

# Taking A Bite out of Cancer



Healthy Columbus Nutrition Webinar - Ashley Harris, MS, RD, CSO

FRESH FOOD PERSPECTIVE

## Where does nutrition fit in?

- Prevention
- Treatment
- Survivorship



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## Objectives

- Review evidenced based nutrition recommendations for cancer **prevention** and **survivorship**
- Describe nutritional management of common side effects associated with cancer and **treatment**

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## What is the right “diet” to fight cancer?

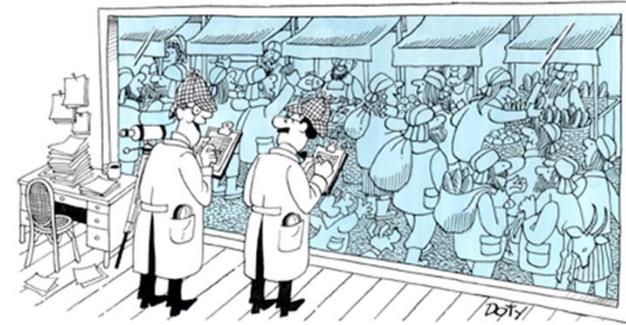


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## Diet & Cancer

- Messages confusing because conflicting studies looking at links between nutrition and cancer
  - Look at dietary patterns, foods (individual and groups), specific nutrients
- Many limitations to research
  - Cell & animal study findings do not always apply to humans
- Difficult to do in humans!
  - Must account for diet over lifetime
  - Hard to have subjects follow research diet precisely
  - Accurate diet assessment almost impossible

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“These studies always remind me of an ant colony I had as a kid!”

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## The WCRF-AICR Reports

- Expert panel reviewed 7,000+ studies from around the world
- **Provide recommendations** by judging strength of evidence related to diet, activity level, body fatness (Expert Reports, CUP)



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## Continuous Update Projects



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## AICR Recommendations for Survivors

- Survivors = in treatment and after treatment
- All recommendations apply for survivors IN GENERAL
  - Reduce risk of recurrence
  - Reduce risk of second primary
  - Improve overall health/prognosis
- Must look at each person individually
  - Recommendations may not be appropriate for all (i.e. ovarian cancer at risk for SBO, pt needing wt gain)
  - Diet & drug interactions (i.e. grapefruit)

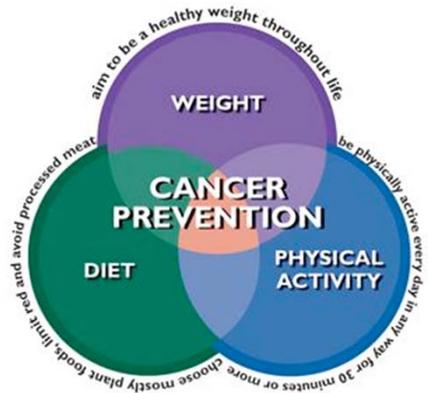
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## AICR Recommendations

<b>BODY FATNESS</b>
Be as lean as possible within the normal range of body weight
<b>PHYSICAL ACTIVITY</b>
Be physically active as part of everyday life
<b>FOODS AND DRINKS THAT PROMOTE WEIGHT GAIN</b>
Limit consumption of energy-dense foods Avoid sugary drinks
<b>PLANT FOODS</b>
Eat mostly foods of plant origin
<b>ANIMAL FOODS</b>
Limit intake of red meat and avoid processed meat
<b>ALCOHOLIC DRINKS</b>
Limit alcoholic drinks
<b>PRESERVATION, PROCESSING, PREPARATION</b>
Limit consumption of salt Avoid mouldy cereals (grains) or pulses (legumes)
<b>DIETARY SUPPLEMENTS</b>
Aim to meet nutritional needs through diet alone
<b>BREASTFEEDING</b>
Mothers to breastfeed; children to be breastfed
<b>CANCER SURVIVORS</b>
Follow the recommendations for cancer prevention

www.aicr.org

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“Eat food. Not too much. Mostly Plants.”

