

CANCER ASSOCIATED FATIGUE & PAIN

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OBJECTIVES

- Recognize the multi-factorial pain response cancer survivors may exhibit
- Understand how to recognize cancer related fatigue
- Identify appropriate outcome measures for assessing fall risk
- Discuss the role of physical therapy along the continuum of care for cancer survivors

ACUTE PAIN

- "An unpleasant sensory and emotional experience associated with actual or potential tissue damage . . ."
- <https://www.iasp-pain.org/Taxonomy>
- Not every person with cancer will experience pain (procedures, surgical, pharmacological, radiation, etc.)
- Often severe and usually lasts < 3 months.
- Medications are often prescribed at this stage.
- <https://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/pain/facts-about-cancer-pain.html>

CHRONIC PAIN

- Lasts beyond the point of injury to where tissue is likely healed (> 3months)
- <https://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/pain/facts-about-cancer-pain.html>
- Neuropathic, phantom, persistent
- Massage, acupuncture, meditation, yoga, distractive techniques

PAIN THEORY: NEUROMATRIX.

MELZACK, R. & KATZ, J. PAIN. COGN SCI VOLUME 4, JANUARY/FEBRUARY 2013.

- Chronic pain is not a warning to prevent disease, it is the disease itself, where neural mechanisms have gone awry.
- Neuromatrix theory of pain proposes that pain is a multidimensional experience produced by characteristic neuro-signature patterns of nerve impulses generated by a widely distributed neural network in the brain."
- Neuromatrix is our brain's neural network which includes an image of our body (homunculus) upon which impulses, genetics, psychological profile, gate theory, personal physiology, homeostatic regulation and past experiences combine for the unique and individual experience of pain.

PAIN SCALES

- Brief Pain Inventory (Short Form)
- International Association for the Study of Pain handout (IASP)
- MD Anderson Symptom Inventory (MDASI)

SURVIVOR FALL RISK

- Age
- CIPN
- Pain
- Depression
- Incontinence
- Impaired cognition
- Vestibular dysfunction
- Impaired vision
- Use of assistive devices
- Impaired physical performance
- Environmental issues
- **Screen for fall risk in all setting**

FALLS/BALANCE OUTCOME TOOLS

- TUG: older adult who takes > 12 seconds to complete is at high risk for falls (CDC 2016)
- Mini Best Test: 14 items, scored from 0-2, max score is 28

CANCER SURVIVORSHIP & EXERCISE

- Must take into account:
 - Fit into ongoing treatment regimen
 - Ongoing medical comorbidities
 - Pain
 - Testing: prescription exercise or modification
 - Patient goals
 - Extent of CRF
 - Support
 - Reality check

FUNDAMENTALS OF EXERCISE PRESCRIPTION

- FITT principle: frequency, intensity, time (duration) and type.
- Exercise must be at a level to bring about a physiological change in muscular strength and endurance.
- One type of program does not fit everyone. It must be unique.
- Accomplished in different ways but it must take into account: heart rate, BP, heart rate reserve, safety, flexibility, balance, strength, etc.
- ACSM guidelines are excellent for setting up a program based off of these parameters.

EXERCISE TOLERANCE OUTCOME ASSESSMENT

- 2 minute walk
- 6 minute walk
- Stair Climbing Test
- 30 second sit to stand
- Quick DASH

CLINICAL PRESENTATION CIPN

- Pain, burning, tingling, loss of feeling
- Trouble using fingers to p/u items, poor balance, tripping or stumbling
- Sensitivity to heat/cold/touch/pressure
- Shrinking muscles, weakness, trouble swallowing, constipation, BP changes, decreased reflexes
- <https://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/peripheral-neuropathy/symptoms-of-cipn.html>
- Accessed October 2, 2017.

RECOVERY FROM CIPN

- Lack of evidence for complete resolution
- There is a plethora of information on different homeopathic/naturopathic methods, traditional medicine, chiropractic, infectious disease, toxicity, etc.
- Some regeneration is found which is dependent on many factors
- General rule: 1 inch per month for regeneration under **optimal healing** conditions may take place

TREATMENT FOR CIPN

- Treatment is supportive in nature: muscle strengthening, falls prevention, gait training, orthoses, desensitization, good nutrition, hydration, sleep, pain management, energy conservation for CRF and adaptive equipment.
- Few things will help the nerve regenerate faster other than providing optimal healing conditions during and after chemotherapy is discontinued.

"CHEMOBRAIN"

- Higher order mental functioning affected
- May happen, may not happen, may be transient
- What is a clinically significant decline, a statistically significant decline?
- May be dependent on subject age
- Decline in cognitive functions: Concentration, reduced capacity to multitask, forgetfulness, may take longer to process information. Executive function may be impacted as well.

SURVIVORSHIP

- National Children Cancer Society: "An individual is considered a cancer survivor **from the time of diagnosis**, through the balance of his or her life. Family members, friends, and caregivers are also impacted by the survivorship experience and are therefore included in this definition."

SURVIVORSHIP

- **Late Effects— begin/recognized long after treatment ends...**
 - Lymphedema
 - Secondary cancer
 - Cognitive changes
 - Cardiovascular changes
 - Osteoporosis

CHILDHOOD SURVIVORS

- 13 years after treatment: median age 22
 - 58% had at least 1 chronic medical problem
 - 32% had at least 2 chronic medical problem
- Psychosocial issues
 - Cognitive & Learning disabilities
 - Anxiety/depression
 - Employment issues

• Skinner. Lancet Oncol. 2006;7:489-98

EXERCISE PRECAUTIONS

- Oncology patients tend to be older:
 - Mean age at diagnosis is 56 YOA
 - Balance
 - Fall risk
 - Strength (UE and LE)
 - Abnormal gait patterns
 - Cardiovascular status
 - Psychological status

(Yancik, 2001)

Oncology patients are complex

