

WELLNESS EDUCATION FOR CANCER NUTRITION



STUDY RESULTS



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OHSU
Knight Cancer
Institute

Stephanie Polizzi, MPH, RDN, CHES, FAND, DipACLM
Primary Investigator
Associate Professor of Practice
Oregon State University Extension

DISCLOSURES



WE CAN
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- Associate Professor of Practice
OSU Extension Family & Community Health
- Masters Public Health, Nutrition
- Registered Dietitian Nutritionist
- Certified Health Education Specialist
- Lifestyle Medicine Diplomate
- Certified Health and Wellness Coach
- Fellow of the Academy of Nutrition & Dietetics
- Chair of the Coos Co Food & Nutrition Group



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OVERVIEW



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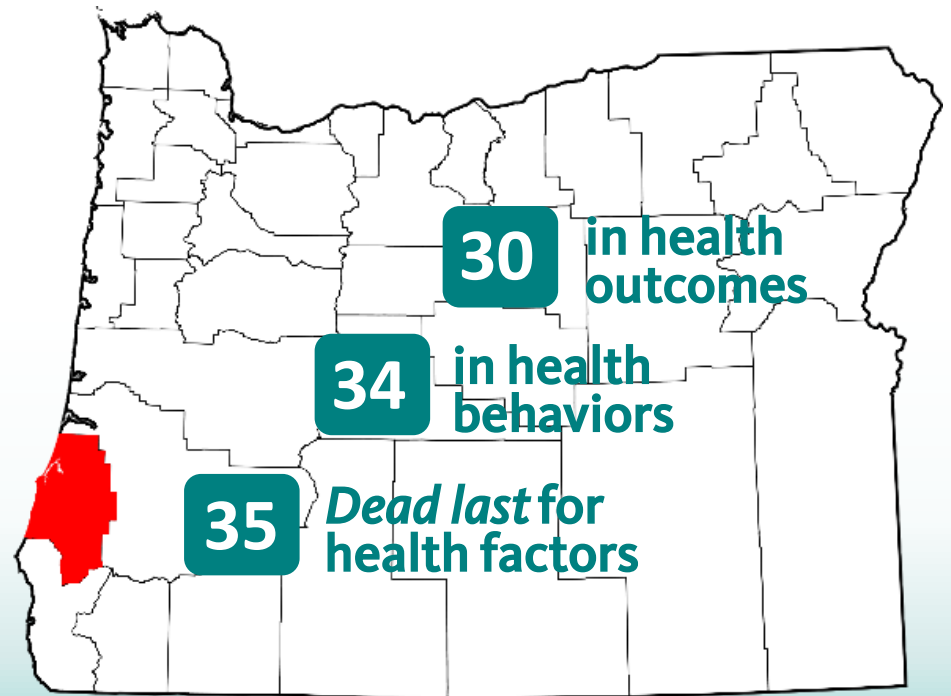
WE CAN

WELLNESS EDUCATION FOR CANCER NUTRITION

- Cancer study funded by OHSU Knight Cancer Institute Community Partnership Program

RATIONALE

- Cancer is the #1 cause of death in Coos County
- RWJF 2018 County Health Rankings



WHY NUTRITION?



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- Studies demonstrate that intake of fruits and vegetables can improve outcomes for cancer patients by reducing incidence, severity and associated morbidity¹
- High-fiber diets feed the microbiome which improves immunity, reduces toxicity of cancer treatment therapies and enhances effectiveness²
- Fiber is found only in plant foods



Cruciferous vegetables and cancer prevention, National Cancer Institute
<https://www.sciencedirect.com/science/article/pii/S153561081830120X>
<https://pubmed.ncbi.nlm.nih.gov/30213279/>



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WHY NUTRITION?



