



## Managing Fatigue after Transplant: Creating Strength through Recovery

Celebrating a Second Chance at Life  
Survivorship Symposium

April 30 - May 6, 2022



**Sandra Mitchell PhD,  
CRNP, FAAN**  
National Cancer Institute

## Evidence-Based Management of Fatigue Following Stem Cell Transplantation: Creating Strength Through Recovery

Sandra A. Mitchell, PhD, CRNP, FAAN

Senior Scientist; Healthcare Delivery Research Program  
Division of Cancer Control and Population Sciences; National Cancer Institute



Sandra.Mitchell@nih.gov  
May 2022



The views expressed in this presentation do not necessarily represent the views of the NIH, DHHS, or any other government agency or official. I have no financial conflicts to disclose.

## Fatigue

- Most common symptom experienced by individuals coping with cancer treatment and recovery – 70-95%
- Also experienced by caregivers and family members
- Associated with physical, psychological, social and spiritual distress
  - Decreased physical activity
  - Changes in mood
  - Sleep disturbances
  - Social role function
  - Questions about quality of life





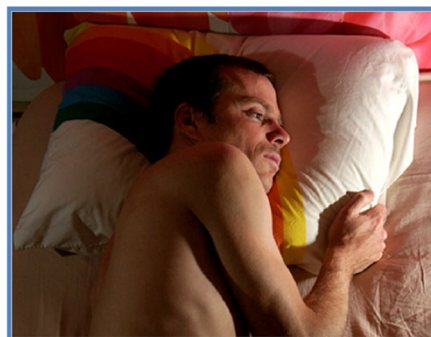
## Fatigue

- 35% incidence of severe fatigue long after transplant, excluding patients with severe GVHD or anemia
- Directly associated with disease and therapy
- A persistent, subjective sense of tiredness that interferes with usual functioning
- It often persists over time and can interfere with usual activities
- May be more severe and distressing than the fatigue of everyday life, and rest does not always relieve it



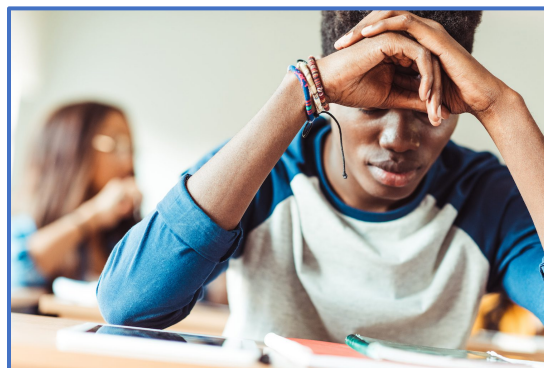
## Contributors to Fatigue after Transplant

- Causes of post-transplant fatigue are multifactorial
  - Anemia
  - Uncontrolled symptoms: Depression, pain, insomnia
  - Infection
  - Malnutrition or dehydration
  - Cardiopulmonary deconditioning
  - Immune dysfunction
  - Medications that act on the brain
- Fatigue usually has several different causes
  - Treatment plan should be individualized



## Misconceptions

- Fatigue is an inevitable side effect
- I just shouldn't be a complainer
- Something I just have to accept
- There are no effective treatments



NIH NATIONAL CANCER INSTITUTE

## Facts

- Fatigue is common but not inevitable
- Fatigue limits the resumption of an exercise program, and can interfere with family, social, and vocational function
- Treatment of fatigue, like other symptoms, is critical to full recovery and quality of life
- We have effective strategies that can reduce or eliminate fatigue

NIH NATIONAL CANCER INSTITUTE

## Some ways that fatigue is experienced

- Diminished energy and increased need for rest
- Generalized weakness or limb heaviness
- Decreased motivation
- Insomnia or sleeping too much
- Sleep non-restorative (wake up tired)
- Marked emotional reactivity to fatigue (sadness, frustration, irritability)
- Difficulty completing daily tasks
- Problems with short-term memory
- Malaise (feeling of weakness) lasting several hours after exercise or exertion



## Fatigue

- Can be a frustrating reminder of what you have been through and what you are coping with
- May make future seem uncertain
- Unpredictability of fatigue can make symptom difficult to manage



## Evaluation of Fatigue

- When did it start?
- How long has it lasted?
- Has it changed over time?
- How did it start?
- What makes it better?
- What makes it worse?
- Do you have other symptoms with the fatigue?
- Does it interfere with daily activities? How much?



