



# **SELF-CARE: EXERCISE, SUPPLEMENTS, DIET AND FATIGUE**

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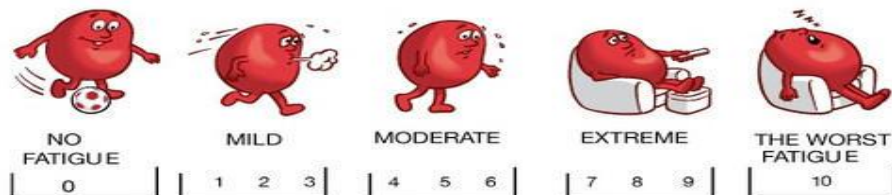
**Bing Center for Waldenstrom's Macroglobulinemia**

YOU CAN'T TALK ABOUT WM WITHOUT  
TALKING ABOUT BEING TIRED.....



# FATIGUE AND WM

- **Anemia-related fatigue** is a frequent presenting symptom and is the most common reason to initiate treatment
  - Bone marrow infiltration by LPL cells
  - Hepcidin blocks the absorption of iron
  - Hemolysis caused by cold agglutinins
- Like pain, fatigue is a subjective symptom.



Source: 4.bp.blogspot.com



# CANCER RELATED FATIGUE

- As defined by the NCCN:
  - “distressing, persistent, subjective sense of physical, emotional and/or cognitive tiredness or exhaustion related to cancer or cancer treatment that is not proportional to recent activity and that interferes with usual function”
    - Symptom most reported to interfere with ADL's
    - Lasts longer than treatment related side effects



# FATIGUE WORK-UP: IT ISN'T ALWAYS WM...

- Anemia: iron, vitamin deficiencies (i.e. B12, folate), GI bleeding
- Thyroid function
- Sleep apnea
- Sleep hygiene
  - Sleep environment, avoid stimulants (alcohol, cigarettes, caffeine), avoid eating heavy meals, exercise, avoid napping, electronics
- Depression/anxiety
- Pain
- Low testosterone (men)
- Medications: beta-blockers, narcotics, anti-depressants and anti-anxiety, antihistamines



# ELECTRONICS AND SLEEP: MORE ON SLEEP HYGIENE

- Electronics emit blue spectrum light, which disrupts the production of melatonin in your brain
- Turn off your electronics with screens one hour before bedtime to allow your brain to generate your natural sleep hormones



# NCCN GUIDELINES: FATIGUE MANAGEMENT

- General strategies
  - Conserve energy
  - Pace yourself
  - ***Limit naps to < 1 hour***
- Physical Activity
  - ***Start and maintain an exercise program***
- Pharmacologic
  - Stimulants, treat pain, treat depression, improve sleep hygiene, sleep medication



# Looking at the Literature



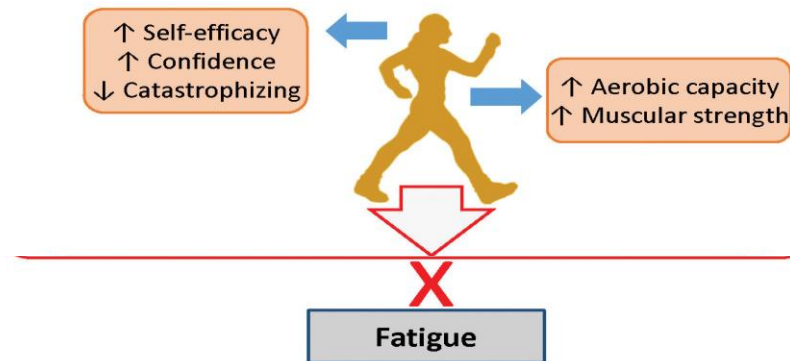


# EXERCISE, INFLAMMATION, AND FATIGUE IN CANCER SURVIVORS

EMILY C.P. LAVOY, CHRISTOPHER P. FAGUNDES, AND ROBERT DANTZER

## ○ ***Exercise training interventions are among most successful at treating cancer related fatigue***

- Exercise reduces inflammation by increasing anti-inflammatory cytokines and reducing pro-inflammatory cytokines.
- Exercise improves psychological well being and physical fitness
- Exercise has protective effects on brain function



# Exercise improves quality of life in patients with cancer: A systematic review and meta-analysis of randomised controlled trials

- Exercise has a direct positive impact on QOL in patients with cancer and is a clinically relevant treatment.
- Improvement in fatigue
  - Improvement in physical functioning
- Why not prescribe it?