-Michael Pollan, *In Defense of Food: an Eater's Manifesto*

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## Weight:

Aim to be a healthy weight throughout life



## Aim for Healthy Weight

BMI HEIGHT	NORMAL	OVERWEIGHT	OBESE	EXTREME OBESITY
	4'10"	16 30 31 32 33 34	35 36 37 38 39	40 41 42 43 44 45 46 47 48 49 50 51 52 53 54
4'11"	91 92 100 109 119 131	119 124 129 134 138	143 149 153 158 162 167 172 177 181 186	191 196 201 205 210 215 220 224 229 234 239 244 248 253 258
5'0"	94 95 104 109 114 121	124 128 133 138 143	148 153 158 163 168 173 178 183 188 193	198 203 208 213 217 222 227 232 237 242 247 252 257 262 267
5'1"	97 102 107 112 118 125	128 133 138 143 148	153 158 163 168 174 179 184 189 194 199	204 209 215 220 225 230 235 240 245 250 255 261 266 271 276
5'2"	100 106 111 116 123 131	132 137 143 148 153	158 164 169 174 180 185 190 195 201 206	211 217 222 227 232 238 243 248 254 259 264 270 275 280 285 290
5'3"	103 109 115 120 128 137	136 142 147 153 158	164 169 175 180 186 191 197 202 207 213	218 224 229 235 240 246 251 256 262 267 273 278 284 289 294 299
5'4"	107 113 119 125 133 142	140 146 151 157 163 169	174 180 186 192 197 204 209 215 221 227	232 238 244 250 256 262 267 273 279 285 291 296 302 308 314
5'5"	114 120 126 132 140 149	148 154 160 166 174 180	186 192 198 204 210 216 222 228 234	240 246 252 258 264 270 276 282 288 294 300 306 312 318 324
5'6"	118 124 130 136 144 153	152 158 164 170 178 184	190 196 198 204 210 216 222 228 234	242 248 254 260 266 272 278 284 290 296 302 308 314 320 326 332
5'7"	121 127 134 140 148 157	156 162 168 174 180 186	192 198 204 211 217 223 230 236 242	249 255 261 267 273 280 286 292 298 304 310 316 322 328 334 340
5'8"	125 131 138 144 151 159	164 171 177 184 190	197 203 210 216 223 230 236 243	249 256 262 269 275 282 289 295 302 308 315 322 329 335 341 348 354
5'9"	129 135 142 149 156 164	169 176 182 189 196	203 209 216 223 230 236 243 250	257 263 270 277 284 291 297 304 311 318 324 331 338 345 351 358 364
5'10"	133 140 146 153 160 168	174 181 188 195 202 209	216 223 230 236 243 250 257 264	271 278 285 292 299 306 313 320 327 334 341 348 355 362 369 376
5'11"	138 145 152 159 167 175	182 189 196 203 210	222 229 236 243 250 257 265	272 279 286 293 300 307 314 321 328 335 342 349 356 363 370 377 384
6'0"	143 149 156 163 171 179	184 191 199 206 213	221 228 235 242 250 256 263 271	279 287 294 302 309 316 324 331 338 346 353 361 368 375 383 390 397
6'1"	144 151 158 166 174 182	189 197 204 212 219	227 235 242 250 257 265 272 280	288 295 302 310 318 325 333 340 348 355 363 371 379 387 395 403 411 419
6'2"	146 153 161 170 178 186	194 202 210 218 225 233	241 249 256 264 272 280 287 295 303	311 319 327 334 342 350 358 365 373 381 389 397 405 413 421 429
6'3"	150 158 166 176 184 192	200 208 216 224 232 240	249 256 264 272 279 287 295 303 311	319 327 335 343 351 359 367 375 383 391 400 407 415 423 431 439
6'4"	154 162 170 180 189 197	205 213 221 230 238 246	254 263 271 279 287 295 304 312 320	328 336 344 352 361 369 377 385 393 401 410 418 426 434 442

Source: Adapted from Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report



## Avoid high-calorie foods!

□ “Energy Dense” Foods:

- High sugar drinks (soda, juice)
- Fast foods (burgers, fries, etc.)
- Fried foods, high fat foods
- Refined/processed foods
- Candy, sweets, cookies, donuts, etc.