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- 2018 World Cancer Research Fund/American Institute for Cancer Research reports³
 - ✓ Alcohol and processed meat are causal factors
 - ✓ Dietary fiber protects against colorectal cancer
 - ✓ Recommend dietary patterns rich in plant foods (legumes, whole grains, pulses, vegetables and fruits)
 - ✓ Recommend modest meat, fish and dairy, intake, low alcohol and salt-preserved foods



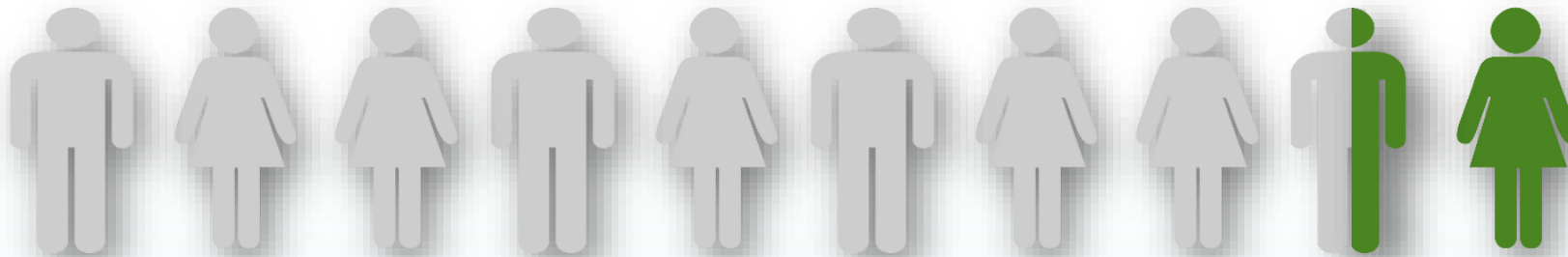
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WHY NUTRITION?



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- According to the 2018 Coos County Community Health Assessment, less than 15% of Coos County residents eat the *minimum* servings of 5 fruits and vegetables each day



- *Optimal* intake of fruits and vegetables should exceed the minimum 5 servings/day



WE CAN GOALS



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TIER 1

- Identify gaps in current practices of healthcare professionals for including nutrition therapy in treatment care plans

TIER 2

- Identify and adapt interventions to bridge gaps identified in Tier 1 surveys
- Implement and evaluate select interventions at the pilot site, the local cancer center

**To identify
and implement
intervention strategies
that link cancer patients
with plant-based
nutrition resources
during and post
treatment**



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TIER 1 METHODS



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- 1**
 - Surveyed healthcare professionals and staff from all 10 healthcare sites to determine current practices and attitudes regarding nutrition and patient care
 - ✓ 3 hospitals
 - ✓ 3 federally-qualified health centers
 - ✓ 2 health clinics
 - ✓ Public Health Department
 - ✓ CCO
 - Surveyed cancer patients and their caregivers identified through the survivorship program at Bay Area Cancer Center

- 2**
 - Held focus groups and personal follow-up sessions to identify potential strategies for bridging gaps identified in surveys



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SUGGESTED INTERVENTIONS



HEALTHCARE

- Policies and procedures to guide clinic process in nutrition assessment
- More options for patient referrals
- Written nutrition guidelines that could be handed to patients
- Brochure with reputable online and community resources

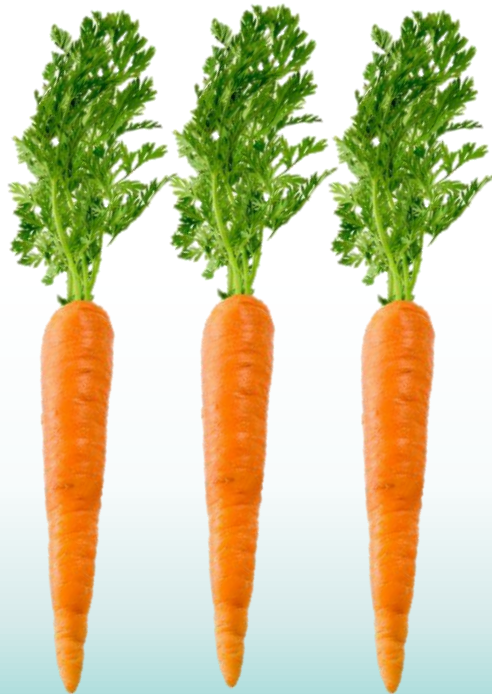
SURVIVOR/CAREGIVER

- Nutrition be prioritized by providers
- Written nutrition guidelines
- List of appropriate websites
- RD referral for consultation
- On-going support from health coaches, classes in nutrition and cooking