 NATIONAL CANCER INSTITUTE

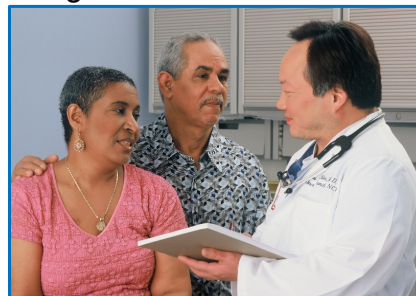
## Mechanisms of Fatigue

- Build up of cellular waste products
- Release of cytokines as a result of inflammatory processes
- Increased energy needs
- Sleep disturbances
- Depression
- Stress
- Anemia
- Loss of muscle mass
- Cardiopulmonary dysfunction
- Thyroid dysfunction
- Adrenal insufficiency
- Infection
- Electrolyte disturbances and dehydration
- Unmanaged symptoms
- Medication side effects

 NATIONAL CANCER INSTITUTE

## Talking with Your Health Care Team

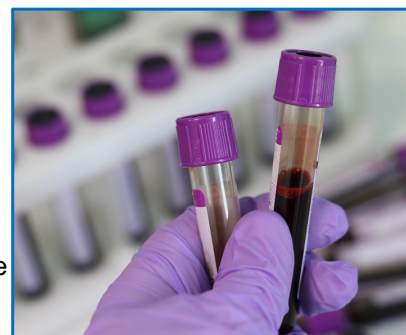
- Presence of symptoms that may be associated with fatigue:
  - Depression
  - Anxiety
  - Difficulty sleeping
  - Pain
  - Frequent night-time urination
  - Peripheral neuropathy (pins and needles)
  - Muscle cramping, constipation
  - Reduced physical functional capacity (strength, endurance)
- Medication side effects, including prescription and over-the-counter
- Nutrition, including hydration
- Exercise plan



 NATIONAL CANCER INSTITUTE

## Anemia, Hypothyroidism, Adrenal Insufficiency

- **Anemia**
  - Tested with a simple blood test
  - Hemoglobin <10; consider benefits/risks of erythropoiesis stimulating agents
- **Hypothyroidism**
  - Common in post-transplant patients and those who have received certain kind of cancer treatments (e.g., total body irradiation, sunitinib)
  - Tested with a simple blood test
  - Compensate with thyroid hormone
- **Adrenal Insufficiency**
  - May occur after prolonged treatment with steroids
  - Tested with a simple blood test
  - Compensate with replacement using low-dose hydrocortisone



 NATIONAL CANCER INSTITUTE



## Rest and Sleep

- Rest and good quality sleep are important, but don't over do it
- Too much rest can decrease your energy
- Nap only for an hour or less during the day so that you sleep well at night
- Go to bed and get up at the same time each day, regardless of the amount of sleep the night before