## Add in low-calorie plant foods!



1575 Kcal  
High Energy Density



1575 Kcal  
Low Energy Density

Used with permission from Dr. Barbara Rolls, Penn State University



## Watch your Portion Size



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## Physical Activity:

Be physically active every day  
in any way for at least 30  
minutes or more

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## Benefits of Physical Activity

- Helps reduce / control body weight
- Enhances immune function
- Improves quality of life
- Reduces stress
- Combats fatigue - especially in survivors!
- Can increase blood flow to brain and may promote healing
- Decreases risk for developing new cancers

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## Be as Physically Active as Possible

- **Goal:**
  - Be moderately active (equivalent to brisk walk) at least 30 minutes every day
  - As fitness improves aim for 60 minutes of moderate activity or 30 minutes of vigorous physical activity every day
- **Does NOT have to be all at once**
  - Studies show it is the cumulative workout minutes that count
  - 5-10 minute activity bursts throughout the day great way to reach fitness goals

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## Diet:

Eat mostly plant foods, limit red and avoid processed meats

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## Moderation with Meats

- Limit red meat to <18 oz per week
  - Includes beef, lamb, pork, goat
- Avoid processed meats
  - Includes meats preserved by smoking, curing or salting or addition of chemical preservatives (i.e. nitrates)
- Avoid charring or blackening
  - Creates cancer causing substances (HCA – heterocyclic amines, PCA – polycyclic aromatic hydrocarbons)



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## Choose a Plant-Based Diet

- Diet comprised of **MOSTLY** plant foods
  - Does not mean vegetarian or vegan
  - Aim for 2/3 or more plant foods, 1/3 or less animal foods
- Plant foods include:
  - Fruits
  - Vegetables
  - Nuts & Seeds
  - Whole Grains
  - Beans & Legumes
  - Coffee, Tea, Dark Chocolate!



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## Why a plant-based diet?

- Studies have shown it can decrease risk of many chronic diseases:
  - **Cancer – Occurrence AND Recurrence**
  - Diabetes
  - Heart Disease
  - High Blood Pressure
  - Cholesterol
  - Stroke
  - **Obesity**



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## Why a plant-based diet?

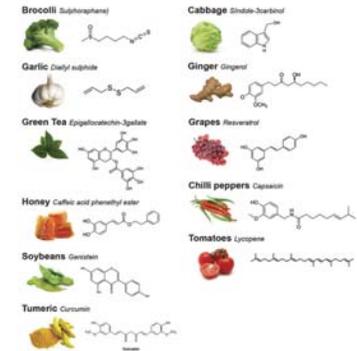
- Plant foods in general tend to be:
  - Lower in calories - **Prevents Obesity**
    - Fruits & vegetables about 1/3 calories of protein & starches
  - Improves Health - Nutrient dense
    - Vitamins
    - Minerals
    - Fiber
    - Phytochemicals



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## Phytochemicals

- Phytochemicals give plants their distinctive color, smell, taste
- Provide MANY health benefits
  - Especially for fighting cancer!
- 1000's discovered so far!



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## Phytochemicals and Cancer

