



Diet & Lifestyle for Cancer Prevention & Survivorship – *Evidence over Opinion*

October 17, 2023



Disclosures

- No commercial support or funding was provided for this webinar.

Diet & Lifestyle for Cancer Prevention and Survivorship – *Evidence over Opinion*

Oldways Preservation Trust Special Webinar

October 17, 2023



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Disclosures

I have no actual or potential conflicts of interest in relation to this presentation.



World
Cancer
Research
Fund

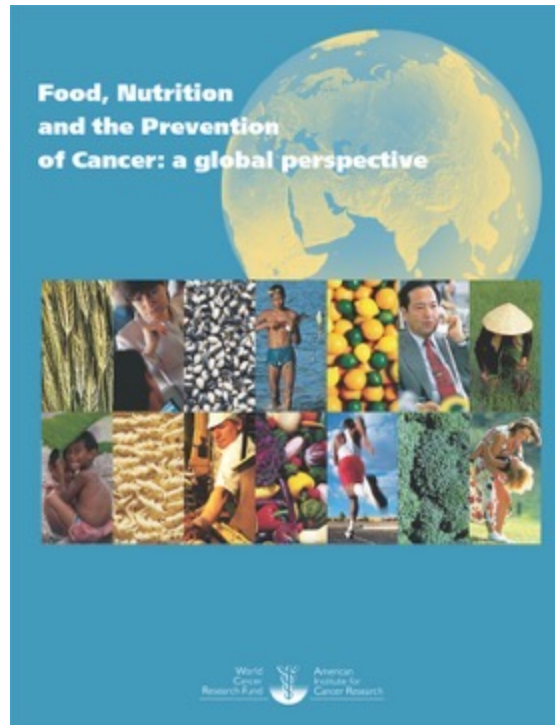


American
Institute for
Cancer
Research

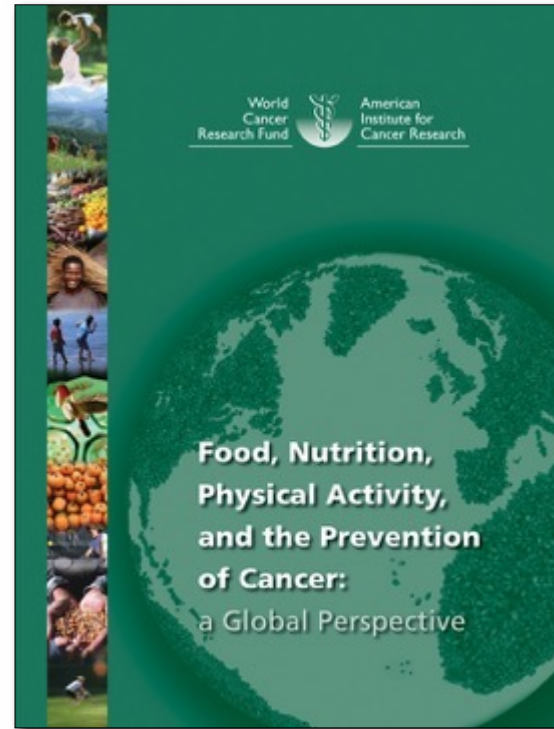
**The world's leading authority on the links between
diet, weight, physical activity
and cancer prevention and survival**

AICR/WCRF Expert Reports

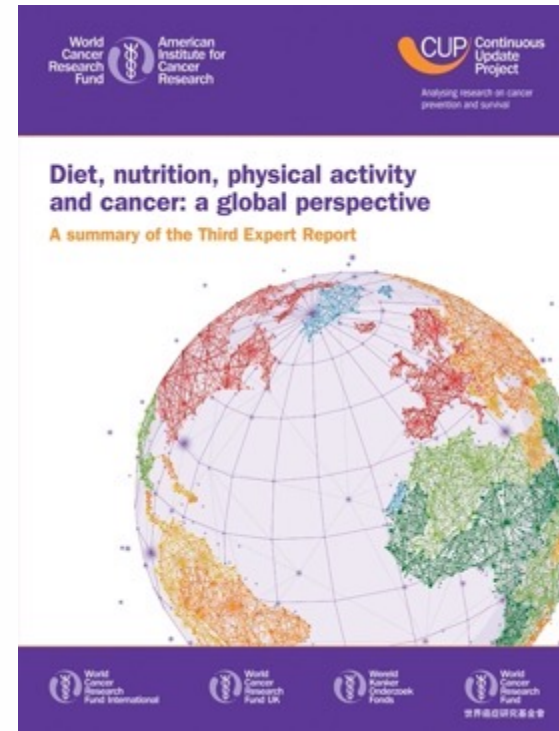
1997



2007



2018





“...we know cancer as a disease we have few good ways to prevent.”

President Biden, 02 Feb 2022

Did you hear this? Oatmeal is now your enemy

JULY 1, 2018

by Carolyn Thomas ♥ @HeartSisters ♥ July 1, 2018



Doctors, are you frustrated by failed attempts to convince your heart patients to follow your sound advice on lifestyle improvements? Are you exhausted from trying to figure out why they won't stop eating junk and start eating heart-healthy foods just like you are recommending?



Stand back, please. I think I have finally figured out WHY YOUR PATIENTS WON'T LISTEN!

It's because no sooner do doctors start advising that something is good for heart patients, that it seems other doctors start advising that not only is it NOT good for us, but it might even be downright dangerous! And vice versa.

Eggs are bad for us. No wait, eggs are okay after all.

Fat is bad for us. No, wait..

Oatmeal is a healthy breakfast food. No, wait..

<https://myheartsisters.org/2018/07/01/breakfast-oatmeal-now-your-enemy/>

AICR/WCRF Global Cancer Update Program

Distinguishing Evidence from Opinion



“Funnel of evidence”

Systematic Literature Review

CUP DATABASE



**World Cancer Research Fund International
Systematic Literature Review**

The Associations between Food, Nutrition and Physical Activity and the Risk of Breast Cancer

CUP Continuous Update Project
Analysing research on cancer prevention and survival

Imperial College London
Continuous Update Project Team Members

Teresa Norat
Doris Chan
Snieguole Vingeliene
Dagflinn Anne
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WCRF Coordinator:
Rachel Thompson

Statistical advisor:
Darren C. Greenwood

Database manager:
Christophe Stevens

Date completed:
16 December 2015

Date revised:
13 January 2017

Assessment of Evidence

World Cancer Research Fund American Institute for Cancer Research CUP Continuous Update Project

Analysing research on cancer prevention and survival

Diet, nutrition, physical activity and breast cancer 2017

Managed and produced by:
World Cancer Research Fund International
World Cancer Research Fund UK
Imperial College London
World Cancer Research Fund

World Cancer Research Fund American Institute for Cancer Research CUP Continuous Update Project

Analysing research on cancer prevention and survival

Diet, nutrition, physical activity and cancer: a global perspective
A summary of the Third Expert Report

World Cancer Research Fund American Institute for Cancer Research

Recommendations



Evidence: 17 Cancers, 51 million people and 3.5 million cancer cases

CUP Scientists: ~100 researchers!

AICR/WCRF Cancer Prevention Recommendations

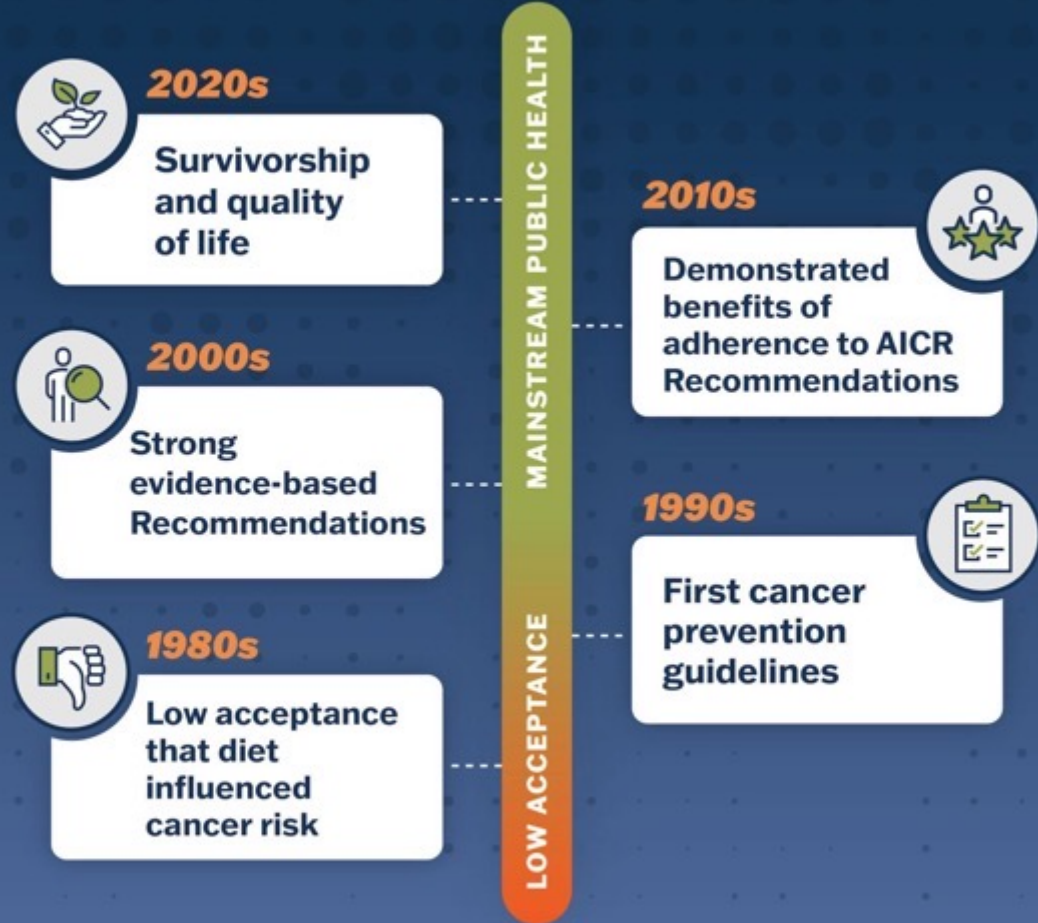
A call for action,
not for perfection

(Karen Collins, MS, RDN, CDN, FAND)



Societal attitudes and dietary recommendations have changed...

Four Decades of Progress in Diet & Lifestyle Cancer Research



Cancer typically takes two to three decades to develop. AICR pioneered the research that is reducing cancer risk and improving survivorship TODAY.

SUMMARY OF STRONG EVIDENCE ON DIET, NUTRITION, PHYSICAL ACTIVITY AND THE PREVENTION OF CANCER

To reference this matrix please use the following citation:
 World Cancer Research Fund International/American Institute for Cancer Research. Continuous Update Project: Diet, Nutrition, Physical Activity and the Prevention of Cancer. Summary of Strong Evidence. Available at: wcrf.org/cupmatrix accessed on DD-MM-YYYY

Abbreviation: SLR, systematic literature review.

