# **MILK PROTEIN HYPERSENSITIVITY**



milk, cow's milk or soy milk to in pediatric patients, including infants. The protein in milk triggers such hypersensitivity. It is not M. Samar Ammar, suggestive symptoms, along with

MD, FAAP, FAGA absence of sensitive diagnostic

testing, adds complexity to such diagnosis. The intensity of milk protein hypersensitivity or allergy may vary from mild to severe.

Cow's milk-sensitive enteropathy was the first recognized food allergic enteropathy and remains the most common one. Associated clinical features may include colic, gastroesophageal reflux, vomiting, failure to thrive, rectal bleeding, or extragastrointestinal manifestations including eczema. Up to 40 % of infants with classic cow's milk-sensitive enteropathy are also sensitized to soy, often after an initial period when it is tolerated.

Food protein-induced enterocolitis syndrome is a severe and sometimes life-threatening form of mucosal food hypersensitivity. Although usually triggered by cow's milk or soy ingestion, food protein-induced enterocolitis syndrome may be induced by a verity of foods, including rice, oat, barley, vegetables and poultry. triggered by milk protein in the mother's diet. Most cases show negative skin-prick tests. The infant usually presents with severe vomiting and diarrhea, requiring emergency admission to the hospital. Some demonstrate undergo a laparotomy if the diagnosis is not recognized.

Food-induced proctocolitis usually occurs in the first few weeks or months of life and is most often secondary to cow's milk or soy protein hypersensitivity. Infants usually have occult or gross blood in their stools with or without mucousy stool or diarrhea. Aside from occasional apparent pain on defecation, and eczema in a few cases, infants with food-induced proctocolitis generally appear healthy and have normal weight gain. Proctocolitis related to cow's milk protein allergy may also occur in exclusively breast-fed infants because of sensitization

Milk protein hypersensitivity to cow's milk protein entering into the mother's milk. or allergy is a diagnosis often Sensitization to other trophallergens via mother's milk, used in conjunction with breast such as egg, fish or peanuts, is also possible.

Based on clinical presentation, work up is indicated to describe groups of symptoms seen rule out other potential medical and surgical conditions. Referral is warranted to establish diagnostic and treatment plan.

Although the classic milk protein hypersensitivity IgE mediated, and lack of specific or allergy is usually self-limiting, rational treatment must be based on clinical presentation and a correct diagnosis. Whenever treatment is indicated, infants with milk protein hypersensitivity should be fed a substitute hypoallergenic formula. Because breast milk is an optimal source of nutrition for infants through the first year of life, maternal diet restrictions should be attempted to alleviate symptoms of infants with milk protein allergy whenever treatment is justified prior to hypoallergenic formula use. Health care providers should be cautious about the introduction of dietary food other than breast milk or hypoallergenic formula to infants with cow's milk protein hypersensitivity.

> Once a change is made, whether through hypoallergenic formula use, or maternal diet restrictions, symptomatic improvement is expected within one to two weeks. That by itself may validate the presumed diagnosis. On the other hand, lack of improvement should trigger more thinking about potential underlying cause of the infant's presentation.

The vast majority of infants with milk protein Milder symptoms can be seen in breast-fed infants, hypersensitivity are expected to outgrow their intolerance, whereas a handful of them may carry on their hypersensitivity into childhood. These may manifest different forms of food allergy.

The family of an infant with milk protein melena and passage of mucus per rectum, and may even hypersensitivity needs support at different levels. It is very stressful to deal with fussy infants. At GI for kids, we have appropriate staffing to intervene and provide support as needed.

How much calcium does my child need?				
Recommended Dietary Allowances (RDAs) for Calcium				
Age	Male	Female	Pregnant	Lactating
0–6 mos	200 mg	200 mg	-	-
7–12 mos	260 mg	260 mg		
1–3 yrs	700 mg	700 mg		
4–8 yrs	1,000 mg	1,000 mg		
9–13 yrs	1,300 mg	1,300 mg		
14–18 yrs	1,300 mg	1,300 mg	1,300 mg	1,300 mg

