

**ECHO IDAHO**

Cancer Survivorship

# Rebuilding Health with Cancer Rehabilitation Services

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None of the planners or presenters for this educational activity have relevant financial relationship(s) to disclose with ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.



**University of Idaho**  
School of Health and Medical  
Professions



# Learning Objectives

1. Understand the nutritional implications of cancer survivorship

2. Identify resources for finding a dietitian and other nutrition services

3. Understand the scope and breadth of rehab

4. Knowing when and why to refer

# What is supportive oncology?



- Specialized providers who offer services and wrap around supports to assist patients with processing, adjusting to, and recovering from their cancer and associated treatments

# Good nutrition is foundational.



Manage treatment side effects



Preserve and regain energy & strength



Reduce the risk of cancer recurrence & prevent secondary cancers



Reducing anxiety & depression

# Common Cancer Treatment Options

**Surgery** – Diagnose, stage, treat, extract solid tumors

- Increases the body's metabolic demands for energy and protein to facilitate tissue repair

**Chemotherapy** – kills fast-growing cancer cells, shrinks tumors, aims to stop cancer from spreading throughout the body

- Causes rapid cell turnover issues (mucositis, stomatitis), nausea, vomiting, diarrhea, and frequently changes in taste and smell (e.g., a metallic taste)

**Radiation** – high-energy particles or waves damage cancer cells and prevent them from dividing and growing

- Nutritional issues related to radiation depend on the site--head/neck radiation affects taste, saliva production, and swallowing (dysphagia); abdominal radiation often causes diarrhea and malabsorption.

**Immunotherapy** – treats cancer by empowering the body's own immune system to recognize, target, and destroy cancer cells

- Complications include gastrointestinal inflammation, fatigue, nausea, etc.

# Managing Common Side Effects of Cancer Treatment with Nutrition

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**Lymphedema** – low-sodium, whole foods

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**Nausea/Vomiting** – BRAT diet (bland, odorless), small & frequent meals, sipping fluids

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**Appetite Changes** – low-volume, nutrient-dense meals to prevent weight loss

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**Taste & Smell Changes** – optimize flavors and textures (sweet, spicy, tangy, crunchy, etc.)

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**Swallowing difficulty** – modify food textures and thickness

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**Constipation, Diarrhea** – adjust fiber intake to improve stool quality, benefit gut motility, and balance gut microbiome

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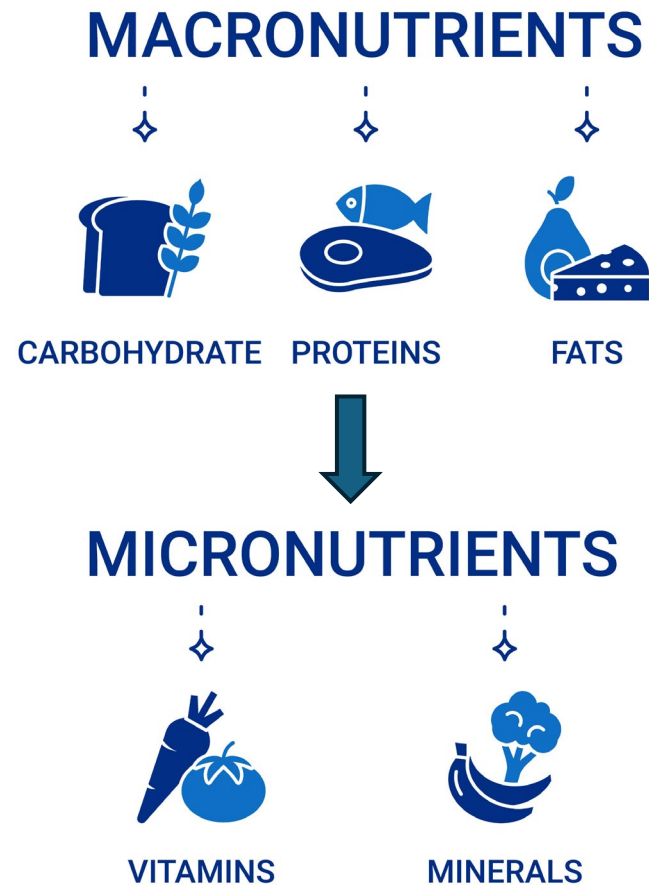
**Dehydration** – replace lost fluids and electrolytes through increased water intake and/or oral rehydration solutions