	Wholegrains	Foods containing dietary fibre	Allisatolins	Foods containing beta-carotene	Non-starchy vegetables or fruit (aggregated) ²	Red meat	Process of meat	Canterese-style salted fish	Dairy products	Foods preserved by salting	Arsenic in drinking water	Mate	Coffee	Sugar sweetened drinks	Alcoholic drinks	'Mediterranean type' dietary pattern	'Western type' diet	'Fast foods'	Glycaemic load	High-dose beta-carotene supplements	Beta-carotene	Calcium supplements	Physical activity (moderate and vigorous)	Vigorous physical activity	Walking	Screen time (children) ¹⁵	Screen time (adults) ¹⁵	Adult body fatness ¹⁶	Body fatness in young adulthood ¹⁶	Adult weight gain	Adult attained height ²³	Greater birthweight	Lactation ²⁴	Having been breastfed	
MOUTH, PHARYNX, LARYNX 2018																																			
NASOPHARYNX 2017 (SLR)																																			
OESOPHAGUS (ADENOCARCINOMA) 2016																																			
OESOPHAGUS (SQUAMOUS CELL CARCINOMA) 2016																																			
LUNG 2017																																			
STOMACH 2016																																			
PANCREAS 2012																																			
GALLBLADDER 2015																																			
LIVER 2015																																			
COLORECTUM 2017																																			
BREAST PREMENOPAUSE 2017																																			
BREAST POSTMENOPAUSE 2017																																			
OVARY 2014																																			
ENDOMETRIUM 2013																																			
PROSTATE 2014																																			
KIDNEY 2015																																			
BLADDER 2015																																			
SKIN 2017 (SLR)																																			
AERODIGESTIVE CANCERS (AGGREGATED) 2016-2018 ¹																																			
RISK OF WEIGHT GAIN, OVERWEIGHT OR OBESITY 2018 ^{23,24}																																			

10
7
2

■ Convincing decreases risk
 ■ Probable decreases risk
 ■ Probable increases risk
 ■ Convincing increases risk
 ■ Substantial effect on risk unlikely

Findings:
Strong evidence for recommendations

Activity and Body Weight



RECOMMENDATION

Be a healthy weight

Keep your weight within the healthy range¹ and avoid weight gain in adult life



RECOMMENDATION

Be physically active

Be physically active as part of everyday life – walk more and sit less

Diet & Nutrition



RECOMMENDATION

Eat a diet rich in wholegrains, vegetables, fruit and beans

Make wholegrains, vegetables, fruit, and pulses (legumes) such as beans and lentils a major part of your usual daily diet



RECOMMENDATION

Limit consumption of 'fast foods' and other processed foods high in fat, starches or sugars

Limiting these foods helps control calorie intake and maintain a healthy weight



RECOMMENDATION

Limit consumption of red and processed meat

Eat no more than moderate amounts of red meat¹, such as beef, pork and lamb. Eat little, if any, processed meat²



RECOMMENDATION

Limit consumption of sugar sweetened drinks

Drink mostly water and unsweetened drinks



RECOMMENDATION

Limit alcohol consumption

For cancer prevention, it's best not to drink alcohol

“Special Recommendations”



RECOMMENDATION

Do not use supplements for cancer prevention

Aim to meet nutritional needs through diet alone



RECOMMENDATION

For mothers: breastfeed your baby, if you can

Breastfeeding is good for both mother and baby



RECOMMENDATION

After a cancer diagnosis: follow our Recommendations, if you can

Check with your health professional what is right for you

Healthy Weight



RECOMMENDATION

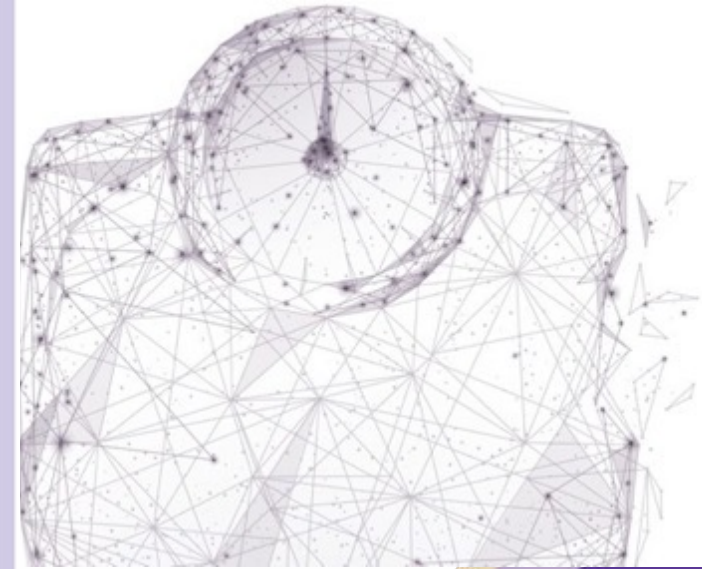
Be a healthy weight

Keep your weight within the healthy range¹ and avoid weight gain in adult life

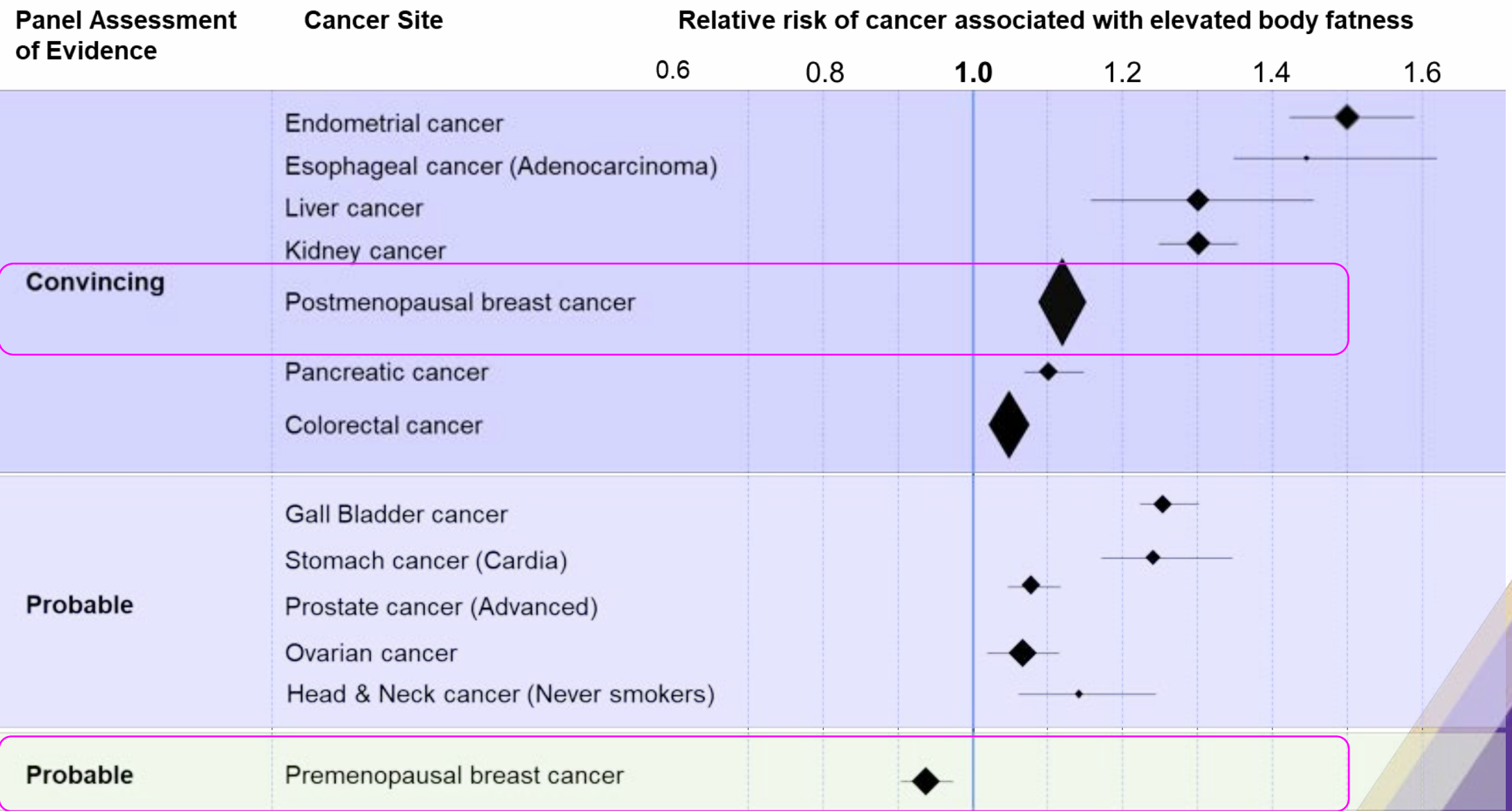
- GOAL** Ensure that body weight during childhood and adolescence projects towards the lower end of the healthy adult BMI range
- GOAL** Keep your weight as low as you can within the healthy range throughout life
- GOAL** Avoid weight gain (measured as body weight or waist circumference)² throughout adulthood

¹ The healthy (or, as defined by WHO, 'normal') range of BMI for adults is 18.5–24.9 kg/m² [1]. Different reference ranges have been proposed for Asian populations [1]. Where these ranges differ from the WHO definition, they are to be used as the guide. Further research is required to establish appropriate thresholds in other ethnic groups. The healthy range for BMI during childhood varies with age [2].

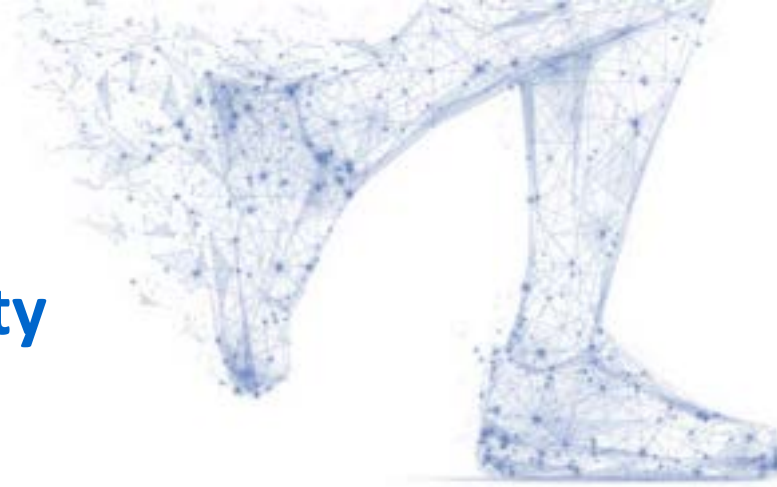
² WHO recommends keeping waist circumference below 94 cm (37 inches) in men and 80 cm (31.5 inches) in women (based on data from European people). These values are roughly equivalent to a BMI of around 25 kg/m² [3]. For Asian populations, cut-offs for waist circumferences of 90 cm (35.4 inches) for men and 80 cm (31.5 inches) for women have been proposed [3]. Further research is required to establish appropriate waist circumference values for other ethnic groups.



