



Cancer Psychiatry

STRENGTHENING LINKAGES FAMILY PHYSICIAN WORKSHOP

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APRIL 23, 2022

Faculty/Presenter Disclosure

- ▶ **Faculty: George Francis (Clinical Assistant Professor, University of Calgary)**
- ▶ **Relationships with commercial interests:**
 - ▶ **None**

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Learning Objectives

01

Define 4 stages of cancer rehabilitation

02

List 5 issues that cancer physiatry can address/help manage

03

Know how to refer to the rehabilitation oncology program

About myself



Born and raised in
Calgary



Completed B.Sc
at UofC



Medical school at
UofA



Residency at UofA



Fellowship at
MDACC in Texas



Returned here
and been working
here since 2017

What is Physiatry?



A medical specialty also known as Physical Medicine and Rehabilitation

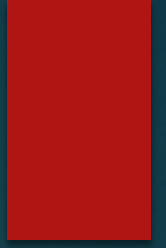


Known as Physiatrists or Rehabilitation Specialists



Physiatry deals with bone, muscle, tendon and nerve issues that impair function

What is cancer rehabilitation?



What is cancer rehabilitation?

“Cancer rehabilitation aims to allow the patient to achieve optimal physical, social, physiological and vocational functioning within the limits imposed by the disease and its treatment.”

- Cromes GJ: Implementation of interdisciplinary cancer rehabilitation. Rehabil Counseling Bull 21:230-237, 1978

- 1) Systemic:
 - a. **DECONDITIONING/CACHEXIA/ASTHENIA**
 - b. **CANCER RELATED FATIGUE**
- 2) Neurologic:
 - a. Brain Injury from brain mass
 - i. Todd's Paralysis
 - b. **Spinal Cord Injury due to spinal mass and/or compression from vertebral fracture**
 - i. Lower motor neuron – e.g. sacrectomy
 - ii. Upper motor neuron
 - c. **Central nervous system radiation necrosis**
 - d. Radiculopathy due to tumor invasion
 - e. Plexopathy due to radiation or tumor invasion
 - f. **CHEMOTHERAPY INDUCED PERIPHERAL NEUROPATHY**
 - g. **Neurogenic Bowel**
 - h. **Neurogenic Bladder**
 - i. **Spasticity**
 - j. Cognitive Deficits including **CHEMO-BRAIN**
 - k. Autonomic Dysfunction including Orthostatic Hypotension
 - l. Dysphagia
 - m. Dysphonia
 - n. Paraneoplastic syndromes
 - i. Neuropathy
 - ii. Cerebellar Dysfunction

- 1) Musculoskeletal:
 - a. **POST-MASTECTOMY RECONSTRUCTION SYNDROME**
 - b. **RADIATION FIBROSIS SYNDROME**
 - c. Myofascial Pain including trigger points
 - d. **LYMPHEDEMA**
 - e. Peripheral edema due to other conditions (e.g. bone marrow transplant inflammation, hypoalbuminemia)
 - f. Pathologic Bone Pain
 - g. Amputation (e.g. External Hemipelvectomy)
 - h. **STEROID MYOPATHY**
 - i. Muscle imbalance
 - j. Shoulder pain
 - k. Joint Pain/Arthralgias (e.g. due to anti-estrogen medications)
 - l. Reduced joint range of motion due to **GRAFT VERSUS HOST DISEASE**
 - m. Osteopenia/Osteoporosis
 - n. Restrictions due to post-surgical flaps
- 2) Miscellaneous
 - a. Opiate induced Constipation



Why is it important?

SURVIVAL RATES

► Cancer Facts & Figures 2017. American Cancer Society. Available at: <https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2017.html>

