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**Dairy Free Fact Sheet**

**What is dairy?** Dairy includes all products made from milk of mammals. All milk contains the sugar lactose that is broken down and digested into galactose & glucose.

**What does it mean to be lactose intolerant?** People who are lactose intolerant lack the enzyme; lactase that is required to help humans digest milk and our ability to produce this enzyme, diminishes with age. People who are lactose intolerant often feel bloated and gassy when they consume dairy products. There are now lactose-free dairy products available to help combat such reactions.

**What does it mean to be casein intolerant?** Casein is the protein in milk. Different types of cows (from different species) produce one of two types of casein: A1 and A2. Cows, such as Holsteins (most common among cows in the US), produce milk with A1 beta casein. A1 beta casein contains beta casomorphins, specifically BCM-7 opioids. \* Smaller cows of older breeds, such as Jersey cows, produce A2 beta casein, also found in human milk and for that matter, goat’s milk. Some humans are more sensitive to the A1 beta casein cow’s milk because it’s molecular structure actually contains a histamine amino acid, whereas the A2 in that same location contains another amino acid. In addition, the A1 beta casein, when it is processed and/or digested, releases BCM-7 opioid into the blood stream, it can cross the blood-brain barrier, the GI tract and is found in urine. People with sensitivity to A1 casein, often have red, inflamed itchy cheeks and eczema. More severe reactions have been linked to behavioral and mental health issues, including autism.\*\* Other symptoms of dairy intolerance include sinus congestion, increased mucus production, constipation and gas. It is especially helpful to avoid dairy when you have a cold, sinus allergies or the flu because of increased mucus production.

**Are there substitutions?** If you suspect that you are sensitive to A1 casein, try dairy-free milks, yogurts, cheeses and ice creams made from flax, almonds, cashews or coconut. They are easily available and adaptable for various recipes.

What’s safe to eat?

Grass-fed meat, poultry & fish

Cage free eggs

Organic vegetables & fruits

Seeds & nuts

Organic whole grains

Meal Suggestions

Breakfast

Cage free eggs with vegetables

Smoothie with vegetables & fruit

Bread with nut butter spread

Grass fed sausage

Nut butter on apples, celery or pears

Lunch

Vegetable soup

Coconut milk based soups

Hummus with vegetables

Egg, tuna, chicken salads

Wraps with grilled beef, poultry or fish

Rice and beans with salsa

Dinner

Rice or quinoa pasta & tomato sauce

Crilled poultry, meat or fish

Meatloaf

Spagetti squash with sautéed vegetables

Rataouie

Beef stew with vegetables

Frittata with vegetables

\*Hans Meisel and R. J. FitzGerald, Opioid peptides encrypted in intact milk protein sequences, British Journal of Nutrition (2000), 84, Suppl. 1, S27±S31

\*\*[Sokolov O](http://www.ncbi.nlm.nih.gov/pubmed/?term=Sokolov%20O%5BAuthor%5D&cauthor=true&cauthor_uid=24657283)1, [Kost N](http://www.ncbi.nlm.nih.gov/pubmed/?term=Kost%20N%5BAuthor%5D&cauthor=true&cauthor_uid=24657283)2, [Andreeva O](http://www.ncbi.nlm.nih.gov/pubmed/?term=Andreeva%20O%5BAuthor%5D&cauthor=true&cauthor_uid=24657283)2, [Korneeva E](http://www.ncbi.nlm.nih.gov/pubmed/?term=Korneeva%20E%5BAuthor%5D&cauthor=true&cauthor_uid=24657283)3, [Meshavkin V](http://www.ncbi.nlm.nih.gov/pubmed/?term=Meshavkin%20V%5BAuthor%5D&cauthor=true&cauthor_uid=24657283)2, [Tarakanova Y](http://www.ncbi.nlm.nih.gov/pubmed/?term=Tarakanova%20Y%5BAuthor%5D&cauthor=true&cauthor_uid=24657283)2, [Dadayan A](http://www.ncbi.nlm.nih.gov/pubmed/?term=Dadayan%20A%5BAuthor%5D&cauthor=true&cauthor_uid=24657283)4, [Zolotarev Y](http://www.ncbi.nlm.nih.gov/pubmed/?term=Zolotarev%20Y%5BAuthor%5D&cauthor=true&cauthor_uid=24657283)4, [Grachev S](http://www.ncbi.nlm.nih.gov/pubmed/?term=Grachev%20S%5BAuthor%5D&cauthor=true&cauthor_uid=24657283)5, [Mikheeva I](http://www.ncbi.nlm.nih.gov/pubmed/?term=Mikheeva%20I%5BAuthor%5D&cauthor=true&cauthor_uid=24657283)3, [Varlamov O](http://www.ncbi.nlm.nih.gov/pubmed/?term=Varlamov%20O%5BAuthor%5D&cauthor=true&cauthor_uid=24657283)6, [Zozulya A](http://www.ncbi.nlm.nih.gov/pubmed/?term=Zozulya%20A%5BAuthor%5D&cauthor=true&cauthor_uid=24657283)2. **Autistic children display elevated urine levels of bovine casomorphin-7 immunoreactivity.,** [Peptides.](http://www.ncbi.nlm.nih.gov/pubmed/24657283) 2014 Jun;56:68-71. doi: 10.1016/j.peptides.2014.03.007. Epub 2014 March