

## Digestive Enzymes

**Rationale:** The body normally produces a variety of digestive enzymes to break large food molecules into smaller ones which can be absorbed. Different enzymes are needed for different types of protein, carbohydrates, and fats. Children with autism sometimes have low levels of certain enzymes, or less active enzymes, or both – enzyme problems are especially common in children with gut problems (chronic constipation or diarrhea).

One digestive enzyme, DPP4, is easily deactivated by small amounts of toxins including mercury and organophosphates (pesticide sprays). DPP4 is needed to digest some peptides from casein and other substances that can have an opioid-like effect.

**Treatment:** Take a digestive enzyme with each meal, usually at the start of the meal. Use enzymes that are as complete as possible. Proteases are needed for protein, lipases for fats, and disaccharidases and other enzymes for carbohydrates.

Note that we recommend digestive enzymes in addition to special diets, and should not be used instead of special diets. If a child has a problem digesting wheat or dairy products, it is best to just avoid them, and use the digestive enzymes as a precaution against unknown exposures.

Sometimes during detoxification treatments, toxic elements such as mercury are freed from sequestration inside cells and they are "removed" via bile. However, once in the small intestine, these toxics (mercury) can bind to and inactivate digestive enzymes such as peptidases (DPP4) and disaccharidases which are needed to break down complex sugars. There are reports of "no evidence of need" for digestive enzymes until detoxification was started. The message is that there can be several reasons for use of digestive aids and that "things change".

**Testing:** A Comprehensive Digestive Stool Analysis can reveal if some types of foods are not being digested well, suggesting a problem with specific digestive enzymes.