1991 → 2015

THE OVERALL
CANCER DEATH RATE
IN THE UNITED STATES
FELL

↓ 26%

SEER Cancer Statistics Review, 1975-2015
cancer.gov

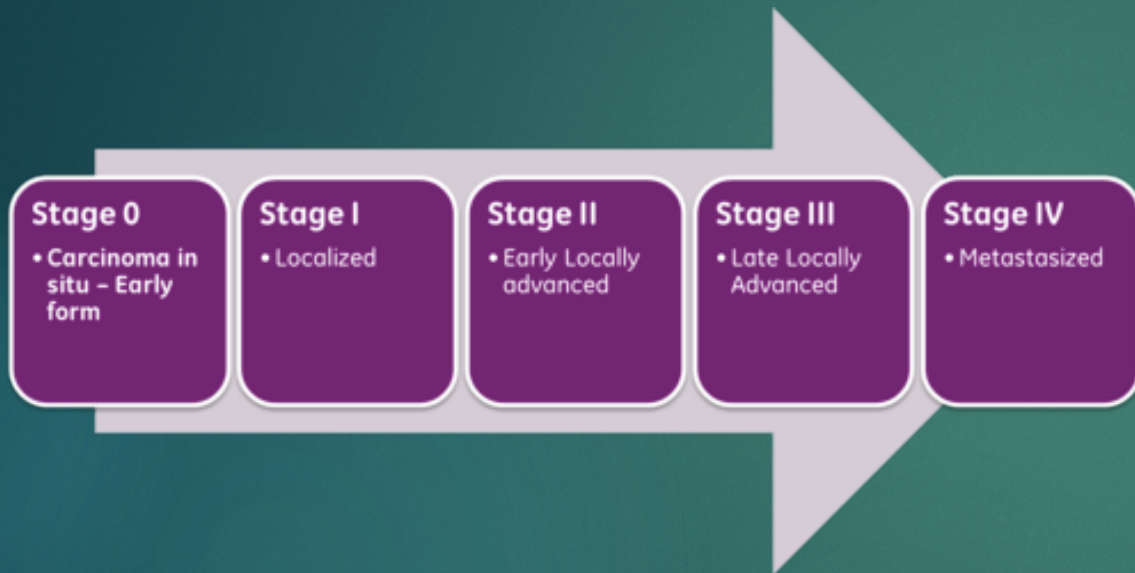
Trends in Five-year Relative Survival Rates (%), 1975-2012

Site	1975-1977	1987-1989	2006-2012
All sites	49	55	69
Breast (female)	75	84	91
Colorectum	50	60	66
Leukemia	34	43	63
Lung & bronchus	12	13	19
Melanoma of the skin	82	88	93
Non-Hodgkin lymphoma	47	51	73
Ovary	36	38	46
Pancreas	3	4	9
Prostate	68	83	99
Urinary bladder	72	79	79

Reasons Improved Performance Status can Affect Survival

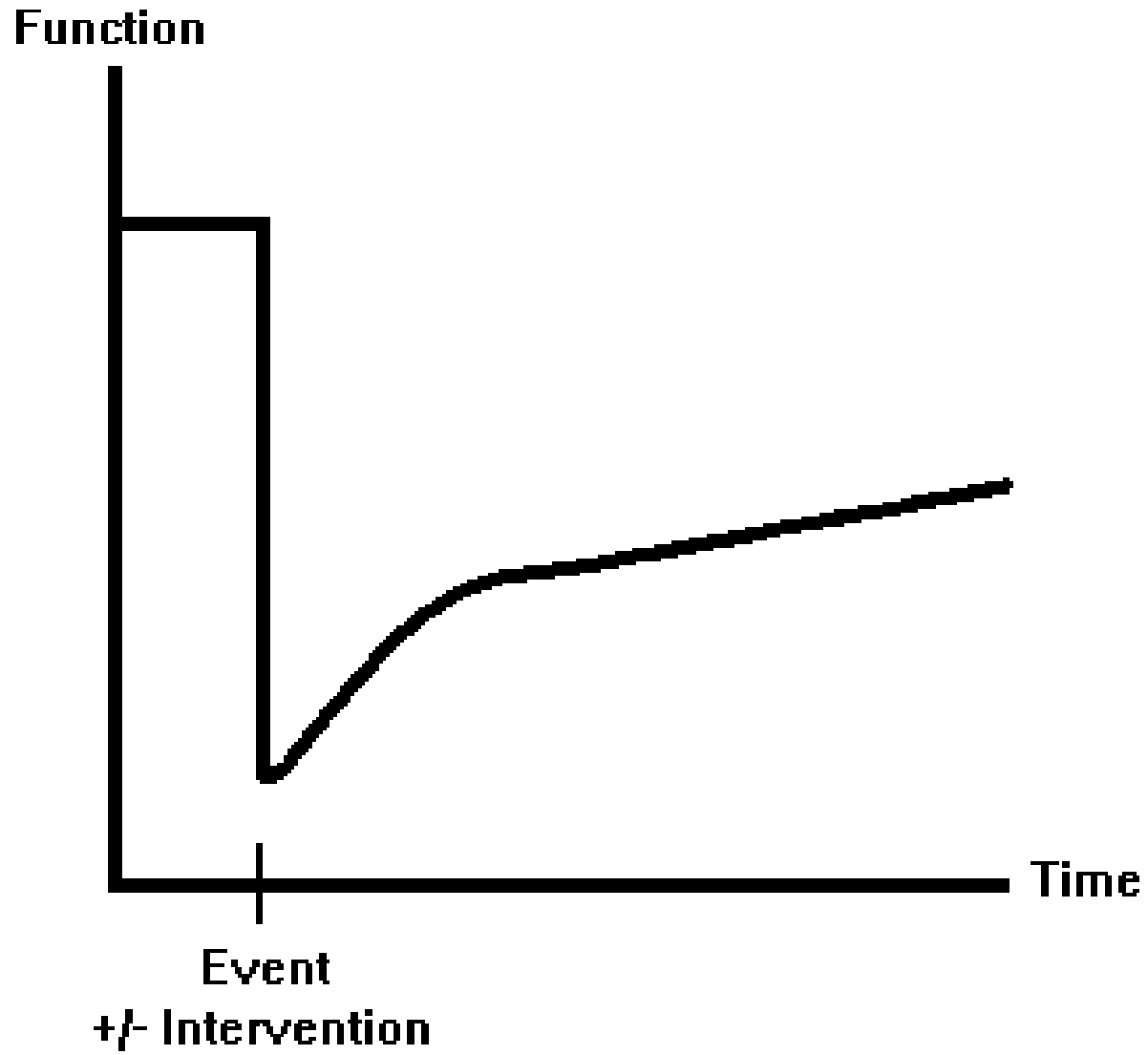
The mechanisms for improved survival could include:

