



# ANIMAL ANTIBIOTICS:

Keeping Animals Healthy  
and Our Food Safe



## Protecting Animal Health

To keep animals healthy, veterinarians and farmers work together to create flock and herd health-management programs to prevent diseases before they develop and spread. These programs are created and tailored to individual farms and their livestock and poultry, taking into account:

- The best time to vaccinate for diseases;
- How the barn should be ventilated;
- What type and how much feed each animal should receive; and
- What type and how often parasite controls should be administered.

In addition to these measures, antibiotics are a necessary tool to manage infectious disease in animals. The Food and Drug Administration's Center for Veterinary Medicine (CVM) approves antibiotics for four uses:

- **Disease Treatment** — To treat animals after they are clinically ill.
- **Disease Control** — To reduce the spread of a specific disease after an animal has been infected.
- **Disease Prevention** — To prevent disease among animals susceptible to infections.

- **Nutritional Efficiency** — To promote overall well-being so animals can grow more efficiently.

### How are antibiotics administered?

Farmers work with veterinarians to determine appropriate and safe antibiotic administration plans for each situation. According to the American Veterinary Medical Association (AVMA), once the decision is reached to use antimicrobial therapy (antibiotics), veterinarians strive to optimize therapeutic efficacy, minimize resistance to antimicrobials, and protect public and animal health.

**Antibiotics are an important tool to prevent, control and treat disease in animals. Antibiotics keep livestock and poultry healthy and our food supply safe, reducing the chance of bacterial transmission from animals to humans.**

## Who regulates animal antibiotics?

Like human medicines, all animal medicines are required by law to meet certain requirements before going to market. Antibiotics undergo a rigorous review process by the Food and Drug Administration (FDA), which approves all antibiotics used for food-producing animals. All products approved by the FDA for use in food-producing animals must pass significant human- and food-safety benchmarks. This process helps protect human health while giving veterinarians and farmers the tools they need to keep animals healthy.

**“Our clients — our producers — look to veterinarians for guidance and direction on how a number of activities are conducted on the farm.”**

— DR. HARRY SNELSON, AMERICAN ASSOCIATION OF SWINE VETERINARIANS

## Veterinarians and Judicious Use

As good corporate citizens, we are responsible for the products we put into the marketplace. We work across the animal health industry to ensure the judicious and proper use of antibiotics. The AVMA, working with various species-specific veterinary organizations and government agencies, has developed guidelines for the prudent use of antibiotics in farm animals to ensure the right drug is used at the right time to treat the right pathogen or disease. These include guidelines for the judicious therapeutic use of antimicrobials for the veterinarians of beef cattle, dairy cows, swine and poultry.

Since 1998, AHI has supported the AVMA's Judicious Use of Antimicrobials. The guidelines specifically outline the following appropriate uses of antibiotics:

- **Problem prevention** — Emphasize appropriate husbandry and hygiene, routine health examinations and vaccinations.
- **Veterinary oversight** — Licensed veterinarians should work with producers to make decisions on the selection and use of antibiotics.
- **First-line therapy** — Veterinarians discourage the use of antibiotics that are important to treating strategic human or animal infections as first-line therapy.
- **Prioritize treatment** — Limit antibiotic use to sick or at-risk animals to treat the fewest number of animals possible.
- **Scientific analysis** — Maintain accurate records of treatment and analyze the outcomes to evaluate therapeutic regimens.

**“Veterinarians do not arbitrarily or haphazardly give antibiotics to food-producing animals. Rather, we use scientifically based assessments and multi-agency guidelines to help us govern our decisions.”**

— DR. GRANT MILLER, CALIFORNIA VETERINARY MEDICAL ASSOCIATION

**“America’s livestock, dairy and poultry producers [...] are committed to using antibiotics responsibly and have developed responsible-use guidelines for each of their respective industries.”**

— CONGRESSMAN LEONARD BOSWELL (D-IA)



## Antibiotic Resistance

### Does the use of antibiotics in animals cause resistance in humans?

Antibiotic resistance is the ability of microorganisms to withstand the effects of antibiotics. While it is possible that antibiotic resistant bacteria can develop in animals as a direct result of antibiotic use and thus cause resistant infections in humans via food, studies show it is highly improbable.

Many published studies have found that the risk to humans from resistant bacteria derived from eating meat or poultry from animals treated with antibiotics is extremely minimal. For example, a study published in *Journal of Food Protection* found that less than one in 10 million people per year will suffer some adverse effects due to resistant bacteria which resulted from animals treated with macrolides. Macrolides are a class of antibiotics.

The FDA and the United States Department of Agriculture (USDA), along with the veterinary community, animal health companies, food producers and other stakeholders, have put in place several layers of human-health protection over the past decade to reduce the resistance risks associated with antibiotic use in animals. These measures include:

- A stringent FDA approval process;
- FDA post-approval risk assessment;
- Government food-safety monitoring programs;
- Responsible-use programs for veterinarians and farmers; and
- Pathogen-reduction programs that have successfully led to documented reductions in pathogens on meat and poultry, contributing to decreased foodborne illness.

The U.S. government closely tracks antibiotic resistance through the National Antimicrobial Resistance Monitoring System (NARMS), a cooperative program among:

- **FDA** — Coordinates the program and monitors resistant bacteria in retail meats;
- **Centers for Disease Control and Prevention (CDC)** — Collects samples from public health laboratories to monitor the emergence of antibiotic-resistant foodborne pathogens in humans; and
- **USDA's Agricultural Research Service** — Collects samples from slaughter and processing facilities to monitor for antibiotic resistance trends in farm animals.