SELECTED INTERVENTIONS



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1. Nutrition Assessment Tool (NAT) with keys and instructions for implementing
2. Written nutrition guidelines
3. Brochure with local food resources and reputable online references



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SELECTED TIER 2 INTERVENTIONS



- NAT adapted from Rapid Eating Assessment for Patients – Shortened version (REAP-S); tested/validated
- 17 questions on one page
- 7 food groups plus meal pattern and food insecurity
- Adapted by converting bubble responses to numbers to indicate risk
- The higher the score = greater risk

<https://pubmed.ncbi.nlm.nih.gov/16966049/>

Patient Name _____ Date of Birth _____ Date _____

Nutrition Assessment Tool (NAT)

Please respond to all 17 questions. Circle the number that represents your typical day.

	In an average day how often do you:	Usually Often	Sometimes	Rarely Never	Score
Fruits & Veggies	1. Eat less than 3 servings of whole fruit? Serving = 1/2 cup cut or 1 medium whole fruit. Do not include juice.	3	2	1	
	2. Eat less than 5 servings of fresh or frozen vegetables like broccoli, green beans, cabbage, cauliflower, asparagus, sweet potato, squash, zucchini, carrot, cucumber, raw lettuce (spinach, kale, Romaine). Serving = 1/2 cup cooked or 1 cup raw	3	2	1	
Legumes	3. Eat less than 3 servings of beans (black, pinto, lima, garbanzo, etc), lentils, split peas or soy beans? Serving = 1/2 cup cooked	3	2	1	
Grains	4. Eat more than 3 servings of bread, pasta, rice, pizza dough or other foods made from refined (white) grain products? Serving = 1 slice bread, 1/2 bagel, 1/2 cup rice or pasta, 1 3" slice pizza	3	2	1	
Meat	5. Eat more than 3 ounces of meat (beef, chicken, fish, game meat)? Serving = approximately size of a deck of cards	3	2	1	
	6. Eat more than 3 eggs per week?	3	2	1	
	7. Eat lunchmeats (ham, salami, roast beef, corned beef, turkey, liverwurst), hot dogs, sausage, pepperoni or bacon?	3	2	1	
Dairy	8. Consume milk, cream, yogurt, ice cream or cheese?	3	2	1	
Fats	9. Add butter, margarine or oil to bread, potatoes, vegetables or rice before serving?	3	2	1	
	10. Eat fried foods such as burgers, pan or deep fried chicken, fried fish, pan fried noodles, French fries or tater tots?	3	2	1	
Sweets & Snacks	11. Eat sweets like cake, cookies, pastries, donuts, muffins, chocolate or other candy?	3	2	1	
	12. Eat snack foods like chips, crackers, popcorn, or nuts?	3	2	1	
	13. Drink juice, soda, fruit drink, sweet tea, punch, Kool-Aid, energy drinks or sports drinks (regular or sugar-free)?	3	2	1	
Meal Pattern	14. Purchase food from restaurants, take out, fast foods or convenience stores?	3	2	1	
	15. Follow a special diet, eat or limit certain foods for health or other reasons?	3	2	1	
Food Insecurity	16. Have trouble shopping for, or preparing food?	3	2	1	
	17. Worry if your food will run out before you have money to buy more?	3	2	1	
Total Score					