Phytochemical(s)	Plant Source	Possible Benefits
Carotenoids (such as beta-carotene, lycopene, lutein, zeaxanthin)	Red, orange and green fruits and vegetables including broccoli, carrots, cooked tomatoes, leafy greens, sweet potatoes, winter squash, apricots, cantaloupe, oranges and watermelon	May inhibit cancer cell growth, work as antioxidants and improve immune response
Flavonoids (such as anthocyanins and quercetin)	Apples, citrus fruits, onions, soybeans and soy products (tofu, soy milk, edamame, etc.), coffee and tea	May inhibit inflammation and tumor growth; may aid immunity and boost production of detoxifying enzymes in the body
Indoles and Glucosinolates (sulforaphane)	Cruciferous vegetables (broccoli, cabbage, collard greens, kale, cauliflower and Brussels sprouts)	May induce detoxification of carcinogens, limit production of cancer-related hormones, block carcinogens and prevent tumor growth
Inositol (phytic acid)	Bran from corn, oats, rice, rye and wheat, nuts, soybeans and soy products (tofu, soy milk, edamame, etc.)	May retard cell growth and work as antioxidant
Isoflavones (daidzein and genistein)	Soybeans and soy products (tofu, soy milk, edamame, etc.)	May inhibit tumor growth, limit production of cancer-related hormones and generally work as antioxidant
Isothiocyanates	Cruciferous vegetables (broccoli, cabbage, collard greens, kale, cauliflower and Brussels sprouts)	May induce detoxification of carcinogens, block tumor growth and work as antioxidants
Polyphenols (such as ellagic acid and resveratrol)	Green tea, grapes, wine, berries, citrus fruits, apples, whole grains and peanuts	May prevent cancer formation, prevent inflammation and work as antioxidants
Terpenes (such as perillyl alcohol, limonene, carnosol)	Cherries, citrus fruit peel, rosemary	May protect cells from becoming cancerous, slow cancer cell growth, strengthen immune function, limit production of cancer-related hormones, fight viruses, work as antioxidants



[http://www.aicr.org/reduce-your-cancer-risk/diet/elements\\_phytochemicals.html](http://www.aicr.org/reduce-your-cancer-risk/diet/elements_phytochemicals.html)

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# I already have cancer, so does it really matter?



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## Benefits of Diet & Exercise AFTER Diagnosis

- Study by the National Cancer Institute (NCI) looking at 670 women 30 months after breast cancer diagnosis
  - **HEALTHY DIET:**
    - When comparing women eating a healthy diet (fruits, vegetables, whole grains, lean proteins) to the standard western diet (refined sugars/grains, red meats, saturated fats)
      - **60% reduced risk of death by any cause, 88% reduced risk of death from breast cancer**
  - **HEALTHY DIET + EXERCISE:**
    - When comparing women eating a healthy diet **AND** engaging in regular physical activity
      - **89% reduced risk from any cause, 91% reduced risk of death from breast cancer!!!**

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## Eating During Treatment: What to eat when you're not feeling well...



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## Common Side Effects

- Nausea/Vomiting
- Poor appetite
- Mouth sores/dry mouth
- Taste changes
- Diarrhea
- Constipation
- Fatigue

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## Nutrition During Treatment

- Protein and calorie needs often increased
- Treatment side effects can lead to malnutrition and electrolyte or metabolic abnormalities
  - Stop/delay treatment = worse prognosis
  - Increase hospital stay & risk of infection
- Can help improve quality of life

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## Nausea/Vomiting

- Small, frequent meals of easy to digest foods
- Room temperature/cold foods
- Salty foods (pretzels, saltines potato chips, chicken noodle soup)
- Ginger
- Lemon
- Avoid rich, greasy, fried, spicy foods
- Replenish with electrolyte fluids if vomiting



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## Poor Appetite

- Small, frequent meals (5-6 “mini-meals”)
- Keep easy go-to snacks around of favorite foods
  - Snack basket (granola bars, trail mix)
- Set alarm
- Choose calorie dense foods or high-calorie food additions
  - Olive oil in soups, smoothies, veggies, sandwiches
  - Add CIB to Ensure to increase calories!
- Avoid greasy/rich & hard to digest foods



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## Mouth Sores/Dry Mouth

- Choose soft, moist foods
  - Can add gravy, broth or soak in milk, juices
- Suck on ice chips or popsicles
- Choose cool, bland foods
- Avoid spicy, dry, acidic foods
- Rinse mouth with baking soda (1 Tbs/1 qt water)
- Use straws
- Avoid alcohol, tobacco
- Use cool mist humidifier



