

TALKING TO CONSUMERS

about hormone implants

Merck Animal Health is committed to improving the health and well-being of animals through innovative science-based solutions, products, treatments and services that help ensure a safe and affordable food supply. The use of hormone implants in beef cattle help farmers raise healthy beef sustainably, which helps keep beef affordable for consumers.¹ Hormone implants have been proven safe for people, animals and the environment, and there are practical reasons for their use.²

Hormone implants are safe

- Hormone implants have been approved for use by the FDA for more than 70 years.²
- Each type of hormone implant must go through rigorous development and testing programs to prove beef from cattle given hormone implants is safe for people to eat, and the implant does not harm animals or the environment.²
- The USDA's Food Safety and Inspection Service routinely tests meat for any trace residues that are beyond the threshold for human safety.³
- Beef from cattle given hormone implants has never been linked to adverse effects in humans.⁴

Hormone implants are practical

- Hormone implants help cattle convert feed into more lean meat consumers desire instead of excess fat.¹
- Hormone implants given to steers provide a fraction of the hormone levels bulls naturally produce, while still allowing for better muscle growth.⁵
- Hormone implants used in heifers being raised for beef balance natural hormone levels and allow for improved muscle growth.¹

Hormone implants help farmers raise beef sustainably

- Hormone implants help farmers raise more beef with fewer cattle while using fewer natural resources like land, feed and water.⁶
- Without hormone implants, to raise the same amount of beef, U.S. farmers would need 11 million more head of cattle, 18 million more acres of land for grazing and growing feed and 515 billion more gallons of water for producing feed and maintaining animals.^{7,8,9}

A three-ounce serving of beef from a steer implanted with estrogen contains

1.9

nanograms of estrogen¹



A three-ounce serving of potatoes contains

225

nanograms of estrogen¹



A three-ounce serving of cabbage contains

2,000

nanograms of estrogen¹



Every day, an average woman produces

513,000

nanograms of estrogen²



A three-ounce serving of beef from a steer NOT implanted with estrogen contains

1.3 nanograms of estrogen¹

Every day, an average man produces

136,000 nanograms of estrogen²



¹Loy, D. Iowa Beef Center. Iowa State University Extension. Understanding Hormone Use in Beef Cattle Q&A. IBC 48. <http://www.iowabeefcenter.org/information/IBC48.pdf>. Accessed January 1, 2021.

²FDA. Steroid Hormone Implants Used for Growth in Food-Producing Animals. 2020. <https://www.fda.gov/animal-veterinary/product-safety-information/steroid-hormone-implants-used-growth-food-producing-animals>. Accessed January 1, 2021.

³United States Department of Agriculture. Food Safety and Inspection Service. Residue Sampling Plan: Fiscal Year 2020 Blue Book. <https://www.fsis.usda.gov/node/1982>. Accessed January 1, 2021.

⁴U.S. Food & Drug Administration. Steroid Hormone Implants Used for Growth in Food-Producing Animals. <https://www.fda.gov/animal-veterinary/product-safety-information/steroid-hormone-implants-used-growth-food-producing-animals>. Accessed January 1, 2021.

⁵Arnold, M. Cornell Cooperative Extension. Why is early castration on bull calves important? <https://crnydfcc.cce.cornell.edu/submission.php?id=810>. Accessed January 1, 2021.

⁶Capper, J. L., and D.J. Hayes. 2012. The environmental and economic impact from removing growth-enhancing technologies from U.S. beef production. J. Anim. Sci. 2012, 90:3527-3537.

⁷Oklahoma Cooperative Extension Service. Growth Promotants Reduce Beef's Environmental Impact. <http://pods.dasn.okstate.edu/focusshare/dsweb/Get/Document-10163/ANSI-3295.pdf>. Accessed January 1, 2021.

⁸National Cattlemen's Beef Association. Beef Industry Statistics. 2017. <https://www.ncba.org/beefindustrystatistics.aspx>. Accessed January 1, 2021.