SELECTED TIER 2 INTERVENTIONS



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NAT Patient Education KEY



Question	Risk	Suggestions for improving nutrient intake
#1, 2 Fruits & Veggies	≥ 4	<ul style="list-style-type: none"> Fruits and vegetables multiple varieties of antioxidants and nutrients that offer protection from free radicals, fight illness and disease, and help the body heal Excellent source of dietary fiber (25 to 35 gm/day minimum, 60-100 gm/day optimum) Fresh or frozen whole fruits and vegetables are preferred over canned or dried Try to make at least half of your vegetables raw, like adding a salad with dark green leafy vegetables to your daily menu Choose a variety including brightly colored purple (blueberries, eggplant, purple cabbage), red (strawberries, tomatoes, red peppers), orange (cantaloupe, butternut squash, carrots), yellow (figs, pineapple, zucchini) and green (star fruit, avocado, broccoli) vegetables and fruits
#3 Legumes	≥ 2	<p>Beans and lentils are a preferred protein source over animal products because they:</p> <ul style="list-style-type: none"> Are very low in fat and contain no cholesterol Are high in soluble fiber which helps lower cholesterol, stabilize blood sugars, and contributes to feelings of fullness to aid in weight management Contain a combination of vitamins and minerals (including iron and calcium) Are budget-friendly, whether dried or canned Seek out low sodium or sodium-free canned beans. If not sodium free, rinsing beans will remove about 1/3 of the sodium Versatile and easy to use in soups or casseroles, on salads, pureed in dips or spreads Choose from beans like black, lima, pinto, kidney and soy, or lentils (green, red, black), split peas (green, yellow) Soak dried beans overnight in water (in refrigerator), then drain before boiling. This shortens cooking time and decreases likelihood of gas Note: lentils and split peas cook quickly, 15-20 minutes, and do not require prior soaking like dried beans
#4 Grains	≥ 3	<ul style="list-style-type: none"> Intact grains, those not ground into flour, should be your first choice. They are rich in nutrients and fiber Intact grains include quinoa, wild rice, amaranth, millet, cracked grains (buckwheat groats or wheat berries) and steel cut oats 100% whole grains are a second choice to intact grains (Note: USDA requires foods labeled as "whole grains" contain a minimum of 51% whole. Seek out 100% whole grains) When choosing products made from ground refined grains (bread, pasta, pastries), reduce portions or seek out 100% whole grain options
#5, 6, 7 Meat	≥ 5	<ul style="list-style-type: none"> Animal products are high in saturated fat and cholesterol. They have been linked to heart disease, type 2 diabetes and cancer Eliminate processed meats which are a group 1 carcinogen. These include hot dogs, sausage, pepperoni, lunch meats, ham, corned beef, jerky and canned meats Replace meat, poultry, fish, game meat with legumes in recipes like soups, chili, casseroles Consider the Meatless Monday campaign which recommends replacing all 3 meals at least one day per week with meatless options. As you find delicious meatless recipes, you can move toward more meatless meals on more days

NAT Patient Education KEY



Question	Risk	Counseling points
#8 Dairy	≥ 2	<ul style="list-style-type: none"> Milk and cheese are the number one source of saturated fat in the diet. Cheese is also very high in sodium Note: Low fat milk is 36% fat Dairy products contain hormones, harmful microorganisms, antibiotics, pesticides and synthetic chemicals like melamine (plastic) Dairy products contain hormones, harmful microorganisms, antibiotics, pesticides and synthetic chemicals like melamine (plastic) Alternative dairy sources include soy, almond, hemp, cashew and other nut or bean milks. Look for unsweetened varieties, calcium-enriched when possible Alternative calcium options include broccoli, tofu, almonds, quinoa, kidney beans, chia seeds and blackstrap molasses
#9, 10 Fats	≥ 4	<ul style="list-style-type: none"> Fats have more than double the calories (9) than carbohydrates (4) or proteins (4) per gram Excess fat intake, particularly saturated and trans fats, is associated with development of type 2 diabetes, heart disease, high blood pressure, cancer (breast, colon, prostate), obesity, depression, cognitive decline and infertility Lower your fat intake using whole plant foods like nuts, seeds, avocados that contain healthy unsaturated fats instead of using butter, margarine, mayo and oil Oils are not health foods and most Americans use too much. Try cooking without fat or oil by using broth, wine or water instead. Use fruit juice with vinegar as salad dressing Try mashing or pureeing beans (garbanzo, black) to make hummus spreads for sandwiches or dips for vegetables
#11, 12, 13 Sweets & Snacks	≥ 4	<ul style="list-style-type: none"> Added sugar, not found naturally in foods and added later, is associated with increased risk for inflammation related to chronic diseases like diabetes, heart disease and autoimmune disease Added sugars are found in nearly every food on the supermarket shelf. Soft drinks, yogurt, cereals, cookies, cakes, candy pastries are obvious sources of sugar. Less noted are those products like bread, soups, cured meats and ketchup. New food labels now indicate added sugars Sugar intake, even diet soda, can increase your craving for sweets. Liquid calories like sodas, sports drinks, energy drinks, sweetened coffees and shakes are a major contributor to obesity, especially for children Try cutting sugar from your recipes and using whole fruits instead. Dates, figs, prunes, raisins and other dried fruit can be rehydrated with boiling water and pureed to make a syrup which can be used in recipes Snack foods and processed foods (those in bags, cans, boxes or packages) are usually high in salt (sodium) and can also be high in fat High sodium diets also contribute to bone loss, high blood pressure and increased risk for heart disease, stroke and kidney failure Try to identify triggers for snacking and foraging behaviors (TV watching, eating out, boredom) and replace with activities like walking, singing or knitting Make healthy snacks at home using fresh fruit and vegetables (dehydrated chips, fruit leather, trail mix or popcorn)

