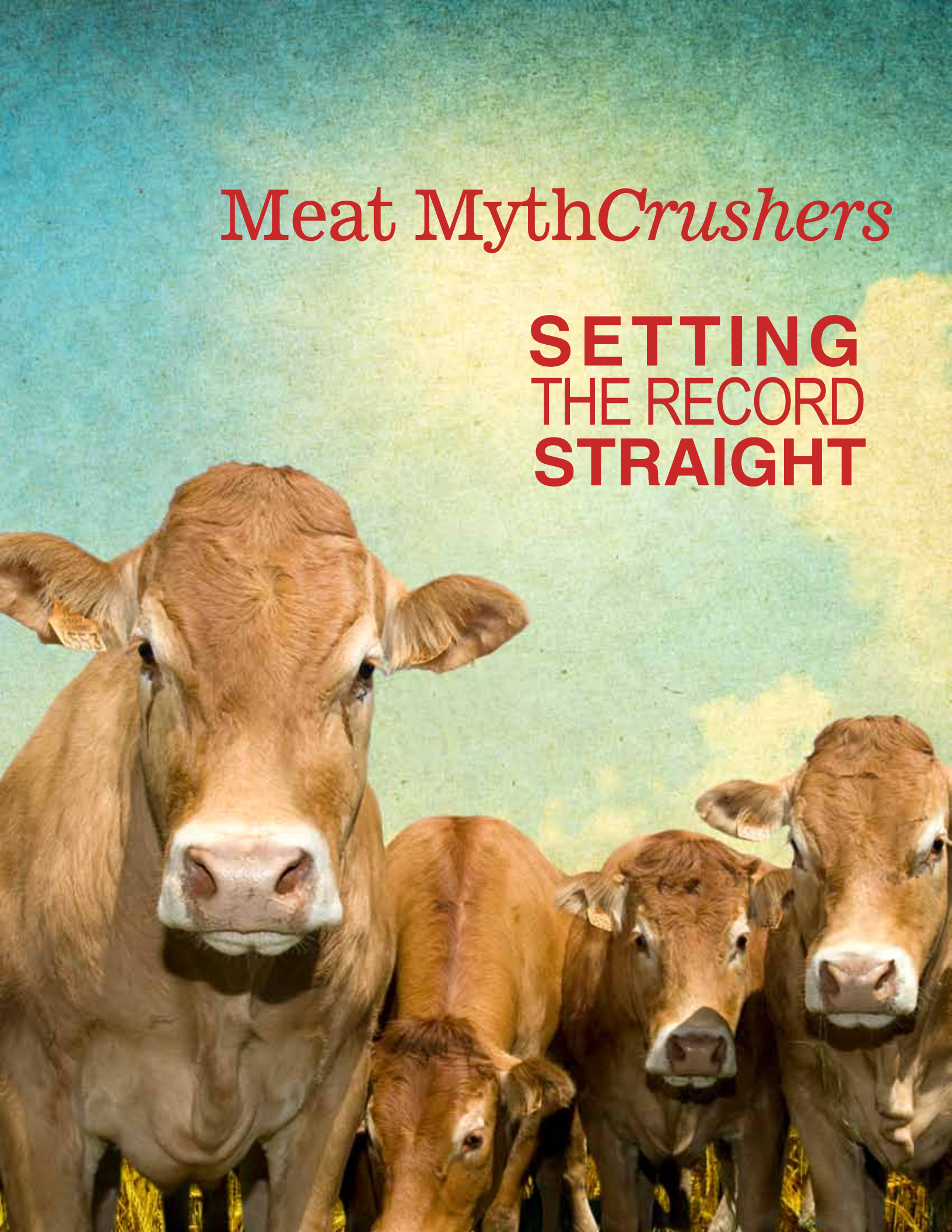
Meat Myth*Crushers*

SETTING THE RECORD STRAIGHT



Myths and Facts About Meat and Poultry

When the U.S. Department of Agriculture was created by Congress in 1862, it was called "The People's Department" because nine out of 10 Americans lived on the farm. Today, fewer than five percent of Americans live on farms. The majority are separated from farming by multiple generations.

This means that for many people, the news media, books and movies are their sources for information about how America's food is produced.

One fact is certain: American food production is a modern miracle. In the U.S., people spend less than six percent of their disposable income on food. In Canada, that number is nearly 10 percent. And in countries like Pakistan, the number approaches 50 percent.