## What others are saying:

By removing some classes of antibiotics from the market, [legislation] “would require antibiotic sponsors to prove again what has already been proven during their initial FDA approval” and would leave livestock producers with “few, if any, medicines to prevent and control animal disease.”

— CONGRESSMAN LEONARD BOSWELL (D-IA)

“Antibiotic use in animals does not pose a serious public health threat. Restricting access to these important tools will jeopardize animal health and compromise our ability to contribute to public health through food safety.”

— BOB STALLMAN, PRESIDENT, AMERICAN FARM BUREAU FEDERATION

“While antibiotic resistance in humans is growing in the United States, the major factor affecting resistance development is human antibiotic use, not food animal use.”

— DR. RON JONES, PRIMARY INVESTIGATOR, SENTRY ANTIMICROBIAL SURVEILLANCE PROGRAM

“There isn’t a simple cause-and-effect relationship between livestock antibiotic use and drug-resistance illnesses.”

— DR. PAUL EBNER, ANIMAL SCIENCES, PURDUE UNIVERSITY

“Inappropriate reactions to the use of antibiotics could have unknown and unintended consequences that negatively affect animal health and welfare, and ultimately could create other public health risks, such as increased foodborne disease.”

— AMERICAN VETERINARY MEDICAL ASSOCIATION

“The Subcommittee heard undeniable evidence supporting the judicious use of antimicrobials in animal agriculture. I hope that careful consideration is given to this record by those groups and individuals who are advocating arbitrary limitations on these vital animal health tools.”

— FORMER CONGRESSMAN ROBIN HAYES (R-NC)





## Myth vs. Fact

**MYTH: Antibiotics for animals are overused, and up to 70% of all antibiotics used in the United States go to healthy animals.**

**FACT: Antibiotics are used carefully and judiciously to prevent diseases. This statistic is based on faulty, non-scientific assumptions.**

- An activist organization created and industriously circulated this statistic to paint a false picture of animal agriculture. The unreliability of this estimate is demonstrated by the fact that it includes tens of thousands of pounds of product never marketed in the United States.
- By their own admission, nearly half of the total estimate includes compounds never used in human medicine, meaning there are no antibiotic resistance concerns associated with these uses.

**“The 70% statistic is agenda-driven junk science that is flat-out false.”**

— DR. MIKE APLEY, KANSAS STATE UNIVERSITY

- Antibiotics are a preventative tool used by veterinarians to keep animals healthy and, in turn, keep humans safe from diseases that could be transmitted from animals. The use of antibiotics is tightly controlled by the FDA to ensure their safe use.

**Science doesn't support blaming the livestock industry for antibiotic resistance. “Pound for pound, humans and their pets use 10 times the amount of antibiotics used in food animal production.”**

— CONGRESSMAN LEONARD BOSWELL (D-IA)

- Additional non-scientific regulation imposed by Congress is likely to have unintended consequences. It is often too late to administer antibiotics after an outbreak or epidemic has already occurred.

**“We use antibiotics to promote health and prevent disease. Removing the ability to use antibiotics in animal agriculture would increase the chance of animals contracting diseases.”**

— DR. RON PRESTAGE, NATIONAL TURKEY FEDERATION

**MYTH: The use of antibiotics in food animals leads to diseases in humans that can't be treated.**

**FACT: While human antibiotic resistance is a serious public health issue, the biggest resistance problems are not related to antibiotic use in animals.**

- There is no scientific evidence that antibiotics used in food animals have any significant impact on the effectiveness of antibiotics in people.
- A recent Institute of Food Technologists expert panel report stated that correlating the risk of antibiotic use in animals and antibiotic resistance in humans is not possible. Antibiotic-resistant intestinal bacteria may be present in food animals, regardless of the animals' exposure to an antibiotic.

**“People would be more likely to die from a bee sting than for their antibiotic treatment to fail because of macrolide-resistant bacteria in meat or poultry.”**

— DR. STEPHANIE DOORES, PENNSYLVANIA STATE UNIVERSITY

- A study conducted at the University of Minnesota College of Veterinary Medicine in 2004 — in which the potential risks associated with increased levels of antibiotic-resistant bacteria in poultry were compared with the potential benefits associated with decreased risk of foodborne illness — found that the potential benefits to human health associated with the use of antibiotics in chicken far exceeded the increased human health risks associated with antibiotic resistance.

**MYTH: Banning the use of antibiotics in food animals will make humans safer and healthier.**

**FACT: Denmark tested this theory by actually banning certain antibiotics used in the feed in 1999, and what followed was an increase in sick and dead animals that caused veterinarians to use antibiotics to treat the outbreaks.**

- A 2002 World Health Organization report found that the ban did not have any significant effect on clinically resistant diseases in humans.
- The AVMA said Denmark's voluntary ban on the use of antibiotics for growth promotion “has not resulted in a significant reduction of antibiotic resistance in humans” while disease and death in hogs increased.
- The Preservation of Antibiotics for Medical Treatment Act of 2009 (PAMTA), which would phase out the use of certain antibiotics also used in human health, would likely have a more drastic effect. Features of this bill would be more restrictive than measures imposed by Denmark and the European Union.

**“The loss of antibiotics for growth promotion and prevention in Danish swine production has been followed by a 100% increase in the use of antibiotics labeled for treatment, as more pigs became ill. Unfortunately there has been no improvement in public health as measured by no reduction in Salmonella or Campylobacter resistance levels in human infections.”**

— DR. SCOTT HURD, FORMER DEPUTY UNDER SECRETARY FOR FOOD SAFETY, U.S. DEPARTMENT OF AGRICULTURE



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