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REFILL: 0 1 2 3 4 5



# AEROBIC PHYSICAL EXERCISE FOR ADULT PATIENTS WITH HAEMATOLOGICAL MALIGNANCIES

NILS BERGENTHAL, ANDREA WILL, FIONA STRECKMANN, KLAUS-DIETER WOLKEWITZ, INA MONSEF, ANDREAS ENGERT, THOMAS ELTER, NICOLE SKOETZ

- ***Four RCT's analyzing exercise interventions on patients with hematologic malignancies.***
  - Physical exercise can improve
    - QOL
    - Physical functioning
    - Depression
    - Fatigue



# ASSOCIATIONS OF SEDENTARY TIME AND PATTERNS OF SEDENTARY TIME ACCUMULATION WITH HEALTH-RELATED QUALITY OF LIFE IN COLORECTAL CANCER SURVIVORS

ELINE H VAN ROEKEL ET AL

## ○ ***Greater sedentary time was associated with***

- Significantly lower physical functioning and more disability
- Greater fatigue
- More depression
- Lower global QOL



# PHYSICAL ACTIVITY RECOMMENDATIONS

- At least **30 minutes** of moderate intensity activity at least **5 days/week** or **75 minutes** of vigorous-intensity aerobic physical activity (i.e. jogging, swimming laps) **3 days/week**
- Muscle strengthening exercises 2 or more days/week
  - Must take into consideration other health problems.
    - Referral to PT may be appropriate.
    - Build up your exercise time gradually



# EXAMPLES OF PHYSICAL ACTIVITY

- Brisk walking or running
- Treadmill, elliptical, stationary bike
- Biking
- Swimming
- Yoga
- Go to the gym....or not.
- Do what you like to do.
- Invite a friend to join you.
- Work up to it. ***Start slow and build your endurance.***



# YOGA DESERVES A SPECIAL MENTION

- Yoga helps change people at every level
  - Enhances resilience and improves mind-body awareness
  - Reduces the stress response





# YOGA IN ADULT CANCER: AN EXPLORATORY, QUALITATIVE ANALYSIS OF THE PATIENT EXPERIENCE

MARCY MCCALL, SALLY THORNE, ALISON WARD AND CARL HENEGHAN

- ***“I just feel much calmer and accepting.”***
- ***“When my body was aching, I would do yoga and it would help.”***
- ***“I certainly feel stronger in my body...more solid.”***
- ***“I’m actively involved in my own health and healing, not waiting for some savior on the outside to make me better.”***





# EFFECTS OF YOGA ON PSYCHOLOGICAL HEALTH, QUALITY OF LIFE, AND PHYSICAL HEALTH OF PATIENTS WITH CANCER: A META-ANALYSIS

KUAN-YIN LIN, YU-TING HU, KING-JEN CHANG, HEUI-FEN LIN, AND JAU-YIH TSAUO

- Yoga showed significant improvement in
  - Anxiety
  - Depression
  - Distress
  - Stress
- ***Yoga may have long-term psychological benefits for patients with cancer***



# PHYSICAL AND PSYCHOSOCIAL BENEFITS OF YOGA IN CANCER PATIENTS AND SURVIVORS, A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

LAURIEN M BUFFART JANNIQUE GZ VAN UFFELEN, INGRID I RIPHAGEN, JOHANNES BRUG, WILLEM VAN MECHELEN, WENDY J BROWN AND MAI JM CHINAPAW

- 13 RCT's. Yoga demonstrated the following benefits:
  - Substantial reductions in stress, anxiety and depression
  - Moderate reductions in fatigue, improved QOL, emotional and social function



# NUTRITION MATTERS

- Good nutrition is essential for overall health and wellness
  - Weight management
  - Supports immune system
  - Boosts energy levels
- Obesity is associated with increased risk for disease
  - Small changes make a difference: 5-10% weight loss can improve health parameters



# NUTRITION AND CANCER



- There is no special cancer diet
- ***Eat an overall healthy dietary pattern that emphasizes:***
  - fruits and vegetables
  - whole grains
  - low-fat dairy products
  - skinless poultry and fish
  - nuts and legumes
  - vegetable oils
- ***Limit*** saturated fat, *trans* fat, sodium, red meat, sweets and sugary beverages
  - If you choose to eat red meat, compare labels and select the leanest cuts available
- Cook real food

# HEALTHY EATING PLATE

Use healthy oils (like olive and canola oil) for cooking, on salad, and at the table. Limit butter. Avoid trans fat.



The more veggies – and the greater the variety – the better. Potatoes and French fries don't count.

Eat plenty of fruits of all colors.