Adult body fatness



Physical Activity



RECOMMENDATION

Be physically active

Be physically active as part of everyday life –
walk more and sit less

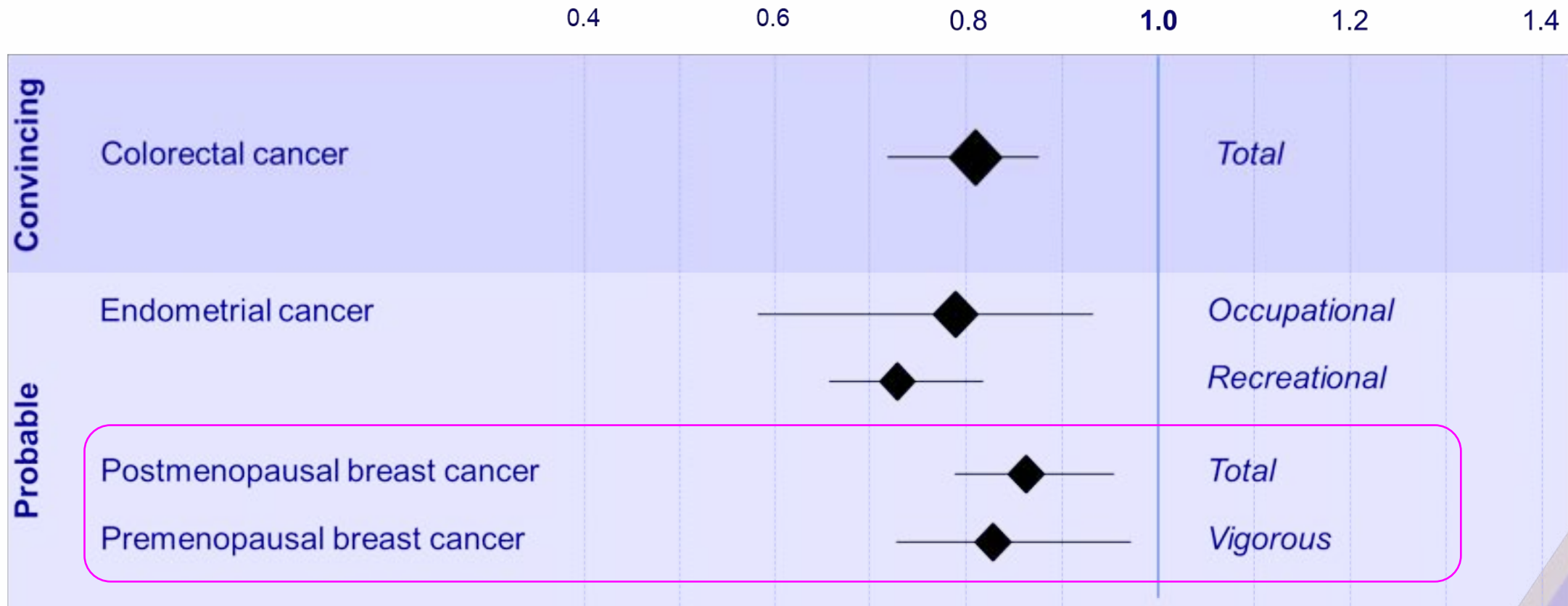
GOAL Be at least moderately physically active¹, and follow or exceed national guidelines

GOAL Limit sedentary habits

¹ Moderate physical activity increases heart rate to about 60 to 75 per cent of its maximum.

Physical activity

Highest vs Lowest meta-analysis



Diet & Nutrition



RECOMMENDATION

Eat a diet rich in wholegrains, vegetables, fruit and beans

Make wholegrains, vegetables, fruit, and pulses (legumes) such as beans and lentils a major part of your usual daily diet



RECOMMENDATION

Limit consumption of 'fast foods' and other processed foods high in fat, starches or sugars

Limiting these foods helps control calorie intake and maintain a healthy weight



RECOMMENDATION

Limit consumption of red and processed meat

Eat no more than moderate amounts of red meat¹, such as beef, pork and lamb. Eat little, if any, processed meat²



RECOMMENDATION

Limit consumption of sugar sweetened drinks

Drink mostly water and unsweetened drinks



RECOMMENDATION

Limit alcohol consumption

For cancer prevention, it's best not to drink alcohol





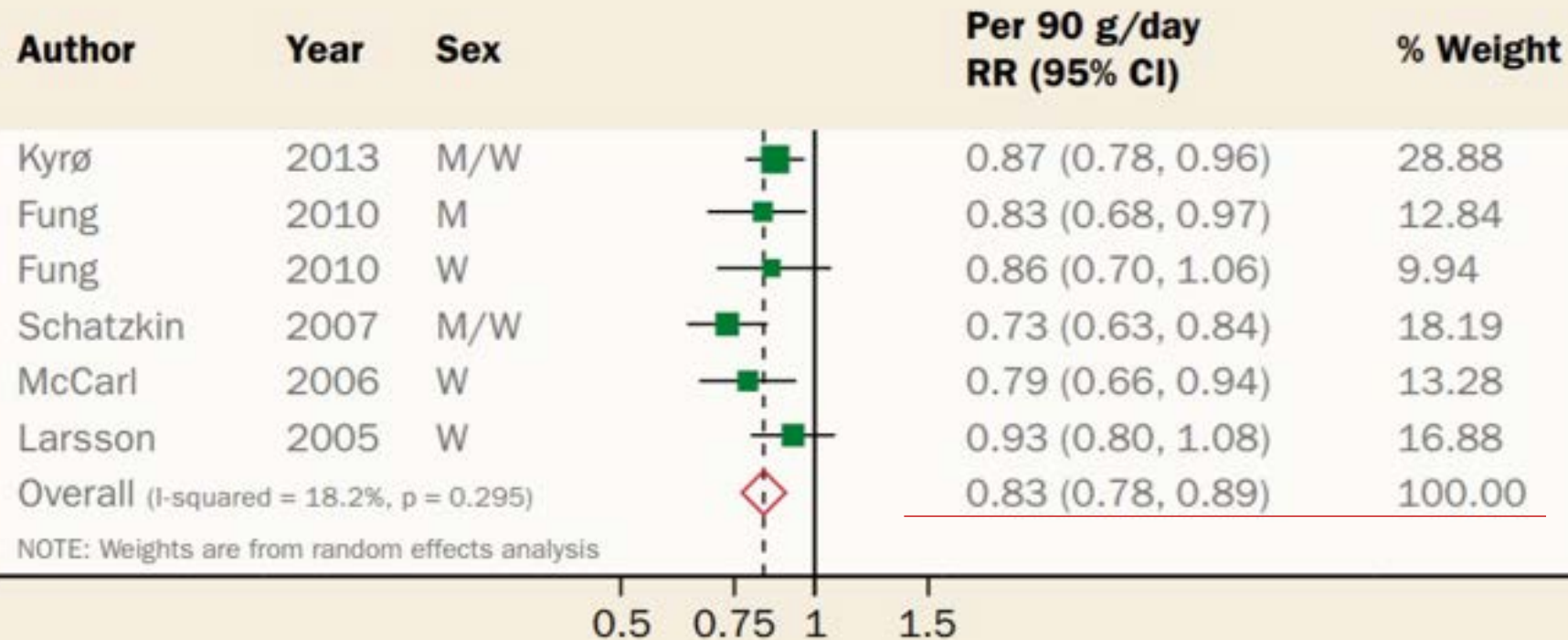
RECOMMENDATION

**Eat a diet rich in wholegrains,
vegetables, fruit and beans**

**Make wholegrains, vegetables, fruit, and pulses
(legumes) such as beans and lentils a major part of
your usual daily diet**

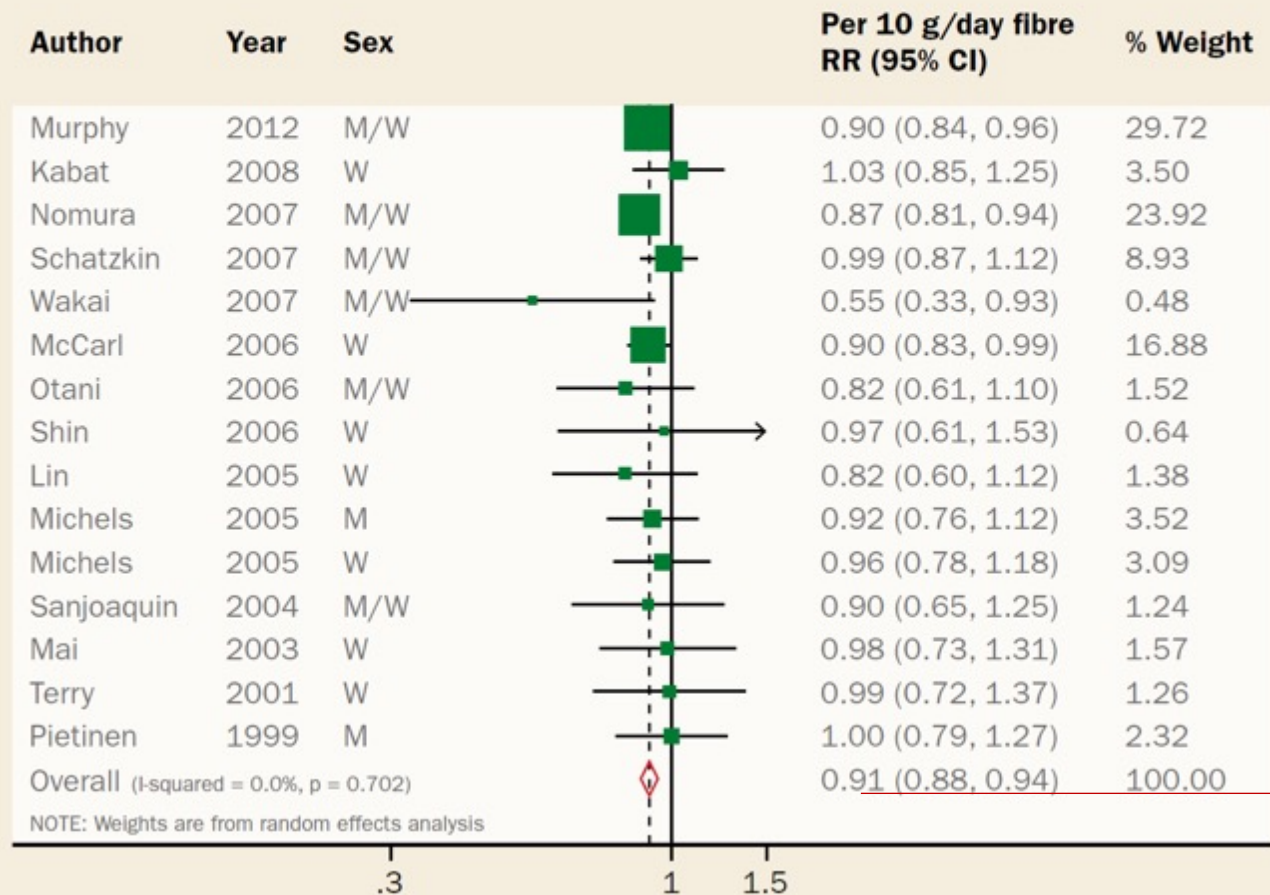
CRC & Whole Grains

Figure 1: Dose-response meta-analysis of wholegrains intake and colorectal cancer per 90 grams per day

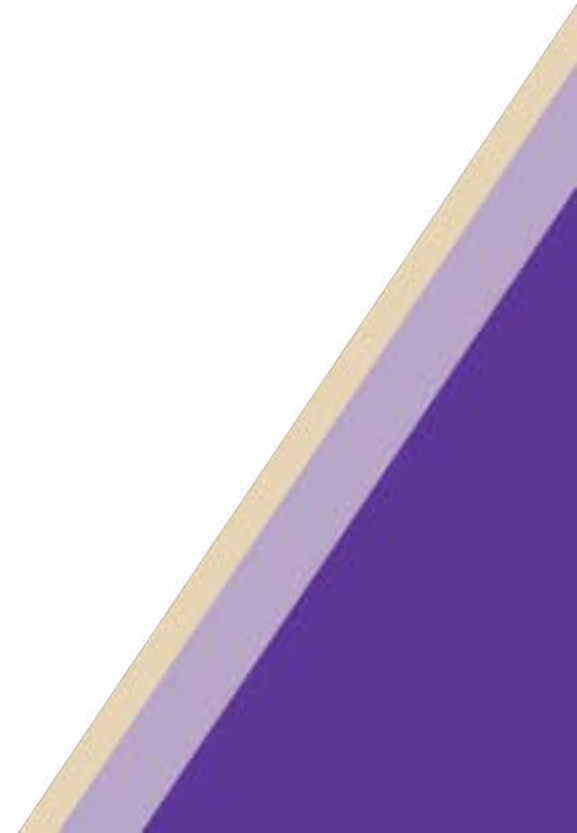


Foods containing fibre

Figure 3: Dose-response meta-analysis of dietary fibre intake and colorectal cancer per 10 grams per day, including individual study results and not the overall Pooling Project result



Fibre Intake



“Fast” & Processed Foods



RECOMMENDATION

Limit consumption of ‘fast foods’ and other processed foods high in fat, starches or sugars

Limiting these foods helps control calorie intake and maintain a healthy weight

GOAL

Limit consumption of processed foods high in fat, starches or sugars – including ‘fast foods’¹; many pre-prepared dishes, snacks, bakery foods and desserts; and confectionery (candy)

¹ ‘Fast foods’ are readily available convenience foods that tend to be energy dense and are often consumed frequently and in large portions.