⁹Capper J. L. 2013. The environmental and economic impact of steroid implant and beta-adrenergic agonist use within U.S. beef production. In: Proceedings of the ADSA-ASAS Joint Annual Meeting, Indianapolis, IN, USA.

¹⁰Treffer, B. University of Nebraska-Lincoln. Worried about Hormones? <https://newsroom.unl.edu/announce/beef/2846/15997>. Accessed January 1, 2021.

¹¹Hoffmann, B. and P. Evers. Drug Residues in Animals. A. G. Rico (Ed.), pp. 111-146. Academic Press. New York (1986).

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We understand consumers have questions about hormone implants, and we want to help answer them.

CONSUMER: I try to make sure I'm feeding my family wholesome food, and I am really concerned about farmers' use of hormones.

I understand your concerns. Safety is a top priority for us, too. We feed our family the same beef that you feed your family. To put your mind at ease, the FDA has strict standards for allowing product approvals, and hormone implants have been approved for use for more than 70 years. A hormone implant must undergo rigorous testing to ensure it is safe for animals and the environment. The USDA's Food Safety and Inspection Service also routinely tests meat to ensure any trace residues found in meat are at safe levels for human consumption.^{2,3}

CONSUMER: Should I be concerned about hormones in my meat?

I want to help you make knowledgeable choices about your food. Hormones are found in every living thing, and therefore in everything we eat.

- For example, you wouldn't expect to find hormones in a potato, but in reality, a three-ounce serving of potatoes contains 225 nanograms of estrogen.¹⁰
- To further put it in perspective, a three-ounce serving of beef from an animal given hormone implants contains only 1.9 nanograms of estrogen.¹⁰

CONSUMER: That's nice to hear, but how do we know the hormones you give animals are safe for us in the long run?

I share your concerns about feeding safe, healthy food to our families. And it's one we look at very closely. More than 60 years of studying hormone implant use in cattle has shown no link to human health concerns. The FDA and USDA continue to monitor and research the use of hormone implants to ensure their safety.^{2,3}

CONSUMER: What about early puberty in girls? I read this was caused by hormones in our food.

I have children too, and want to be sure that the food they eat is wholesome and safe. Actually, no peer reviewed study has ever linked hormone implants used in raising beef to early onset puberty. According to *Scientific American*, many different factors contribute to earlier onset puberty, including gender, ethnicity, obesity, Body Mass Index (BMI) and other medical conditions.⁴

CONSUMER: That's all very helpful to hear. So, why do you use growth hormones in the first place?

I understand you have questions, and I'm glad that I can answer them. Farmers use hormone implants for several reasons. For starters, bulls (male cows) are castrated to curb aggression, which keeps workers and other animals safe. Hormone implants replace some of the hormones the steers would have naturally produced. They help the cattle make the most of the nutrients in their feed and improve their natural ability to convert feed into more lean beef instead of excess fat. Hormone implants ultimately benefit consumers like you and me because they also help farmers raise beef sustainably - making more food available while helping keep beef affordable.¹

CONSUMER: Are they harmful to the animal?

Quality beef begins with quality care and the well-being of our cattle is a top priority. Hormone implants must go through rigorous development and testing programs to prove they are safe for people to eat and do not harm animals or the environment. Everything we do for our cattle we do under the advice of our veterinarian and the cattle nutritionist, who generally has a masters degree or Ph.D., who ensure the cattle are getting the care and nutrients they need.²

CONSUMER: What impact do these implants have on the environment?

That is a great question. It's a positive story for the environment because the use of hormone implants allows farmers to raise beef sustainably. In fact, farmers are able to raise more beef with fewer animals and less land, water and feed. For example, if we didn't have this important tool, we'd need 11 million more cattle in the U.S. beef herd to produce the same amount of beef to feed the growing population.^{7,8,9}

CONSUMER: Thanks for talking with me. I appreciate your answers.

My pleasure. We understand that transparency in food production is important to consumers like you, and I enjoy these conversations and the open dialogue. Safety is our top priority, and we always look for ways to improve.