

# FOOD KNOW-HOW WEBINAR: GROUND BEEF MATTERS

March 31, 2021 @ Noon (12 pm) EDT:

## Your Questions Answered:

As a result of this Food Know-How webinar, 16 questions were submitted. Here are the Answers back. Thank you for attending the webinar and for submitting these thoughtful questions.

*Question 1: Is fattening up cows with grains like corn, that a ruminant animal wouldn't typically eat result in any metabolic difference or nutritional difference in the meat?*

Firstly – some background on grain feeding. Cattle love grain, and corn is a grass - really. Cattle will break down fences to get into corn fields so it is not a food force-fed to cattle.

Cattle that eat grain tend to put on weight gain faster, and typically develop fine white streaks of fat that run throughout the meat known as marbling and that is a good thing for beef quality. The amount of marbling in the meat influences the flavour, tenderness and juiciness. Grading of beef is related to the marbling in the meat, ranging from most marbling (Prime grade), to least (Canada A grade). The marbling melts with cooking imparting juiciness and flavour. So there is choice within the grades with leaner options to choose from. It is important to remember that of the fat in Canadian diets, all fresh red meat accounts for 7% of the total fat in our diets (9% of the saturated fat) and 5% of our total calories. Fresh Red Meat is not a major contributor of fat or calories in our diets.

What about nutritional impacts? The higher the grade, the higher the fat content is the general rule of thumb. Of note, the Canadian Nutrient File (CNF) data has been developed based on cuts of beef from across the country with varying grades and varying cattle feeds, breeds, etc, so that the CNF data is a 'capture' that represents what is available to the consumer at Canadian retailers.

**On the topic specific to the human nutrition impacts of grass versus grain feeding practices with beef cattle:**

Grass-fed beef is somewhat leaner than grain finished beef by about 2 to 4 g per 100 g. Although statistically significant, in practical terms this difference is small in the context of the total fat consumed from the foods we eat daily. Some consumers choose grass-fed beef because it is higher in omega-3 fats, but neither grass-fed nor grain-fed beef is a significant source. For omega-3s, choose better sources such as fatty fish, flax oil, walnuts and hemp seeds.

What about other nutrients? In the majority of studies reviewed, there were no differences in the levels of cholesterol or in nutrients such as zinc and iron. There were small differences in B vitamins, potassium and calcium, but, like fat content, these differences are not significant enough to be meaningful in the context of your total diet.

Reference: Van Elswyk ME and McNeill SH. Impact of Grass/Forage Feeding versus Grain Finishing on Beef Nutrients and Sensory Quality: The U.S. Experience. Meat Sci 2014; 96(1):535-540.

*Question 2: What part of the cattle does lean ground beef comes from?*

All ground beef available at retail is made from a variety of cuts and trim. Fat levels of ground beef are determined by the mix of cuts and trim. Lean Ground Sirloin or Chuck or Round means that the ground beef is sourced from those whole muscle cuts specifically and are known as 'source-specific ground beef'.

*Question 3: Is there a difference between the different types for beef: Angus, Simmental, etc.*

Yes. Different breeds will have nuances of variability but there are also many other factors affecting beef sensory and other characteristics such as the aging process, trim levels, feeds, butchery practices and age of the animal to name just a few of the factors.

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**Question 4: What effect does the plant-based diet have on the farmers?**

If beef farmers and ranchers don't have a market to sell their beef, then it is difficult for them to stay in the business of raising cattle. If they are to remain as farmers, if the land is viable, they may switch over their land from prairie or pasture to a crop that could provide a better income. The grass ecosystem and that way of life that exists would be lost. If the land is not viable for growing foods or raising other livestock, it may be sold or used for non-agricultural uses/development.

**Question 5: How are cattle raised for veal? What are the differences between beef and veal from raising them, to nutrition factors, packaging, etc.**

The Canadian Veal Association would be the better qualified experts to answer questions about veal. For questions about how veal is raised please go to: <https://vealfarmers.ca/all-about-veal/the-real-deal-about-veal>. For recipes and human nutrition info, please go to: <https://ontariovealappeal.ca>.

