SACRED COW

The Nutritional, Environmental and Ethical Case for Better Meat
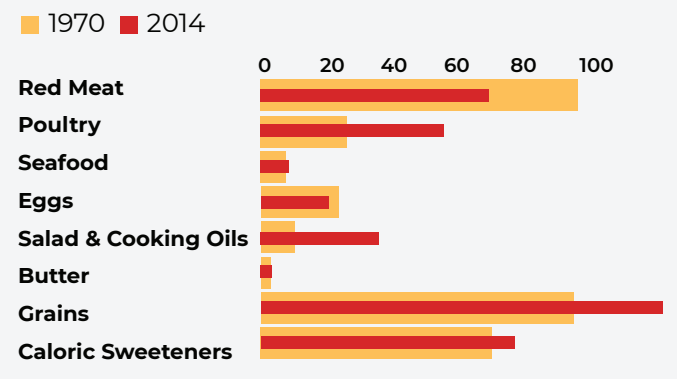
Red Meat Won't Kill You!

There is no evidence showing red meat or saturated fat consumption causes heart disease or diabetes. Humans have eaten red meat and other nutrient dense animal products for thousands of years. It's time to stop blaming animals for our poor health and start looking at the real culprit: nutrient-poor, hyper-palatable, ultra-processed foods.

We're Not Eating "Too Much" Meat

Americans ate less than 2oz of beef per day in 2018, and global per capita beef consumption has been flat for 50 years. Increases in developing countries have been offset by declines in developed countries.

U.S. FOOD AVAILABILITY, ADJUSTED FOR LOSS, 1970 -2014 *(in lbs)*

1970 ■ 2014 ■

(0 20 40 60 80 100)

- Red Meat
- Poultry
- Seafood
- Eggs
- Salad & Cooking Oils
- Butter
- Grains
- Caloric Sweeteners

At the same time, we're eating more chicken, grains, industrially processed seed oils and sugars.[1]

We Need MORE Protein, Not Less

Americans are only getting 16% of their calories from protein. As the most satiating macronutrient and the building block of our bodies, intakes at 1.6g/kg body weight and above help people regulate overall caloric intake and help build and preserve muscle mass.[2]

Meat > Beans

Animal sources are the most complete protein sources because they contain all of the amino acids we need for optimal health. The heme iron in steak is the best, most bioavailable source of iron, and a small 4oz serving of beef contains 95% of the DRI for B12, something you can't get from plants. Iron and B12 are two of the most common nutrient deficiencies worldwide according to the CDC.[3]

To get the same amount of protein in a 4oz steak (181 calories) you'd need to eat 12 oz of kidney beans plus a cup of rice, which equals 638 calories, and 122g of carbs.

What about nuts? To get the 30g of protein from almonds, you would need to consume a little over 1 cup of chopped almonds, which is over 850 calories and 75g of fat.

Nutrition in 4oz Kidney Beans

Protein			Vitamins			Minerals		
Protein	9.8 g	10%	B1 (Thiamine)	0.2 mg	16%	Calcium	39.7 mg	4%
Cystine	0.1 g	15%	B2 (Riboflavin)	0.1 mg	6%	Copper	0.2 mg	27%
Histidine	0.3 g	30%	B3 (Niacin)	0.7 mg	5%	Iron	2.5 mg	14%
Isoleucine	0.5 g	38%	B5 (Pantothenic Acid)	0.2 mg	5%	Magnesium	47.6 mg	5%
Leucine	0.8 g	31%	B6 Pyridoxine	0.1 mg	5%	Manganese	0.5 mg	27%
Lysine	0.7 g	28%	B12 (Cobalamin)	0.0 µg	0%	Phosphorus	156.5 mg	22%
Methionine	0.1 g	21%	Folate	147.4 µg	37%	Potassium	459.3 mg	10%
Phenylalanine	0.6 g	55%	Vitamin A	0.0 IU	0%	Selenium	1.2 µg	2%
Threonine	0.4 g	28%	Vitamin C	1.4 mg	2%	Sodium	1.1 mg	0%
Tryptophan	0.1 g	37%	Vitamin D	1.1 IU	0%	Zinc	1.1 mg	14%
Tyrosine	0.2 g	22%	Vitamin E	0.0 mg	0%			
Valine	0.6 g	37%	Vitamin K	2.5 µg	11%			