**STAY ACTIVE!**

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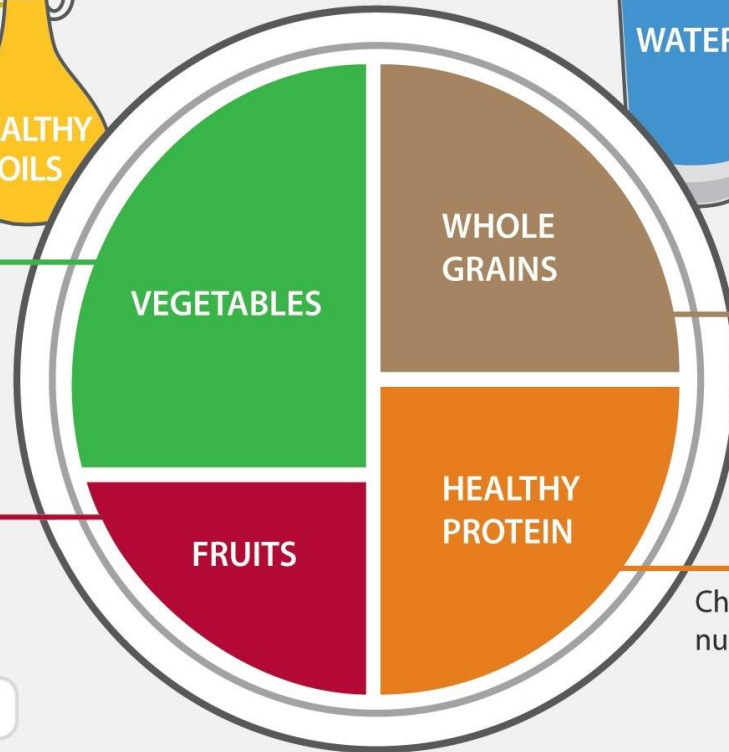
Harvard T.H. Chan School of Public Health  
The Nutrition Source  
[www.hsph.harvard.edu/nutritionsource](http://www.hsph.harvard.edu/nutritionsource)



Drink water, tea, or coffee (with little or no sugar). Limit milk/dairy (1-2 servings/day) and juice (1 small glass/day). Avoid sugary drinks.

Eat a variety of whole grains (like whole-wheat bread, whole-grain pasta, and brown rice). Limit refined grains (like white rice and white bread).

Choose fish, poultry, beans, and nuts; limit red meat and cheese; avoid bacon, cold cuts, and other processed meats.



Harvard Medical School  
Harvard Health Publications  
[www.health.harvard.edu](http://www.health.harvard.edu)

