Results of the WHO public consultation on the scope of the guideline on carbohydrate intake

Comments were received from the following individuals and organizations

Government agencies	
Hanna Eneroth	National Food Agency, Sweden
Jacinta Holdway	Australian Government Department of Health
Chantal Martineau	Health Canada
Rusidah Selemat	Nutrition Division, Ministry of Health, Malaysia

Nongovernmental and consumer organizations and associations	
Michelle Broom	Grains & Legumes Nutrition Council, Australia
Asha Mettla	L V Prasad Eye Institute, India
Robert Rankin	Calorie Control Council, USA

Private sector (including industry organizations and associations)	
Angelika De Bree	Unilever, Netherlands
Anne Roulin	Nestlé, Switzerland
Laurence Rycken	International Dairy Federation, Belgium

Academic/research	
Salmeh Bahmanpour	Shiraz University of Medical Sciences, Iran
Jennie Brand-Miller	University of Sydney, Australia
Ifeoma Uzoamaka Onoja	University of Nigeria Teaching Hospital, Nigeria
Pankaj Shah	SRMC & RI, SRU, India
Rob te Biesebeke	Tp Institute Food & Nutrition, Switzerland

Full comments on carbohydrates

(alphabetical by contributor)

1. Salmeh Bahmanpour

Shiraz University of Medical Sciences, Iran (Islamic Republic of)

Comments

Dietary Fibre

Populations

It is better make difference in adult men and women separately

Interventions

If the extrinsic fiber definition contain "Isolated fiber" and "“Added fiber" then it is necessary to clarify the physiological benefits of these two kind of fiber. what is the physiological action and benefits of intrinsic and extrinsic fiber, what is adverse effects of high-fibre diets?

Comparators

Below the recommendation level, poor fiber intake

Outcomes

Adult: Immune respond in gut, satiety, weight management, Glycemic control, chronic constipation, laxation, Metabolic Syndrom(MeS)

Additional Comments

No comments provided.

Dietary Starch

Populations

No comments provided.

Interventions

What is Effect of Feeding Reduced-Starch Diets versus High-starch diets on health outcome?

Comparators

Medium- Low-, High- starch diet,

lower versus higher Pulses, intakes.

lower versus higher Wholegrains intakes

lower versus higher Pasta intakes

lower versus higher milled grains intakes

lower versus higher Cereal grains intakes

lower versus higher seeds intakes

lower versus higher starchy-cooked vegetables intakes

Outcomes

Physical performance and exercise and Sport

Additional Comments

No comments provided.

2. Jennie Brand-Miller
University of Sydney, Australia

Comments

Dietary Fibre

Populations

General population, including women of reproductive age, people with chronic disease (obesity, diabetes, CVD)

Interventions

RCTs in which high fibre foods have been increased.

Dietary fibre in modern diets may be in a particle size that is not effective.

Comparators

Usual diets and usual dietary intake of fibre.

Outcomes

Risk factors for diabetes (fasting glucose, 2 h post-load glucose, glycated hemoglobin) and CVD (serum cholesterol fractions, inflammatory markers), weight, BMI, % body fat.

Additional Comments

While increased dietary fibre intake appears to be helpful in observational studies, in majority of RCT studies, the evidence does not support benefits of increasing dietary fibre on risk factors for diabetes or CVD.

Dietary Starch

Populations

General population, including women of reproductive age, people with chronic disease (obesity, diabetes, CVD)

Interventions

RCT

High vs low glycaemic index diets

High vs low fibre diets

Supplemental fibre (eg guar gum)

Comparators

Usual dietary intake of starch (mostly in a form with a small particle size and high degree of gelationisation.

Outcomes

Risk factors for diabetes (fasting glucose, 2 h post-load glucose, glycated hemoglobin) and CVD (serum cholesterol fractions, inflammatory markers), weight, BMI, % body fat.

