

## The Problem With Milk

### What is lactose intolerance?

The largest single nutrient in milk is a complex natural sugar, lactose. In order to digest lactose it is necessary for the body to produce an enzyme called lactase. Unfortunately, not all people do and when the body ceases the production of this enzyme or does not produce it in sufficient quantity, digestion of milk and milk foods becomes difficult. This common condition is known as lactase deficiency and generally becomes more prevalent the older we become. When a lactase deficient person eats or drinks a dairy food and reacts to the lactose, he or she is termed lactose intolerant. Common lactose intolerance symptoms are gas, cramps, bloating and/or diarrhea.

Most populations have a high portion of adults and children who have lactose intolerance. Among them, to name a few, are American Indians, Asians, African blacks, Mediterraneans, Ascaunazic? Jews, Southern and Central Europeans, and Central and South Americans. Approximately 75% of the world's adult population has this characteristic. Northern Europeans and their descendants appear to have the best tolerance to lactose at all ages but there are many exceptions even to this group.

Lactose intolerance can also occur as a secondary event from a physical condition as well. Temporary or permanent lactose intolerance often occurs when there has been intestinal problems such as intestinal infection and the taking of medications (particularly antibiotics). In addition, hundreds of medications use lactose as their formulation as a carrier.

Lactose intolerance can also be found in infants and young children though it is not common if the children continue to receive milk products to the age of five. Most children are born with the ability to digest lactose and can do so until at least five years of age. However, in conditions where extreme malnutrition has occurred or chronic diarrhea has been a routine part of their health, even young children may lose their lactose tolerance.

### Detection of lactose intolerance

If a person experiences the symptoms described above after drinking milk or eating dairy products, a series of simple tests should be taken to determine whether or not the population has lactose intolerance.

### Nutritional implications

Persons who react to milk products with gas or diarrhea should curtail their consumption of milk and dairy foods. To continue to partake will only increase the rate of diarrhea and therefore the loss of other nutrients taken during eating. In other words, if milk is continually provided to a person who is lactose intolerant, the result will be an increase in nutritional deficiency.

The reason that some people do not digest lactose is because lactose is a double sugar. When it is not broken down it will not be absorbed through the intestinal wall. For lactose to be broken down or split it is necessary for the enzyme lactase to be present in the body. When there is insufficient lactase present to digest the amount of lactose ingested the lactose remains in the intestinal tract. The presence of this lactose increases the density of the intestinal fluid and draws water from the surrounding tissue into the intestine. This is the reverse of the normal direction when food is being digested properly and it causes gut distention and bloating. The bacteria in the lower intestine feed on the undigested lactose and produce gas and acid. The results of lactose maldigestion can include diarrhea which, in a malnourished population, is one of the greatest causes of death.

Many relief organizations believe that dry skimmed milk or DSM is lower in lactose than whole fluid milk. Unfortunately just the opposite is correct. Whole fluid milk contains approximately 11 grams of lactose. Dry skimmed milk contains 49 grams of lactose while non-fat dry skimmed milk contains 62.4 grams. Therefore, issuing DSM actually increases the likelihood that diarrhea will be increased among lactose intolerant populations and relief workers are likely to see a dramatic increase in the number of deaths.

#### Recommended actions

1. Avoid issuing DSM in any malnourished population until a relatively high standard of nutrition has been restored.
2. If DSM or other milk products are being issued, closely monitor the rates of diarrhea to detect any possible cases of lactose intolerance.
3. If lactose intolerance is suspected, conduct a clinical examination to determine if a significant portion of the population is lactose intolerant. (Note: Lactose intolerance of over 15% of the infant population should be considered the absolute threshold for determining whether or not to issue milk products.)
4. If lactose intolerance is determined, the following foods should be withheld from distribution:
  - a. whole fluid milks;
  - b. low-fat milk;
  - c. skim milk;
  - d. dry whole milk;
  - e. non-fat dry milk;
  - f. dry skimmed milk;
  - g. sweetened or chocolate milk;

- h. whole milk yogurt;
- i. cheeses;
- j. chocolate, and
- j. all baby formulas containing lactose.\*

DSM and impure water

In recent years scientists have noted that there have been abnormally high death rates among populations receiving DSM as a relief food. Many observers have attributed this to the use of impure water for the preparation of the milk. Earlier, suppliers of DSM had defended the use of the product by pointing out that many people had developed intestinal intolerance to impure and should therefore the higher deaths should not be attributed to simply to the use of DSM. Research, however, has shown that the DSM provides a culture whereby the harmful bacteria in the water can multiply at a much higher rate than normal thereby overcoming any natural tolerance or resistance that the body may have developed. Therefore, it is now confirmed that the higher death rates are attributable to the issuance of DSM.

\* As a general rule all baby formulas should be avoided unless given under the direct supervision of the medical staff.

#### References

1. Lactose Intolerance in Third World Populations; Center for Disease Control; Atlanta, Georgia, 1982.
2. Nieburg, Philip and Allegra, Donald; "Instruction to the Red Cross Societies Concerning the Use of Milk in Feeding Programs for Kampuchean Relief Operations", (unpublished handout, League of Red Cross Societies, 1979).
3. Nieburg, Philip \_\_\_\_\_?, 1987.
4. "Why Lactaid: The Problem with Milk and the Answer", Lactaid, Inc., 1987.