144 calories, 9g protein, 18.4g carbohydrates, .6g fat

Nutrition in 4oz Sirloin Steak

Protein			Vitamins			Minerals		
Protein	33.9 g	34%	B1 (Thiamine)	0.1 mg	8%	Calcium	18.1 mg	2%
Cystine	0.4 g	59%	B2 (Riboflavin)	0.3 mg	30%	Copper	0.1 mg	7%
Histidine	1.3 g	147%	B3 (Niacin)	9.0 mg	64%	Iron	3.3 mg	18%
Isoleucine	1.6 g	135%	B5 (Pantothenic Acid)	0.5 mg	10%	Magnesium	17.0 mg	5%
Leucine	3.0 g	113%	B6 Pyridoxine	0.9 mg	68%	Manganese	0.0 mg	0%
Lysine	3.4 g	138%	B12 (Cobalamin)	2.3 µg	95%	Phosphorus	306.2 mg	44%
Methionine	0.9 g	156%	Folate	5.7 µg	1%	Potassium	435.4 mg	9%
Phenylalanine	1.4 g	133%	Vitamin A	15.9 IU	1%	Selenium	30.8 µg	56%
Threonine	1.6 g	129%	Vitamin C	0.0 g	0%	Sodium	76.0 mg	3%
Tryptophan	0.4 g	123%	Vitamin D	1.1 IU	0%	Zinc	5.1 mg	64%
Tyrosine	1.3 g	124%	Vitamin E	0.3 mg	2%			
Valine	1.7 g	154%	Vitamin K	2.2 µg	2%			

181 calories, 30g protein, 0g carbohydrate, 4.5g fat

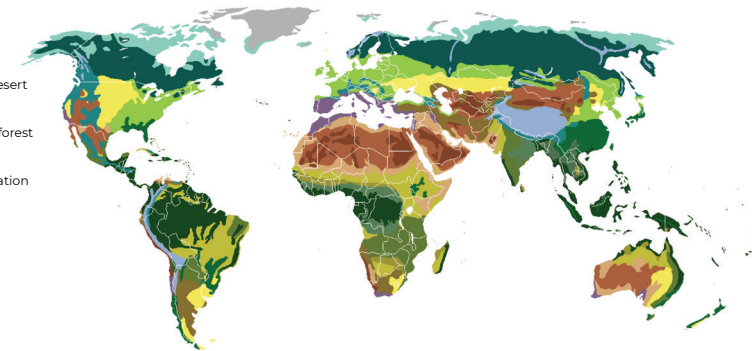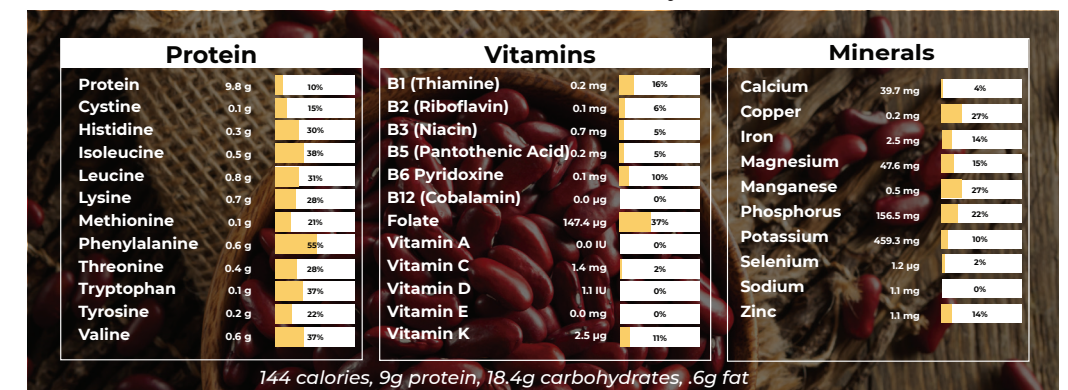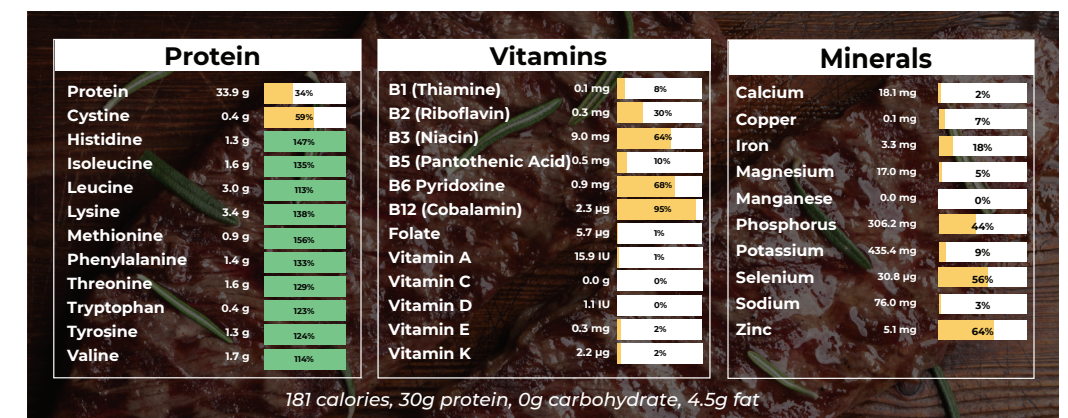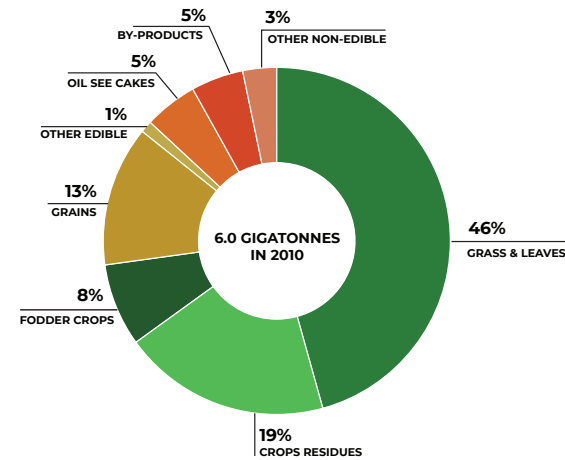## Less Meat = More Nutrient Deficiencies, Calories, Carbs