Additional Comments

There is little evidence in observational studies to support a recommendation for higher total carbohydrate intake. However, there IS evidence that low GI and low glycaemic load diets (including lower dietary starch) improves risk factors for diabetes or CVD. Some observational studies suggest that low GI starchy foods are helpful, but high GI starchy foods may increase the risk of CVD and diabetes.

I am concerned that the WHO recommendation to reduce added sugars intake to 5% Energy may have unintended consequences. If consumers substitute 5%E in the form of added sugar with %E in the form of starch (mostly high glycaemic index) and/or low digestibility sugars, this will cause an increased risk of diabetes, CVD and gastrointestinal conditions.

3. Michelle Broom

Grains & Legumes Nutrition Council, Australia

Comments

Dietary Fibre

Populations

No comments provided.

Interventions

It would a useful to consider the effect of consuming fibre based on the food source as this will assist in forming food-based recommendations. For example, determine the level of evidence for the effect of consuming fibre from fruit, vegetables, cereals (grains), legumes or nuts. Suggest including subgroups of foods.

The intervention should include a definition of total dietary fibre. The definitions and analytical methods vary considerably. For example, would this include resistant starch and oligosaccahrides of what chain length?

Comparators

Suggest comparing effect of fibres from different food sources. For example, compare the effect of consuming fibre from fruit, vegetables, cereals (grains), legumes and nuts. This could be used to determine if the amount of fibre from one source is equivalent to another source, thus informing recommendations.

Outcomes

No comments provided.

Additional Comments

Recommend consideration is given to including whole grain as a separate PICO question. Evidence indicates that the effect of whole grain is greater than can be attributed to fibre alone. By reducing the review to carbohydrate only, the intrinsic value of the whole food is not captured. Recommendations based solely on analysis of the effect of fibre and starch may not reflect the effect of foods.

Dietary Starch

Populations

No comments provided.

Interventions

A more accurate description of the would be 'What is the effect of replacing food sources of rapidly digested starches with food sources of slowly digested starches'. This more accurately reflects all the

elements that effect the digestibility.

Comparators

The comparisons listed will not provide a measure of the effect of simply replacing rapidly digested starch with more slowly digested starch alone as these foods have a range of differences in macronutrients, micronutrients as well as food matrices. As stated above, the intervention needs to be reframed as food sources not simply starch.

Whole grain foods are not necessarily more slowly digested than refined grain, for example with breads. If the effect of replacing refined grain with whole grain is to be measured this should be a separate PICO question.

Outcomes

No comments provided.

Additional Comments

Recommend consideration is given to including whole grain as a separate PICO question. Evidence indicates that the effect of whole grain is greater than can be attributed to fibre alone. By reducing the review to carbohydrate only, the intrinsic value of the whole food is not captured.

Recommendations based solely on analysis of the effect of fibre and starch may not reflect the effect of foods.

4. Angelika De Bree
Unilever, Netherlands

Comments

Dietary Fibre

Populations

We recommend including subjects with diabetes as a sensitive population for markers of glycaemic control

Interventions

The subgroup analyses should be hypothesis-led. Sub-group analyses based on physical-chemical properties of fibres where established (independent of being intrinsic or extrinsic) should therefore be given priority, since these properties underpin any physiological effects.

Comparators

No comments provided.

Outcomes

No comments provided.

Additional Comments

No comments provided.

Dietary Starch

Populations

We recommend including subjects with diabetes as a sensitive population for markers of glycaemic control

Interventions

The primary exposure definition is not clear, specifically the how starches will be confirmed and classified as being 'slowly digestible'. A lower GI or blood glucose response profile does not confirm that starch is more slowly digested, nor does being more slowly digested always result in a lower blood glucose response (see Eelderink et al., J Nutr 2012;142:258-263; Eelderink et al., Am J Clin Nutr 2012;96:1017-1024; Schenk et al., Am J Clin Nutr 2003;78:742-748.)

Comparators

For low vs high GI it is not only fibre that should be matched but also other macronutrients and energy density, in order to confidently assign cause-effect relationships.

Outcomes

Should include age-related cataracts and macular degeneration

Additional Comments

No comments provided.