U.S. food is also more abundant and varied than anywhere in the world. Choices abound from ethnic favorites to low-fat and fat-free options to organic and natural products. Just ask anyone who visits the U.S. for the first time about his or her impression of the American grocery store and you will surely hear that Americans are truly blessed by the bounty of the food supply.

America's bounty isn't reserved for our country alone. The U.S. exports seven percent of its beef supply, 18 percent of its pork supply and 18 percent of its poultry supply. Our modern, efficient food production system is essential in meeting future demands for food. The global population is expected to increase from 6.8 billion to nine billion by 2050. The demands are real, yet there is a movement under way in America to slow food production and return to old-fashioned and less efficient means of production.

This doesn't sit well with those who recognize global food needs. Nina Fedoroff, technology advisor to Secretary of State Hillary Clinton and former director of the Agency for International Development said, "We have six-and-a-half-billion people on the planet, going rapidly towards seven. We're going to need a lot of inventiveness about how we use water and grow crops...We wouldn't think of going to our doctor and saying 'Treat me the way doctors treated people in the 19th Century,' and yet that's what we're demanding in food production." [1]

Still, Americans' lack of connection to food production has made many people susceptible to the claims of those who long for the food production systems of the past. Movies like "Food, Inc." and "Fast Food Nation" have romanticized rural life and slower, less efficient forms of agriculture. They have left some people with an impression that U.S. food is produced by an uncaring machine, rather than millions of people who feed their families the very same food they sell to their customers.

In 2010, the American Meat Institute conducted a poll [2] to determine whether key myths included in popular media were believed by the American public. This brochure contains some of the most popular myths — and the facts associated with them. This brochure has been reviewed by the American Meat Science Association (AMSA) for accuracy and includes detailed references to support statements. AMSA is a professional society that provides the forum for all interests in meat — commercial, academic, government and consumer — to collaborate in a scientifically-based atmosphere addressing the needs of the production, processing and marketing segments of industry, the consuming public, its own members and others in the biological and nutritional sciences.

[1] Duke, Steven, "Earth Population Exceeds Limits," One Planet, BBC World News, downloaded at http://news.bbc.co.uk/2/hi/science/nature/7974995.stm November 8, 2010
[2] Harris Interactive Poll, March 2010.



MYTH:

Hormone Use In Poultry Production Poses A Health Risk To Consumers

FACT:

Federal law prohibits the use of hormones in poultry production. This is clearly stated on package labels when a "no added hormone" claim is made. Polling data showed that many consumers were confused about when hormones were used in livestock and poultry production and about their safety. It is important to understand that all multi-cellular organisms contain hormones, whether they are beef, broccoli, eggs, soybeans — or people. No food or living thing can be "hormone-free," despite marketing claims that may suggest this to be so. Livestock and poultry can be grown without added hormones, but they cannot be hormone-free.

DIG DEEPER...

In the case of poultry, bird size has increased significantly over the last several decades. This is due to advances in breeding, animal nutrition and animal care that ensure that only the heartiest birds with the greatest potential to yield the most food are produced.

Just as a citrus farmer strives to plant trees that will yield the most fruit, poultry producers also breed the birds that yield the most meat. This environmentally beneficial practice requires fewer birds, less animal feed and, in turn, less waste to produce the same amount of meat and poultry. It is also more economically sustainable for the farmer, which translates to affordable food for consumers.

MYTH:

Hormone Use In Pig Production Poses A Health Risk To Consumers

FACT:

Federal law prohibits the use of hormones in pig production. Between 1980 and 2005, changes in genetics and feeding programs have reduced "days to harvest" — or the time required to grow a pig to full weight — by 15 percent and increased the amount of lean meat by 45 percent. [3] This growth has nothing to do with hormones like estrogen because they are simply not used.

DIG DEEPER...

As in poultry production, producing pigs with more muscle (and in turn more meat) reduces environmental impact and enhances the economic sustainability of farms for future generations.



[3] Livestock Science, Volume 128, Issues 1-3, March 2010, Pages 108-114.



MYTH:

Hormone Use In Beef Production Is A Health Concern

FACT:

Hormones like estrogen are used in modern beef production to increase the amount of beef that can be harvested from cattle. However, these hormones are the same as, or synthetic versions of those naturally produced by cattle. The estrogen that is used in beef production, for example, is used at levels that are a fraction of what is found in soybean oil, soybeans, eggs and what is produced by the human body.

DIG DEEPER...