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**Fatigue** – stabilize blood sugar levels and balance diet with complex carbs, unsaturated fats, and lean protein

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# Nutrition to Preserve & Regain Energy and Strength in Cancer Survivorship



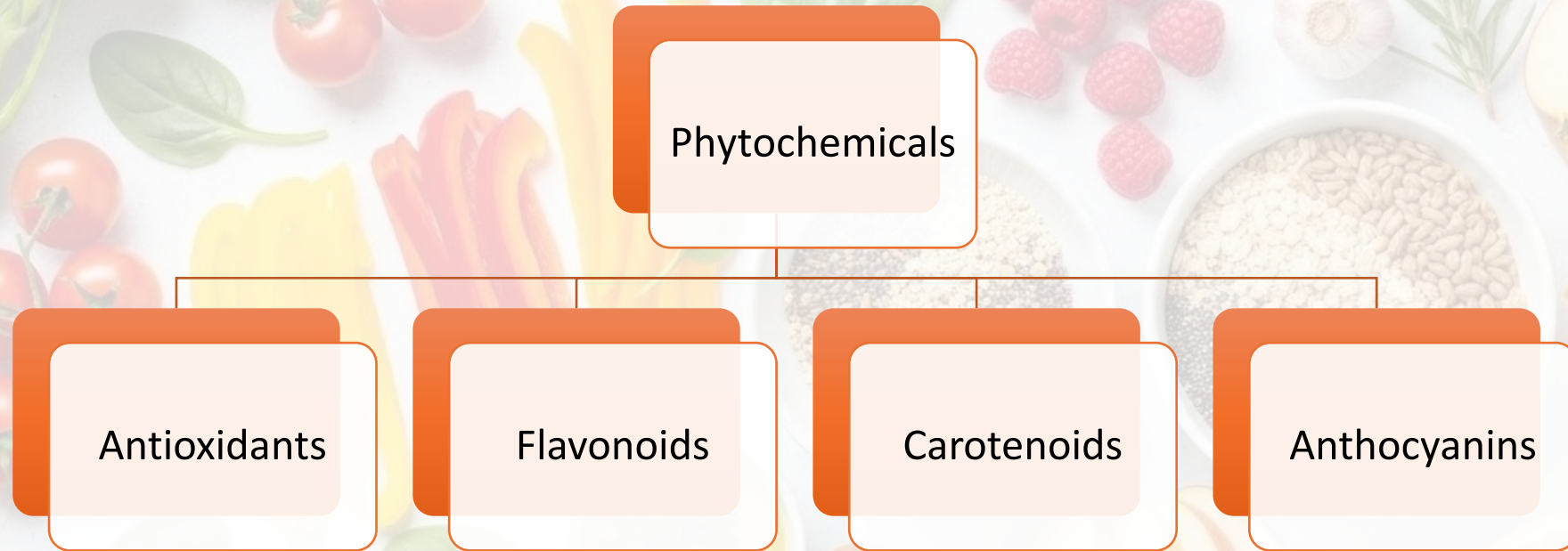
# Mediterranean Diet = Anti-Inflammatory

## Key Components include:

- **High omega-3 fatty acid intake**
  - Salmon, chia seeds, walnuts, avocado, olive oil
- **Optimal fiber intake (20-30 grams/day)**
  - Sweet potatoes, green peas, beans, apples, kiwi, berries, oatmeal, whole grains, etc.
- **Low saturated fat (no more than 8-10%)**
  - Less pork and beef, more chicken, turkey and some plant-based protein sources; also less high-fat dairy
- **Low glycemic-index (less refined carbohydrates)**
  - Less processed foods—potato chips, white rice, cookies, candies, juice, soda pop
- **High fruit & vegetable intake**
  - Vary the color (Eat the rainbow!)



# Reducing the Risk of Cancer Recurrence and Preventing Secondary Cancers



# Nutrition to Reduce Anxiety & Depression and Improve Mental Health



Anxiety and depression can decrease appetite, resulting in a lower intake of essential nutrients that the body needs. Studies also reveal that individuals experiencing anxiety and depression may need increased amounts of certain nutrients to counteract the chronic stress their bodies are experiencing.