Additional comments (covering all topics)

Many thanks for this opportunity to input into the consultation.

5. Hanna Eneroth

National Food Agency, Sweden

Comments

Dietary Fibre

Populations

No comments provided.

Interventions

No comments provided.

Comparators

No comments provided.

Outcomes

Bowel habits is improtant also to consider as a potential adverse effect in children.

Additional Comments

No comments provided.

Dietary Starch

Populations

No comments provided.

Interventions

No comments provided.

Comparators

Should first line read foods with higher compared to lower glycaemic response?

We appreciate the approach with comparisons that regards types of foods such as whole grain foods and legumes.

Outcomes

No comments provided.

Additional Comments

No comments provided.

6. Jacinta Holdway

Australian Government Department of Health, Australia

Comments

Dietary Fibre

Populations

No comments provided.

Interventions

No comments provided.

Comparators

No comments provided.

Outcomes

No comments provided.

Additional Comments

No comments provided.

Dietary Starch

Populations

No comments provided.

Interventions

No comments provided.

Comparators

No comments provided.

Outcomes

No comments provided.

Additional Comments

No comments provided.

Additional comments (covering all topics)

Australia considers the PICOs developed by WHO to be very comprehensive. We are supportive of the GRADE approach being implemented.

7. Chantal Martineau
Health Canada, Canada

Comments

Dietary Fibre
Populations

No comments provided.

Interventions

Products falling into the fibre category

The fibre definition varies with the different jurisdictions and scientific bodies. In the previous WHO Guidelines (2002), DF was identified as NSP (Non-Starch Polysacccharides) from plant foods. Later, in 2006, FAO/WHO experts proposed the following definition: "Dietary fibre consists of intrinsic plant cell wall polysaccharides". This definition excludes oligosaccharides and RS naturally occurring in plant foods but also synthetic isolated oligo- and polysaccharides and other resistant starches. While the WHO interventions will also investigate the effect of "extrinsic fibre" as a subgroup of total DF, it is not clear which fibre components would be considered as "extrinsic fibre (oligosaccharides, RS, synthetic products, etc.?). This is also a question for intrinsic fibre.

In 2009, CODEX accepted yet another definition: "Dietary fibre denotes carbohydrate polymers with 10 or more monomeric units, which are not hydrolysed by the endogenous enzymes in the small intestine and belong to the following categories:

- Edible carbohydrate polymers naturally occurring in the food consumed
- Carbohydrate polymers, which have been obtained from food raw material by physical, enzymatic or chemical means and which have been shown to have a physiological benefit to heath, as demonstrated by generally accepted scientific evidence to competent authorities.
- Synthetic carbohydrate polymers that have been shown to have a physiological benefit to health, as demonstrated by generally accepted scientific evidence to competent authorities.

I suggest that WHO clarify the fibre definition and the chemical components that will be retained for conducting these systematic reviews.

Fibre characteristics as a tool for consumers

DF is not a homogenous entity and it is well established that the physiological effects of different dietary fibres are linked to its physico-chemical properties. Therefore, while investigating the fibre effects on the selected outcomes, it may be useful to consider other subgroups such as soluble viscous fibres, soluble and non-viscous fibres, fermentable fibres, and insoluble fibres. The results

may not only help explain the fibre mechanisms of action, but also may be useful in providing the appropriate guidance to consumers ingesting DF for a specific physiological effect.

Comparators

Suggest comparing effect of fibres from different food sources. For example, compare the effect of consuming fibre from fruit, vegetables, cereals (grains), legumes and nuts. This could be used to determine if the amount of fibre from one source is equivalent to another source, thus informing recommendations.

Outcomes

2.1 The system for ranking the relative importance of outcomes is not clear.

2.2 While some outcomes may be more prevalent and severe from a global perspective, it is not clear that dietary fibre has a scientifically substantiated role in modifying these outcomes. (see point 3 below regarding association vs. proof of cause and effect). Should the list be confined to effects proven to be modified by all dietary fibres?