Consider that a pound of soybean oil contains 900,000 nanograms of estrogen per pound. Compare that to 1.9 nanograms per pound found in beef produced using hormone implants and 1.7 nanograms per pound in non-implanted beef. [4]

While some people cite Europe's ban on hormone-treated beef from the U.S. as evidence that hormones are a concern, Europe's own scientists have affirmed that hormone use in cattle production is safe. Unfortunately, European political bodies have rejected the science and refused to lift the ban. Because high quality U.S. beef is produced more efficiently and economically, it is a prime competitor to Europe-an-produced beef.

Consider, also, that the use of small amounts of growth hormones in some cattle helps increase the amount of beef that we can produce from individual animals and this helps improve the sustainability of cattle and beef production.

MYTH:

Meat Is Less Safe Today Than It Was In The Past

FACT:

Meat safety can be evaluated in a number of ways. One way is by counting bacteria levels. All raw agricultural products contain bacteria, but during processing, the meat and poultry industry seeks to reduce these levels as much as possible and then urges careful handling and thorough cooking to ensure that no harmful bacteria remain when food is served.

DIG DEEPER...

Federal data from the U.S. Department of Agriculture (USDA) document steep declines in bacteria on meat and poultry.

For example, the presence of *E. coli* O157:H7 in fresh ground beef declined by 63 percent between 2000 and 2009 to approximately one-third of one percent of ground beef samples tested. That means that the pathogen will only be found in approximately 1 in 300 samples.

Salmonella on fresh pork has declined by 63 percent since 2000 while *Salmonella* on chicken has declined by 21 percent since 2000.

An environmental pathogen called *Listeria monocytogenes* that can contaminate a range of protein foods has also declined markedly on ready-to-eat meat and poultry products. Between 2000 and 2009, *L. monocytogenes* declined 74 percent and now is found in less than one half of one percent of samples tested.

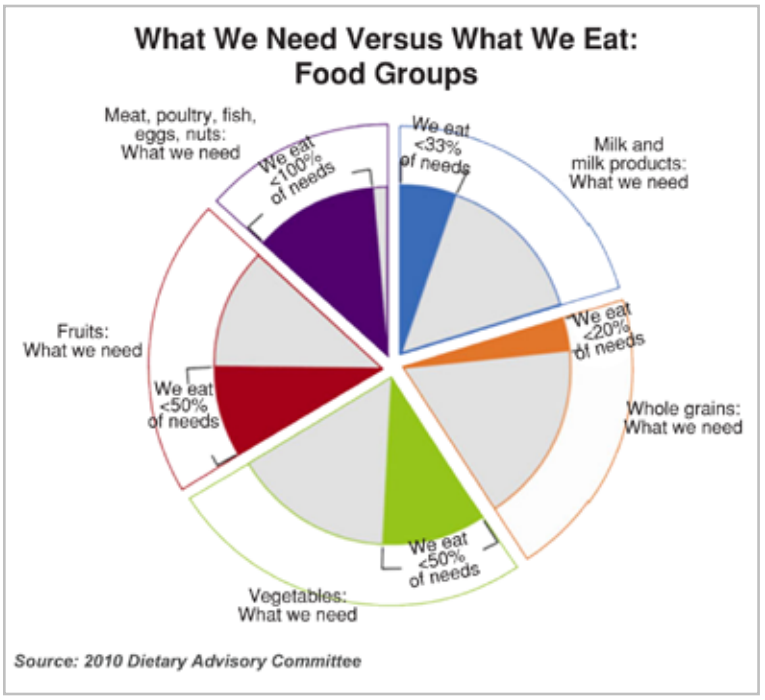
And all of these declines have occurred just as efforts to find harmful bacteria have increased

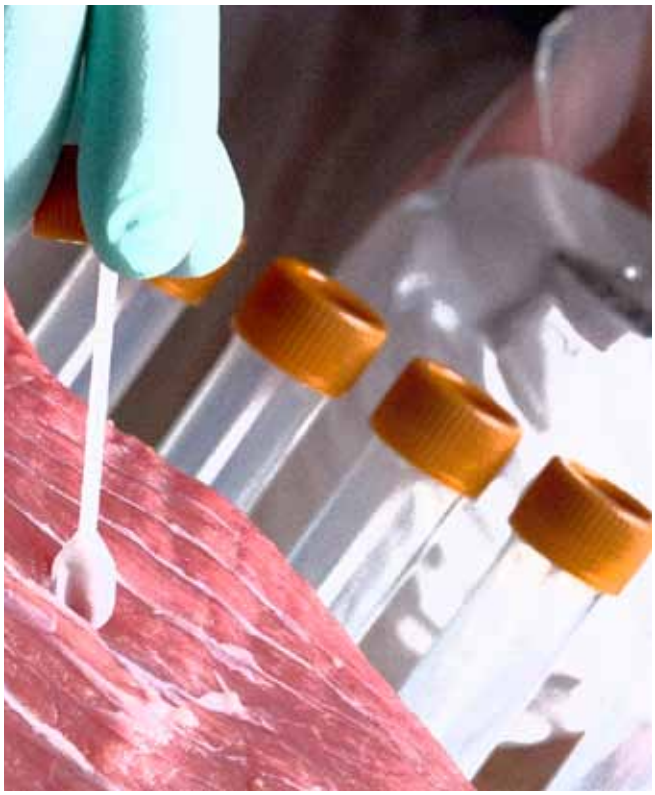
[4] Hormones in my organic food? Yep., 2009, Accessed at http://meatisneat.wordpress.com/2009/12/05/hormones-in-my-organic-food-yep/, July 20, 2010.