One study in PNAS modeled what would happen if America eliminated all animal products and caloric intake would increase, carbohydrate intake would increase, and nutrient deficiencies would increase. At the same time, greenhouse gas emissions would only reduce by 2.6%.[4]

Women who don't eat meat when pregnant are more likely to experience premature delivery and lower birth weights.[5] Vegetarians are also more likely to be deficient in multiple nutrients such as B12, glycine, selenium, methionine, taurine, creatine, choline, and iodine.

Not All Land Can Be Cropped

Removing cattle doesn't mean that we'll free up more land for crop production. More than 60% globally and 40% of the land in the contiguous U.S. is pasture and rangeland that is too rocky, steep, and/or arid to support cultivated agriculture – yet this land can support cattle and protein upcycling.[6]

- ice sheet and polar desert
- tundra
- taiga
- temperate broadleaf forest
- temperate steppe
- subtropical rainforest
- Mediterranean vegetation
- monsoon forest
- arid desert
- xeric shrubland
- dry steppe
- semiarid desert
- grass savanna
- tree savanna
- subtropical dry forest
- tropical rainforest
- alpine tundra
- montane forest

Cattle Turn Food We Can't Eat into Protein

86% of the global livestock feed intake is made of materials that are currently not eaten by humans. Soybean production (for oil) is the main driver of agricultural land use, but represents just 4% of the global livestock feed intake. Soybean cakes, which are sometimes fed to cattle, are byproducts of the soy oil industry. Monogastrics (like poultry and pork) consume 72% of the global livestock grain intake while grass and leaves represent more than 57% of the ruminants' (like cattle, sheep and goats) intake.

6.0 GIGATONNES IN 2010

- 5% BY-PRODUCTS
- 3% OTHER NON-EDIBLE
- 5% OIL SEE CAKES
- 1% OTHER EDIBLE
- 13% GRAINS
- 8% FODDER CROPS
- 46% GRASS & LEAVES
- 19% CROPS RESIDUES

Global livestock feed intake. Share of main feed types consumed by livestock supply chains (both ruminants and monogastric species) in 2010. [7]

Beef Isn't a Water Hog

Most of the droplets below represent "green water", or natural rainfall. [8] "Blue water" represents water that has been sourced from surface or groundwater resources. Beef requires only 280 gallons of "blue water" per pound, which is less than the amount required to produce a pound of avocados, walnuts, or sugar. Grey water is the volume of water required to dilute pollutants.
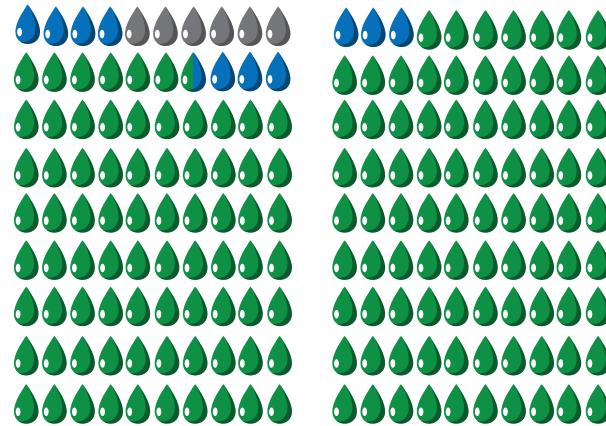
Typical Beef
94% green water, 4% blue water, 3% gray water

Grass-finished Beef
97% green water, 3% blue water

Methane Claims Against Cattle are Overblown

According to the EPA, all livestock only represents 3.9% of the US GHG emissions, which is far lower than the 18% - 51% range many plant-based advocates report. The largest source of GHG emissions in the US comes from energy and transportation.