- **Omega 3 fatty acids** are known to reduce inflammation, which helps to increase the body's ability to use serotonin and dopamine.
- **Antioxidants** have been shown to increase availability of serotonin and norepinephrine.
- **Vitamin D** supports mental health by aiding in serotonin synthesis, reducing neuroinflammation, and acting as a neuroprotective agent.
- **Magnesium** helps reduce anxiety by calming the nervous system, balancing neurotransmitters, and decreasing stress hormones, like cortisol.
- **Vitamin B6** reduces anxiety primarily by increasing the body's production of gamma-aminobutyric acid (GABA), an inhibitory neurotransmitter that calms the nervous system and reduces brain cell overactivity.

# Resources to Find a Dietitian

The screenshot displays the 'Find a Nutrition Expert' search page on the eatright.org website. At the top left is the logo for 'eatright.org Academy of Nutrition and Dietetics'. Navigation links include 'About RDNs and NDTRs', 'Become an RDN', and a prominent red button labeled 'Find a Nutrition Expert'. A secondary navigation bar contains categories like 'Food', 'Health', 'Fitness', 'Recipes', 'Kids', 'Seniors', 'Men', and 'Women', along with a search bar. The main heading 'Find a Nutrition Expert' features a red location pin icon. Below it, a text prompt invites users to search by location, specialty, language, or insurance. The search filters include 'In-Person' and 'Telehealth' service options, a location input field with '83854', and expandable sections for 'Specialty', 'Insurance/Payment', and 'Languages'. A 'Find Now' button is positioned to the right of the location field. Additional controls include 'Sort by Distance', a 'List/Map' toggle, and a 'Per page 12' dropdown. The page indicates '12 Results Showing 1-12'.

# Other Areas of Nutrition to Address

- Budget
- Family Dynamics & Schedule
- Food prep/Cooking skills
- Energy levels
- Grocery Shopping



## **Supplemental Nutrition Assistance Program (SNAP)**

[fns.usda.gov/snap](https://fns.usda.gov/snap) | 1-800-221-5689

## **Meals on Wheels America**

[mealsonwheelsamerica.org](https://mealsonwheelsamerica.org) | 1-888-998-6325

## **American Cancer Society Patient Programs and Services**

[cancer.org/support-programs-and-services](https://cancer.org/support-programs-and-services) | 1-800-227-2345

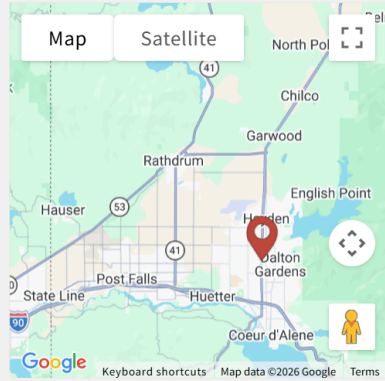
post falls, id (83854) / food / food delivery (7)

Sort by RELEVANCE CLOSEST

Personal Filters

Program Filters

Income Eligibility



Notice out-of-date information or see a program you work for? Click **Suggest** to share an update or claim your program listing to get access to free tools and data.

**Home Delivered Meals** ✓

by Area Agency on Aging: Northern Idaho

Reviewed on: 11/20/2025

Area Agency on Aging of North Idaho (AAANI) Nutrition Program works in partnership with local agencies to provide Home Delivered Meals/ Meals on Wheels. Our Nutrition Program believes in...

Main Services: food delivery , meals

Serving: seniors, all disabilities, limited mobility

**Next Steps:**  
Call 800-786-5536.  
6.82 miles ( serves your local area)  
402 West Canfield Avenue, Coeur d'Alene, ID 83815  
**Closed Now** : See open hours

MORE INFO SAVE SHARE NOTES SUGGEST SEE NEXT STEPS

**Once a Month Volunteer Prepared Meal Delivery** ✓

by Lasagna Love

Reviewed on: 11/19/2025

Lasagna Love provides volunteer prepared home delivered meals to families in need throughout the