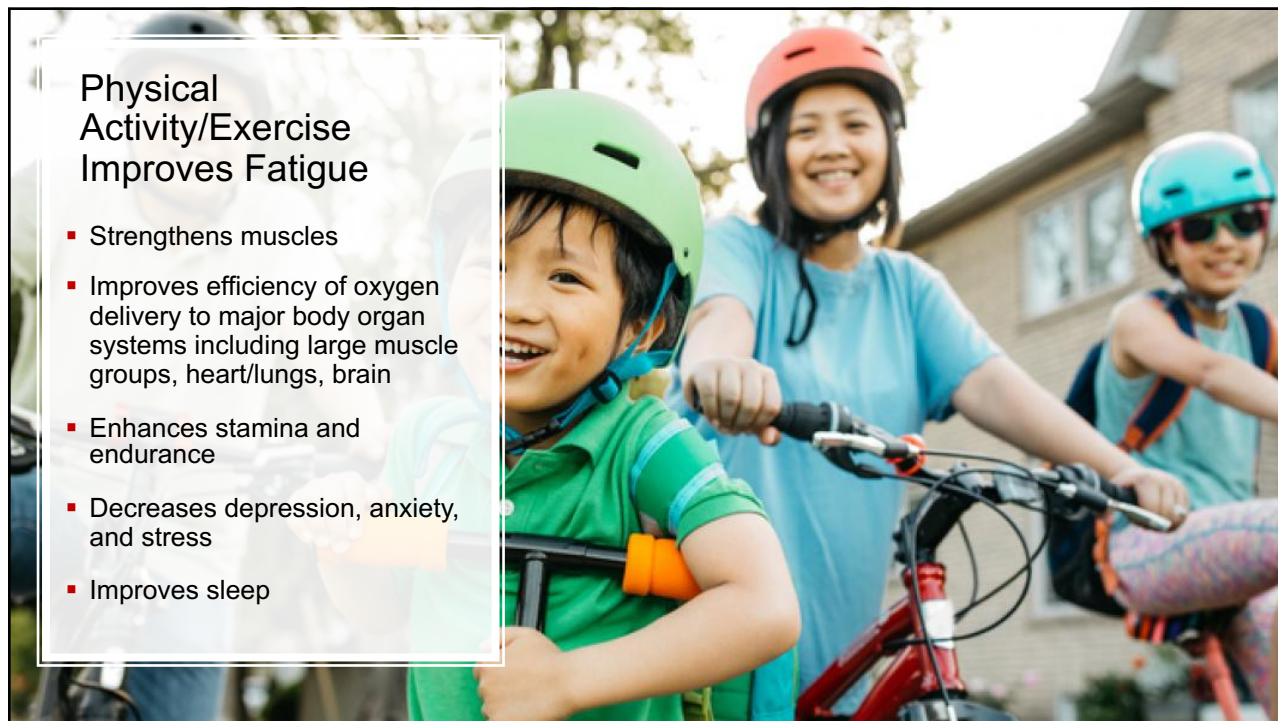


## Rest and Sleep

- Cognitive-behavioral strategies can *significantly* improve sleep quality
  - Go to [www.cbtforinsomnia.com](http://www.cbtforinsomnia.com) for more details
- Consult with a sleep medicine clinic if you think you have a sleep disorder such as
  - Restless legs syndrome
  - Sleep apnea
  - For more information about these issues view recording of symposium workshop on sleep problems after transplant (Sue and team to insert URL)

### Physical Activity/Exercise Improves Fatigue

- Strengthens muscles
- Improves efficiency of oxygen delivery to major body organ systems including large muscle groups, heart/lungs, brain
- Enhances stamina and endurance
- Decreases depression, anxiety, and stress
- Improves sleep



## Physical Activity/Exercise

- Stay active
- Exercise several times each day for short intervals (even 5 or 10 minutes several times per day is beneficial)
- Stretching, light weights, and walking/bicycling
- Set short-term goals (eg. 10 minutes, 2 blocks) and increase goals gradually
- Try to exercise with a partner
- Consider yoga, tai chi, or pilates to enhance flexibility, balance, strength and well-being
- Consider referral to physical therapy or an exercise professional



## Nutrition

- Drink liquids - dehydration can make you feel fatigued
- Carbohydrates and proteins are important
- Consume sufficient calories
- Talk with your team about appetite loss, mouth pain, difficulty swallowing or other symptoms that may affect nutritional/fluid intake
- Supplements may be helpful if you are losing weight or muscle mass, and you can't consume a usual diet rich in fruits, vegetables, lean meat/fish
- Consult with a dietician