- 1) Earlier diagnosis
- 2) Treatment completion rates
- 3) Treatment response
- 4) Performance status does impact treatment decisions



Cancer is a dynamic disease

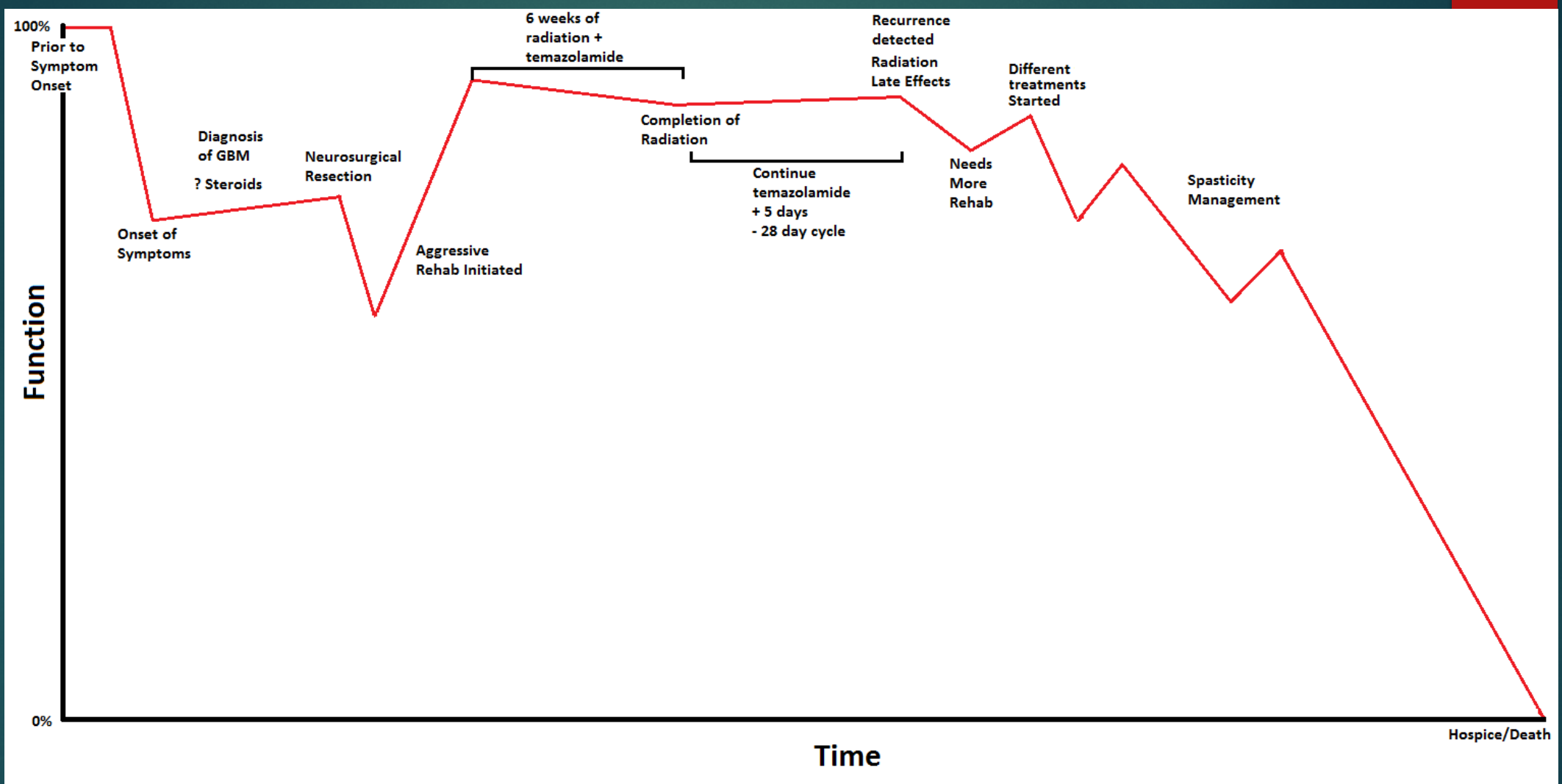
REHAB STATUS AND GOALS MUST CONSISTENTLY BE REEVALUATED.