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## Taste Changes

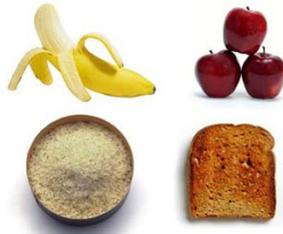
- “Shock” taste buds with salty, sweet, sour\*, vinegar tastes
- If metallic taste:
  - Use plastic silverware
  - Choose fresh/frozen over canned
  - Use other proteins in place of meats
- Choose cool or room temperature foods
- Rinse mouth with baking soda (1 Tbs/1 qt water)



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## Diarrhea

- Increase soluble fiber (Benefiber)
- Replace fluid losses, include electrolyte rich fluids
  - At LEAST 64oz non-caffeine, non-alcohol fluids + 1 cup water for each loose stool
  - Broth, coconut water, V8, G2
- Potentially aggravating:
  - Insoluble fiber
  - Dairy
  - Greasy, fatty, rich foods
  - Sorbitol and concentrated sweets



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## Constipation

- Eat regular meals throughout the day
- Maintain adequate hydration
- Movement, massage
- Hot beverages (smooth move tea)
- Fiber
- Prune juice (hot), prunes, apple/prune sauce
- Avoid caffeine



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## Fatigue

- Maintain stable blood sugars
  - Small frequent meals (every 2-3 hours)
  - Protein with each meal
  - Choose complex carbs (whole grains, whole fruit, starch vegs) over simple carbs (juice, sugar, soda, “whites”, candy, cookies, sweets)
- 64+ oz water
- Moderate physical activity (as MD approved)
- Yoga/meditation



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## Resources

- **Registered Dietitian!!!**
- American Institute for Cancer Research website
  - [www.aicr.org](http://www.aicr.org)
- Books:
  - The New American Plate Cookbook (AICR)
  - The Cancer Fighting Kitchen (Rebecca Katz)
- NCI “Eating Hints: Before, During, and After Cancer Treatment” booklet
- Smart Phone Apps: Dana-Farber Cancer Institute Nutrition

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## Questions??



THANK YOU!!

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## Bonus:

Tips for making it work!!



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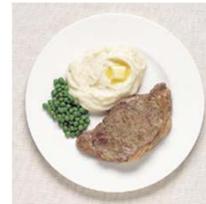
## Ideas to Get Moving

- Park further away from the door
- Use the stairs whenever possible
- Cleaning counts
  - Try putting headphones to get into the job and keep your heart rate up
- Dance!
- Get outside
  - Sled with the kids
  - Go for a walk in the woods
  - Fresh air (as little as 5 minutes/day) provides extra mood boosting benefits
- Take a break and stretch at the top of every hour



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## Take it Slow!



Traditional American Plate



Transitional Plate



New American Plate

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## Tips for a Plant-Based Diet

- **Start the day right:**  
Go veggie at breakfast



- **Join the Meatless Monday bandwagon**

- **Shop for plants first:**  
Instead of planning your menu around meat, plan it around plants!



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## Tips for a Plant-Based Diet

- **If you eat meat, use it as a seasoning:**  
Cut down on animal food intake while pushing plants by using meat as a flavoring in dishes instead of the main event.
- **Create a plant-based pantry list:**  
Many plant based foods like beans and whole grains are shelf-stable, convenient and economical!



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## Tips for a Plant-Based Diet

- **Get cooking:**  
Plan at least one night a week to try a new vegetarian recipe.

- **Keep it simple:**  
Not every meal has to involve cookbooks and cutting boards; it can be as easy as black bean burritos, vegetarian chili, or hummus pita sandwich.



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## Tips for a Plant-Based Diet

- **Try ethnic flair:**  
Some cultures know how to do vegetarian meals right!
- **Convert your favorite dishes:**  
Turn your favorite meat-based recipes veggie for an easy dinner solution.



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## Tips for a Plant-Based Diet

□ **Dust off your slow-cooker:**

Just throw in veggies, herbs, vegetable broth, canned tomatoes, whole grains and dried beans; then turn the dial off!

□ **Grab a cook book:**

There are tons of great vegetarian or plant based cookbooks like the AICR's New American Plate!