## Energy Conservation

- Sit down to bathe or to prepare meals
- Organize time to avoid rushing
- Save necessary activities for time of day when you have more energy
- Pace yourself through the day; consider if the activity can be broken up into parts interspersed with rest
- Delegate tasks to others
- Forego activities that don't need to be done daily, such as making beds



## Energy Conservation

- Shopping
  - Organize list by aisle
  - Shop at less busy times
- Meal Preparation
  - Use convenience foods (the food preparation outlets are a great option for homemade meals prepared with fresh ingredients)
  - Keep healthy snacks/small meals (e.g. boiled eggs, cottage cheese, high-protein yogurt)
  - Prepare double portions and freeze half



## Energy Conservation

- Child Care
  - Plan activities to allow for sitting down (eg. computer games, drawing pictures, games)
- Workplace
  - Alternate sedentary tasks with more demanding tasks
  - Plan workload to take advantage of peak energy times
- Leisure
  - Balance activity and rest (don't get overtired)





## Energy Restoration

- Do activities that you enjoy and make you feel good
- Cognitive fatigue can be eased, and attention restored through activities such as
  - Bird watching, gardening
  - Spending time in nature
  - Listening to music
  - Visiting with friends and family
  - Looking at pleasant pictures
- Consider meditation, mindfulness-based stress reduction, relaxation/imagery
- Remain open to friendships and emotional support



## Improving Mental Concentration/Attention

- Meet with friends
- Get involved with group discussions
- Avoid spending all day home alone
- Write lists
- Organize yourself with a routine (e.g., keep your keys in the same place, etc.)
- Talk to your physician or nurse about:
  - Medications that may be impairing your attention span
  - Medications that may be interfering with sleep (e.g., corticosteroids, diuretics)
  - Medications that can be prescribed that may help improve your attention and mental concentration







## Other Potential Treatments for Fatigue that Can Be Explored with Your Healthcare Team

- Wisconsin Ginseng (if approved by your care team)
- Mindfulness-based stress reduction, progressive muscle relaxation, imagery
- Antidepressants (e.g., donepezil, bupropion, venlafaxine, sertraline)
- Psychostimulants (e.g. methylphenidate)
- Wakefulness-promoting agents (e.g., modafinil, armodafinil)
- Omega-3 fatty acid supplementation (e.g., fish oil supplements)
- Bright light therapy
- Massage, reflexology, acupuncture
- Structured rehabilitation

## Talk to Your Employer about Fatigue

- Fatigue may interfere with ability to work
- May decrease hours and responsibilities, discontinue work or request disability leave
  - Set realistic goals
  - Request a change or modification in your job responsibilities
  - Communicate openly and provide employer and co-workers with information about fatigue
  - Don't feel embarrassed to ask for help
  - Be sure to eat regularly, drink fluids and exercise moderately



## Talk to Your Employer about Fatigue

- Know the provisions of the Americans with Disabilities Act and the Family Medical Leave Act so that you understand your rights as an employee
- Familiarize yourself with your company's policies regarding sick leave, disability, flexible scheduling and work retraining
- Good source of information about employment rights and cancer:
  - <https://www.cancerandcareers.org/>



**BMT** *infonet.org*  
BLOOD & MARROW TRANSPLANT INFORMATION NETWORK  
SURVIVORSHIP SYMPOSIUM

## Questions?



**Sandra Mitchell PhD,  
CRNP, FAAN**

Celebrating a Second Chance at Life Survivorship Symposium 2022

[bmtinfonet.org](https://bmtinfonet.org) ♦ [help@bmtinfonet.org](mailto:help@bmtinfonet.org) ♦ 847-433-3313



Let Us Know How BMT InfoNet Can Help YOU!



Visit our website: [bmtinfonet.org](http://bmtinfonet.org)

Email us: [help@bmtinfonet.org](mailto:help@bmtinfonet.org)

Give us call: 888-597-7674

We're here to help every step of the way!