**Next Steps:**

https://cancer.findhelp.com/

# What is Cancer Rehab?

- **Physical Therapy**
- **Occupational Therapy**
- **Speech Therapy**



*Oncology rehabilitation is the specialized management of musculoskeletal, neuromuscular, integumentary, and cardiovascular/pulmonary needs for people living with and beyond cancer. It addresses treatment side effects—like fatigue, neuropathy, and lymphedema—using tailored exercise and rehabilitation to restore function throughout all cancer stages.*

**Inpatient Acute Care**



**Inpatient Rehab**

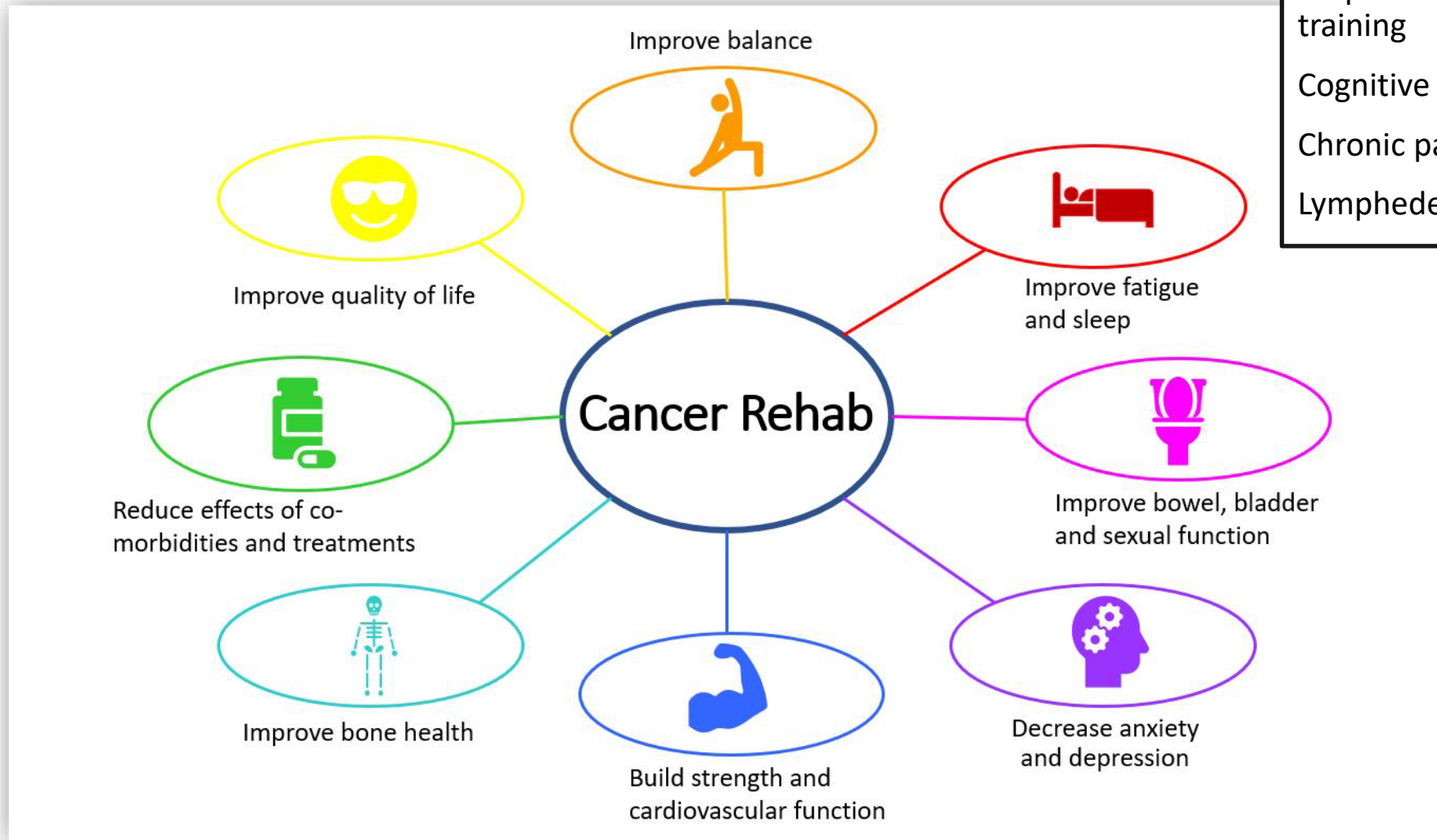


**Home Health Care**



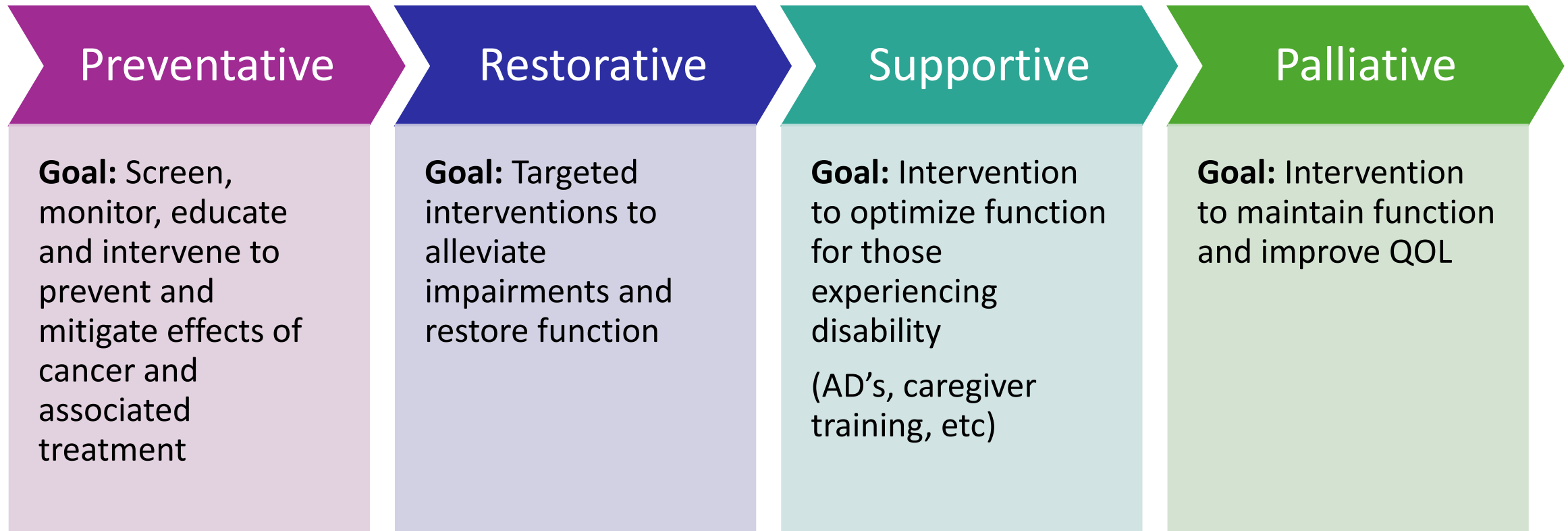
**Outpatient Therapy**

# What else can rehab do?

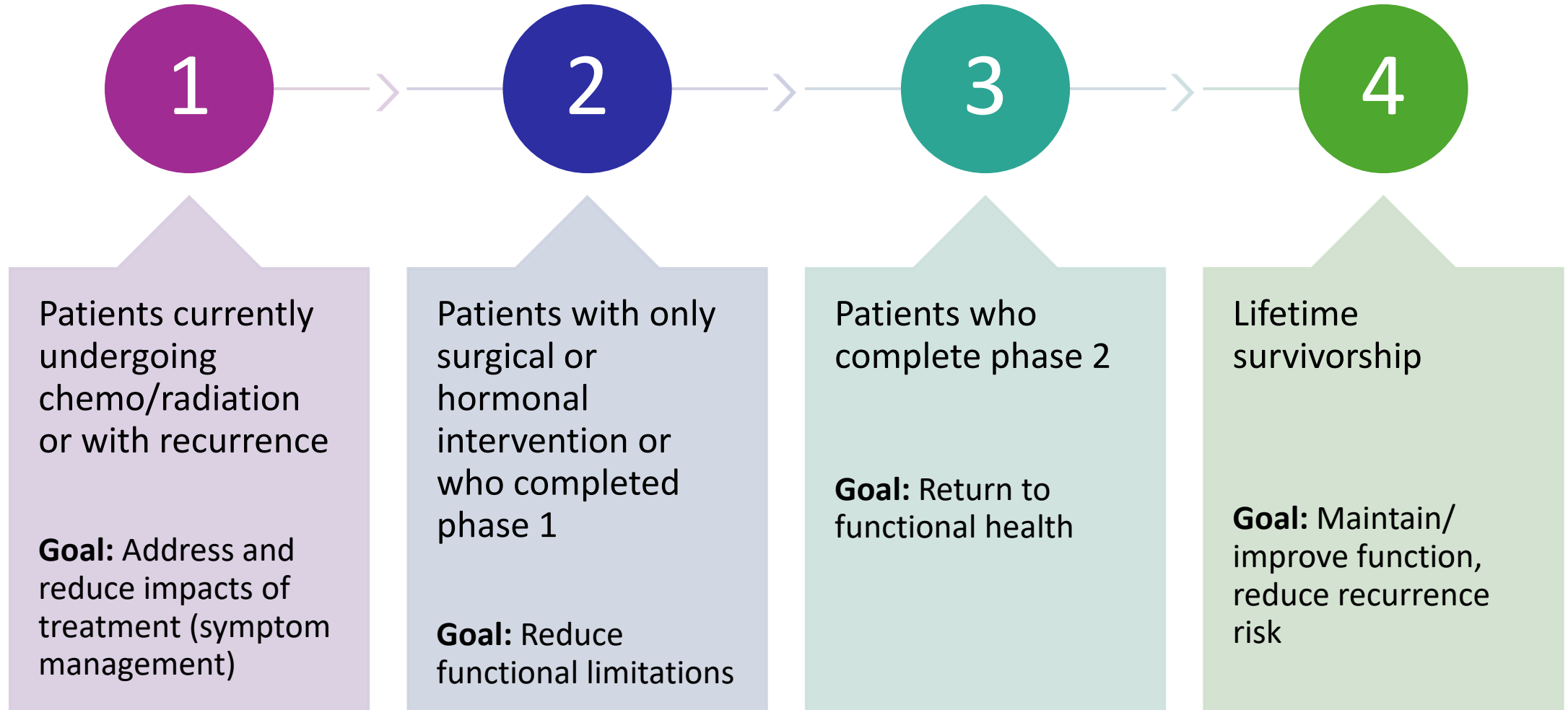