2.3 There are mechanistic issues associated with the effect of dietary fibre on the listed outcomes. All the chronic disease outcomes have been derived from observational studies. These studies are not proof of a cause-effect relationship. Thus, we consider it misleading to say that increased intakes of dietary fibre will alter Coronary Heart disease, Colon cancer, Diabetes, Stroke or Obesity outcomes in individuals. Rather, epidemiological data has found associations between increased total dietary fibre intake and these outcomes for some studied groups. Some of these associations are not found in all prospective cohort studies suggesting confounding factors exist (see (Smith and Ebrahim 2002)). For studies in the Western world, how can economic status, access to health care, consumption of a healthy diet, time for exercise, stress, etc… be disentangled adequately?

2.4 There are issues with the definition of dietary fibre since it incorporates many different chemical compounds with different physiological effects (see above). HC considers that it can be misleading to use CHD as a basis for determining an adequate intake for fibre since not all fibres lower cholesterol. For example, only soluble, viscous dietary fibres have been shown to reduce serum cholesterol values ((De Moura, Lewis et al. 2009). Under such a definition, it is misleading to say that dietary fibre reduces the risk of heart disease since only one type of dietary fibre (soluble, viscous) has a mechanistic basis that might support such a statement. This statement would also have to be tempered by the fact that there are several risk factors for heart disease (Yusuf, Hawken et al.), only some of which can be modified by increased intake of soluble viscous dietary fibre. How significant is the reduction in risk?

2.5 It is recommended to consider normal gut function as an important outcome derived from consumption of dietary fibre per se. The reason is that all DFs act on the lower intestine through fermentation and by supporting normal physiological function (i.e., laxation). Defining dietary fibre through its action on an existing disease state or adverse health condition would mean that the 'benefit' would only apply to individuals with that condition and the material would only qualify as dietary fibre to those individuals. All DFs contribute to normal gut function through their impact on stool bulk, which promotes laxation or their contribution to the energy needs of the colon through fermentation. Defining a nutrient role common to all dietary fibres and estimating intakes necessary for that role from clinical studies is essential for determining recommended intakes that are applicable to dietary fibre as a group.

2.6 While "Bowel Habits" is listed as an outcome, it is not clear which endpoint will be used as a marker.

2.7 The WHO should ensure that the desired outcome can be achieved from the statements it issues. For example, is consuming more dietary fibre (for example, only: inulin, resistant starch, or wheat bran, etc…) consistent with a reduction of the stated risk? Would a more scientifically accurate statement be something along the lines of: 'Selecting food choices that are naturally higher in dietary fibre (lower in energy density, associated with other potentially beneficial food components, etc…) has been associated with reduced… '

References

De Moura, F. F., K. D. Lewis and M. C. Falk (2009). "Applying the FDA definition of whole grains to the evidence for cardiovascular disease health claims." J Nutr 139(11): 2220S-2226S.

Smith, G. D. and S. Ebrahim (2002). "Data dredging, bias, or confounding." BMJ 325(7378): 1437-1438.

Yusuf, S., S. Hawken, S. Ôunpuu, T. Dans, A. Avezum, F. Lanas, M. McQueen, A. Budaj, P. Pais, J. Varigos and L. Lisheng "Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study." The Lancet 364(9438): 937-952.

Additional Comments

No comments provided.

Dietary Starch

Populations

No comments provided.

Interventions

No comments provided.

Comparators

No comments provided.

Outcomes

No comments provided.

Additional Comments

No comments provided.

8. Asha Mettla

L V Prasad EyeInstitute, India

Comments

Dietary Fibre

Populations

No comments provided.

Interventions

No comments provided.

Comparators

No comments provided.

Outcomes

No comments provided.

Additional Comments

No comments provided.

Dietary Starch

Populations

Adolescent girls may be included as a separate population group since the nutritional status during this age may have an impact on the later years

Interventions

Intake of carbohydrates since the consumption during puberty and adolescence may have an impact

Comparators

A comparator study between male and female population may be useful to understand as part of the intervention

Outcomes

No comments provided.