and as the ability to find them has improved dramatically through better diagnostic technologies.

Foodborne illness trends also offer clues about the safety of the U.S. food supply. In 2010, the Centers for Disease Control and Prevention (CDC) announced that foodborne illnesses are declining. In particular, the CDC said that the U.S. had achieved its Healthy People 2010 public health goal of less than one *E. coli* O157:H7 illness per 100,000 people.[5]

Notably, these declines have occurred as public health tracking of these infections has expanded significantly. In 1993, for example, almost no state tracked *E. coli* O157:H7 infections in people. Today, every state in the U.S. routinely monitors the incidence of these infections and reports to federal officials. Still, data show declines, which is very encouraging.





MYTH:

Americans Eat Too Much Meat

FACT:

The U.S. Dietary Guidelines recommend that Americans consume five to seven ounces from the meat and beans category per day depending upon age, gender and level of activity. The 2010 U.S. Dietary Guidelines Technical Report indicates that Americans are eating within this recommended amount.

The National Health and Nutrition Examination Survey ("NHANES") indicates that men consume 6.9 ounces of meat and poultry, while women consume approximately 4.4 ounces. [6]

DIG DEEPER...

In fact, this is the only category consumed in the proper quantity. [7] Fruits, vegetables and whole grains are under-consumed while discretionary sugars and fats are over-consumed.

[5] CDC Press Release, CDC Report Shows Success in Fighting *E. coli* O157:H7, April 23, 2010, Accessed at http://www.cdc.gov/media/pressrel/2010/r100415b.htm, July 20, 2010.
[6] Pyramid Servings Intakes in the United States, 1999-2002, 1 Day, Beltsville Human Nutrition Research Center, ARS, USDA, March 2005, Accessed at ,,http://www.ars.usda.gov/sp2UserFiles/Place/12355000/foodlink/ts_3-0.pdf, July 29, 2010.
[7] 2010 U.S. Dietary Guidelines. Advisory Committee, Webinar, May 12, 2010.

MYTH:

Meat Contains Saturated Fat And This Contributes To Heart Disease

FACT:

While meat does contain saturated fat, those limiting saturated fat intake should know that approximately 40 cuts of meat qualify for the government definition of "lean" [8] and contain less than 10.5 grams of fat, less than 4.5 grams of saturated fat and less than 95 mg of cholesterol. Fat in meat also has substantial portions of both mono- and polyunsaturated fat — so-called "good fats" — as well, a fact that many people do not realize.

Importantly, a very large 2010 study from the Harvard School of Public Health found "there is no significant evidence for concluding that dietary saturated fat is associated with an increased risk of CHD (Coronary Heart Disease) or CVD (Cardiovascular Disease)." [9]

DIG DEEPER...

In addition, important new research shows that meals that include meat are associated with a sense of satisfaction and lasting hunger control, which can help prevent the weight gain that can cause weight-related health issues. [10,11]

While some studies have suggested an association between saturated fat and heart disease, this latest finding suggests that the evidence is unclear and that moderation in the diet is likely the most prudent approach.





MYTH:

Inspectors Only Visit Meat Plants Occasionally

FACT:

Few industries in America are regulated and inspected as comprehensively as meat and poultry plants. U.S. meat packing plants where livestock are handled and processed are inspected continuously. Large plants may have two dozen inspectors on site in a two-shift day. Plants that process meat or poultry, but do not handle live animals are inspected daily.

