



**MEAT  
EAT LESS  
EAT GREENER**



# **MEAT EATER'S GUIDE**

**TO CLIMATE CHANGE + HEALTH**

# REDUCE YOUR IMPACT. IMPROVE YOUR HEALTH.

## Eat Less Meat and Cheese + Make it Greener.

Americans' appetite for meat and dairy – billions of pounds every year from billions of animals – takes a toll on our health, the environment, the climate and animal welfare. Meat and dairy production requires large amounts of pesticides, chemical fertilizer, fuel, feed and water and generates greenhouse gases, toxic manure and other pollutants that contaminate our air and water.

### WHAT YOU EAT MATTERS

Eating large amounts of red and processed meats increases exposure to toxins and is linked to higher rates of heart disease, cancer and obesity.

There is something you can do about it: eat less meat and cheese. When you do eat them, go greener. This EWG guide can help you green your diet and advocate for changes to make our food system better for our bodies and the planet.

### HERE'S HOW EATING LESS MEAT MEASURES UP AGAINST OTHER CLIMATE-SAVING ACTIONS:

	OVER 1 YEAR
<b>IF YOU</b> eat one less burger per week	It's like taking your car off the road for 320 miles, or line-drying your clothes half the time.
<b>IF YOUR 4-PERSON FAMILY</b> skips meat + cheese 1 day a week	It's like taking your car off the road for 5 weeks or shortening everyone's daily shower by 3 minutes.
<b>IF YOUR 4-PERSON FAMILY</b> skips steak 1 day a week	It's like taking your car off the road for almost 3 months.
<b>IF EVERYONE IN THE U.S.</b> ate <b>NO</b> meat or cheese just 1 day a week	It's like not driving 91 billion miles – or taking 7.6 million cars off the road.

OVER 1 YEAR

## WHAT WE DID

### Lifecycle Assessments

EWG set out to help meat eaters better understand the health, environmental and climate impacts of their food choices. We partnered with CleanMetrics, an environmental analysis firm, to do **lifecycle assessments of 20 types of popular meat, fish, dairy and vegetable proteins to determine their full "cradle-to-grave" carbon footprints** – from the fertilizer used to grow animal feed to the processing, transportation and disposal of unused food. We focused on conventionally produced meat (fed non-organic grain and raised or fattened in confined feeding operations), because that's what Americans mostly eat. EWG also considered other environmental impacts and assessed how meat and dairy products can affect your health.

## WHAT WE FOUND

### All Meat is Not Created Equal.

Different meats affect our health and environment differently. Lamb, beef, cheese and pork generate the most greenhouse gases. They also tend to be higher in fat and have the worst environmental impacts, because producing them uses the most resources – mainly feed, chemical fertilizer, fuel, pesticides and water. **Lamb has the greatest impact. Beef is second. Cheese is third.** Beef has more than twice the emissions of pork, nearly four times more than chicken and more than 13 times as much as vegetable proteins such as beans, lentils and tofu. But vegetarians who eat dairy aren't off the hook, because pound for pound, cheese generates the third-highest emissions.

## WHAT YOU CAN DO

### Eat Greener. Speak Out.

Although eating less meat is important for improving your personal health and living more gently on the Earth, that alone won't stop climate change or environmental damage. Even if everyone in the U.S. chose a vegetarian diet – the equivalent of taking 46 million cars off the road – it would make only a small dent in overall emissions. To bring them down significantly, we need to **convince our elected officials to enact a comprehensive energy and climate policy that puts the nation on a path to green energy.** We also need better policies and stronger regulatory enforcement to reduce meat production's negative impact on soil, air, water and animal welfare.

# CLIMATE IMPACTS

How meat creates greenhouse gases and harms the environment:

## DIGESTION-GENERATED METHANE

Through their unique digestive process (enteric fermentation), cows, sheep and other “ruminant” livestock release substantial amounts of methane – a greenhouse gas 25 times more potent than carbon dioxide (CO<sub>2</sub>).