NAT Patient Education KEY



Question	Risk	Counseling points
#14, 15 Meal Pattern	≥ 6	<p>Eating at Home is Healthier and Less Expensive</p> <ul style="list-style-type: none"> Food prepared at home has been shown to be significantly more nutritious than food away from home containing notably less saturated fat, sodium, and added sugar for home prepped meals. "For the average consumer, eating one meal away from home each week translates to roughly 2 extra pounds each year" (USDA 2010) (https://www.ers.usda.gov/webdocs/publications/46352/8169_err90_reportsummary_1.pdf?v=1735.2) The average American spends 42% of their food budget on food away from home. Eating more meals at home will lower food costs giving you more money in your pocket to be used for other things (https://www.ers.usda.gov/webdocs/publications/46352/8169_err90_reportsummary_1.pdf?v=1735.2) <p>Address Time Constraints</p> <ul style="list-style-type: none"> Meal prepping large batches of food on weekends will save you lots of time during the week, making your goals more attainable. Cooking and recipe resources available online can streamline your meal and preparation process as you provide food for your family. Ask neighbors and friends for their quick, easy, and tasty recipes to start building your collection. Having a notebook or binder with your go-to meals is extremely helpful. Meal consistency is important and that includes having three nutrient-dense meals with added snacks every day. <p>Cooking Environment/Tools/Skills</p> <ul style="list-style-type: none"> Utilizing home cooking appliances and utensils that are of good quality allows you to perform more actions in the kitchen, allowing for a wider range of nutrients to be consumed. Cooking skills can be learned quickly through videos or attending community kitchen demonstrations. Having access to healthy snacks in the fridge and cooking meals the family enjoys will help make eating at home more enjoyable.
#16, 17 Food Insecurity		<ul style="list-style-type: none"> Food insecurity is more than having access to enough calories. Adequate access to healthy foods like fruits and vegetables is a food insecurity issue too. (https://www.sciencedirect.com/science/article/pii/S1499404615007125) Food insecurity is associated with obesity and diabetes in the United States, which is largely caused by a lack of healthy foods in their diet. (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4584102/) More and more resources are recognizing the importance of widespread access to fruits & vegetables with various local food banks offering produce, SNAP credit at local farmers markets, the introduction of Veggie Rx via doctors, and more. Replacing meat products with plant-based protein options (beans, lentils, tofu, etc) can stretch the food budget further and allow you to buy more high quality food for your family.



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SELECTED TIER 2 INTERVENTIONS



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- Written nutrition guidelines
 - ✓ HEAL Well book from the American Institute of Cancer Research (AICR) was chosen for the cancer study
 - ✓ For other sites using the tools, the Kaiser Permanente Plant-Based Diet booklet is more appropriate

<https://prod-io.livestrong.org/sites/default/files/rs/images-email/pdfs/livestrong-fertility/Meals-to-Heal-Heal-Well-Nutrition-Guide.pdf>

The Plant-Based Diet

a healthier way to eat



 KAISER
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SELECTED TIER 2 INTERVENTIONS



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NUTRITION RESOURCE GUIDE

Food & Agriculture Resources
Nutrition Education
Resource Reading & Cookbooks
Trainings for Consumers & Professionals
Helpful Web Links
Health Coaches
About the WE CAN study

Brought to you by WE CAN
A grant-supported study
Wellness Education for Cancer Nutrition

Contributors:
Stephanie Polizzi, MPH, RDN, CHES, FAND, DipACLM
Renee Menkens, MS, RNC Barbara Van Slyke, RN, GSN, OCN
Mikayla Piveck, MS Jenny Pinard, BS