These inspectors have a wide range of authority. They may cite plants for non-compliance forcing changes in procedures; prevent the use of certain equipment; condemn meat products that they deem to be unsafe or mislabeled; seize and detain meat products; and withdraw inspectors from plants, which forces the plant to cease operating. A review of USDA records will show that they use their powers frequently.

DIG DEEPER...

USDA currently employs 8,000 inspectors to oversee 6,200 plants. According to USDA, today they have one of the lowest inspector vacancy rates in recent history and meat and poultry plants are being directly inspected more closely than ever.

[8] Code of Federal Regulations, 9CFR317.363.
[9] Meta-Analysis of Prospective Cohort Studies Evaluating the Association of Saturated Fat With Cardiovascular Disease, *American Journal of Clinical Nutrition*, January 13, 2010, Accessed at: http://www.ncbi.nlm.nih.gov/pubmed/20071648, November 5, 2010.
[10] Apolzan JW, Carnell NS, Mattes RD, Campbell WW. Inadequate Dietary Protein Increases Hunger and Desire to Eat in Younger and Older Men. *Journal of Nutrition*, 2007;137(6):1478-82.
[11] Johnston, CS, Tionn SL, Swan PD. High-protein, low-fat diets are effective for weight loss and favorably alter biomarkers in healthy adults. *Journal of Nutrition*. 2004; 134: 586-591.

MYTH:

Americans Get The Most Nitrite From Cured Meats

FACT:

When added to cured meats, nitrite plays a very important role in preventing the growth of *Clostridium botulinum*, which can cause the deadly disease botulism. Still, less than five percent of sodium nitrite intake comes from cured meats like ham, bacon and hot dogs. Ninety-three percent comes from vegetables like lettuce, spinach, celery, cabbage, beets and from human saliva.

DIG DEEPER...

In fact, research conducted during the last 20 years has uncovered the fact that the body makes nitrite as part of its healthy, normal nitrogen cycle. As a reference, consider that a spinach salad and a ham sandwich contribute the same amount of nitrite to the diet.

Some of the nitrate found in leafy green and root vegetables like spinach, beets, celery and lettuce is converted to nitrite when it comes into contact with human saliva. When it is swallowed, the nitrite becomes nitric oxide — an essential and critical compound used by the body to maintain normal blood pressure levels, fight infection and support the nervous system. Even naturally cured meat products contain nitrite because they use ingredients like celery juice/powder as a natural curing ingredient that are rich in naturally occurring nitrate and nitrite.

While some people question whether nitrite from vegetable or saliva sources is different from the nitrite that is added to cured meats, experts like Jeff Sindelar, Ph.D., University of Wisconsin, say emphatically: “Where you receive it (nitrite) actually makes no difference because nitrite is nitrite. In other words, the nitrite derived from celery or other vegetables is exactly same as the nitrite found in cured meats.”



MYTH:

Nitrite In Cured Meat Is Linked To Diseases Like Cancer

FACT:

The U.S. National Toxicology Program (NTP), which is considered the “gold standard” in determining whether substances cause cancer, completed a multi-year study in which rats and mice were fed high levels of sodium nitrite. The study found that nitrite was not associated with cancer. NTP maintains a list of chemicals found to be carcinogenic. Sodium nitrite is not on that list. [12]

DIG DEEPER...

Not only does nitrite NOT cause cancer, scientists at the National Institutes of Health [13] and the University of Texas Health Science Center at Houston have discovered that nitrite actually has health benefits. When nitrite’s safety was questioned in the 1970s, scientists had not yet discovered that the human body makes nitrite

[12] National Toxicology Program Report on Carcinogens, Accessed at http://ntp.niehs.nih.gov/?objectid=72016262-BDB7-CEBA-FA60E922B18C2540, November 5, 2010.
[13] Gladwin, MT, et. al., The emerging biology of the nitrite anion, 2005, Accessed at http://www.nature.com/nchembio/journal/v1/n6/abs/nchembio1105-308.html, July 19, 2010.
[14] Acute Blood Pressure Lowering, Vasoprotective, and Antiplatelet Properties of Dietary Nitrate via Bioconversion to Nitrite Hypertension 2008 51 (3) 784-790.
[15] Effects of dietary nitrate on blood pressure in healthy volunteers. *N Engl J Med* 355: 2792–2793, 2006.
[16] Dietary nitrite supplementation protects against myocardial ischemia-reperfusion injury. *Proc Natl Acad Sci USA* 104: 19144–19149, 2007.
[17] Early intravenous infusion of sodium nitrite protects brain against in vivo ischemia-reperfusion injury. Stroke 37: 2744–2750, 2006.
[18] Nitric Oxide and Reproduction, *Molecular Human Reproduction*, vol.3 no.8 pp. 639–641, 1997.