- Difficulty with speech or swallowing
- Help to complete ADL's or caregiver training
- Cognitive function
- Chronic pain management
- Lymphedema Management

# Dietz Model: Stages of Emphasis for Rehab Treatments



# Rehab Goals Based on Treatment Phase



# What else can exercise do?

## NCCN Activity Recommendations:

- 150 min moderate intensity cardiovascular activity weekly
- 2x/week strength training

### Prevention of 7 common cancers

- Up to **40% risk reduction** in bladder, breast, colon, endometrial, esophageal, kidney and stomach cancers

### Survival of 3 common cancers

- Up to **23% decrease in risk of recurrence** in hormone driven breast, colon and prostate cancers

### Strong evidence:

- CIPN, Cancer related fatigue, quality of life, physical function, anxiety/depression, lymphedema, bone health

### Moderate evidence

- Sleep

# Changes in Muscle Strength



- Causes
  - Decreased activation
  - Loss of motor unit function
  - Increased protein uptake
- Chemo and systemic steroids have greatest direct impact
- Biopsy demonstrated loss of Type IIb muscle fibers
- Weakness in proximal muscle groups



# Cardiovascular Conditioning

- + Variable % loss in VO<sub>2</sub>max patient to patient
- + Causes
  - + Decreased strength and mitochondrial count
  - + Inactivity/disuse
  - + Cardiopulmonary toxicities/direct organ affects
  - + Metabolic load
  - + Surgery