Diet, nutrition and physical activity:
Energy balance and body fatness

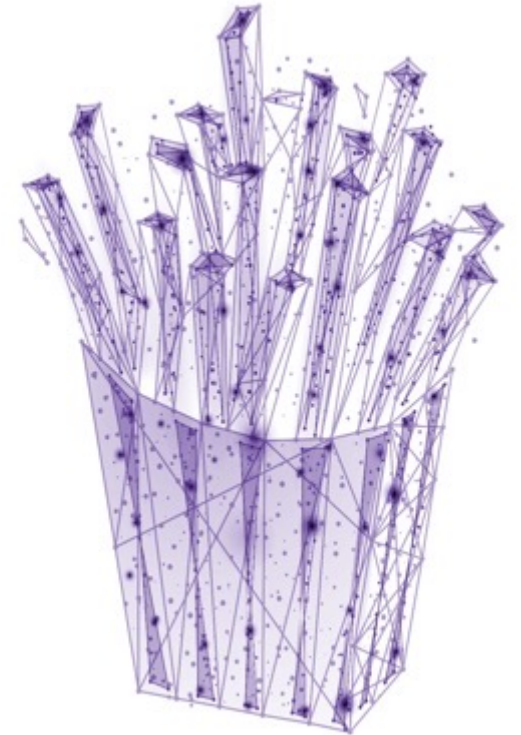
2018

The determinants of weight gain, overweight
and obesity

Diet and physical activity and weight gain, overweight and obesity in adults and children¹

The factors identified in the matrix as increasing or decreasing risk of weight gain, overweight or obesity do so by promoting excess energy intake (positive energy balance, increased risk) relative to the level of energy expenditure (in particular physical activity), or appropriate energy balance (decreased risk), through a complex interplay of physiological, psychological and social influences.²

		Decreases risk of weight gain, overweight, and obesity	Increases risk of weight gain, overweight, and obesity
STRONG EVIDENCE	Convincing	Walking	Screen time (children) ³ Sugar-sweetened drinks ⁴
	Probable	Aerobic physical activity Foods containing dietary fibre 'Mediterranean type 'dietary pattern' ⁵ Having been breastfed ⁶	Screen time (adults) ³ 'Fast foods' ⁷ 'Western type' diet ⁸
LIMITED EVIDENCE	Limited – suggestive	Wholegrains ⁹ Fruit and vegetables Lactation (mother)	Sedentary behaviours ¹⁰ Refined grains ⁹
	Limited – no conclusion	Vegetarian or vegan diets, adherence to dietary guidelines, dietary variety, eating breakfast, family meals, eating in the evening, eating frequency, snacking, pulses (legumes), nuts, fish, dairy, confectionery, water, artificially sweetened drinks, fruit juice, coffee and tea, alcoholic drinks, total carbohydrate, glycaemic load, total protein, caffeine, catechins, strength training, energy density, and sleep	



Red meat and processed meat



RECOMMENDATION

Limit consumption of red and processed meat

Eat no more than moderate amounts of red meat¹, such as beef, pork and lamb. Eat little, if any, processed meat²

GOAL If you eat red meat, limit consumption to no more than about three portions per week. Three portions is equivalent to about 350 to 500 grams (about 12 to 18 ounces) cooked weight of red meat.³ Consume very little, if any, processed meat

¹ The term 'red meat' refers to all types of mammalian muscle meat, such as beef, veal, pork, lamb, mutton, horse and goat.

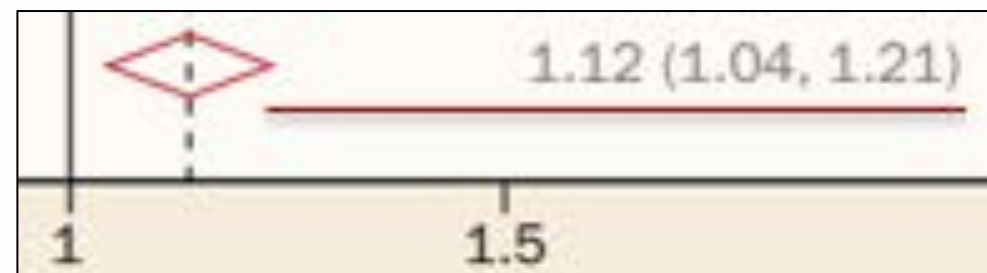
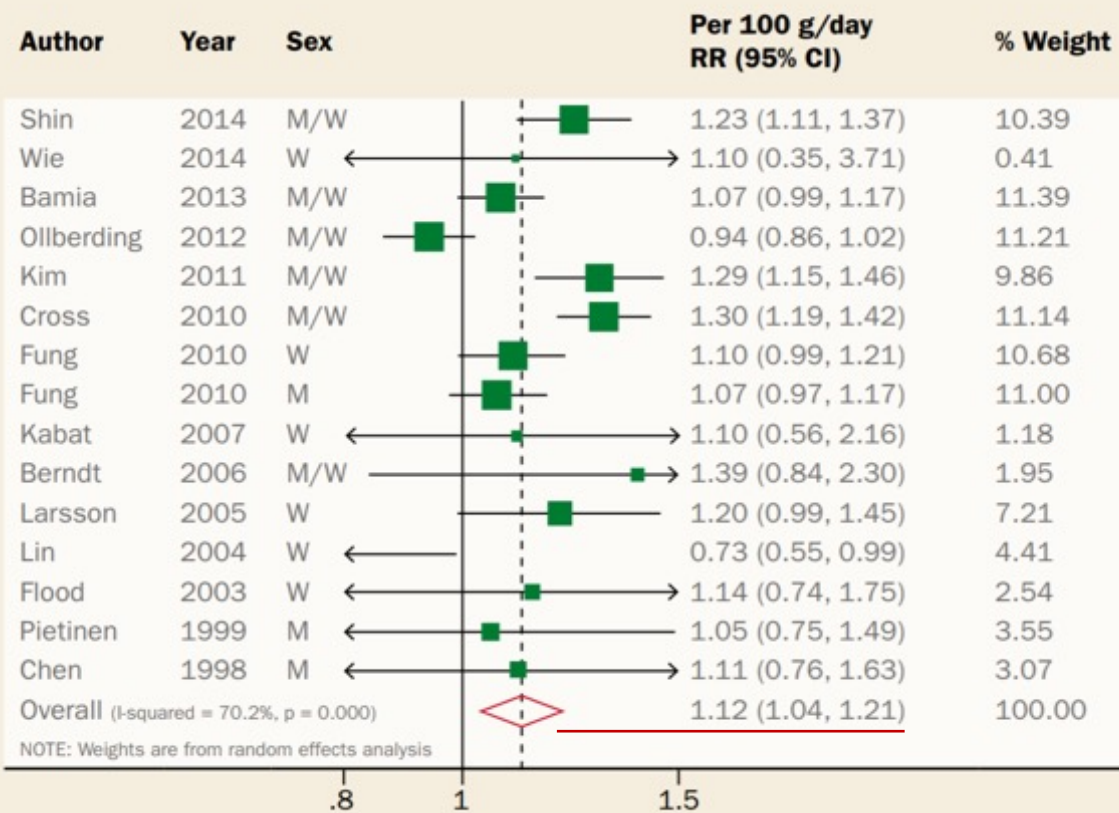
² The term 'processed meat' refers to meat that has been transformed through salting, curing, fermentation, smoking or other processes to enhance flavour or improve preservation.

³ 500 grams of cooked red meat is roughly equivalent to 700–750 grams of raw meat, but the exact conversion depends on the cut of meat, the proportions of lean meat and fat, and the method and degree of cooking.



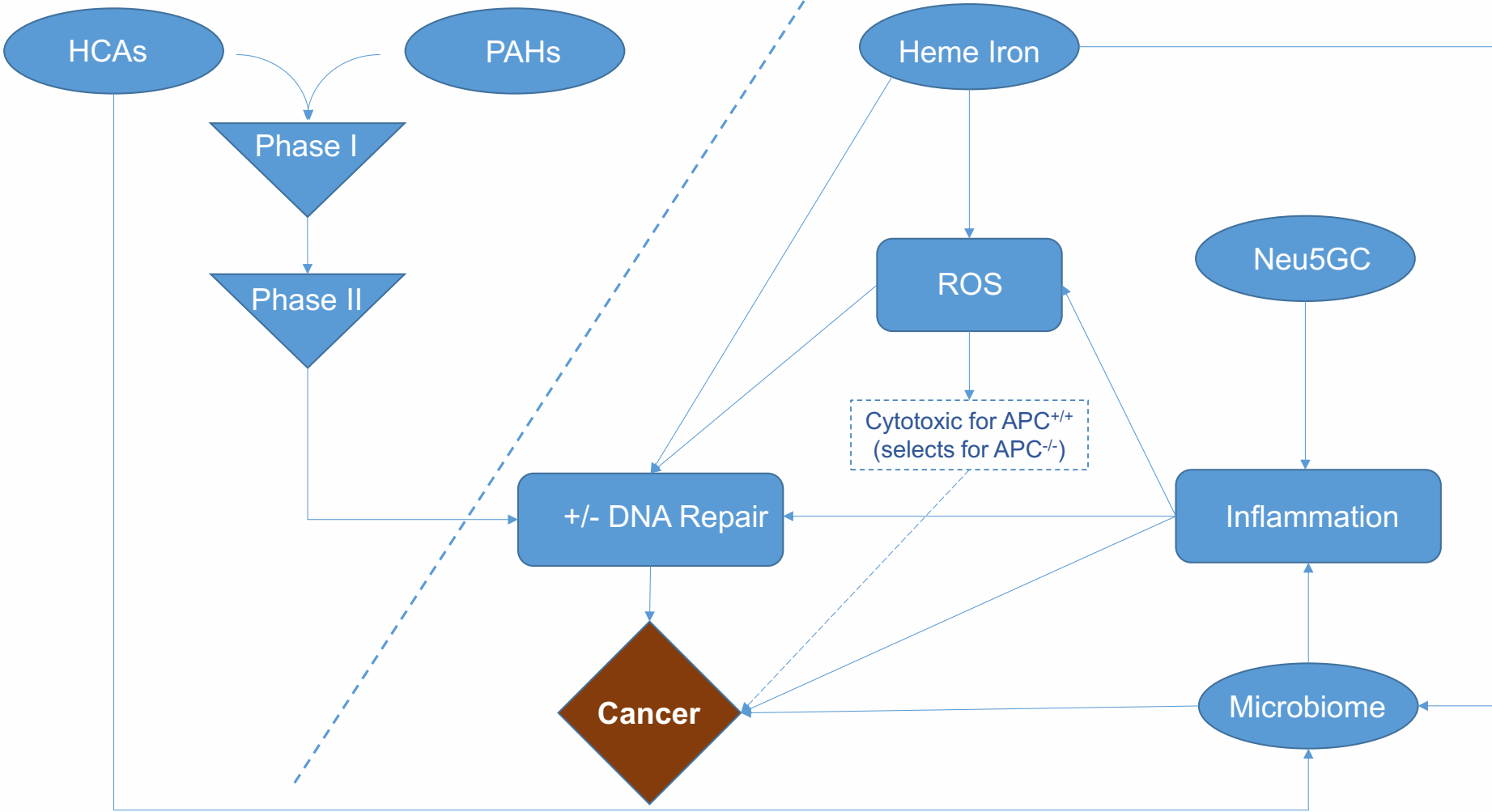
Red meat and processed

Figure 6: Dose-response meta-analysis of red and processed meat and colorectal cancer per 100 grams per day