as part of its normal, healthy nitrogen cycle. While this is surprising to many people who for years have thought they should avoid dietary nitrite, study after study has shown that nitrite can:

•Regulate blood pressure [14,15]
•Prevent injury from heart attack [16]
•Prevent brain damage following a stroke [17]
•Prevent preeclampsia in pregnant women [18]
•Promote wound healing [19]
•Promote successful organ transplantation [20]
•Treat sickle cell anemia [21]
•Prevent gastric ulcers [22]

While conducting research for the National Institutes of Health Heart, Lung and Blood Institute, Marc Gladwin, M.D., said "The idea it's bad for you has not played out." [23] Indeed, Gladwin's group found that infusing nitrite into patients with a variety of health conditions was an inexpensive and extremely effective treatment.

MYTH:

Monitoring Of Animal Welfare In Meat Plants Is Inadequate

FACT:

No other sector of animal agriculture has the level of oversight that the U.S. meat packing industry has. Under the Humane Slaughter Act, [24] all livestock must be treated humanely. They must be given water at all times, given feed if they are held at a plant for an extended period and they must be handled in a way that minimizes stress. Federal veterinarians monitor animal handling continually and may take a variety of actions — including shutting a plant down — for violations.

DIG DEEPER...

In addition, in the late 1990s, a thriving commercial auditing business evolved based upon standards written for the industry by animal welfare expert Temple Grandin, Ph.D., professor of animal science at Colorado State University. Independent auditors evaluate plants for major retail grocery and restaurant chains according to Grandin's standards to provide additional oversight. Failed audits can result in lost contracts.

Beyond federal and commercial compliance, extensive research has shown that humane handling of livestock creates better finished products. Rough handling can cause bruises that need to be trimmed. It also causes quality defects like pale, soft, watery pork and blood spots in beef. These are direct costs to meat companies.

Strong ethical, regulatory and economic incentives exist to handle animals humanely.

While there have been instances in which those handling livestock in plants and farms have failed to meet these standards, it is important to remember that these are the exceptions. The industry has a demonstrated commitment to animal welfare and data collected by Dr. Grandin has shown a sustained improvement over time in welfare indicators. [25]



[19] Dermal Nitrite Application Enhances Global Nitric Oxide Availability: New Therapeutic Potential for Immunomodulation: Dermal Nitrite Administration *Journal of Investigative Dermatology*, 130, 608-611m February 2010.
[20] Cytoprotective effects of nitrite during in vivo ischemia-reperfusion of the heart and liver, *Journal of Clinical Investigation* 115; 1232-1240, 2005.
[21] Sodium nitrite promotes regional blood flow in patients with sickle cell disease: a phase I/II study, *Br J Haematol*. 2008 September; 142(6): 971–978.
[22] Lundberg, JO, et. al., The nitrate–nitrite–nitric oxide pathway in physiology and therapeutics, 2006, accessed at http://www.nature.com/nrd/journal/v7/n2/full/nrd2466.html, July 19, 2010.
[23] Hot Dog Preservative Could Be Disease Cure, *USA Today*, September 5, 2005, Accessed at http://www.usatoday.com/news/health/2005-09-05-hot-dog-drug_x.htm, July 19, 2010.
[24] Pub.L. 85-765, § 2, Aug. 27, 1958, 72 Stat. 862; Pub.L. 95-445, § 5(a), Oct. 10, 1978, 92 Stat. 1069.
[25] Vogel, K. and Grandin, T., 2009 Restaurant Animal Welfare and Humane Slaughter Audits in Federally Inspected Beef and Pork Slaughter Plants in the U.S., 2009, Accessed at: http://www.grandin.com/survey/2009.restaurant.audits.html, July 27, 2010.



MYTH:

Antibiotic Use In Livestock Production Is Increasing And This Is A Human Health Risk

FACT:

Antibiotic use in livestock and poultry production is strictly regulated by officials at the U.S. Food and Drug Administration and meat and poultry is inspected in plants by the U.S. Department of Agriculture to ensure that it complies with all federal safety rules. Issues surrounding antibiotic use and resistance are extremely complex and involve both human and veterinary use. While recent news has focused on veterinary antibiotic use, many experts have cautioned against overuse of antibiotics in humans for decades.

In the 1940s, antibiotics became available in general medicine. One decade later, the medical community cautioned in medical journals against the overuse of antibiotics to treat illnesses for which they were not warranted because scientists recognized even then that overuse in humans had the potential to create resistant strains.

