



Position Statement on rBGH

Health Care Without Harm opposes the use of recombinant Bovine Growth Hormone (rBGH or rBST¹), a synthetic hormone given to dairy cows to increase milk production, due to its adverse impacts on animals and potential harm to humans. We therefore encourage health care providers to purchase non-rBGH milk from suppliers. Moreover, we encourage them to source from dairies that demonstrate a strong commitment to alternatives to non-essential hormones and antibiotics, and that support local farmers and sustainable practices.

Background on rBGH

Introduced into dairy production in the United States in 1993, rBGH is a genetically engineered animal drug injected into cows to increase their milk production. After a cow calves, she produces milk for about twelve weeks, after which milk production tapers down, feed intake catches up, and her body rebuilds. By injecting or implanting rBGH, a producer can postpone that crossover point for another 8 to 12 weeks and keep milk production at a high level for a longer period of time.²

Though approved by the Food and Drug Administration (FDA), rBGH has adverse impacts on animal health and human health concerns about the use of rBGH remain unresolved. Consumers Union, the nation's largest consumer organization, has called on the FDA to reassess its approval of rBGH. Most industrialized nations of the world do not allow the use of rBGH in dairy production based primarily on animal and human health concerns. These include Canada, Australia, New Zealand, Japan, and all 25 nations of the European Union.

Human Health Concerns

Antibiotic Resistance: Cows injected with rBGH suffer increased rates of udder infection (mastitis) and other health issues, forcing farmers to increase their use of therapeutic antibiotics including important human antibiotics.³ Antibiotic use in food animals contributes to antibiotic resistance transmitted to humans. More generally, the increased use of antibiotics in animals has contributed to the global crisis of antibiotic-resistant infections in humans.⁴ Pasteurization kills 97-99% of

bacteria in milk. The remaining bacteria may include drug-resistant strains. The National Academy of Sciences has stated that, "Clearly, a decrease in the inappropriate use of antimicrobials in human medicine alone is not enough. Substantial efforts must be made to decrease inappropriate overuse of antimicrobials in animals and agriculture as well."⁵

Potential Cancer Risks: IGF-1 is a growth factor present with the same molecular structure in both cows and humans. Use of rBGH increases IGF-1 levels in cows and cows milk. Some evidence from animal studies suggests that most IGF-1 in milk is protected from digestion by casein, milk's main protein, thereby allowing IGF-1 to enter the bloodstream.^{6,7,8} It remains unclear whether drinking rBGH milk will contribute to an increase in human blood levels of IGF-1 significantly more than drinking non-rBGH milk or other dietary factors.^{9,10} If it does there would be concern since elevated IGF-1 in humans is associated with increased rates of colon, breast, and prostate cancer.¹¹

Since rBGH is unnecessary to produce milk, and because there is some scientific basis to presume that milk from rBGH-treated cows indeed might increase human IGF-1 levels, we feel it is prudent to err on the side of avoiding this potential risk.

Immunological Effects of Absorbed rBGH: Low levels of rBGH are present in milk that people drink from rBGH-treated animals. Laboratory animal tests at higher doses indicate that at least some rBGH survives digestion and enters the bloodstream, potentially resulting in antibody production and allergic reactions. In granting approval for use of rBGH/rBST, the FDA relied upon a single toxicological study in animals (a 90-day rat feeding study). Five years after FDA's approval, a Health Canada scientific review team found "(T)here were no long-term toxicity or reproduction/teratogenicity studies" done on the drug. In fact, as the Canadian scientists reported, "(N)ot only was the orally administered rBST absorbed into the blood stream of these rats but also it produced in them a distinct immunological effect."¹²

Health Canada's report found a specific immunoglobulin response in 20% - 30% of rats fed a moderate or high dose of rRBGH, and stated "The human health implications of the immunological findings in rats should have been thoroughly evaluated...the nature of the product should have prompted more exhaustive and longer toxicological studies in laboratory animals."¹³

Animal Health Concerns

The package insert for rRBGH, as required by the FDA, lists 16 different harmful health effects increased in cows receiving it. These include reduced pregnancy rates, lower birth weight of calves, and increased rates of indigestion, diarrhea, somatic cell counts and mastitis. Scientists from the Canadian Veterinary Medical Association stated that "there are a number of legitimate animal welfare concerns associated with the use of rBST," and recommended against approval.¹⁴ rRBGH manu-

facturer Monsanto, is required in its drug circular for its rRBGH/rBST product to state that "Use of POSILAC™ is associated with increased frequency of use of medication in cows for mastitis and other health problems."