Additional Comments

No comments provided.

9. Ifeoma Uzoamaka Onoja
University of Nigeria Teaching Hospital, Nigeria

Comments

Dietary Fibre

Populations

In adults high intake of carbohydrates should be minimized as it could lead to progression of non communicable diseases.

Interventions

Dietary fibre in take helps to protect against some diseases. Consumption at a higher level could lead to gastrointestinal disturbances.

Comparators

High, low and usual fibre intake would be compared with no fibre intake.

Outcomes

The intake of dietary fibre in adults would be of great benefit as it will lower the incidence of high blood lipids, control glycaemic indices , helps in early satiety , helps in control of weight ,reduces dental erosions, and reduces chronic kidney diseases.

Additional Comments

Age, sex of the population should be considered.

Dietary Starch

Populations

All age group should be considered.

Interventions

The use of slowly digested starch would probably release lower amount of glucose to the blood stream.

Comparators

Carbohydrates with higher compared with lower glycaemic response will reduce blood glucose levels.

Outcomes

It would however reduce incidence of diabetes, obesity/ overweight, coronary heart disease and improve oral health and quality of life.

Additional Comments

No comments provided.

Additional comments (covering all topics)

High intake of carbohydrates, non sugar sweeteners could lead to chronic diseases both in children and in adults, whereas intake of high dietary fibre that is within the recommended level protects against some diseases.

The use of polyunsaturated fatty acids equally of great importance in maintaining adequate health.

10. Robert Rankin

Calorie Control Council, United States of America

Comments

Dietary Fibre

Populations

The Calorie Control Council ("the Council") believes that NHD should consider inclusion of studies which assess high-risk populations, such as those with hypertension, hypercholesterolemia and those with pre-diabetes.

Interventions

The Council recognizes the NHD's desire to differentiate types of fiber within the total fiber range. However, rather than using sub-categories for intrinsic versus extrinsic dietary fiber, NHD may wish to consider differentiating fibers between fermentable versus non-fermentable fibers or viscous versus non-viscous fibers. Differentiating dietary fibers in these ways, rather than intrinsic versus extrinsic, will demonstrate a larger potential impact on health and well-being.

For example, intrinsic wheat bran will not have a different effect than extracted and purified wheat bran fiber which is added to a product as an ingredient. Fecal bulking properties and other health benefits will remain with the active component, regardless of its source for inclusion.

NHD may also want to consider matching available carbohydrates in the diets for control and test populations. Further, NHD may want to consider fiber in a food matrix (including fiber enriched foods) versus fiber as a supplement.

Comparators

No comments provided.

Outcomes

NHD may wish to consider as an outcome the Vahouny fiber benefits (total LDL cholesterol, post-prandial glucose and insulin, increased fecal bulk and laxation, colonic transit time, blood pressure, colonic fermentation and short chain fatty acid production, modulation of the colonic microflora, weight loss/maintenance/reduction in satiety, increased satiety), plus increased mineral absorption and satiety associated with reduced food/energy intake.

Additional Comments

NHD should consider the following reference: Livingston K , Chung Mi, Sawicki C , Lyle B, Wang D, Roberts SB, McKeown NM. Development of a Publicly Available, Comprehensive Database of Fiber and Health Outcomes: Rationale and Methods. PloS One 2016/6/27.

Specifically for overweight/obesity, key research questions may include:

Does substitution of dietary non fiber CHO with dietary fiber support maintenance of healthy weight?

Does substitution of dietary non fiber CHO with dietary fiber support reduced calorie intakes [and weight reduction] in overweight/obese?

Dietary Starch

Populations

No comments provided.

Interventions

No comments provided.

Comparators

No comments provided.

Outcomes

No comments provided.

Additional Comments

No comments provided.

11. Anne Roulin

Nestlé, Switzerland

Comments

Dietary Fibre

Populations

We propose to divide children group into 2 subgroups of infant/young children (IYC) of 6 months to 36 months and older since the impact of fiber intake on assessed outcomes in IYC can be different from older children

Interventions

Additional possible subgroup by fibre origin: cereal, fruits, vegetables

Comparators

No comments provided.