## FEED PRODUCTION

Most U.S. livestock are fattened on soybean meal, corn and other grains that require large amounts of fertilizer, fuel, pesticides and water. It takes 149 million acres of cropland, 167 million pounds of pesticides and 17 billion pounds of nitrogen fertilizer to grow this much feed every year. When fertilizer is spread on soil, it generates nitrous oxide (N<sub>2</sub>O), which has 300 times the warming effect of CO<sub>2</sub>. Pesticides and fertilizers often end up in field runoff, polluting rivers, ground water and, ultimately, the ocean (like the Gulf of Mexico’s infamous “dead zone”). Feed crops are heavily subsidized by taxpayers in the federal farm bill – to the tune of \$45 billion over the past 10 years.

## MANURE

Animal waste causes substantial water and air pollution and emits nitrous dioxide and methane. U.S. livestock in confined feedlots generate about 500 million tons of manure a year, three times the waste produced by the entire human population. Manure is a valuable nutrient for plants, but it can leach pollutants – including antibiotics, metals, nitrogen and phosphorus – into groundwater when storage facilities leak or too much is spread on farm fields. Decomposing waste also releases polluting dust, smog, odors and toxic gases (ammonia, hydrogen sulfide) that can cause itching and dizziness in people.

## PROCESSING

Although slaughterhouses account for a small portion of most meats’ overall carbon footprint, they dump millions of pounds of toxic pollutants into America’s waterways (nitrogen, phosphorus, ammonia etc.). Eight slaughterhouses consistently rank among the nation’s top 20 industrial polluters, responsible for discharging 30 million pounds of contaminants in 2009.

## TRANSPORTATION

Transporting animals, supplies and retail food products generates only about 10 percent of the overall carbon footprint associated with meat. Emissions are much higher when foods travel by air. EWG found that airfreighted cheese has a 46 percent larger footprint than domestically produced cheese. Most imported meat and dairy, however, are shipped by sea, adding less than 1 percent to their carbon footprint.

## WASTE

Nearly 20 percent of all edible meat ends up in landfills. That makes the chemical fertilizer, pesticide and water used to produce the wasted meat unnecessary, and the resulting emissions and environmental damage entirely avoidable.

# HEALTH IMPACTS

Too much red and processed meat is unhealthy.

Meat is important in many people’s diet, and when eaten in moderation it can provide healthy, complete proteins, along with other nutrients such as iron, zinc, vitamins B-12, B-6 and niacin. However, Americans consume far more meat than needed to get their recommended amount of daily protein – adult men, on average, get twice as much as protein as they need. In 2009, the US produced 208 pounds of meat per person for domestic consumption, nearly 60 percent more than Europe. The evidence is clear that eating too much meat – particularly red and processed meats – is associated with serious health problems. We can improve our health, shrink our waistlines and even extend our lives by eating more vegetables and less meat.

## DIET-RELATED DISEASE

Eating a lot of red and processed meat is linked to increased risk of heart disease, certain cancers, obesity and, in some studies, diabetes. Two examples:

- A 2009 National Cancer Institute study of 500,000 Americans found that people who ate the most red meat were 20 percent more likely to die of cancer and at least 27 percent more likely to die of heart disease than those who ate the least.
- A seven-year study of almost 200,000 people found that those who ate the most processed meats had a 67 percent higher risk of pancreatic cancer than those who ate little or none.

## ANTIBIOTIC RESISTANCE

In the unsanitary conditions typical of confined feedlots, animals are given continual low doses of antibiotics in their feed to prevent sickness, promote faster growth and boost profits. This contributes to increased antibiotic resistance in the bacteria that infect people – a serious threat to public health. In 2009, 80 percent of all antibiotics used in the U.S. were given to livestock.

## HORMONES

Residues of hormones widely used to promote growth in beef cattle, dairy cows and sheep (especially rBST or rBGH) may increase the risk of breast, prostate and colorectal cancer. Their use also increases the risk of health problems in animals (especially mastitis), which leads to higher antibiotic use. Hormones are not permitted in pork or poultry products.

## TOXINS

According to the FDA, most human exposure to dioxins comes from food, almost entirely through animal fats. The best way to reduce health risks associated with dioxins is by limiting dietary exposure to these compounds. Mercury in seafood is also a concern, as this widespread neurotoxin bio-accumulates in large fish. Farmed salmon generally have more dioxin-like PCBs than wild salmon.