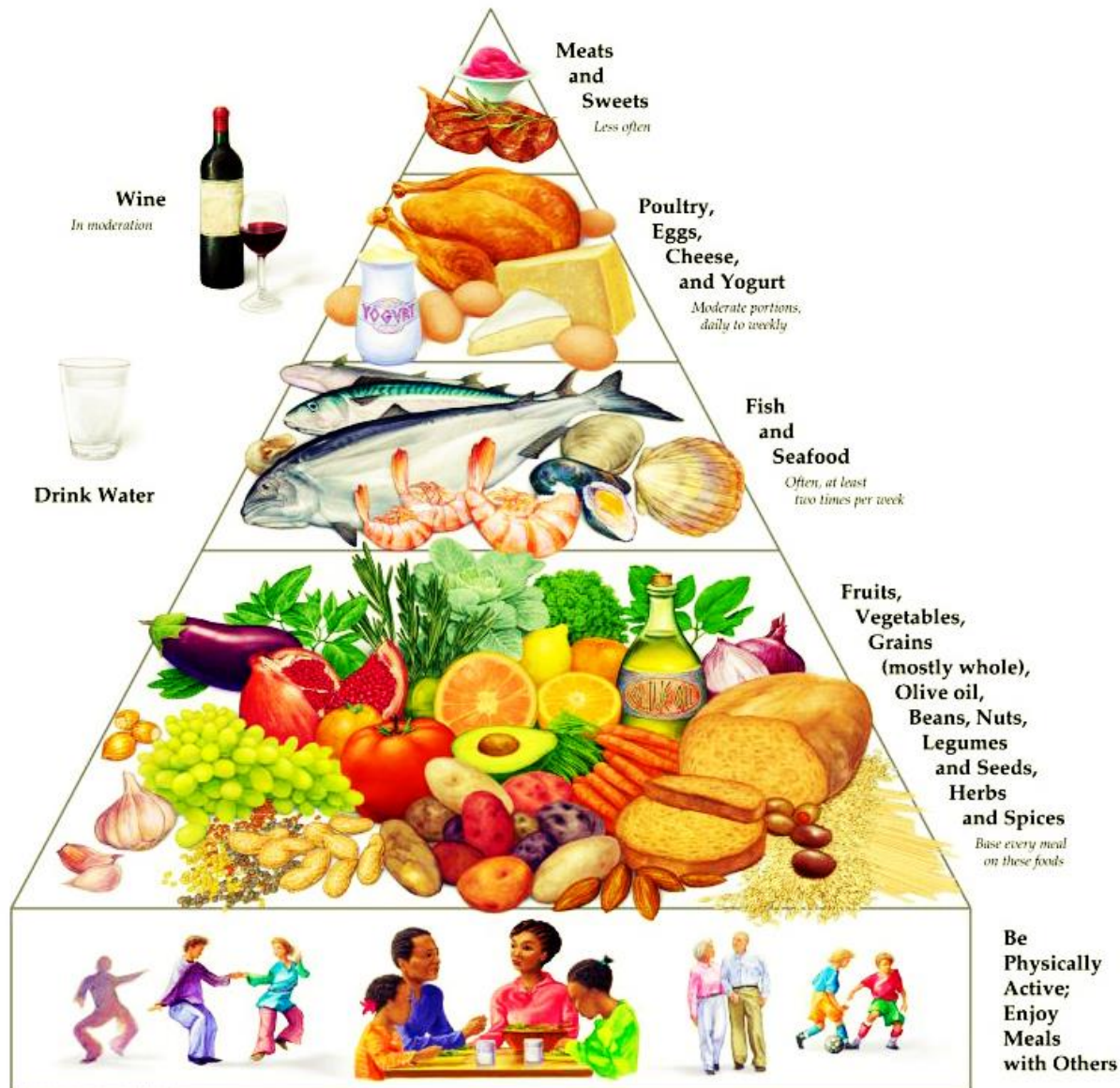


# SUGGESTED SERVINGS FROM EACH FOOD GROUP

- Grains: 6-8 servings
  - At least half should be whole-grain
- Vegetables: 4 -5servings
  - Eat a variety of colors and types
- Fruits: 4-5 servings
- Dairy (low fat or fat free): 2-3 servings
- Lean meats, poultry and seafood: 3-6 oz/day
- Fats and oils: 2-3 servings/day
- Nuts, seeds and legumes: 3-5 servings/week
- Sweets and added sugars: < 5/week



# THE MEDITERRANEAN DIET PYRAMID





- DFCI Nutrition Support:
  - DFCI website: Ask the Nutritionist
  - Ask the Nutritionist: Recipes for Fighting Cancer award winning app
  - You tube videos: Eating Well During Cancer series





# SUPPLEMENTS



- ***Vitamin D:*** promotes calcium absorption in the gut; needed for bone growth and remodeling
  - Deficiency is common and correction may improve fatigue
  - Levels should be checked
  - Sources: fortified foods, sun exposure, supplements
  - Daily recommended supplement is 1,000-2,000 IU/day
- ***Calcium:*** required for vascular contraction and vasodilation, muscle function, nerve transmission, intracellular signaling.
  - Milk, dairy and cheese are rich sources
  - Recommended intake for adults is 1,000 mg



# SUPPLEMENTS FOR PERIPHERAL NEUROPATHY

- ***Alpha lipoic acid***: potent antioxidant
  - 200 mg-500 mg twice/day
- ***Acetyl L-Carnitine***: amino acid
  - Can take up to 2,000 mg/day
  - Combination pill of alpha lipoic acid and acetyl L- carnitine exists
- ***Fish oils***: omega-3 fatty acids may have neuroprotective effects and can be used in place of amino acids
  - Fish oils should not be used with Ibrutinib



# SUPPLEMENTS FOR MUSCLE CRAMPING

## ○ **MAGNESIUM**

- 250mg twice a day
- May cause diarrhea in larger doses

## ○ **POTASSIUM**

- Bananas, Oranges, Apple cider vinegar

## ○ **CALCIUM**

- TUMS, milk, cheese, ice cream

## ○ **TONIC WATER (*has Quinine in it*)**

- Drink one glass in evening and any other time cramping occurs



## FINALLY, A WORD ON MEDITATION

- Meditation is a ***mind and body practice*** that has a long history of use for increasing calmness and physical relaxation, improving psychological balance, coping with illness, and enhancing overall health and well-being.
- Four elements of meditation:
  - Quiet location with as few distractions as possible
  - Specific, comfortable posture
  - Focus of attention
  - An open attitude (letting distractions come and go naturally without judging them).



# MEDITATION WEBSITE/APPS

- 5 minute breathing meditation
  - <http://www.mindful.org/a-five-minute-breathing-meditation/>
- Phone apps for meditation anytime
  - Omvana
  - The mindfulness app
  - Headspace



## TAKE HOME POINTS

- Determining the source of the fatigue is important before deciding on treatment
- Exercise should be used as a therapeutic intervention for cancer related fatigue
- A healthy diet is plant based and rich in a variety of fruits and vegetables.
- Supplements should not be used without consulting your oncologist
- Meditation is a useful tool to reduce stress and improve fatigue



# IN THANKS

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