Cooking-dependent

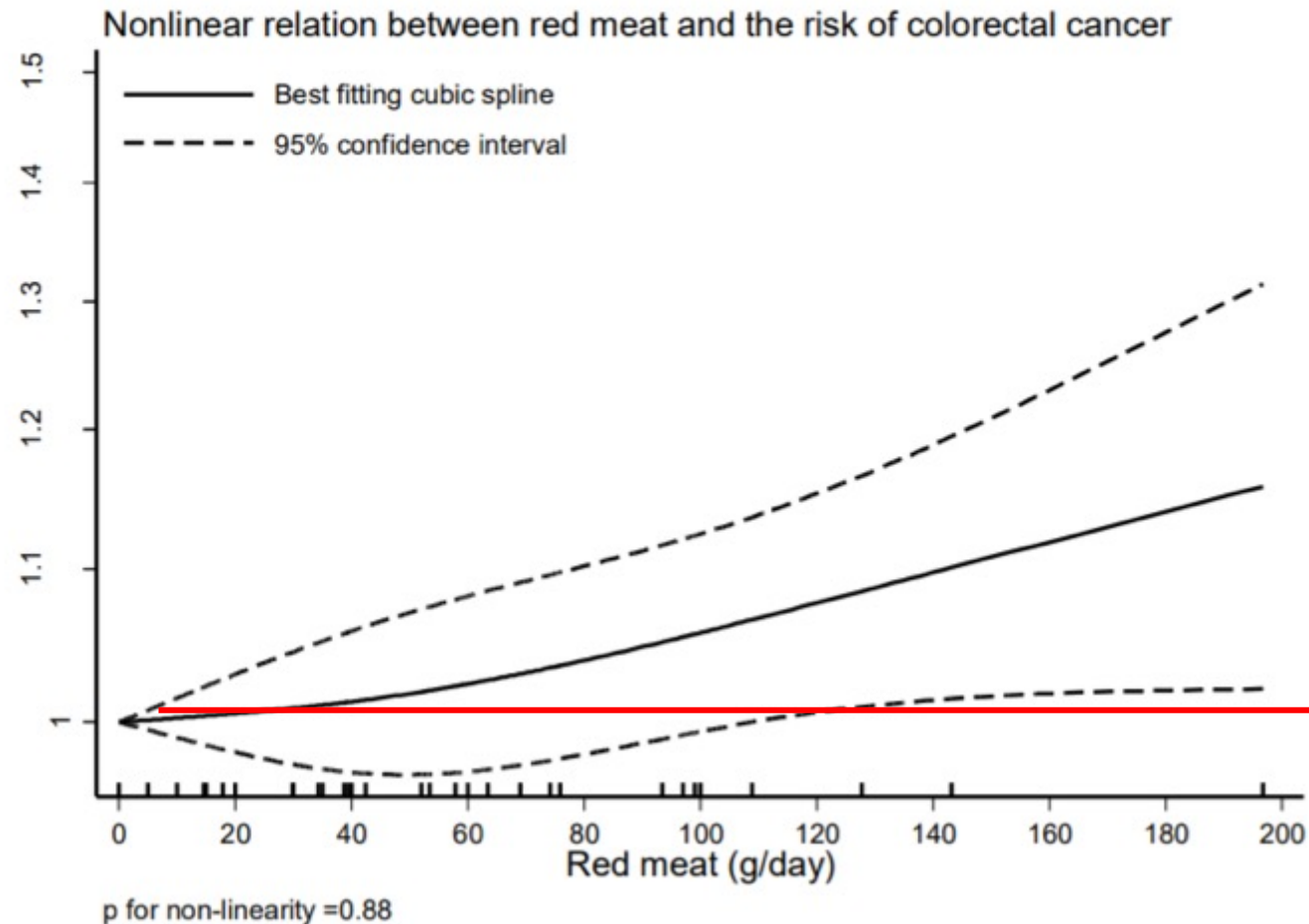
Cooking-independent



Red meat

Table 81 Table with red meat values and corresponding RRs (95% CIs) for non-linear analysis of red meat and colorectal cancer

Red meat (g/day)	RR(95%CI)
0	1
15	1.00(0.99-1.02)
30	1.00(0.97-1.04)
50	1.01(0.96-1.07)
100	1.05(0.99-1.12)





RECOMMENDATION

Limit consumption of sugar sweetened drinks

Drink mostly water and unsweetened drinks

GDAL

Do not consume sugar sweetened drinks¹

¹ Sugar sweetened drinks are defined here as liquids that are sweetened by adding free sugars, such as sucrose, high fructose corn syrup and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrate. This includes, among others, sodas, sports drinks, energy drinks, sweetened waters, cordials, barley water, and coffee- and tea-based beverages with sugars or syrups added. This does not include versions of these drinks which are 'sugar free' or sweetened only with artificial sweeteners.



REVIEWS

Check for updates

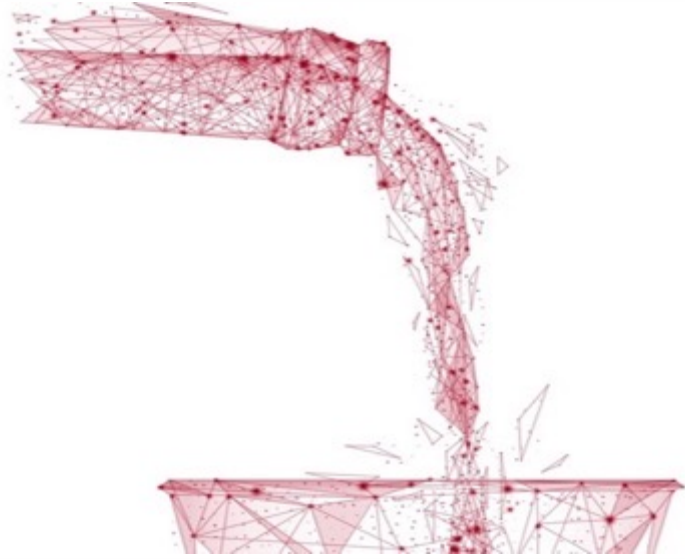
The role of sugar-sweetened beverages in the global epidemics of obesity and chronic diseases

Vasanti S. Malik^{1,2} and Frank B. Hu^{2,3,4}

[Nat Rev Endocrinol.](#) 2022 Jan 21 : 1–14

- The *2015-2020 Dietary Guidelines for Americans* recommends limiting calories from added sugars to no more than 10% each day. That's 200 calories, or about 12 teaspoons, for a 2,000 calorie diet.
- “Collectively, SSBs are the largest source of added sugar in the diet; a typical 12 fl oz (355 ml) serving of soda delivers 35.0–37.5 g of sugar and 140–150 calories”
- Half of the US population consumes sugary drinks on a given day
<https://www.cdc.gov/nutrition/data-statistics/sugar-sweetened-beverages-intake.html>

Alcohol



RECOMMENDATION

Limit alcohol consumption

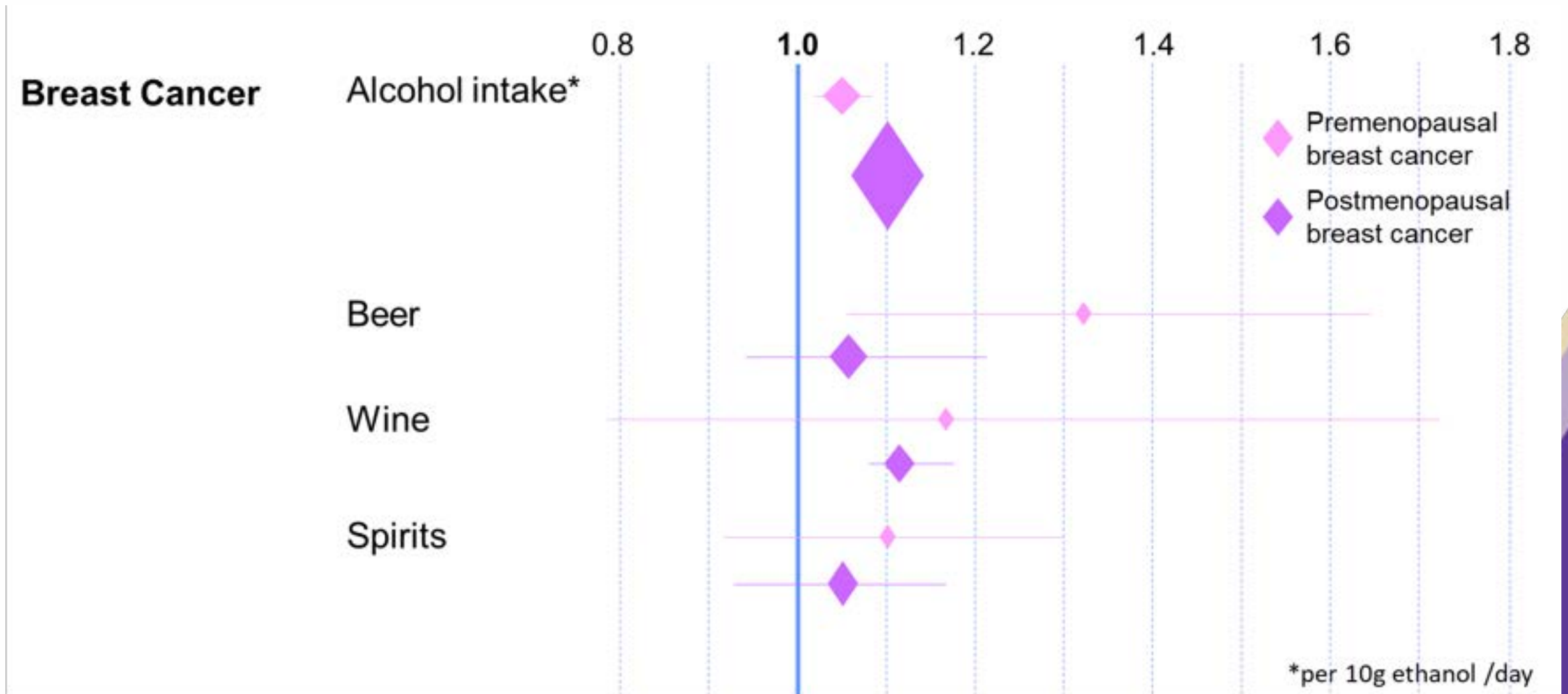
For cancer prevention, it's best not to drink alcohol