Within the livestock category, beef represents 2% of total US GHG emissions. [9]

2016 US Total GHG Emissions (Source: US EPA)

- Transportation
- Electricity generation
- Industry
- Ag-Crops
- Ag-Livestock
- Ag-Fuels
- Commercial
- Residential
- U.S. territories

21.6%, 4.7%, 3.9% LIVESTOCK, 0.8%, 6.4%, 5.1%, 0.7%, 28.4%, 28.5%

Well-Managed Cattle Sequester Carbon

Studies which tracked soil carbon sequestration in mid-west beef finishing systems showed that well-managed cattle on grass (moved frequently to new pasture) are a net carbon sink. [10]

Grass-fed Cattle Improve Biodiversity and Other Ecological Measures

Cattle graze on land we can't farm and produce high-quality protein and micronutrients from food we can't eat - which is a win for our health and the environment. Well-managed cattle improve the water-holding capacity of the land, which makes rainfall more effective. Cattle also improve the health of the soil microbiome and increase biodiversity by providing a rich habitat for pollinators, birds, and other wildlife.

There is No Life Without Death

All living things eat and are eaten. A food system without animals could cause more harm than good. Well-raised beef is a healthy, sustainable and ethical food.

Eliminating Meat Would Do More Harm than Good

One study that modeled what would happen if the entire US eliminated all animal-derived foods found that total US GHG emissions would only be reduced by 2.6%, but the simulated diet would result in more overall calories consumed, increased carbohydrates, and would lead to more nutrient deficiencies, including Ca, vitamins A and B12, and EPA, DHA and arachidonic acid. [4]

Support the Sacred Cow Film Project!

We've allowed corporate interests, big food, flawed science, click-bait media and naïve celebrities to steer the public away from a truly nutrient-dense, ethical, sustainable, and regenerative food system. These views influence how we're training doctors and dietitians, plus our dietary guidelines, school lunch policies, and funding for nutrition-related research.

We're now working on securing the funding to complete the project. Go to **www.sacredcow.info** today and contribute! If you're looking to be a corporate sponsor, please contact **Diana Rodgers (info@sacredcow.info)** for more information.

Executive Producer, Producer: Diana Rodgers, RD
Co-Executive Producer: Robb Wolf
Director: Myna Joseph

SACRED COW
The Nutritional, Environmental and Ethical Case for Better Meat

References:

[1] https://www.ers.usda.gov/data-products/food-availability-per-capita-data-system/food-availability-per-capita-data-system/
[2] https://robbwolf.com/2016/11/07/how-much-protein-do-we-really-need/
[3] https://www.cdc.gov/nutritionreport/pdf/4page_%202nd%20nutrition%20report_508_032912.pdf
[4] Nutritional and Greenhouse Gas Impacts of Removing Animals from US Agriculture. PNAS, National Academy of Sciences, 28 Nov. 2017
[5] Rogne T, et al. Associations of Maternal Vitamin B12 Concentration in Pregnancy With the Risks of Preterm Birth and Low Birth Weight: A Systematic Review and Meta-Analysis of Individual Participant Data. Am J Epidemiol. 2017 Feb 1;185(3):212-223
[6] http://www.fao.org/docrep/x5304e/x5304e03.htm
[7] Mottet, Anne. "Livestock: On Our Plates or Eating at Our Table? A New Analysis of the Feed/Food Debate." Global Food Security, Elsevier, 10 Jan. 2017, www.sciencedirect.com/science/article/abs/pii/S2211912416300013?via%3Dihub.
[8] Mekonnen, Mesfin, and Arjen Ysbert Hoekstra. "The Green, Blue and Grey Water Footprint of Animals and Animal Products." - University of Twente Research Information, Unesco-IHE Institute for Water Education, 11 May 2017, research.utwente.nl/en/publications/the-green-blue-and-grey-water-footprint-of-animals-and-animal-pro.
[9] https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#agriculture
[10] Stanley, P., Rowntree, J., et al. (2018). Impacts of soil carbon sequestration on life cycle greenhouse gas emissions in Midwestern USA beef finishing systems. Agricultural systems, 162, 249-258