The American Cancer Society recommends limiting processed and red meats to decrease the risk of colon and prostate cancer; the American Institute for Cancer Research (AICR) and the American Dietetic Association recommend limiting red meat to 18 oz. a week. AICR and the President’s Cancer Panel say processed meat should be avoided altogether.

# A BETTER ALTERNATIVE

## Grass-Fed, Organic and Pasture-Raised Meat, Eggs and Dairy

### BETTER FOR YOUR HEALTH

Studies show that grass-fed beef is lower in saturated fat, higher in heart-healthy Omega 3's, vitamin E, beta-carotene, B vitamins and conjugated linoleic acid (CLA), a nutrient associated with lower cancer risk.

Eating meat from grass-fed animals raised in open pasture on a natural diet of organic grass, hay and forage, without antibiotics and growth hormones, is less environmentally damaging and more ethical than consuming meat from animals raised or fattened on grain in confined feedlots – which is what Americans mostly buy. Grass-fed is likely healthier for you, too.

### BETTER FOR THE ANIMALS

Grass-fed and pasture-raised livestock are generally raised more humanely in their natural environment, with sufficient space for natural behaviors.

Unfortunately, grass-fed, organic, pasture-raised meats, eggs and dairy can be expensive and difficult to find. Ask your grocer to carry them or try to buy directly from a local producer. When you buy less meat overall, it's easier to afford healthier, greener meat and dairy.

