



# Facts about Seracal

## Fat Digestion, Absorption, and Seracal™

Fat is the hardest macronutrient to absorb because oil and water do not naturally mix, and the digestive tract contains mostly water-based material (from food and beverages). Fats are large molecules and are not water-soluble.

Like carbohydrates and protein, fats are broken into smaller components (digested) for absorption. This digestion starts in the stomach and continues in the small intestine, where lipase enzymes are released.

The goal of fat (“triglyceride”) digestion is to use the digestive enzyme, lipase, to remove two of the three fatty acids from the glycerol backbone, leaving the final fatty acid attached to the glycerol as a “monoglyceride.”

For the digested fatty acids and monoglycerides to be absorbed, they first need to combine with bile acids (produced by the body) to form into tiny spheres called micelles. Micelles are absorbed through the intestinal wall, allowing the transport of digested fats into the body to be used as energy.

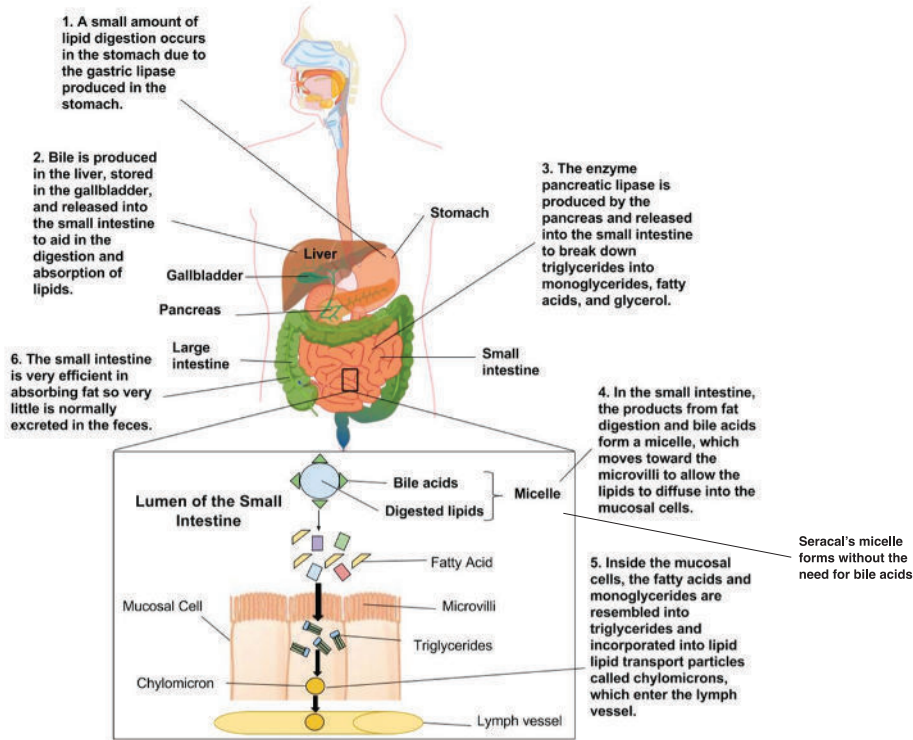
Seracal is a healthy source of pre-digested fat that contains essential fatty acids, monoglycerides, and choline-containing

phospholipids (lecithin). In addition to not requiring digestion, the important effect of Seracal occurs once it reaches the small intestine and crystallizes into micelles without the need for bile acids.

Unlike a typical micelle, Seracal’s micelle is a “pocketed” structure. It is the pockets that make Seracal’s micelles dynamic and unique as compared to typical micelles. Each pocket attracts fat-soluble nutrients from other foods (such as broken-down fats and fat-soluble vitamins), bringing these additional nutrients along when Seracal’s micelles are absorbed by the body.

One of Seracal’s key ingredients, the choline-containing phospholipid, is recognized by the body as a key component to micelle production. This special phospholipid is recirculated back into the digestive tract to help produce more Seracal micelles. In this way, even once Seracal is initially absorbed, it can continue to help patients absorb fat soluble nutrients from other foods they eat. Seracal “primes the pump” for fat soluble nutrient absorption.

## Lipid Digestion and Absorption Fig 6.13



### Modified from:

<https://pressbooks.calstate.edu/nutritionandfitness/chapter/6-3-lipid-digestion-absorption-and-transport/>

Both the pocketed micelles and the recirculation of the choline-containing phospholipids explain how Seracal helps people absorb fat even better than diet and enzymes alone.

Because Seracal does not break down triglycerides in other foods, it does not take the place of digestive enzymes (whether produced by the body or taken as a drug or supplement). However, Seracal will help improve fat absorption with the presence of any amount of pancreatic enzymes, even if it is less than healthy levels.

Seracal has been clinically shown to increase caloric intake and weight gain in patients with exocrine pancreatic insufficiency that was associated with cystic fibrosis. This technology is now being applied to multiple other malabsorption syndromes.

### References:

<https://pressbooks.calstate.edu/nutritionandfitness/chapter/6-3-lipid-digestion-absorption-and-transport/>

Stallings, et al. J Pediatric Gastro Nutr 2016  
Stallings, et al. Plos One, 2020.

## How to use Seracal

We recommend starting with 1-2 Tablespoons mixed in with a meal or snack and increase gradually to the number of servings recommended by your clinician (typically 2 or 3 servings per day, depending on your age). One Serving of Seracal = 4 Tablespoons or 1/4 cup (level, not packed), or 13.4gm by weight.

Our consumers recommend measuring out your daily dose of Seracal (1/2c or 3/4c) into a lidded container in the morning. Add Tablespoons to foods throughout the day vs. attempting 1 serving in a meal.



Seracal mixes best with soft foods – either cold or hot. Some ideas include pudding, yogurt, applesauce, oatmeal, condiments (ketchup, whipped butter, sauces, ranch dressing/dip, hummus), chili, taco meat, scrambled eggs, or baked goods such as pancakes or muffins.

We do not recommend adding Seracal to thin beverages like coffee, water, juice or milk. However, blended drinks such as smoothies or thick milkshakes do mix well with Seracal.

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Please check out [MySeracal.com](https://www.myseracal.com) for more mixing ideas and recipes!  
[@MySeracal](https://www.youtube.com/channel/UC...) YouTube Channel has videos for measuring, mixing and fun recipes.