

<b>CHAPTER 6</b>	<b>Thought Lab 6.3: Enzymes and Diet Answer Key</b>	<b>BLM 6.3.1A</b>
<b>ANSWER KEY</b>		

### Answer to Analysis Question

1. Your answer will depend on your personal beliefs and ideologies. The following is a brief overview of a raw food diet.

Those who follow this way of eating generally believe the following:

- Raw foods contain enzymes that act as catalysts to regulate the digestive process in the body.
- Heating (or freezing) food degrades or destroys enzymes in food.
- Food without enzymes is thought to lead to toxicity in the body, excess consumption of food, and, therefore, obesity.
- Living and raw foods are thought to have much higher nutrient values than foods that have been cooked.

The main idea behind raw food diets is that cooked food is supposedly toxic, because cooking destroys the enzymes contained in food.

### Critics of this Diet

Raw food diets have been criticized in the mainstream medical community as being too harsh and restrictive.

- A raw food diet requires special care to include the recommended amounts of several important vitamins and nutrients, including vitamin B-12 and protein. If adopted for an extended period of time without special attention to essential nutrients, any restrictive diet can lead to nutritional deficiency.
- Much of the research advocating raw food diets has been criticized. Critics say that food enzymes cannot be fully utilized by the human body, since they are destroyed during the digestive process.
- Some nutrients are only fully released in cooking, including lycopene in tomatoes, and beta carotene in carrots.
- It is also argued that humanity has been cooking for such a long time that the human body can hardly be ill adjusted to cooked food.
- Many claims of “enhanced enzyme activity” ignore the vast and specific roles that enzymes play in physiological processes.
- Any enzyme ingested, whether raw or cooked, is rapidly digested into inactive peptides in the stomach.

### Is it healthy for all people?

Proponents of this diet will support it while others reject it as being dangerous. Here is a quotation from the FAA in the United States:

Many highly touted weight reduction diets are unhealthy or dangerous. Single food diets are nutritionally bankrupt and may cause problems with gall bladder disease. Very low calorie diets have some of the same problems. Diets that avoid single macronutrients such as fats, protein, or carbohydrates tend to be nutritionally depleted also. Long-term success with weight control is best achieved with a healthy, nutritionally balanced diet that is enjoyable and sustainable.

### Is it healthy for dogs and cats?

There are many proponents that support this diet is healthy for cats and dogs. However, no scientific proof was provided supporting this claim.

<b>CHAPTER 6</b>	<b>Thought Lab 6.3: Enzymes and Diet (cont'd)</b>	<b>BLM 6.3.1</b>
<b>HANDOUT</b>		

### Answer to Extension Question

- Industrial enzymes are those catalysts used on large production-oriented scales to aid the reactions of mass quantities of chemicals. For example, specific enzymes are used in a number of applications, such as laundry detergents, paper bleaching, and food processing.  
Development of medical applications for enzymes has been at least as extensive as those for industrial applications, reflecting the magnitude of the potential rewards. For example, pancreatic enzymes have been in use since the nineteenth century for the treatment of digestive disorders. The variety of enzymes and their potential therapeutic applications are considerable.  
In contrast to the industrial use of enzymes, therapeutically useful enzymes are required in relatively tiny amounts, but at a very high degree of purity and (generally) specificity. A major potential therapeutic application of enzymes is in the treatment of cancer.  
Asparaginase has proved to be particularly promising for the treatment of acute lymphocytic leukemia.