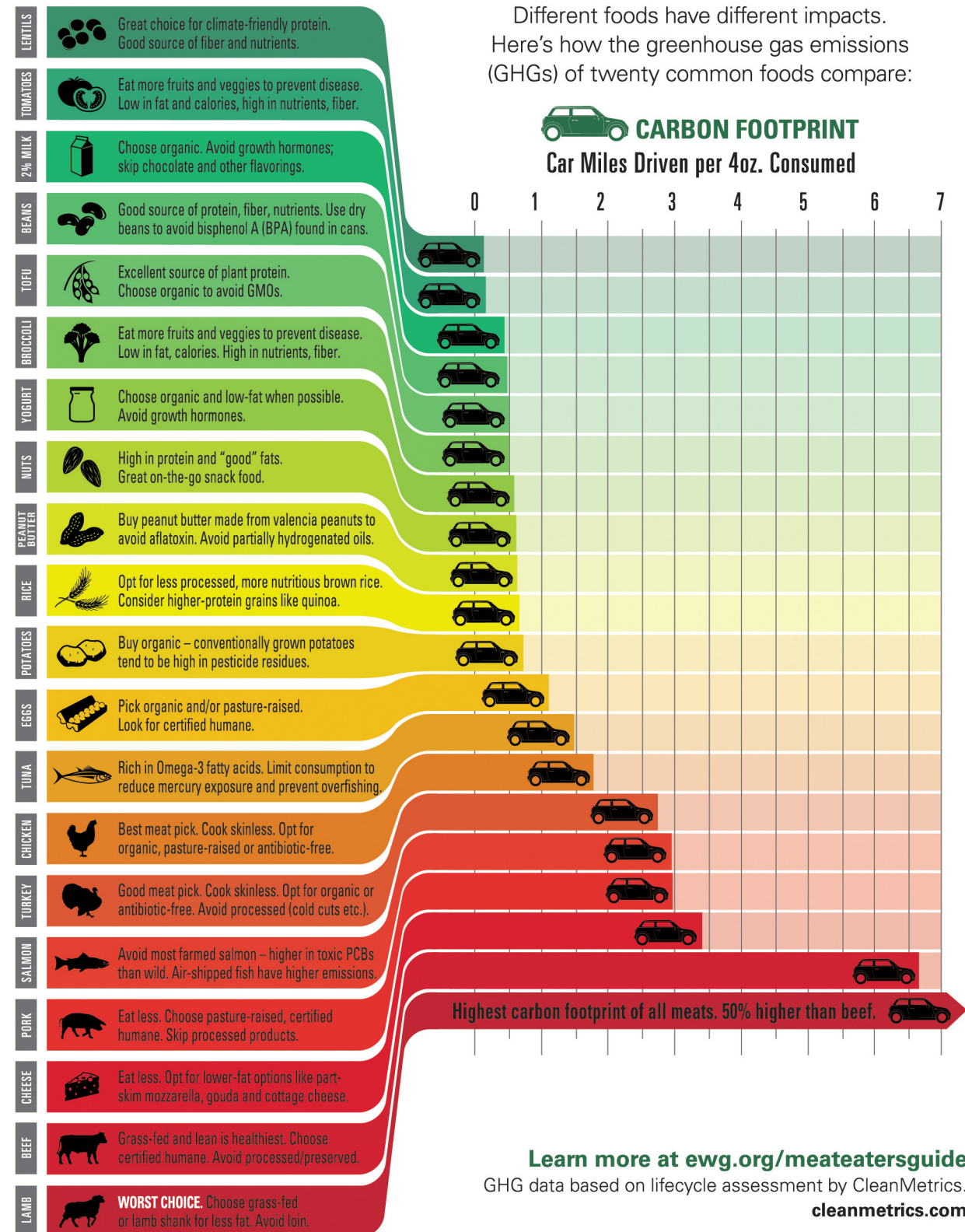
### BETTER FOR THE ENVIRONMENT

Sustainably managed grazing and grass-fed livestock reduce erosion and water pollution, increase carbon storage in soil and preserve biodiversity and wildlife.

**Climate impacts of grass-fed versus feedlot beef are mixed.** Since grass-fed cattle take longer to reach slaughter weight than grain-fed animals, they emit more methane and nitrous oxide. These higher emissions may be offset, however, by the carbon stored in the ground by well-managed pasture systems. Also, far fewer energy-intensive inputs are used in grass-fed beef production.

# EAT SMART. YOUR FOOD CHOICES AFFECT THE CLIMATE.

Different foods have different impacts. Here's how the greenhouse gas emissions (GHGs) of twenty common foods compare:



## EAT LESS MEAT AND DAIRY

Make meatless & cheese-less Mondays part of your life; and on at least two other days, make meat a side dish, not a main course. For more info, visit: [meatlessmonday.com](http://meatlessmonday.com)

## EAT LOWER FAT

dairy products such as cream cheese, part-skim or fresh mozzarella, gouda, feta, muenster, cottage cheese and non-fat yogurt. Choose organic when possible.

## EAT GREENER MEAT WHEN YOU DO EAT IT

### When shopping, look for:

- Grass fed or pasture-raised meat
  - Lean cuts
  - No antibiotics or hormones
  - Certified organic
  - Certified humane
  - Local
  - Unprocessed, nitrite-free and low sodium
  - "Best Choice" Seafood designated by Monterey Bay Aquarium
- Consult [montereybayaquarium.org/cr/seafoodwatch.aspx](http://montereybayaquarium.org/cr/seafoodwatch.aspx)

### When you buy less meat overall, you can afford healthier, greener meat.

If you can't find these healthier products, ask your grocer to carry them. Consult [eatwellguide.org](http://eatwellguide.org) or [eatwild.com](http://eatwild.com) to find a nearby store or farm that offers greener, pasture-raised meat.

# TIPS FOR MEAT EATERS

Eat Healthier and Reduce Your Climate and Environmental Impacts.

## EAT MORE PLANTS

and low-impact protein foods like grains, legumes, nuts and tofu. Choose organic when possible.

## WASTE LESS

Buy right-size portions and eat what you buy. On average, uneaten meat accounts for more than 20% of meat's greenhouse gas emissions.

## SPEAK OUT

Push for smarter, healthier agricultural, food and energy policies, such as:

- Strengthening regulation of concentrated animal feeding operations (CAFOs) to prevent pollution and unnecessary use of antibiotics and hormones.
- Cutting taxpayer subsidies for animal feed and funding programs that support pasture-raised livestock and diversified, organic crop production.
- Strengthening conservation requirements on farms that collect subsidies.
- Serving less meat and more fresh fruits and vegetables in school lunch programs.
- Enacting comprehensive energy and climate policies.