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- Nutrition Resource Guide
 - ✓ Food resources
 - ✓ Agricultural resources
 - ✓ Nutrition education
 - ✓ Books & cookbooks
 - ✓ Trainings
 - ✓ Websites
 - ✓ Health Coaches
 - ✓ Getting started in plant-based dietary pattern



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EVALUATION



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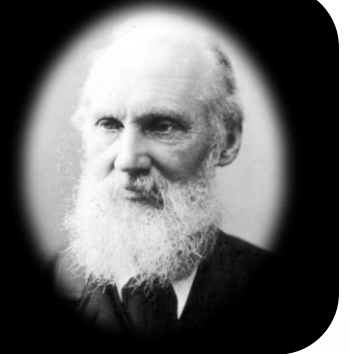
- Healthcare staff and patients rated tools easy to use and helpful for making nutrition decisions or communicating with patients (92-100% agreement)
- Patients showed less confidence (77%) that the tools would open conversations with their providers

HC Comments

- Patient key tells you what you need to do next
- Helps me to refer them to appropriate staff
- Lots of examples and follow-up questions in counseling patients
- Very easy to follow and understand

*If you do not measure it,
you cannot improve it.*

William Thompson, 1st Baron Kelvin



Pt Comments

- Nice to see resource guide available
- I haven't had any discussion with my provider at this point



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TIER 2 IMPACTS



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- BACC requested RD FTE at the center be increased from 0.4 FTE to 0.8 FTE
- Cancer center's annual required CME presentation was focused on nutrition
- Health Coach Certification Training was held in Coos County in 2020
- Coast Community Health Center is implementing NAT and using the Kaiser Permanente Plant Based Diet booklet



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TIER 2 IMPACTS



NUTRITION RESOURCE GUIDE

Food & Agriculture Resources
Nutrition Education
Resource Reading & Cookbooks
Trainings for Consumers & Professionals
Helpful Web Links
Health Coaches
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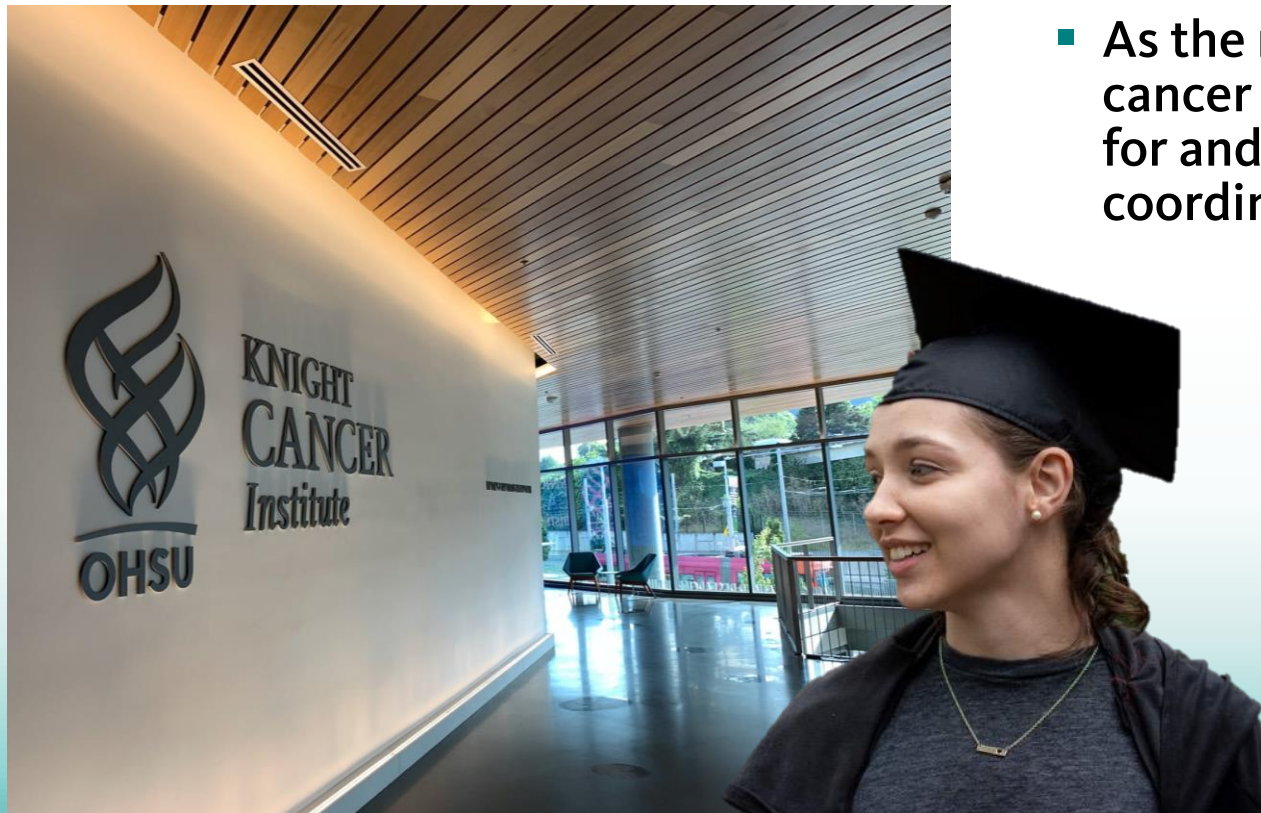
- Additional funding was secured to print over 1000 Nutrition Resources Guides which were distributed to government and healthcare sites across Coos/Curry counties
- Digital Booklets distributed to >70 Coos and Curry partners
- The advantage to digital distribution is that resources include hot links for direct access online
- More than half of this booklet includes links to national resources



