# Steroid Hormone Implants Used for Growth in Food-Producing Animals

Español (/animal-veterinary/product-safety-information/implantes-de-hormonas-esteroides-utilizados-para-el-crecimiento-de-los-animales-productores-de)

Since the 1950s, the Food and Drug Administration (FDA) has approved a number of steroid hormone drugs for use in beef cattle and sheep, including natural estrogen, progesterone, testosterone, and their synthetic versions. These drugs increase the animals' growth rate and the efficiency by which they convert the feed they eat into meat.

All approved steroid implant products have a zero day withdrawal. This means that the meat from the animal is safe for humans to eat at any time after the animal is treated. Unless otherwise approved and labeled for reimplantation, only one ear implant may be given to an animal during a specific stage of growth. No steroid hormone implants are approved for growth purposes in dairy cows, veal calves, pigs, or poultry. All of the steroid hormone implants are available for over-the-counter purchase in the U.S. and are generally given by the livestock producer at specific stages of the animals' growth.

The FDA approves these drugs only after information and/or studies have shown that the food from the treated animals is safe for people to eat, and that the drugs do not harm the treated animal or the environment. The drugs also have to be effective, meaning that they work as intended. The labeling for each product provides all instructions for safe and effective use and is approved by FDA. For each approved product, the FDA also makes available to the public via its website a Freedom of Information Summary that summarizes the information that FDA used to determine that the drug is safe for the treated animals, the animal products (edible tissues such as meat) are safe for humans to eat, and that the product is effective.

These steroid hormone drugs are typically formulated as pellets or "implants" that are placed under the skin on the back side of the animal's ear. The implants dissolve slowly under the skin and do not require removal. The ears of the treated animals are discarded at slaughter and are not used for human food. Using scientific data, FDA establishes the acceptable safe limits for hormones in meat. A safe level for human consumption is a level of drug in the meat that would be expected to have no harmful effect in humans based on extensive scientific study and review.

## Naturally-Occurring Hormones

Some of the approved drugs are naturally produced throughout life in people and animals, such as estradiol (estrogen), progesterone, and testosterone. These natural hormones are necessary for normal development, growth, and reproduction. People are not at risk from eating food from animals treated with these drugs because the amount of additional hormone following drug treatment is very small compared with the amount of natural hormones that are normally found in the meat of untreated animals and that are naturally produced in the human body.

## Synthetic Hormones

Some of the approved drugs are synthetic versions of the natural hormones, such as trenbolone acetate and zeranol. Just like the natural hormone implants, before FDA approved these drugs, FDA required information and/or toxicological testing in laboratory animals to determine safe levels in the animal products that we eat (edible tissues). Furthermore, FDA required that the manufacturers demonstrate that the amount of hormone left in each edible tissue after treatment is below the appropriate safe level. As described above, a safe level is a level which would be expected to have no harmful effect in humans.

## Additional Information

Information about approved hormonal implant products can be found in the *Code of Federal Regulations* (CFR), Title 21, Parts 522 and 556. Paper copies of the CFR may be found at your local public or university library and are for sale from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. In addition, the *Electronic Code of Federal Regulations* may be found on the Internet: https://www.ecfr.gov/ (https://www.ecfr.gov/).