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Comment on FR Doc # 2019-12806

The is a Comment on the **Food and Nutrition Service** (FNS) Notice: **Meetings: 2020 Dietary Guidelines Advisory Committee**

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Comment

RE: Growing Body of Evidence Demonstrates A Weak and Diminishing Association between Meat and Cancer Risk

The Beef Checkoff appreciates the opportunity to provide evidence for consideration on the development of the 2020-2025 Dietary Guidelines for Americans (DGA). The Beef Checkoff is a producer-funded marketing and research program, which includes a significant commitment to supporting nutrition research to better understand beefs role in healthy diets, including its impact on disease risk.

When assessing the impact of food and nutrition on cancer, its important to note that cancer is a complex disease, with many factors affecting ones risk. Being overweight and eating an unhealthy diet have been linked to increased cancer risk, but no available evidence has proven that single foods cause or cure cancer. When addressing the role of nutrition in cancer risk, assessing the totality of the evidence and putting that risk into perspective is critical for evidence-based dietary guidance. As the Committee addresses this topic, the attached summary addresses key points related to understanding beefs role in cancer risk.

Importantly, in looking closely at dietary components, a growing body of evidence illustrates a weak and diminishing association between meat and cancer risk. Specifically, the systematic literature review (SLR) conducted by the World Cancer Research Fund (WCRF) for the Continuous Update Project (CUP) Report: Diet, Nutrition, Physical Activity and Colorectal Cancer, 2017 concludes that the 2016 CUP findings are less strong than those from the 2010 SLR, which showed a 17 percent increased risk per 100 grams of red meat per day. The CUP meta-analysis included the same number of studies as the 2010 SLR but over 2,000 more cases of colorectal cancer. Consequently, the authors downgraded the strength of evidence on red meat from convincing in their 2011 CUP report to probable in their 2017 CUP report.

Moreover, the same report found, The evidence for consumption of foods containing haem was limited, and no significant associations were observed between haem iron and colorectal, colon or rectal cancer. In fact, beef is a foundational food that nourishes and optimizes Americans health at every life stage, which is reflected in the WCRFs discussion on public health and policy implications of their 2018 Third Expert Report. For example, advice to consume modest amounts of red meat is coupled with recognition of the importance of nutrient-dense diets and red meat as a valuable source of nutrients, that contributes to the overall balance and nutritional adequacy of typical Western diets. Finally, it is important to note that Americans are already consuming beef within dietary guidelines; Americans, on average, eat less than 2 ounces of beef each day.

Thank you for the opportunity to share this evidence overview for consideration as the Committee examines Topics and Questions that are relevant to evaluating the role of beef in healthy diets, including its impact on disease risk.

Attachments (1)

Beef Checkoff_Cancer Evidence overview

View Attachment: PDF

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October 28, 2019

Barbara Schneeman, PhD
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CC: 2020-2025 Dietary Guidelines Advisory Committee Members
U.S. Department of Agriculture
U.S. Department of Health and Human Services
Brandon Lipps, Deputy Undersecretary, Food and Nutrition Consumer Services

RE: Growing Body of Evidence Demonstrates A Weak and Diminishing Association between Meat and Cancer Risk

Dear Members of the Dietary Guidelines Advisory Committee:

The Beef Checkoff appreciates the opportunity to provide evidence for consideration on the development of the 2020-2025 Dietary Guidelines for Americans (DGA). The Beef Checkoff is a producer-funded marketing and research program, which includes a significant commitment to supporting nutrition research to better understand beef's role in healthy diets, including its impact on disease risk.

When assessing the impact of food and nutrition on cancer, it's important to note that cancer is a complex disease, with many factors affecting one's risk.[1] Being overweight and eating an unhealthy diet have been linked to increased cancer risk, but no available evidence has proven that single foods cause OR cure cancer.[2,3] When addressing the role of nutrition in cancer risk, assessing the totality of the evidence and putting that risk into perspective is critical for evidence-based dietary guidance.[26-28] As the Committee addresses this topic, the attached summary addresses key points related to understanding beef's role in cancer risk.

Importantly, in looking closely at dietary components, a growing body of evidence illustrates a weak and diminishing association between meat and cancer risk. Specifically, the systematic literature review (SLR) conducted by the World Cancer Research Fund (WCRF) for the Continuous Update Project (CUP) Report: Diet, Nutrition, Physical Activity and Colorectal Cancer, 2017 concludes that "the 2016 CUP findings are less strong than those from the 2010 SLR, which showed a 17 percent increased risk per 100 grams of red meat per day. The CUP meta-analysis included the same number of studies as the 2010 SLR but over 2,000 more cases of colorectal cancer." [5,6,7] Consequently, the authors downgraded the strength of evidence on red meat from 'convincing' in their 2011 CUP report to 'probable' in their 2017 CUP report.[5,8]