Outcomes

We propose that the critical outcomes in IYC be energy intake, weight gain, bowel habits, and impact on later food choice (i.e. intake of fiber containing foods such as whole grain and vegetable/fruit) (Rank of 7-9), followed by other included health impact with lower Rank (i.e. blood lipids, diabetes, etc.).

Additional Comments

No comments provided.

Dietary Starch

Populations

We propose children subgroups of IYC (6 months-36 months)

Interventions

Additional intervention: what is the effect of replacing sugars by hydrolized starch?

Additional intervention: what is the effect of replacing intact starch by hydrolyzed starch?

These two additional questions will provide guidance on whether replacement of sugars by starch or hydrolyzed starch is a preferred option.

Comparators

Effect of maltodextrin in IYC subgroup

Outcomes

Higher Rank of bowel habits for IYC in view of comparison of refined starch vs. whole grain starch

Additional Comments

No comments provided.

Additional comments (covering all topics)

Thank you for the opportunity to contribute to this consultation.

12. Laurence Rycken
International Dairy Federation, Belgium

Comments

Dietary Fibre
Populations

No comments provided.

Interventions

No comments provided.

Comparators

No comments provided.

Outcomes

No comments provided.

Additional Comments

No comments provided.

Dietary Starch
Populations

No comments provided.

Interventions

No comments provided.

Comparators

No comments provided.

Outcomes

No comments provided.

Additional Comments

No comments provided.

Additional comments (covering all topics)

The International Dairy Federation (IDF) would like to thank the WHO for this public call and we appreciate the opportunity to submit comments on the scope of the proposed update of WHO guidelines on the intake of carbohydrates, polyunsaturated fatty acids and non‐sugar sweeteners. If, as stated the objective of this work is to ensure that WHO guidelines on these critical nutrients and associated dietary practices are comprehensive and informed by the most recent scientific data, we would suggest a 'whole food' and 'dietary approach', rather than an 'isolated nutrients' approach

is taken.

Because:

1. Foods and diets are clearly far more than the sum of their single nutrients. Single nutrients are not consumed in isolation – many factors within a food influence the effects of a single nutrient and it is inaccurate to generalise about the effects of a single nutrient without considering the food it is present in.

2. Foods are not a matrix that we can adjust at will. Their composition is sometimes mainly defined by the raw material meaning by nature itself. Thus, in recommending decreasing or increasing the consumption of a single nutrient it will result in a modification of the diet itself. However, this major issue is not addressed if a nutrient approach is taken.

Instead of the suggested approach, the WHO evidence review should focus on foods and dietary patterns (rather than isolated nutrients) and on actual disease risk (rather than considering various markers of risk in isolation).

People eat whole foods not single nutrients in isolation and food based recommendations are more practical for the general public than nutrient-based dietary advice. We would therefore urge WHO to provide clear guidelines on how to translate these recommendations into practical advice for consumers.

Moreover, the GRADE system appears more relevant to developing guidelines for pharmaceutical drug use than for food based dietary guidelines. For example, short term randomised controlled trials measuring short term changes in a small number of indicators of risk will be given higher priority than long term observational studies assessing dietary intake over many years and risk of developing NCDs.

13. Rusidah Selemat

Nutrition Division, Ministry of Health, Malaysia

Comments

Dietary Fibre

Populations

It should also include elderly and those with prior cardiovascular diseases.

Interventions

Should also include crude fibre

Comparators

Minor correction: Higher, lower or usual dietary fibre

Outcomes

Agree with the proposed outcomes

Additional Comments

No comments provided.

Dietary Starch

Populations

Should also include elderly and those with prior cardiovaskular diseases and diabetes

Interventions

Stand alone carbohydrate vs taken in combination with other meals ie meat/fat

Comparators

Suggest to include simple sugar

Outcomes

Agree

Additional Comments

No comments provided.