GOAL For cancer prevention, it's best not to drink alcohol

1. Alcoholic drinks and the risk of cancer: a summary matrix

ALCOHOLIC DRINKS AND THE RISK OF CANCER					
WCRF/AICR GRADING		DECREASES RISK		INCREASES RISK	
		Exposure	Cancer site	Exposure	Cancer site
STRONG EVIDENCE	Convincing			Alcoholic drinks ¹	Mouth, pharynx and larynx 2018 Oesophagus (<i>squamous cell carcinoma</i>) 2016 Liver 2015 ² Colorectum 2017 ³ Breast (postmenopause) 2017 ⁴
	Probable	Alcoholic drinks	Kidney 2015 ⁵	Alcoholic drinks	Stomach 2016 ² Breast (premenopause) 2017 ⁴
LIMITED EVIDENCE	Limited – suggestive			Alcoholic drinks	Lung 2017 Pancreas 2012 ² Skin (<i>basal cell carcinoma</i> and <i>malignant melanoma</i>) 2017

Alcohol



Dietary supplements



RECOMMENDATION

**Do not use supplements
for cancer prevention**

Aim to meet nutritional needs through diet alone

GOAL High-dose dietary supplements¹ are not recommended for cancer prevention – aim to meet nutritional needs through diet alone

¹ A dietary supplement is a product intended for ingestion that contains a 'dietary ingredient' intended to achieve levels of consumption of micronutrients or other food components beyond what is usually achievable through diet alone.



Breast Feeding



RECOMMENDATION

For mothers: breastfeed your baby, if you can

Breastfeeding is good for both mother and baby

GOAL This recommendation aligns with the advice of the World Health Organization, which recommends infants are exclusively breastfed¹ for 6 months, and then up to 2 years of age or beyond alongside appropriate complementary foods

¹ 'Exclusive breastfeeding' is defined as giving a baby only breastmilk (including breastmilk that has been expressed or is from a wet nurse) and nothing else – no other liquids or solid foods, not even water [93]. It does, however, allow the infant to receive oral rehydration solution, drops or syrups consisting of vitamins, minerals, supplements or medicines [93].





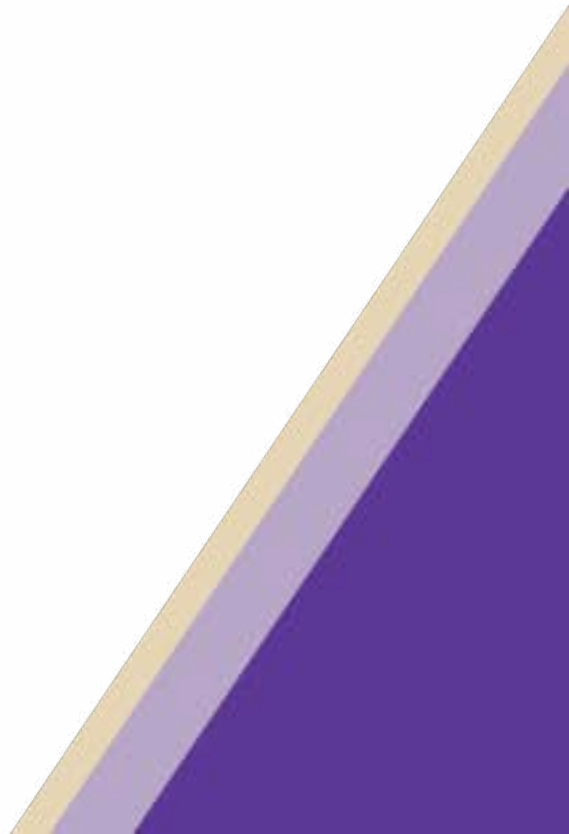
OCTOBER

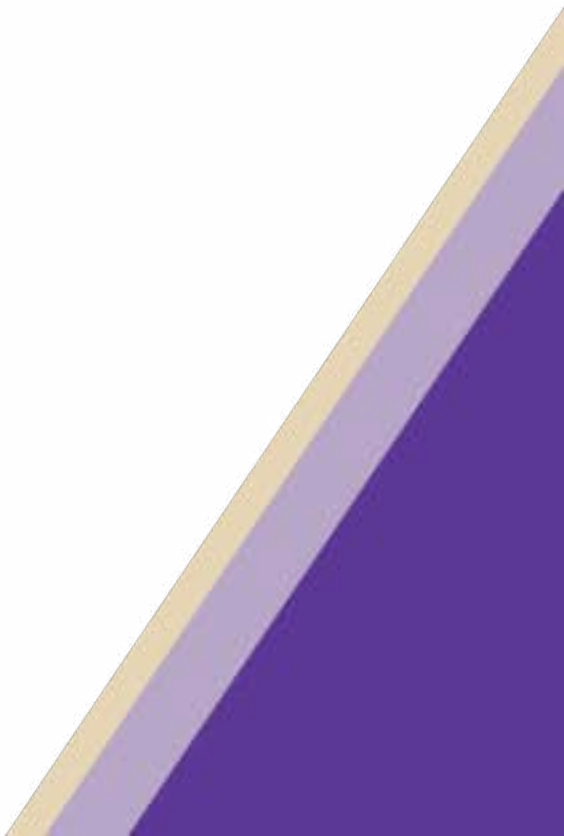
Breast

CANCER

awareness

MONTH





Cancer Survivors



RECOMMENDATION

After a cancer diagnosis: follow our Recommendations, if you can

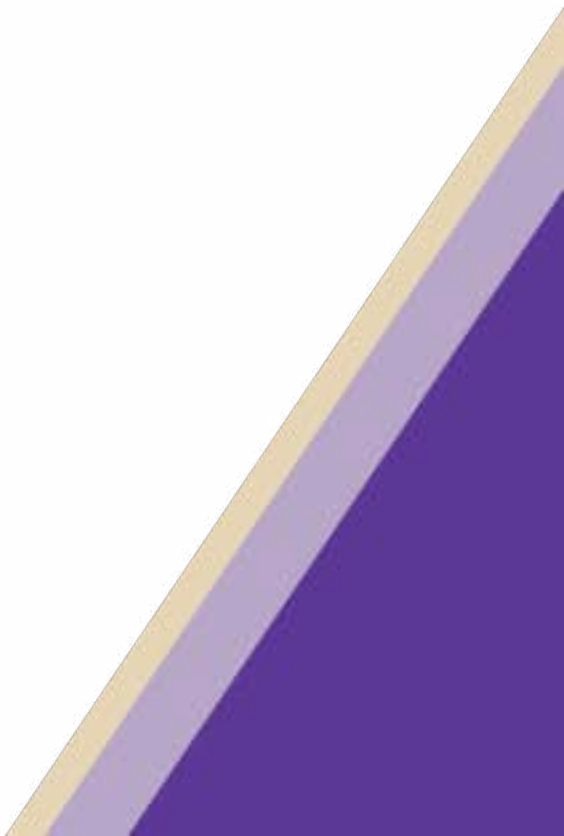
Check with your health professional what is right for you

- GOAL** All cancer survivors¹ should receive nutritional care and guidance on physical activity from trained professionals
- GOAL** Unless otherwise advised, and if you can, all cancer survivors are advised to follow the Cancer Prevention Recommendations as far as possible after the acute stage of treatment

¹ Cancer survivors are people who have been diagnosed with cancer, including those who have recovered from the disease.



Survivors of breast and other cancers

- 32.6 million people worldwide living with a cancer diagnosis
 - Persuasive evidence that diet, nutrition, physical activity predict outcomes; limited evidence on the impact of changing these.
 - CUP/CUP Global Panel judges that following the Recommendations is unlikely to be harmful to survivors who have finished treatment
 - Research in cancer survivors is a key future research direction
- 

Breast cancer survivors

2014

DIET, NUTRITION, PHYSICAL ACTIVITY AND BREAST CANCER SURVIVAL – ALL-CAUSE MORTALITY					
		DECREASES RISK		INCREASES RISK	
		Exposure	Timeframe	Exposure	Timeframe
STRONG EVIDENCE	Convincing				
	Probable				
LIMITED EVIDENCE	Limited – suggestive	Physical activity	Before diagnosis	Body fatness	Before diagnosis
			≥12 months after diagnosis		<12 months after diagnosis
		Foods containing fibre	Before diagnosis		≥12 months after diagnosis
			≥12 months after diagnosis	Total fat	Before diagnosis
Foods containing soy	≥12 months after diagnosis	Saturated fatty acids	Before diagnosis		
STRONG EVIDENCE	Substantial effect on risk unlikely				

STRONG: Evidence strong enough to support a judgement of a convincing or probable causal relationship and generally justify making recommendations

LIMITED: Evidence that is too limited to justify making specific recommendations

2022

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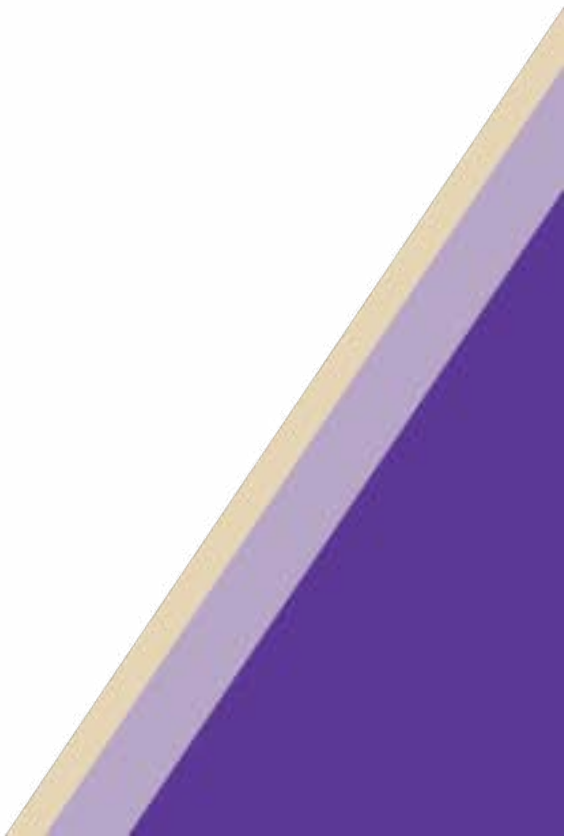
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- 1 point is awarded for meeting, 0.5 points for partially meeting and 0 points for not meeting a recommendation.
- The Score components are weighted equally.
- A higher Score reflects greater adherence to the Recommendations.



The **WCRF/AICR Score** is a standardized scoring system to assess adherence to the [2018 WCRF/AICR Cancer Prevention Recommendations](#). The Score includes eight of the ten Cancer Prevention Recommendations; the inclusion of breastfeeding is optional.