DIG DEEPER...

Concerns about the overuse of antibiotics in humans continued throughout the following decades. A 1999 study of pediatricians in the journal *Pediatrics* [26] found that more than half of doctors reported writing 10 or more antibiotic prescriptions in the past month that they believed to be unwarranted and did so in response to parental pressure. Similarly, research involving interviews with patients reveals that patients often exaggerate symptoms and pressure doctors to secure a prescription for antibiotics even when it is not needed. By and large, those interviewees believed that antibiotics were needed to treat everything but the common cold. [27]

Just as antibiotics, used judiciously, are important in ensuring human health, they also are important in ensuring animal health. Antibiotic use in livestock production has been relatively steady over time, but in responding to concerns about the development of new, antibiotic resistant bacteria, attention seems to have shifted toward agriculture. For more than 40 years, antibiotics regulated and approved by the Food and Drug Administration (FDA) have been used to treat sick animals, prevent illness and maintain the health of animals.

And in all cases, they must be used properly. In livestock and poultry, antibiotics may be used to treat, control and prevent diseases. Some antibiotics offer an added benefit of enhancing livestock and poultry growth when administered, but, according to a 2007 survey, only an estimated 13 percent of antibiotics are used in growth promotion and heightened attention to the issue is discouraging such use even more.

Some critics argue that the use of antibiotics in food animals could create strains of bacteria that are resistant to antibiotics and ultimately infect humans, but years of research have failed to prove that this evolution is occurring or that it is risking human life. One often-cited statistic comes from the Union of Concerned Scientists, which claims that 70 percent of antibiotics

[26] Bauchner, H, et al., Parents, physicians and antibiotic use, *Pediatrics*, Vol. 103 No. 2 February 1999, pp. 395-401.
[27] Patients interviews and misuse of antibiotics, *Clinical Infectious Diseases*, 2001, Accessed at http://www.journals.uchicago.edu/doi/abs/10.1086/321844, July 16, 2010.

produced in the U.S. are fed to livestock, a statistic they cannot possibly calculate considering that antibiotic use in humans is not tracked. Even so, one would expect the 302 million head of American livestock and 6.27 billion American chickens and turkeys to require more antibiotics than 309 million people who weigh a fraction of a full grown steer and far less than a typical market hog.

Many cite Denmark, where non-therapeutic antibiotic use was banned, as the model. But the elimination of antibiotics at the health maintenance level in Denmark has not led to a substantial impact on the incidence of antibiotic-resistant food-borne illness in humans.

According to an article by risk assessment expert and former USDA Deputy Under Secretary for Food Safety Scott Hurd, DVM, Ph.D., of Iowa State University, "There seems to be little evidence after 10 years that public health has improved since the Danish ban on growth promoting and preventive antibiotics."

Additionally, according to Hurd, although many predicted that a ban on growth promotion and preventive antibiotic uses would reduce total antibiotic consumption in livestock, the Danish government reported that "for production animals consumption [of therapeutic antibiotics] has increased gradually by 110 percent from 1998 through 2008." [28] And the therapeutic antibiotics that are now being used are considered more important in human medicine. Overall, Hurd says the data suggest that the antibiotics previously used for growth promotion were preventing a great deal of illness, especially in pigs.

MYTH:

Feeding Cattle Corn Is Unnatural

FACT:

Feeding corn to cattle is natural. Some people mistakenly believe that corn or grain-fed cattle never eat grass. That's just not true. Nearly all cattle eat grass for most of their lives. Some cattle have their diets enhanced with corn and grain for the last few months of their lives. This is typically done in feedlots, but may happen on ranches, too.

DIG DEEPER...

Cattle enjoy corn and benefit from its nutrition. While some proponents of grass feeding only claim that cattle should not eat corn, they neglect to mention that corn is the seed of a grass. When placed in a pen with a choice of consuming grass or a corn or grain based feed, cattle will always choose to consume corn.

Remember, also, that when cattle are "finished" in feedlots, their diets are carefully supervised and monitored by expert bovine nutritionists to ensure that they are completely balanced, which maximizes health and growth. Cattle raised on pasture alone consume what they choose and these diets are more difficult to control and can be nutritionally less complete for the animal.



[28] Hurd, H.S., Danish Experience Offers Lessons for U.S. Antibiotic Use, Spring 2010, Accessed at http://beefissuesquarterly.com/danishexperienceofferslessonsforu.s.antibioticuse.aspxhttp://beefissuesquarterly.com/danishexperienceofferslessonsforu.s.antibioticuse.aspx, July 26, 2010.