14. Pankaj Shah

SRMC & RI, SRU, India

Comments

Dietary Fibre

Populations

Great.

Interventions

This may be written in non question format.

the effect of increasing consumption of total dietary fibre?

- Subgroup by: effect of intrinsic fibre

effect of consuming total dietary fibre above a threshold [25 or 30g/d]2 relative to

consuming total dietary fibre below the threshold [25 or 30g/d]2

effect of increased consumption of intrinsic fibre relative to increased consumption of extrinsic fibre?

Comparators

should include a Comparator arm with no fiber

Outcomes

Great

Additional Comments

No comments provided.

Dietary Starch

Populations

Great

Interventions

non question format

Comparators

mat include -needs to be removed

Outcomes

Great

Additional Comments

No comments provided.

Additional comments (covering all topics)

Dear Sir/Madam,

Thank you for the opportunity provided.

I feel along with PICO methods of the systematic review and possibility of meta-analysis should be included. As this research method is also very important along with PICO. For example- method of literature review, data extraction, assessment of heterogeneity, publication bias, independent work by review authors etc are also very important.

Also I suggest for registration of protocol with Prospero.

Thank you,

With regards,

Pankaj .

15. Rob te Biesebeke

Tp Institute Food & Nutrition, Switzerland

Comments

Dietary Fibre

Populations

Include in the pre-specific subgroup analysis : Gastrointestinal disorder (IBD, IBS, Crohn's disease) and allergy.

Interventions

The answers to the questions posed are very much dependent on the type of fibers consumed. It would clarify the review and guidelines in case a rough classification is made between dietary 'bulk' fibers (intrinsic/extrinsic) that are not (or minor) metabolised by the body during transit time and dietary fibers (intrinsic/extrinsic) that are digested by the intestinal microflora. Different fibers have distinct outcome parameters. One may want to include a guide for classifying dietary fiber from intrinsic and extrinsic sources.

Additional questions are suggested to be :

What is the effect of increased consumption of total soluble fibre relative to increased consumption of total insoluble fibre?

What is the effect of consumption of soluble dietary fibre below a threshold?

What is the effect of consumption of insoluble dietary fibre below a threshold?

What is the effect of increased consumption of dietary fibre relative to increased consumption of functional fibre?

Comparators

The comparators ‘higher’ and ‘lower’ only have value in case of dietary classification of fiber. The guidelines should include a classification reflecting the diverse properties of fiber.

Other comparators could be :

Soluble / Insoluble

Fiber classification

Functional & Dietary fibers

Outcomes

The outcomes mentions: ‘quality of life and mental health also considered but ranked as not important’ for children and adults. This remark is in contradiction to the outcomes presented because the incidence of an illness cannot be excluded from the quality of life evaluation. The quality of life improves in case the incidence of an outcome is lower. (e.g. consumption of dietary fiber decreases colorectal cancer occurance and therefore impacts the quality of life).

There are significant advances in linking the gastrointestinal microbiological activity to brain function. Gastrointestinal microbiological activity is largely dependent on the biochemical character of dietary fibers.

Additional Comments

The scientific evidence for the outcome ranking of coronary heart disease is majorly based upon one type of dietary fiber. Colorectal cancer seems a result of insoluble dietary fibers and is probably due to the relation between bowel movements and fiber intake. A fiber classification seems unavoidable to enable credible guideline development.

Food for thought for classification:

Intrinsic fiber by food groups e.g. (1) Cereal based, 2) Fruit, 3) Vegetables) ?

Extrinsic fiber by Biochemical fiber composition groups?

Dietary Starch

Populations

Include in the Pre - specified subgroup analyses (to be considered within adult and child populations): physical activity

Or include in the populations : adults with high physical activity and children with high physical activity

Interventions

What is the need for dietary starch in adults and children which have high physical activity levels?

Comparators

May include:

high/low physical activity

Outcomes

No comments provided.

Additional Comments

When providing a review and guidelines about dietary starch, the metabolic rate and/or a measure of physical activity should be included.