Enhanced QoL
Physical functioning, fatigue, nausea & pain

Longer survival
(1.6yrs per recommendation followed)

Lower metabolic syndrome prevalence in survivors

Reduced Cancer Risk & mortality
(10–61%)

Low adherence – high adherence

Increased cancer risk

Reduced survival



- 58% lower colorectal cancer risk (≥ 4 vs 1-3 recs)
- 51% lower breast cancer risk (≥ 6 vs 0-2 recs)
- 33% lower mortality

A call for action,
not for perfection

(Karen Collins, MS, RDN, CDN, FAND)



CANCER HealthCheck

*Powered by the American Institute for Cancer Research**



Thank you!

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Diet & Lifestyle for
Cancer Prevention
and Survivorship –
*Evidence over
Opinion*

Key Messages and Action Steps

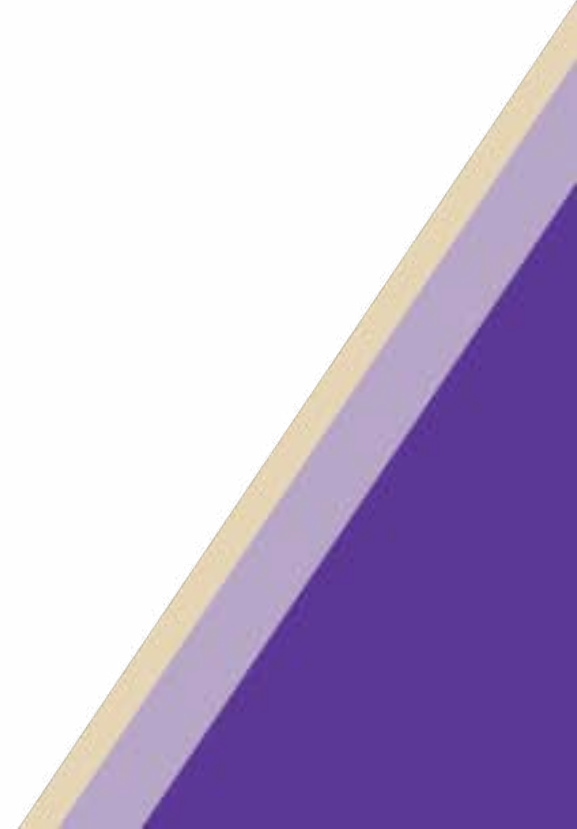
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Senior Nutrition Advisor

American Institute for Cancer Research

Disclosures

I have no conflicts of interest related to this presentation.



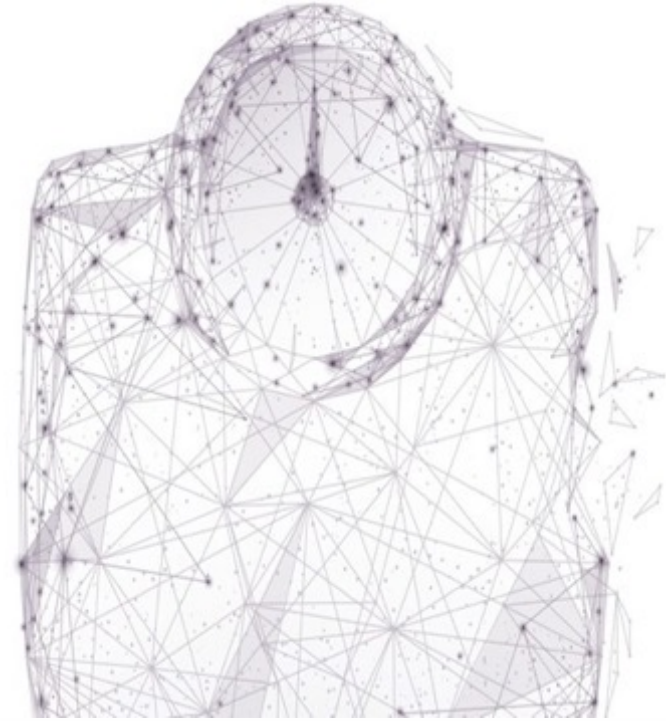
Framing Messages:

- **Address misinformation**
- **Consider barriers**
- **Find flexibility**

Recommendation:

Be a healthy weight

Keep your weight within the healthy range
and avoid weight gain in adult life



Making Sense of Adiposity's Link to Cancer Risk & Cancer Survivorship

Lifestyle association
or
Physiological effect?

- ↑ Bioavailable estrogen
- ↑ Inflammatory cytokines
- ↓ Adiponectin
- ↑ Leptin
- ↑ Insulin and insulin-related growth factors



Practice Pearls: Weight & Cancer Risk

- Population level targets for lowest risk
 - Lower end of Healthy BMI 18.5-24.9
 - Waist: Men 94 cm (37 in), Women 80 cm (31.5 in)
 - Asian ethnicity criteria lower; other ethnicity standards needed
- Individualized targets working with patients
 - Separate from body-shaming language
 - Will intentional weight loss reduce risk?
 - Change in biomarkers shows potential ¹
 - Data on weight loss and cancer risk is very limited
 - Stop a weight gain trend ²

¹ Agurs-Collins, Front Oncol 2019;9:765; Naaman, J Clin Endocrinol Metab. 2022;107(8):2154

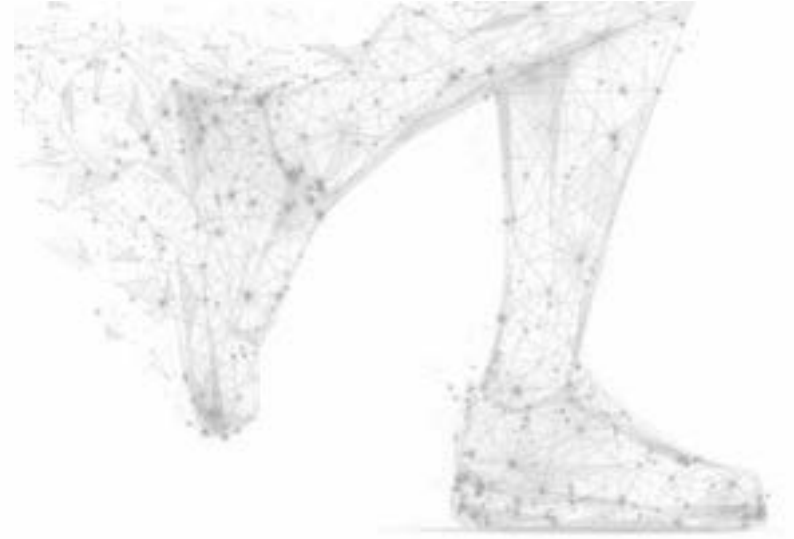
² AICR/WCRF Expert Report 2018; Christakoudi, Int J Cancer. 2021;148(7):1637

Recommendation:

Be physically active

Be physically active as part of everyday life

– walk more and sit less



Practice Pearls: Physical Activity & Cancer Risk

“Doesn’t work!”

Physical activity “works” even without weight loss

- Benefits: hormones, immune system, GI function
- Helps avoid weight gain
- Psychological health, stress management

“Too hard”
“No time”

Replace old lifestyle habits with new

- Start where you are
- Accumulate shorter blocks
- Don’t use food to reward activity
- Find opportunities for light activity to replace sedentary time

Recommendation:



Eat a diet rich in whole grains, vegetables, fruits, and beans

Make whole grains, vegetables, fruit, and pulses (legumes) such as beans and lentils a major part of your usual diet.

Consume a diet with at least 30 grams of fiber from food sources each day

Practice Pearls: Vegetables, Fruits & Cancer Risk

Realistic choices
“won’t matter” ?

What about
potatoes?

- Greatest difference in cancer risk is between low intake and 5 a Day
- Fresh, frozen, canned all “count”
- Experiment with swaps
 - Keep current choices: shift proportions
 - Try new choices: replace other foods to meet recommendations or add variety
- Food fears: calories and glycemic load
 - Check portion, preparation and company they keep
- Expand non-starchy vegetables, don’t fear spuds

Practice Pearls: Whole Grains & Beans

Don't people say they have harmful compounds?

- **Lectins:** claims as pro-inflammatory based on rodent studies with high doses of the active form
 - Proper cooking inactivates lectins & sharply reduces amount
- **Gluten:** inflammatory only in celiac disease & non-celiac gluten sensitivity
- **Soyfood isoflavones:** claims of risks as “phytoestrogens” based on high doses of isolated compounds in cell & rodent studies
 - Dose matters. Soy food consumption is not linked with increased cancer risk.

Put studies in context of overall human research related to food

- Whole grains & dietary fiber: reduce risk of colorectal cancer
- Whole grains & dietary fiber may reduce risk of weight gain & obesity
- Fermentable fiber supports gut microbiota → anti-inflammatory effects suggested

More Practice Pearls: Whole Grains & Beans

What do I do with these foods?

- **Make the unfamiliar feel comfortable**
 - Use in soups, stews, casseroles, tacos, pasta sauce as swap for some or all meat or
 - Prepare with familiar flavors
- **Talk about time**
 - Quick-cooking whole grains or cook ahead and freeze
 - Canned or frozen pulses; quick-cooking lentils; tofu & tempeh
- **Highlight the benefits**
 - Money-saving when swapped for some or all meat
 - Does healthy seem boring? Explore different cuisines

Practice Pearls: Plant Foods & Cancer Risk

“Do I need a vegetarian diet?”

- Plant-based diet = “plant-focused” or “plant-forward”
 - Mostly plants, not necessarily exclusively plants
 - Plants-only (vegan), vegetarian, pescatarian, flexitarian all fit
- Reduce cancer risk with what you choose & what you limit
 - Look beyond individual studies to the overall picture
 - Focus on nutritional quality within food categories
- Gradually create a long-term protective dietary pattern
 - Aim for variety of plant foods for nutrients, phytochemicals, types of dietary fiber
 - Individualize choices

Parra-Soto, BMC Med. 2022;20(1):79

Watling, BMC Med. 2022;20(1):73

Thompson, JAMA Netw Open. 2023;6(3):e234714

Recommendation:

Limit consumption of 'fast foods' and other processed foods high in fat, starches, or sugars

Limiting these foods helps control calorie intake and maintain a healthy weight



Practice Pearls: Processed Foods & Cancer Risk

Processed
foods:
all the same?

- **Processed foods:** Some processing can enhance nutrient bioavailability and/or convenience of healthy eating
- **Ultra-processed foods** aren't all the same
 - Depends on what is removed, what is added ¹
 - High intake usually = high sweetened drinks, processed meat, French fries, pizza, read-to-eat/heat meals
 - Beyond weight and weight gain, link to cancer risk is unclear
- **Be selective as you limit ultra-processed foods**
 - Low intake in studies can include a few servings daily
 - Focus on limiting those high in added fat, starches, sugars
 - Choose those that help you stick with an overall healthy diet

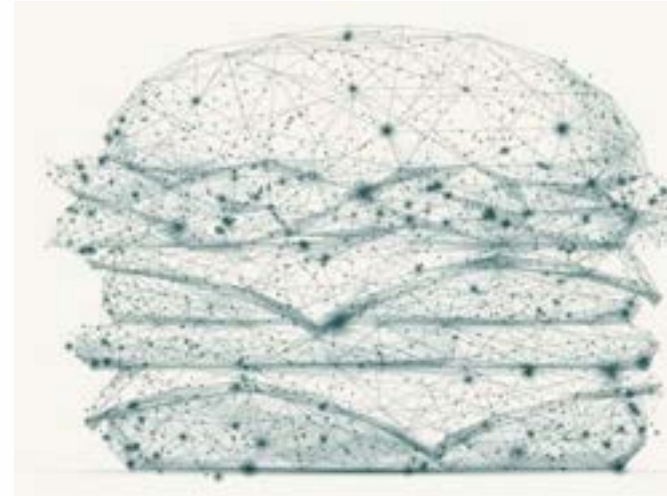
¹ AICR/WCRF Third Expert Report, 2018; Monteiro, Public Health Nutr. 2019;22(5):936; Juul, Br J Nutr 2018;120(1):90

Recommendation:

Limit consumption of red and processed meat

Eat no more than moderate amounts of meat, such as beef, pork, and lamb.