**Question 6: It seems that the public health survey was done in 1964, is there not any more recent data on public consumption of saturated fats?**

Please note that '1964' noted in the reference material is not a date - it is a page number! BUT we can see how it is confusing. The date is 2019. Below is a presentation of the reference that we hope is less confusing:

Harrison, S., et al. Consumption and Sources of Saturated Fatty Acids According to the 2019 Canada Food Guide: Data from the 2015 Canadian Community Health Survey. *Nutrients* (2019).

**Question 7: 5% consumption of beef (contribution of calories for Canadians) is fine across the board... but at a household level some families maybe be different. I think awareness is needed. Stats are fine but on an individual level it's different. I think what's available in your area makes a difference too.**

This is true – however, where should the threshold be would be a good question that needs to be considered.

In the PURE study (2020), diets with higher intakes of unprocessed red meat (~1.5 servings per day) are associated with lower Cardiovascular Disease (CDV) risk than diets with low red meat intake:

Research Summary: <https://securereservercdn.net/45.40.152.13/zph.89d.myftupload.com/wp-content/uploads/2020/01/Study-Summary-3.pdf>

Research Paper: <https://academic.oup.com/ajcn/advance-article-abstract/doi/10.1093/ajcn/nqaa448/6195530?redirectedFrom=fulltext>

From JACC (2020), the research also supports that a diet higher in saturated fatty acids (SFA) within a healthy food matrix, results in NO increased risk of CVD or diabetes:

"Whole-fat dairy, unprocessed meat, and dark chocolate are SFA-rich foods with a complex matrix that are not associated with increased risk of CVD. The totality of available evidence does not support further limiting the intake of such foods."

Reference: <https://www.sciencedirect.com/science/article/pii/S0735109720356874?via%3DIihub>

We know MOST Canadians over consume Ultra Processed Foods and under consume Fruits and Vegetables. Should those two priorities not take precedence nutritionally? Particularly when you look at the research around unprocessed red meat and health, like the references above.

Some 'food for thought': When we tell people to "reduce red meat", what is it we hope they replace it with? Chicken? Beans? Do we tell them? The decline in red meat consumption has been followed with an increase in UPF. The public needs to be cautious of this unintended consequence of just 'reducing red meat'. For most people, better balance would come from increasing consumption of vegetables and whole grains in place of UPF, and also adopting other health-habits such as losing weight, increasing exercise, not smoking, increasing fish consumption, etc.

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**Question 8: What exactly is in ground beef? parts... and any fillers?**

Ground beef has no fillers. It is 100% beef, no colours, no water, no preservatives or fillers added. All ground beef available at retail is made from a variety of cuts and trim. Fat levels of ground beef are determined by the mix of the two. Lean Ground Sirloin or Chuck or Round means that the ground beef is sourced from those whole muscle cuts specifically.

**Question 9: One of the many issues patients ask about is the negative effect of consuming beef that has been culled in a manner that increases cortisol in the beef due to high stress in the kill facilities. They are concerned about consuming stress hormones released due to this. Can you please comment?**

All processing facilities strive to have minimal stress for cattle as stress ultimately reduces the quality of the meat and in turn, the return on investment. Buy Canadian graded beef for quality beef. It is the priority for all concerned with getting meat to Canadians that the cattle are treated well. Stressed cattle at processing would be an anomaly so the risk of consuming stress hormones is minimal.

**Question 10: How has Covid impacted the industry?**

Retail sales of meat have gained, while foodservice restaurant sales have been reduced – so steak-house grades (Prime) beef is more available at retail. During the first lockdowns/outbreaks, several plants had to close as the operations needed to adjust to accommodate safe distancing protocols for the workforce. Carpooling of the workforce also contributed to worker health and had to be considered as a control factor.

Canadians are cooking more beef at home as a result of COVID-19 and so beef is in greater demand for home-cooking as are all protein foods. Beef supply has stabilized and is steady now that the protocols are in place, but disruptions are certainly anticipated as a reality in all our daily lives.

**Question 11: Can you speak to the difference between grass fed and regular beef? Is it a better option?**

See Question 1 (above)

**Question 12. With the guidelines recommending 2 servings or less of red meat per week (particularly for heart health concerns)- where do these recommendations come from if saturated fat content isn't as much of a concern? What would you recommend for consumption instead?**

See Question 7 for more references and discussion. My (Karine Barlow RD) recommendation would be the Canada food guide healthy plate. Treat red meat the same as any other meat, for example, do you have guidelines for chicken? The balanced plate is what matters. Make sure minimum servings of vegetables are met (5-10 /day), fish 2x week, fibre targets in place, sodium in line, minimize fast/ultra-processed foods. The rest will fall into place!