Conclusion

Based on evidence of harm to animals from rRBGH and the science raising possible human health concerns, HCWH encourages health care providers to purchase non-rRBGH dairy from suppliers. There are two categories of non-rRBGH milk, organic and conventional. Organic is available in most parts of the country, usually at higher prices than conventional. Non-rRBGH milk, often similarly priced to rRBGH milk, may sometimes be labeled as containing "no artificial (or added) hormones"; buyers should ask their dairy suppliers for their policies on availability and verification methods for non-rRBGH dairy products.¹⁵

ENDNOTES

1. Recombinant Bovine Growth Hormone (rRBGH) is also known as rBST (recombinant Bovine Somatotropin), and is sometimes referred to by its "brand" names Posilac or Nutrilac.
2. Meadows, Donella, RBGH - Not The Only Choice Comparing the full effects of chemically-generated increases in milk production—with a non-chemical alternative *The Ecology Of Justice* (IC#38) Spring 1994, Page 8 Copyright (c)1994, 1997 by Context Institute
3. Health Canada report <http://www.hc-sc.gc.ca/english/protection/rbst/animals/index.htm>
4. The nonpartisan Congressional research arm, the U.S. General Accounting Office (GAO) recommended against approval of rRBGH, based on the risk of antibiotic resistance. The GAO found that FDA "did not address our concern: does rRBGH use result in higher concentrations of antibiotics in milk or not, and if so, is the higher level acceptable from a food safety standpoint?" FDA told the GAO that its review of rRBGH food safety issues was complete, but GAO asked, "How can a food safety determination be made when the rRBGH-mastitis- antibiotic issue has not been addressed[by the agency], much less resolved?": Correspondence from Eleanor Chelimsky, Assistant Comptroller General, General Accounting Office, to Donna E. Shalala, Secretary of Health and Human Services, March 2, 1993, quoted in Rachel's #383, "Drug Experiments On The Public," March 31, 1994.
5. National Academy of Science's Institute of Medicine. 2003. *Microbial Threats to Health: Emergence, Detection and Response*. National Academies Press: Washington, DC.
6. Anderle, P. et al, In Vitro Assessment of Intestinal IGF-1 Stability, *Journal of Pharmaceutical Sciences*, Jan. 2002, 91:1
7. Kimura T. et al, Gastrointestinal absorption of recombinant human insulin-like growth factor-1 in rats, *Journal of Pharmacology and Experimental Therapeutics*, 1997, 283:611-618.
8. Xian C. et al, Degradation of IGF-1 in the adult rat gastrointestinal tract is limited by a specific antiserum or the dietary protein casein, *Journal of Endocrinology*, 1995, 146:215-225
9. Heaney R. et al, Dietary changes favorably affect bone remodeling in older adults, *Journal of the American Dietetic Association*, October 1999, 99:1229-1233.
10. The European Commission, Report on Public Health Aspects of the Uses of Bovine Somatotropin, "Food Safety: From the Farm to the Fork," March 15-16, 1999.
11. For example, S. E. Hankinson, and others, "Circulating concentrations of insulin-like growth factor 1 and risk of breast cancer," *Lancet*, vol. 351, no. 9113, 1998, pp. 1393-1396; June M. Chan, et. al., "Plasma Insulin-Like Growth Factor-1 [IGF-1] and Prostate Cancer Risk: A Prospective Study," *Science*, vol. 279, January 23, 1998, pp. 563-566; LeRoith, Derek, et al. The role of the insulin-like growth factor-I receptor in cancer. *Annals New York Academy of Sciences*, Vol. 766, September 7, 1995, pp. 402-08; Michelle D. Holmes, et. al., "Lifestyle correlates of plasma insulin-like growth factor I and insulin-like growth factor binding protein 3 concentrations," *Cancer Epidemiology, Biomarkers & Prevention* 11: 862-867, 2002; Michelle D. Holmes, et. al., "Dietary correlates of plasma insulin-like growth factor I and insulin-like growth factor binding protein 3 concentrations," *Cancer Epidemiology Biomarkers & Prevention* 11: 852-861, 2002.
12. Health Protection Branch, Health Canada, "rBST (Nutrilac) 'Gaps Analysis' Report, Dr. Ian Alexander, Coordinator, April 21, 1998, pp. 30-31. (<http://www.nfu.ca/gapsreport.html>)
13. Ibid, pp.29-30
14. <http://www.hc-sc.gc.ca/english/protection/rbst/animals/index.htm>
15. There are two options for purchasing rRBGH-free milk: any dairy products labeled "USDA Organic" must by law be from dairies that exclude the use of rRBGH. These dairies are certified organic (and rRBGH-free) by USDA accredited, third-party certifiers. Organic milk is typically sold for a premium price. There are also many dairies that produce rRBGH-free milk that is not labeled "organic." These producers may not comply with other organic livestock standards, but do (by contract and/or certification) require their dairy farmers not to use rRBGH.

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