil.

These galactolipids are polar lipids which have the ability to stabilize the emulsion.

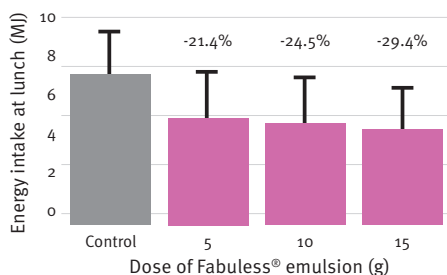


The Fabulesse® microstructure

Satiety

The physiological processes behind food intake and the control of appetite are complex and an area of key interest for scientists and researchers. When food consumption satisfies hunger and inhibits further eating, two mechanisms are involved-satiation and satiety. **Satiation** develops during the course of eating, whereas **satiety** starts at the end of one meal and lasts until the next.

Fabulesse® supports satiety and influences food and energy intake. In a dose-response study, the energy intakes (MJ) in the Fabulesse® group, were lower by 21, 25 and 30% after the 5, 10 and 15g doses, respectively ($p < 0.001$ at each dose level), in comparison to control.



Burns et al, European Journal of Clinical Nutrition (2002)

Efficacy

There is a significant body of evidence that substantiates the effectiveness of Fabulesse® in both short-term energy intake and long-term weight management.

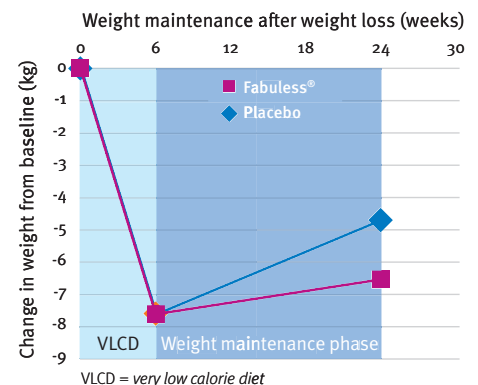
Results indicate an effect of Fabulesse® on the reduction of daily energy intake in the order of 100 kcal per day. Observational studies confirm that such an effect is meaningful and beneficial in a weight maintenance context. A study in the US has shown that overweight adults consume ~100 kcal/day more than their normal weight counterparts (US Department of Agriculture, 2006). In another study, it has been calculated that an additional 20 to 50 kcal/day during one year results in one extra kilogram body weight (Dutch Nutrition Centre, 2007).

A long-term 18 week weight regain study after an initial weight loss period of 6 weeks demonstrated that the test group consuming Fabulesse® had a significantly reduced waist circumference compared to placebo ($p < 0.05$) after the regain period. A significant weight increase ($p < 0.05$) was observed in the placebo group, not in the Fabulesse® group, indicating the Fabulesse® efficacy in weight maintenance.

In another long-term study, after a 6-week weight loss period with a very low calorie diet, it was shown that body fat mass was significantly reduced in the test group compared to placebo during the 12-week weight maintenance follow-up period ($p < 0.05$).



- **Unique, proprietary lipid emulsion for satiety**
- **All natural**
 - based on naturally occurring dietary lipids
- **Proven efficacy**
 - with substantiated benefits from short-term, long-term and mechanistic studies
- **Clear dose-response effect**
- **Safe**
- **Fabulesse® helps to:**
 - Eat less
 - Reduce body fat during or after dieting
 - Support in weight management efforts
- **Adding a new, safe and complementary strategy to weight control**



Adapted from Diepvens et al, International Journal of Obesity (2007)

Fabules[®]