TIER 2 IMPACTS



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- As the result of participating in this cancer study, Jenny Pinard, BS, applied for and was hired as a clinical research coordinator with Knight Cancer Institute
 - She began Jul 1, 2021



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Institute



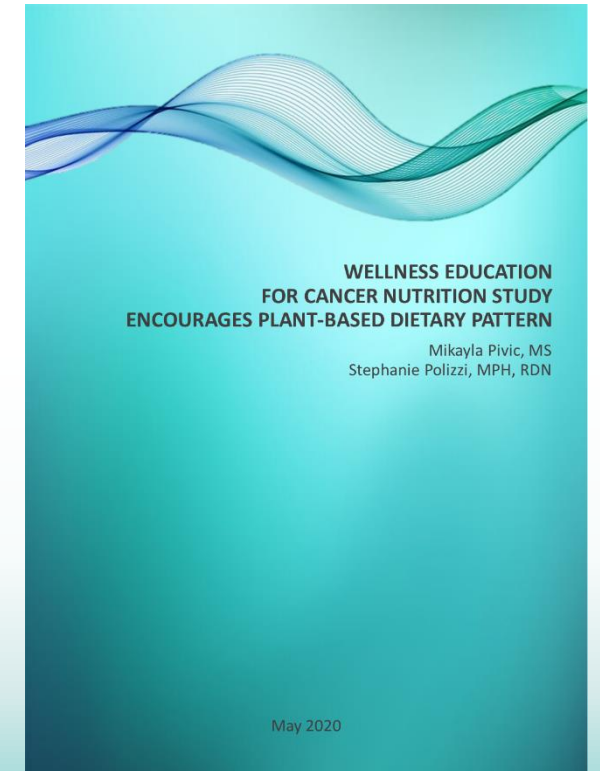
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TIER 2 IMPACTS



- Mikayla Pivec's Master's thesis was centered on the WE CAN study and Plant-Based nutrition
- Entitled *WE CAN Study Encourages Plant-Based Dietary Pattern*, this comprehensive paper highlights the benefits of PB diets to prevent, arrest and reverse chronic disease
- Mikayla's paper is posted here:

<https://extension.oregonstate.edu/coos/healthy-families-communities>



BUILDING COMMUNITY CAPACITY



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- This study may at first seem clinical, but it is a community study from which we created community nutrition resources
- For prevention or treatment of any diet-related disease state
- NAT, key and guides can be used at any site by anyone with or without training/expertise, with any adult/young adult population teens through seniors

For example:

- Hospitals, clinics, private practice
- Government agencies (WIC, DHS, SNAP)
- Church groups, TOPS, WW, students
- Families or friends
- Individuals



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THANK YOU!



WE CAN
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<https://extension.oregonstate.edu/coos/healthy-families-communities>

**"Let food be
thy medicine
and medicine
be thy food."**

~Hippocrates



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