**Question 13: Cattle aren't natural to Canada...where did they come from... and why?**

Beef cattle are domesticated animals that came with European settlers along with dairy cattle, poultry and hogs as well. Domestic livestock provided settlers with an efficient and reliable way to access high quality protein year-round without the need for hunting or risk of weather dependent crop failure. And beef cattle can live on marginal lands that could not be put into crops. Not everyone got the best farmland to work with. Families and communities that had access to these domestic animals were much more food secure than those without.

**Question 14: How can you convince animal rights activists that beef is better nutritionally than plant-based?**

We are always willing to engage in healthy conversation when it comes to the topic of Beef. Nutritionally speaking, both animal and plant protein foods have their own unique set of nutrients so it shouldn't really be a matter of one versus the other. Plant-sources provide fibre and folate – meat does not. Meat provides vitamin B12 and easy-to-absorb heme iron – only animal sourced foods provide these.

Eat and enjoy both animal and plant food sources of protein – and in fact there are benefits of eating them in combination. For example, combining meat with plant-food sources of iron will boost iron absorption from the plant foods by 150% -- it is the 'food synergy' effect.

Reference: Engelmann, M, Davidsson, L, Sandstrom, B, Walczyk, T, Hurrell, R, & Michaelsen, K. (1998). The influence of meat on nonheme iron absorption in infants. *Pediatric Research*, 43(6), 768-773.

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**Question 15: My understanding the recommendation to decrease red-meat intake is also related to increased incidence of cancer in red-meat eaters. Comments?**

The World Cancer Research Fund recently reclassified the relationship between unprocessed red meat and colorectal cancer as no longer convincing. Unprocessed red meat was included as part of the latest Food Guide. It is important to realize that no one food causes, or cures cancer. It is extremely important to recognize that any link between red meat and cancer is an association – not causal. We certainly know that some poor dietary patterns can be high in meat, however these most certainly will be high in Ultra Processed Foods and low in nutrient rich foods. Some further references here:

The most comprehensive quality assessment of the evidence, using the authoritative GRADE system for epidemiological data, found there is no convincing evidence of a link between fresh red meat and cancer.[1] Similar conclusions were obtained when assessing dietary patterns with less intake of red or processed meats.[2] The authors therefore suggested that based on the low-certainty of evidence of the negative health outcomes of eating meat, that the majority of people continue their current red meat consumption.

Furthermore, in 2019, Health Canada reported there was no longer convincing evidence for red meat intake and increased risk of colorectal cancer.[3]

The most important dietary advice people can follow to decrease cancer risk are to enjoy a nutrient-rich, balanced diet of fruits, vegetables, whole grains, lean meat and low- and nonfat dairy. Not smoking, responsible alcohol consumption, maintaining a healthy weight and regular physical activity are much more important to your cancer risk than eating any individual food.

References:

[1] Han MA, et al. Reduction of Red and Processed Meat Intake and Cancer Mortality and Incidence: A Systematic Review and Meta-analysis of Cohort Studies. *Ann Intern Med.* 2019 Nov 19;171(10):711-720. doi: 10.7326/M19-0699. Epub 2019 Oct 1. PMID: 31569214.

[2] Vernooij RWM, et al. Patterns of Red and Processed Meat Consumption and Risk for Cardiometabolic and Cancer Outcomes: A Systematic Review and Meta-analysis of Cohort Studies. *Ann Intern Med.* 2019 Nov 19;171(10):732-741. doi: 10.7326/M19-1583. Epub 2019 Oct 1. PMID: 31569217

[3] Food, Nutrients and Health, Interim Evidence Update, For Health Professionals and Policy Makers, Health Canada, 2019.

**Question 16: Beef... antibiotics. Is there a difference between users and non-users?**

Please find this Fact Sheet reference for more detail on the use of antibiotics in beef cattle:

[https://betacanadabeef.wpengine.com/wp-content/uploads/2018/01/3430\\_CANBEEF\\_factsheet\\_ANTIBIOTICS-DEC2017.pdf](https://betacanadabeef.wpengine.com/wp-content/uploads/2018/01/3430_CANBEEF_factsheet_ANTIBIOTICS-DEC2017.pdf)