Eat little, if any, processed meat.



Practice Pearls: Red Meat & Cancer Risk

Red meat:
what counts?

Red meat: mainly beef, pork, lamb

- Grass-fed still counts
- Lean for heart health, not lower cancer risk
- Likely mechanisms aren't fat-related¹
 - Heme iron (oxidative stress, nitroso-compounds)
 - Inflammation, Microbiome
 - HCAs and PAHs formed in cooking

What does
"limit" mean?

If you eat red meat, limit consumption to no more than 12 to 18 ounces (cooked weight) per week

- Often translates to no more than 3 times a week
- But if portions are 3-oz deck-of-cards size: 4 to 6 portions per week

¹ AICR/WCRF Third Expert Report 2018; Turesky, CHIMIA 2018;72(10):718

Practice Pearls: Processed Meat & Cancer Risk

Processed meat:
what counts?

Processed meat = Smoked, Cured, Salted, Preservatives

- Examples: bacon, sausage, lunch meat, hot dogs
- “Safe” forms? Evidence not yet clear

Recommendation: Consume very little, if any, processed meat

Practice Pearls: Limiting Red and Processed Meat



“But what
can I eat?”

Within a mostly plant-based diet, optional to include:

- Poultry
- Fish
- Dairy

Most important: Opportunity to re-orient the plate

- Focus on what *replaces* processed meat and big portions of red meat
- What opportunities does limiting meat provide for increasing whole grains, vegetables, pulses and soyfoods?

Recommendation:



Limit consumption of sugar sweetened drinks

Drink mostly water and unsweetened drinks.

Key Points on Sugar-Sweetened Drinks in the Big Picture

- Limit all sugar-sweetened drinks
 - Drinks sweetened with high-fructose corn syrup (HFCS), sugar, honey, agave nectar or syrup, fruit juice concentrate
 - Soda, sports drinks, energy drinks, sweetened waters, coffee- and tea-based beverages sweetened with added sugars or syrups
- Main reason: Reduce unintended weight gain
 - Some research suggests risk also related to effects on blood sugar, elevated insulin levels, and insulin resistance¹

¹ Malik & Hu, Nat Rev Endocrinol 2022;18(4):205

Practice Pearls: Beverages & Cancer Risk

“But what’s left to drink?”

- First choice: drink water or unsweetened drinks, such as tea, coffee, sparkling water
- Beverages sweetened with artificial/non-nutritive sweeteners:
 - No strong evidence of cancer risk in limited amounts¹
 - Helpful for weight or health? Individual choice²
- Fruit juices, even with no added sugar, are best kept to limited portions for most people

¹ WCRF/AICR Third Expert Report, 2018; McCullough, Cancer Epidemiol Biomarkers Prev. 2022;31(10):1907; AICR blog July 2023, Aspartame and Cancer Risk – What You Need to Know

² Malik & Hu, Nat Rev Endocrinol 2022;18(4):205

Recommendation:

Limit alcohol consumption

For cancer prevention, it's best not to drink alcohol.



Practice Pearls: Alcohol & Cancer Risk

But isn't alcohol heart-healthy?

- Mixed findings on heart health
 - Beyond moderation increases hypertension, serum triglycerides
 - Potential confounding in some studies (abstainer bias, cultural eating pattern)

What about red wine?

- Research does not show a difference in cancer risk between wine, beer, spirits

But what can I drink?

- Talk about positive alternatives: beverages & activities

Key Messages on Alcohol

- For lowest cancer risk: avoid alcohol
- For those who choose to drink, moderation: ≤ 1 /day women, ≤ 2 /day men
- Key discussion points: portion and concentration

1 drink = 14 gm Ethanol



5 ounces
of wine



12 ounces
of beer



1½ ounces
of 80 proof liquor

Recommendation:



Do not use supplements for cancer prevention

Aim to meet nutritional needs through diet alone.

Practice Pearls: Supplements in a Diet to Reduce Cancer Risk

Aren't they
"insurance"?

Can't replace healthy eating pattern & lifestyle

- Small steps in healthier choices make a difference

So what's
the bottom line?

Supplements can help reach specific nutrient recommendations, but...

- More is not necessarily better for health
- "Gaps" should be identified by a qualified health professional
- Even "natural" botanical supplements can interfere with cancer treatment by competing with shared metabolic pathways.

Recommendation:

**After cancer diagnosis:
follow the recommendations,
if you can**

**Check with your health professional to determine
what is right for you.**



Key Message:

After Cancer, Nutrition & Physical Activity are Individual

Priorities vary among individuals and at different times

- Short-term survivorship issues
- Risk of new cancers
- Risk of other cardiovascular disease and other chronic diseases

Physical Activity

- May improve health-related quality of life (fatigue, physical functioning)
- Preliminary evidence: possible benefit for treatment tolerance and response
- Individual considerations:
 - bone health, balance, anemia, peripheral nerve damage, lymphedema
 - overall health

Practice Pearls: Weight & Weight Change after Cancer

Overweight, obesity, large weight gains ($\geq 5-10\%$)

- Associated with greater cancer-specific & all-cause mortality in some types of cancer
- But weight is complex: reflecting body fat, bone, lean muscle tissue, and water balance

Unplanned Weight Loss & Loss of Lean Body Mass

- Can lead to treatment interruption or dose reduction, & increase risk of infection or decreased survival
- Sarcopenia occurs in 20-70% of cancer patients¹
 - Often overlooked due to obesity
 - Associated with greater mortality in people with cancer – at any level of adiposity²

Intentional Weight Loss?

- Weight loss of $\geq 5\%$ may improve markers of inflammation and metabolic health
- Individual risk in perspective: abdominal obesity, cardiovascular & metabolic health
- Clarify the goal: possibly allow for slow weight loss from diet plus physical activity

¹Trujillo, J Acad Nutr Diet 2018; 118(4):749 ²Caan, JAMA Oncol. 2018;4(6):798

AICR Cancer Prevention Recommendations

Activity and Body Weight



RECOMMENDATION

Be a healthy weight

Keep your weight within the healthy range¹ and avoid weight gain in adult life



RECOMMENDATION

Be physically active

Be physically active as part of everyday life – walk more and sit less

Diet & Nutrition



RECOMMENDATION

Eat a diet rich in wholegrains, vegetables, fruit and beans

Make wholegrains, vegetables, fruit, and pulses (legumes) such as beans and lentils a major part of your usual daily diet



RECOMMENDATION

Limit consumption of 'fast foods' and other processed foods high in fat, starches or sugars

Limiting these foods helps control calorie intake and maintain a healthy weight



RECOMMENDATION

Limit consumption of red and processed meat

Eat no more than moderate amounts of red meat¹, such as beef, pork and lamb. Eat little, if any, processed meat²



RECOMMENDATION

Limit consumption of sugar sweetened drinks

Drink mostly water and unsweetened drinks



RECOMMENDATION

Limit alcohol consumption

For cancer prevention, it's best not to drink alcohol

“Special Recommendations”



RECOMMENDATION

Do not use supplements for cancer prevention

Aim to meet nutritional needs through diet alone



RECOMMENDATION

For mothers: breastfeed your baby, if you can

Breastfeeding is good for both mother and baby



RECOMMENDATION

After a cancer diagnosis: follow our Recommendations, if you can

Check with your health professional what is right for you

Lifestyles Closer to the Recommendations Are Linked with Better Health

- Closer fit with the recommendations is linked with lower cancer risk
 - A **package** of protection influencing:
 - > antioxidant & anti-inflammatory defenses
 - > metabolic & hormonal pathways
 - > gut microbiome
 - Each step closer helps – **Emphasize progress, not perfection**
- Steps to reduce cancer risk can **reduce overall chronic disease risk**
- **Emerging evidence** among people diagnosed with cancer
 - Lower overall mortality & cancer-specific mortality in several cancers
 - Lower prevalence of metabolic syndrome
 - Greater health-related quality of life

Talking with Patients Amidst Headline Hype

Emphasize: Evidence over Opinion

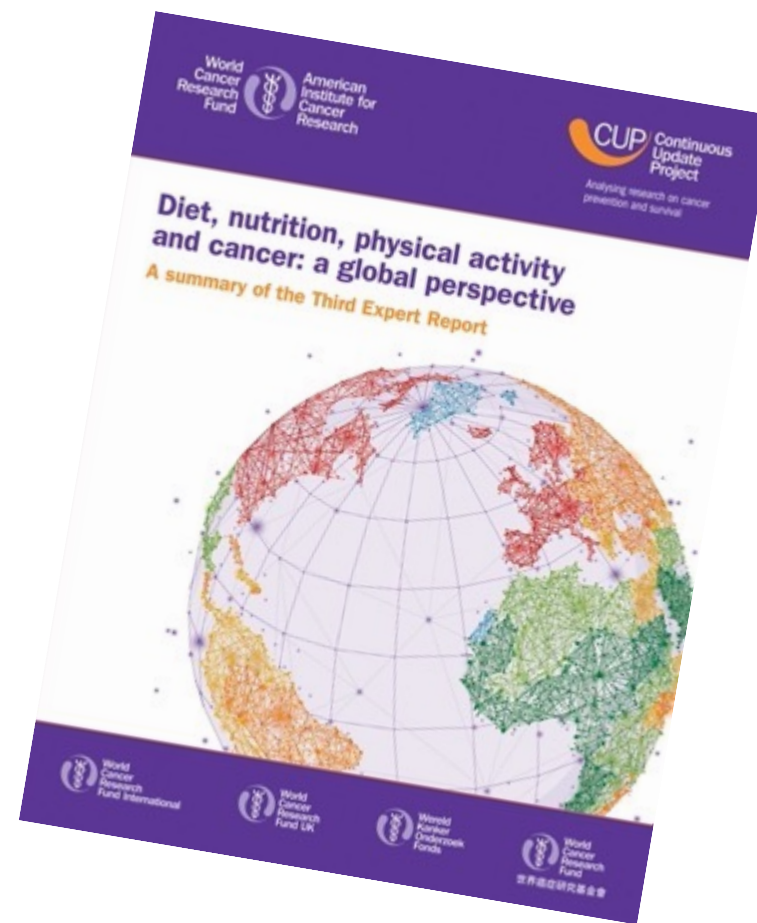
Educate people: all information is not equal

Base choices on evidence-based recommendations and expert reports

...not single studies and hearsay

Address perceived barriers

- Find flexibility for steps that fit individuals
- Recommendations are **a call for action, not perfection**



No Need to Reinvent the Wheel

AICR Resources

For Health professionals, Caregivers, Families and children

<https://www.aicr.org/>



Cancer HealthCheck

<https://www.aicr.org/cancer-health-check/>



New American Plate

<https://www.aicr.org/new-american-plate/>



Healthy10 Challenge

<https://healthy10challenge.org/>

Thank you!

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We look forward to addressing your questions!