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Mechanism of action

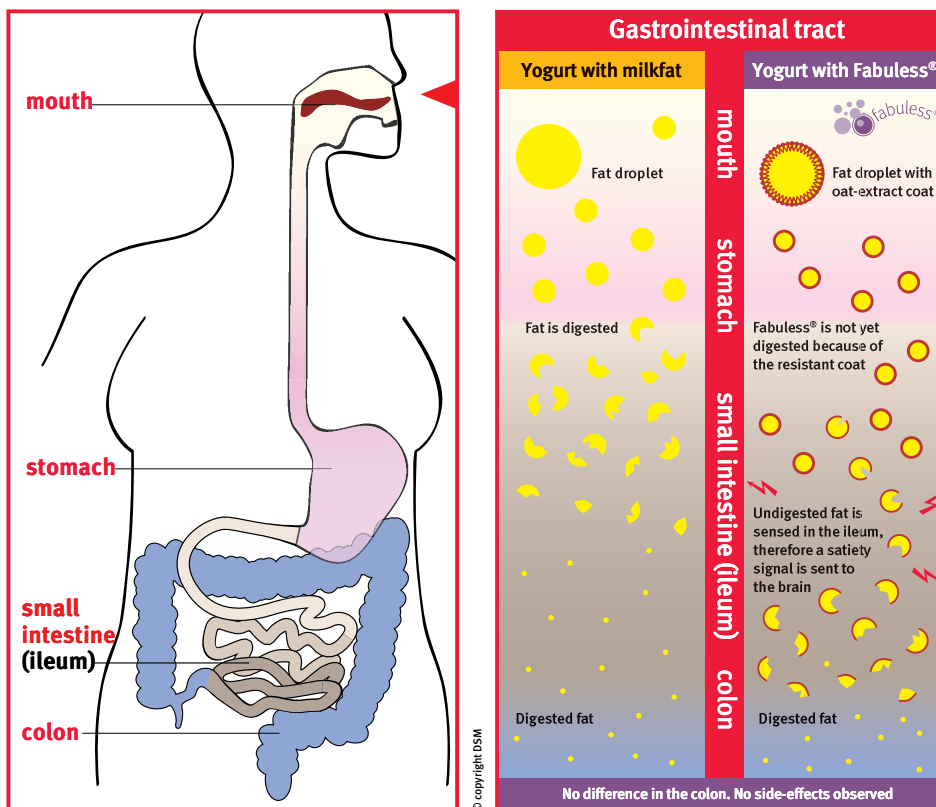
The unique Fabules[®] emulsion delays the digestion of its oil droplets in the stomach and small intestine. The triglycerides are hydrolyzed into glycerol and free fatty acids.

It has recently been found that the Fabules[®] emulsion induces the formation of free fatty acid crystals along the intestinal tract. These crystals explain that lipids can reach the ileum to activate a satiety feedback mechanism.

The free fatty acids released (mainly palmitic acid) are recognized as undigested lipids and later their absorption triggers the ileal brake in the ileum. A message of satiety is sent to the brain through an hormone induced response via the body's natural appetite control mechanism.

The ileal brake is known as an inhibitory feedback mechanism to control transit of a meal through the gastrointestinal tract in order to optimize nutrient digestion and absorption (van Citters and Lin, Curr Gastroenterol Rep-1999).

The Fabules[®] mechanism of action is substantiated by two mechanistic studies showing a significant increase of fatty acids in the proximal jejunum and the formation of fatty acid crystals compared to control treatment, as well as a delayed food transit time of 45 minutes compared to placebo.



Safety

Fabules[®] is a combination of natural food grade components, and the emulsion is produced by proprietary and conventional processing techniques.

Fabules[®] triggers an appetite control mechanism the same way food would do and no side effects have been reported in the long-term studies with daily exposure to Fabules[®].

Applications

Available in liquid and powder forms, Fabules[®] can easily be added to your formulation, for example in its liquid form for dairy applications and ready-to-drink shakes or in its powder form for instant beverage mixes.

Recommended dosage for liquid and powder forms are 5 and 6 grams per serving respectively.

Fabules[®] has a proven track record of being used in highly successful products all over the world.

Our technical team can work closely with you on your project. Our Nutrition Innovation Center offers laboratories, pilot plants and sensory analysis facilities to enable our experts to validate the formulation at every stage of the product development process.



For DSM, quality is a way of life. This is the core of Quality for Life[™].

Quality for Life[™] is the mark of quality, reliability and traceability. It means that DSM customers are getting the best ingredients, knowing the source on which they depend.

Quality for Life[™] means sustainability. It symbolizes our commitment to our environment, consumers, our business partners, our people and the regulatory framework that governs our operations.

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