MYTH:

Grass-Fed Beef Is Safer Than Beef From Cattle Finished On Corn And Grains

FACT:

Extensive research has shown that beef from grass-fed and corn-finished cattle is equally safe. While some unreliable online sources claim that grass-fed cattle have lower levels of *E. coli* O157:H7 in their intestines, studies show that the there is no difference in the prevalence of *E. coli* O157:H7 in live animals fed a variety of diets. [29,30]

DIG DEEPER...

In fact, organic and natural methods don't seem to impact bacteria in the gut either. In 2009, researchers examined the incidence of pathogenic *E. coli* O157:H7 in organic and naturally raised cattle and concluded, "Our study found similar prevalences of *E. coli* O157:H7 in the feces of organically and naturally raised beef cattle, and our prevalence estimates for cattle in these types of production systems are similar to those reported previously for conventionally raised feedlot cattle." [31]

While a very small USDA study [32] of a handful of cattle in 1998 initially suggested that feeding cattle hay could reduce *E. coli* O157:H7, that small study's findings were never able to be duplicated in larger research. More than a decade later, a large, accumulated body of research strongly suggests that *E. coli* O157:H7 appears to be a natural bacterium found in the gut of cattle regardless of production system.

[29] Fegan, N et. al., The prevalence and concentration of *Escherichia coli* O157 in faeces of cattle from different production systems at slaughter, 2004, Accessed at http://www3.interscience.wiley.com/journal/118807187/abstract?CRETRY=1&SRETRY=0 July 19, 2010.
[30] Van Baale, MJ, et. al., Effect of Forage or Grain Diets with or without Monensin on Ruminal Persistence and Fecal *Escherichia coli* O157:H7 in Cattle, 2004, Accessed at http://aem.asm.org/cgi/content/abstract/70/9/5336, July 19, 2010.
[31] S. Reinstein, J. T. Fox, X. Shi, et al., Prevalence of *Escherichia coli* O157:H7 in Organically and Naturally Raised Beef Cattle, *Environ. Microbiol.* 75(16):5421-5423.



MYTH:

Grass-Fed Beef Is More Nutritious Than Beef From Cattle Finished On Corn And Grains

FACT:

Grass-fed beef has slightly lower levels of saturated fat than corn fed beef. While grass-fed beef does have slightly higher levels of omega-3 fatty acids than cattle finished on corn and grain, neither type of beef is a rich source of omega-3s compared to fish. Salmon, for example, contains 35 times more omega-3s than beef. Whether these differences translate to a truly meaningful health benefit in the context of a varied diet has not been established.

DIG DEEPER...

Interestingly, new research from Texas A&M University found that men who consumed corn-fed beef improved their cholesterol levels while men who consumed grass-fed beef experienced no change. [33]

"There really were no negative effects of feeding ground beef from the pasture-fed cattle," said the study's director Dr. Stephen Smith. "We did see many positive effects in men that consumed ground beef from corn-fed cattle. The ground beef from the USDA Prime cattle increased HDL cholesterol and LDL particle diameter. Both effects are protective against cardiovascular disease. The Prime ground beef also decreased insulin, so it may have some protective effect against type II diabetes."

Both grass-fed and corn-finished beef are among the most nutrient-dense foods available and both are good choices. Consumers should choose the one that they prefer. "And if you are looking for omega-3s, you need to go to the fish products," says Benjy Mikel, Ph.D., professor of animal science at Mississippi State University.

[32] Diego-Gonzales, F. et. al., Grain Feeding and the Dissemination of Acid-Resistant *Escherichia coli* from *Cattle Science* 11 September 1998: Vol. 281. no. 5383, pp. 1666 – 1668.
[33] Study shows ground beef from grain-fed cattle healthier than grass-fed, 2010, Accessed at http://agnews.tamu.edu/showstory.php?id=1934, July 20, 2010.



A FINAL WORD:

When it comes to food and agriculture, some "conventional wisdom" commonly found on the Internet and in popular media often isn't the "accurate wisdom." The American Meat Science Association and animal and meat science departments at universities can be useful resources when information seems confusing or unclear.

We hope this brochure has served as an important educational tool for you. Be sure to visit www.meatmythcrushers.com for more information and to stay current as additional myths are "*crushed*."



AMERICAN MEAT INSTITUTE

REVIEWED BY:

American Meat Science Association

www.meatmythcrushers.com

www.meatscience.org