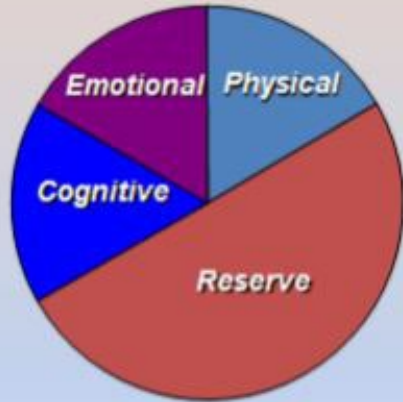
# Neural Changes



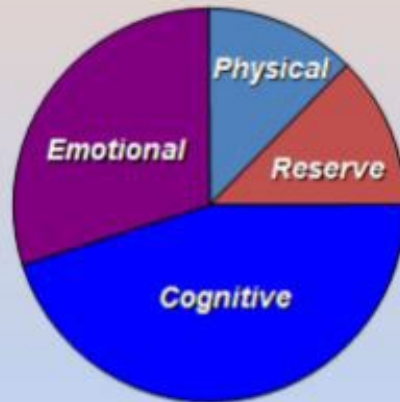
- Chemo brain
- s/p radiation, resection or chemo
- Neuropathies – Platins, taxanes, vinblastine, surgeries
- Recovery at 1mm/month with intact pathway
- SLOW – Spontaneous recovery up to 1 year
- Need 3 things for best function
  - Space – no constrictions
  - Movement - ~13% stretch along pathway
  - Blood flow – Constant circulation in extremities

# Energy Allocation Model

**BEFORE**



**NOW**



## Overload

### PHYSICAL

Fatigue  
Pain  
Decreased Immunity  
Headache

### COGNITIVE

Shut Down  
Disorganization  
Decreased Filtering  
Confusion  
Word finding Trouble