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Moreover, the same report found, “The evidence for consumption of foods containing haem was limited, and no significant associations were observed between haem iron and colorectal, colon or rectal cancer.” [5]

In fact, beef is a foundational food that nourishes and optimizes Americans’ health at every life stage[4], which is reflected in the WCRF’s discussion on public health and policy implications of their 2018 Third Expert Report. For example, advice to consume “modest” amounts of red meat is coupled with recognition of the importance of nutrient-dense diets and red meat as a valuable source of nutrients, that contributes to the overall balance and nutritional adequacy of typical Western diets.[2] Finally, it is important to note that Americans are already consuming beef within dietary guidelines; Americans, on average, eat less than 2 ounces of beef each day.[12,21]

Thank you for the opportunity to share this evidence overview for consideration as the Committee examines Topics and Questions that are relevant to evaluating the role of beef in healthy diets, including its impact on disease risk.

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Growing Body of Evidence Demonstrates A Weak and Diminishing Association between Meat and Cancer Risk - Evidence Overview and Supporting Citations

Cancer is a complex disease (1). Many factors – some within our control and some not – can increase individual cancer risk (1). Being overweight and eating unhealthy diets have been linked to increased cancer risk (2), but no available evidence has proven that single foods cause or cure cancer (3). The attached summary infographic puts the role of diet in perspective among the many risk factors for cancer (see attached).

Beef is a foundational food that nourishes and optimizes Americans' health at every life stage (4). This fact is reflected in World Cancer Research Fund/American Institute for Cancer Research (WCRF/AICR) discussion on public health and policy implications of their 2018 Third Expert Report (2). Specifically, **advice to consume "modest" amounts of red meat is coupled with recognition that red meat is a valuable source of nutrients that contributes to the overall balance and nutritional adequacy of typical Western diets (2)**.

The cancer prevention recommendations outlined in the 2018 WCRF/AICR Third Expert Report are based on findings from cancer-specific systematic literature reviews (SLRs) conducted as part of WCRF's Continuous Update Project (CUP), **which demonstrate a growing body of evidence of a weak and diminishing association between meat and cancer risk.** Specifically, the *Continuous Update Project Report: Diet, Nutrition, Physical Activity and Colorectal Cancer, 2017* (5), which is based on the findings of the CUP Colorectal Cancer SLR 2016 (6), and serves as an update to a 2010 SLR (7), concludes that **"The 2016 CUP findings are less strong than those from the 2010 SLR, which showed a 17 per cent increased risk per 100 grams of red meat per day (RR 1.17 (95% CI 1.05-1.31)). The CUP meta-analysis included the same number of studies as the 2010 SLR but over 2,000 more cases of colorectal cancer."** None of the 13 studies identified in the 2016 SLR reported statistically significant associations between red meat intake and CRC risk which, when included in a dose-response meta-analysis of red meat and CRC risk, resulted in a non-statistically significant 12% increased risk of CRC per 100 grams of red meat (RR 1.12 (95% CI 1.00-1.25) (5). Consequently, the authors downgraded the strength of evidence on red meat from 'convincing' in their 2011 CUP report (8) to 'probable' in their 2017 CUP report (5). **Furthermore, evidence regarding the association between red meat and three additional cancers (nasopharynx, lung, and pancreas) was found to be insufficient to "…justify recommendations designed to reduce the risk of cancer"** (evidence grade = limited-suggestive; (2, 9)).

In addition to finding a weakened association between red meat intake and CRC risk, mechanistic evidence for several components of red meat (and meat generally) and CRC was also found to be weak or diminished. **For example, evidence regarding the association between foods containing animal fats and CRC risk was found to be less consistent in the 2016 SLR (6) compared to the 2010 SLR (7) resulting in a downgrading of the strength of evidence from "limited-suggestive increases risk" in the 2011 report (8), to "limited-no conclusion" in the 2017 report (5).** Dietary cholesterol, found only in animal products, was reviewed for the first time in the 2017 report, and found also to have limited evidence resulting, in a "limited-no conclusion" judgement (5). Regarding heme iron, the 2017 CUP report finds, **"The evidence for consumption of foods containing haem was limited, and no significant associations**

were observed between haem iron and colorectal, colon or rectal cancer" (5). These findings are supported by results of a SLR of mechanistic studies examining heme iron and cancer risk, which found most utilized heme-like chemicals or derivatives were provided at levels incompatible with human consumption, making the relevance of this mechanism to human cancer risk difficult to establish (10). Mechanistic evidence regarding exposure to heterocyclic amines (HCAs), formed during high temperature cooking of meat, finds dietary exposure from the U.S. diet insufficient to warrant recommendations to avoid high temperature cooking methods (11).