### **MILK INTOLERANCE**

when infants are given a cow's lips, or throat, nausea, vomiting, milk-based formula or exposed itchy eyes, nasal congestion, to cow's milk in the mother's diet wheezing, diarrhea, gas, bloating, through her breast milk. Casein stomach cramps, runny nose, is the principal protein found in sneezing, watery eyes, shortness of cow's milk and makes up the curd breath, or coughing. that forms when milk is left to sour. Milk proteins are what cause the the doctor may recommend the allergic reaction in some people. breastfeeding mother try a dairy free There is often some confusion diet to see if the infant's symptoms between milk allergy and lactose intolerance. A milk allergy is the immune system's reaction to the Soy-based formulas protein found in milk and milk proteins found in soybeans rather products. Symptoms usually appear in early infancy and can affect the may be recommended if the infant digestive system as well as other is found to have a reaction to cow's systems in the body. Lactose milk-based formulas. The infant intolerance is caused by the body's inability to break down lactose the needed vitamins, minerals and (milk sugar). Lactose intolerance is not life threatening. It is very rare amounts. If cutting dairy out of in the first years of life and only affects digestion. By drinking milk or eating dairy products bloating, gas or loose bowel movements can a hypoallergenic formula. These occur. Symptoms of a milk allergy may include itchy red rash, hives, an allergic response. The two types eczema, allergic "shiners" (black of hypoallergenic formulas are:

Milk intolerance usually occurs eyes), swelling of the face, mouth, Sandy Altizer. RD. LDN Callie M. Jubran, RD, LDN • Hydrolyzed formulas in which For infants with a milk allergy, the milk proteins have been broken down or "pre-digested". • Amino acid-based infant formulas, which contain protein in improve. If this is unsuccessful, a its simplest form. soy-based formula may be used. For a milk-allergic older child, contain beyond the formula stage (usually at one year old) eating and drinking than those found in cow's milk and real foods and liquids, and avoiding milk, can be a challenge. Rice, almond, coconut, or soy milk may be substituted instead of cow's milk soymilk formulas are fortified with as long as the child is not allergic to the proteins that make up these essential fatty acids in specified other milks. The nutritive value of fortified commercial soymilk the mother's diet and/or switching is almost equal to that of cow's to a sov formula does not help, the milk. Be aware that there are some infant will usually be switched to milk preparations sold that are not fortified and, therefore, will not formulas are less likely to trigger supply the nutrients (especially calcium) found in cow's milk.

## Additional Tips for a Cow's Milk Free Diet

- on the label.
- labels carefully.
- cookies, doughnuts, breads, frozen desserts, creamed foods and soups.
- products, therefore the meat could be contaminated.
- Use milk-free milks or creamers on cereal.
- Substitute tofu, a soy product, for cheese in pasta dishes.
- Milk is an important source of calcium, vitamin D, the B vitamins, and protein. Calcium supplements may be needed.



Do not give your child foods that contain the words "caseinate" or "casein" on the label. Do not give your child foods that contain the words "lactate," "lactose," "lacto-" or "lacta-"

Be aware that "nondairy" products are not necessarily milk-free. Always check ingredient

Foods that may be made with milk or milk products include many baked products, such as cakes,

Avoid buying "deli" meats, because the slicers frequently are used to cut both meat and cheese

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Having an infant that is fussy at times is not unexpected. A baby becomes fussy when hungry, sleepy or needs a diaper change. Infants may develop an intolerance to milk protein in their diet and, as a result, manifest a verity of symptoms. Milk protein hypersensitivity or allergy can be seen in conjunction with breast milk, cow's milk or soy milk. The intensity of milk protein hypersensitivity may vary from mild to severe.



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Celiac Disease, or gluten intolerance, is a genetic autoimmune disease estimated to affect 1 of every 133 people in the U.S. Research indicates approximately 2.5 million people in the U.S. have celiac disease with approximately 80,000 diagnosed.

Children's Hospital

CELI-ACT IS SPONSORED BY GI FOR KIDS, PLLC, LOCATED AT EAST TENNESSEE CHILDREN'S HOSPITAL, AND OPEN TO ANYONE WITH CELIAC DISEASE OR THEIR FAMILY MEMBERS.

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The vast majority of infants with milk hypersensitivity are expected to outgrow their intolerance; but a small percentage does not. The family of an infant with milk protein sensitivity needs support at different levels.

At GI for Kids, we have appropriate staffing to intervene and provide support as needed.

helping each other.