### EMOTIONAL

Irritability  
Frustration  
Anxiety  
Short Fuse  
Crying Easily  
Mood Swings

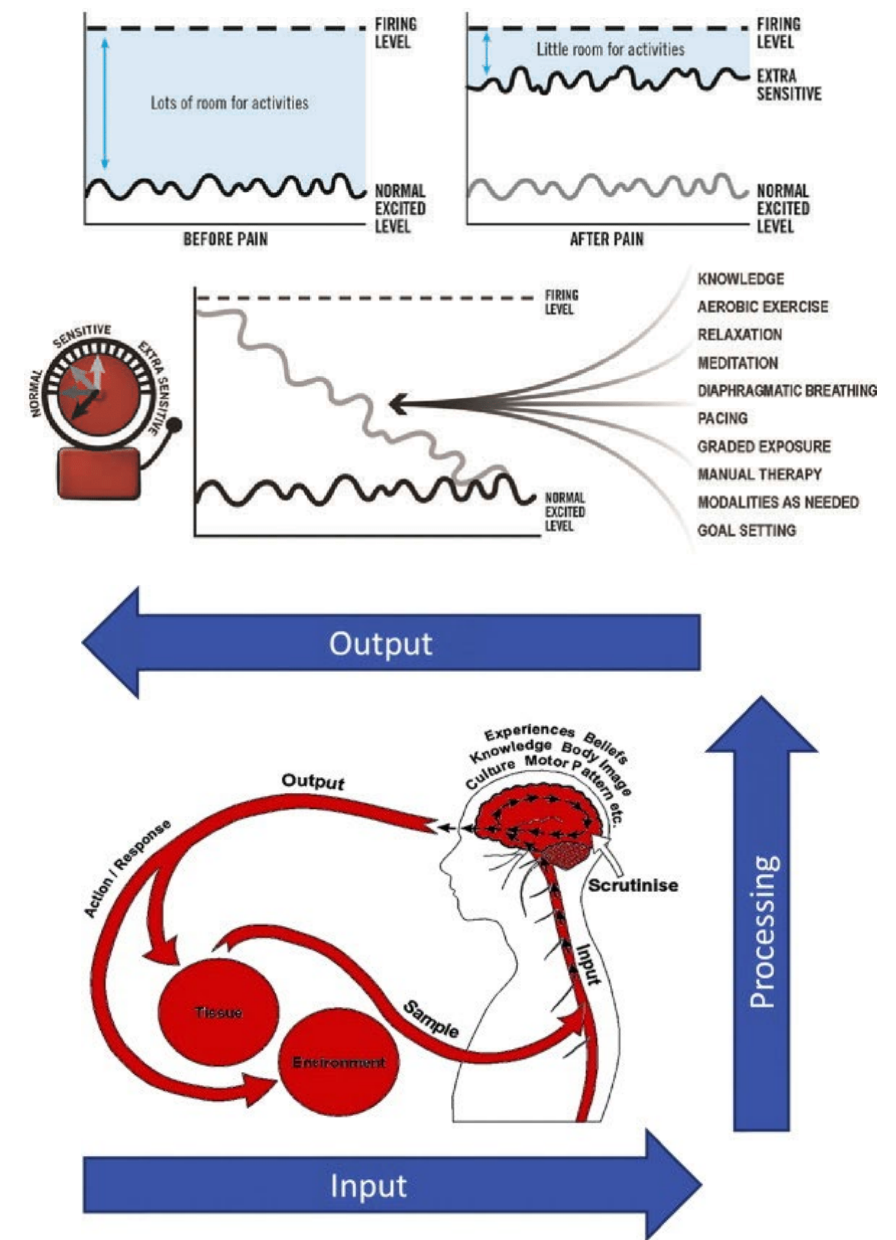
# Fatigue and Energy Management

- Prevalence
  - 80-98% of patients undergoing treatment
  - >40% note fatigue as a primary complaint at diagnosis
- Persistent sense of fatigue unchanged by rest
- Exercise and rehab are the only evidence-based interventions
- Impact on return to work (Chemo Brain)
- Recovery
  - Total treatment time x 2 = Return to baseline

# Pain Neuroscience Education & Fear Avoidance



**Fear-Avoidance Model of Chronic Pain**  
 Adapted from "Fear avoidance and its consequences in musculoskeletal pain," by J. W. Vlaeyen and S. J. Linton, 2000, Pain, 85, p. 329



# Exercise Recommendation for People With Bone Metastases: Expert Consensus for Health Care Providers and Exercise Professionals

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## Overarching Recommendation:

Regular exercise can be done safely and has the potential to maintain or improve physical function and health-related quality of life in people with bone metastases.

- 14% MELANOMA
- 65-75% BREAST AND PROSTATE CANCER
- 90% MULTIPLE MYELOMA
  - (Beaton et al.)
- INCREASED LIFE EXPECTANCY = INCREASED LIKELIHOOD OF BONE METS
  - 1.5 MIL PATIENTS IN 2018 WORLD-WIDE
  - PROSTATE & BREAST CANCERS HAVE LONGEST MEAN SURVIVAL RATE
    - (Sheill et al.)

# Lymphedema Management

- Lymphedema diagnosis and treatment is not black and white
- Early intervention!!
  - Easier for the patient
  - Better outcomes
  - Lower costs
- Greater length of time from treatment = greater risk

## Breast Cancer

- Sentinel node biopsy (<4 LN): 5%
- Sentinel node + radiation: 15% (AMAROS study)
- Axillary dissection: 25% (AMAROS study)
- Axillary dissection + nodal radiation: 31%
- Axillary dissection + nodal radiation+ AC/taxane chemotherapy->40%



# Sample Case

- 51 y/o F who works as a bedside RN, diagnosed with primary squamous cell carcinoma of oral cavity (HCC), Stage IVB (pT3, pN3b, cM0). Lives alone, 2 adult children, one is local. Lives in a 2-floor home with bedroom and bath on the 2<sup>nd</sup> floor. Has 3 dogs.
- PMH: Hypertension with current Lisinopril rx, no other significant findings. No history of routine activity. BMI 29.7. Former smoker, Cigarettes: 1996 – 2014, continues to vape and use marijuana recreationally. Reports drinking ~4 drinks of alcohol weekly
- Planned treatment: S/p right partial glossectomy, right modified radical neck dissection, left radial forearm free flap, full thickness skin graft, complex vestibuloplasty, and tracheostomy. Concurrent chemo/radiation (6 weeks B neck and oral cavity with single agent cisplatin). PEG tube to be placed next week, dental visit scheduled.

# Key Points

- Supportive services, including RD's and Rehab, are an integral part of patient care from diagnosis through the lifespan
- Cancer is an inherently metabolic disease directly impacting nutrient utilization and physical/mental capacity and function
  - Increased utilization can improve treatment tolerance, decrease side effects and speed recovery
- Aligning services, interventions and treatments to patient goals and wishes is critical and the shared responsibility of all providers

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