Finally, while a Mediterranean-style dietary pattern is recognized by the 2015 DGAC as a useful example of an eating pattern to reduce the risk of chronic disease (12), the WCRF/AICR Third Expert Report found inadequate information regarding a "Mediterranean type" dietary pattern to feature this style diet in their global cancer prevention recommendations, noting that "…although there are recognized scores for quantifying adherence to such a diet, it is unclear what such a diet comprises (5)." This finding is consistent with recent observations regarding dietary patterns, i.e dietary pattern assessments lack standardized methods to identify patterns and has been reported to be misleading, which may contribute to confusion and/or erroneous assumptions (13-15). Randomized controlled trials (RCTs) are able to examine such dietary patterns, are at lower risk of bias, and can confirm disease observations using controlled diets and markers of disease (15). Research from RCTs continue to demonstrate that lean beef can be the predominant protein source in DASH (Dietary Approaches to Stop Hypertension), Mediterranean and fruit and vegetable rich eating patterns (16-19).

People have enjoyed beef for centuries (20), and **today, eat beef within the current Dietary Guidelines for Americans recommendations (12, 21). Scientific evidence demonstrates that beef, at current levels consumed, offsets nutrient deficiencies and serves as an integral part of healthy diets** (22-25).

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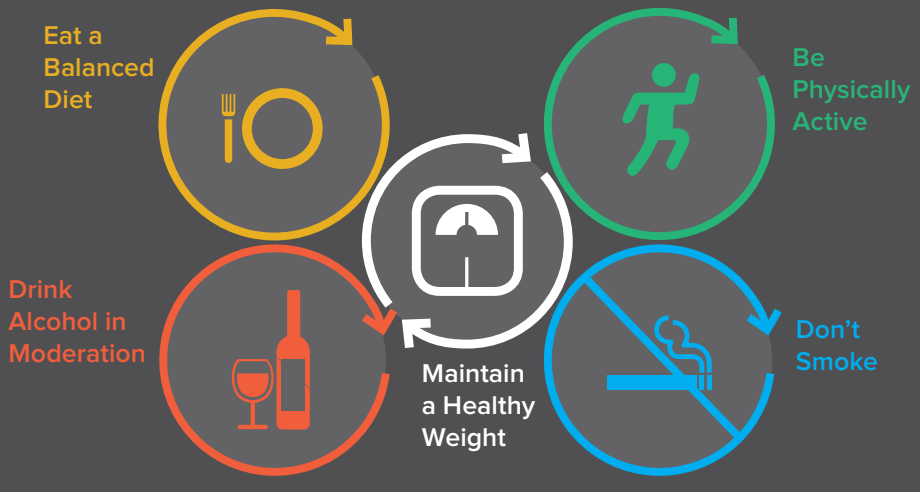
UNDERSTANDING DIET'S ROLE IN CANCER RISK

Cancer is a complex disease. Many factors – some within our control and some not – can increase individual cancer risk. Being overweight and eating an unhealthy diet have been linked to increased cancer risk, but no available evidence has proven that single foods cause or cure cancer.

CONTROLLABLE FACTORS TO REDUCE CANCER RISK



5 FIVE FACTS ABOUT RESEARCH ON DIET AND CANCER

1. The total diet has more of an impact on cancer risk than any single food or ingredient
2. Measuring what and how we eat is an imperfect science
3. Diet is closely linked to other lifestyle factors
4. People respond differently to foods
5. More research on diet's role in cancer is needed

WHAT IS A HAZARD?

Something that is capable of causing harm under some circumstances.

WHAT IS RISK?

The chance (high or low) that a hazard will cause harm under certain circumstances.

Cancer is a hazard, but an individual's risk of getting cancer depends on a number of factors – some controllable and some not.[1]

LIFETIME (ABSOLUTE) RISK

The risk of developing or dying from cancer sometime during a person's lifetime, based on average characteristics of the U.S. population as a whole including age, gender, environment and lifestyle.[2]

RELATIVE RISK

A statistical measurement in research used to compare the response of two different groups to a particular risk.[3]

VS

INDIVIDUAL (PERSONAL) RISK

The risk of developing or dying from cancer based on many factors, including a person's age, birthplace, gender, genetics, environment, lifestyle and socioeconomic traits.[2]

UNDERSTANDING RISK IN RESEARCH REPORTS AND MEDIA HEADLINES

The lifetime risk for developing colorectal cancer is 4.5% or about 1 in 20.[4]

50g of processed meat a day - less than two slices of bacon - increases the chance of developing colorectal cancer by 18%.[5]

– World Health Organization (WHO)

Translation

Total lifetime risk of developing colorectal cancer increases from 4.5% to 5.3%.

For comparison

Smoking cigarettes increases the chance of developing lung cancer by 2,500%.[2]

DON'T CONFUSE HAZARD AND RISK

A hazard is not a risk until you are exposed to that hazard at a level that will cause harm.

Funded by the Beef Checkoff.

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