Functional
Graph –
Conventional
Rehab Patient



Functional Graph – Cancer Pt.



100%

Prior to Symptom Onset

Onset of Symptoms

Diagnosis of GBM
? Steroids

Neurosurgical Resection

Aggressive Rehab Initiated

6 weeks of radiation + temazolamide

Completion of Radiation

Continue temazolamide + 5 days - 28 day cycle

Recurrence detected
Radiation Late Effects

Needs More Rehab

Different treatments Started

Spasticity Management

Function

0%

Time

Hospice/Death

Goals of Cancer Rehabilitation

Preventive

Restorative

Supportive

Palliative

Preventive Rehabilitation

Preclude or minimize functional morbidity caused by cancer or its treatment before it happens.

Example: Prophylactic range of motion of irradiated soft tissue before head and neck radiation

Goals of
Cancer
Rehabilitation

Preventive

Restorative

Supportive

Palliative

Restorative Rehabilitation

Return to pre-morbid functional status when little or no long-term impairment is anticipated.



Example: Strength & range of motion following mastectomy

Goals of Cancer Rehabilitation

Preventive

Restorative

Supportive

Palliative

Supportive Rehabilitation



Maximize function after permanent impairments caused by cancer and/or its treatment

Example: Post-sacrectomy bowel, bladder and ambulation

Goals of Cancer Rehabilitation

Preventive

Restorative

Supportive

Palliative

Palliative Rehabilitation

- ▶ For those with advanced cancer: reduction of dependence in mobility and self-care activities in association with the provision of comfort and emotional support
- ▶ Examples:
 - ▶ Bowel & bladder incontinence
 - ▶ Mobility and energy conservation

Sales Summary

QTD Sales: \$4,978K
Current Quarter Quota: \$10,131K
(\$5,153K)

Accumulated Sales by Week of the Quarter



Sales Trend by Quarter



ACCESS DENIED!

Customer Count

Opportunity



Barriers to Cancer Rehabilitation

- ▶ Lack of education & expertise
- ▶ Limited evidence/literature
- ▶ Limited referral & education on impact
- ▶ Lack of access/development



Barriers to Cancer Rehabilitation

- ▶ **Lack of education & expertise**

EDUCATION & ADMINISTRATION

**Cancer Rehabilitation Education
During Physical Medicine and
Rehabilitation Residency**

Preliminary Data Regarding the Quality and Quantity
of Experiences

ABSTRACT

Raj VS, Balouch J, Norton JH: Cancer rehabilitation education during physical medicine and rehabilitation residency: preliminary data regarding the quality and quantity of experiences. *Am J Phys Med Rehabil* 2014;93:445–452.



Barriers to Cancer Rehabilitation

- ▶ Lack of education & expertise
- ▶ **Limited evidence/literature**

Effectiveness of Multidimensional Cancer Survivor Rehabilitation and Cost-Effectiveness of Cancer Rehabilitation in General: A Systematic Review

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Barriers to Cancer Rehabilitation

- ▶ Lack of education & expertise
- ▶ Limited evidence/literature
- ▶ **Limited detection & referral**

Support Care Cancer (2009) 17:61–67

DOI 10.1007/s00520-008-0461-x

ORIGINAL ARTICLE

The detection and treatment of cancer-related functional problems in an outpatient setting

**A. L. Cheville · L. A. Beck · T. L. Petersen ·
R. S. Marks · G. L. Gamble**

Received: 24 January 2008 / Accepted: 9 April 2008 / Published online: 14 May 2008

© Springer-Verlag 2008



Barriers to Cancer Rehabilitation

- ▶ Lack of education & expertise
- ▶ Limited evidence/literature
- ▶ Limited detection & referral
- ▶ **Lack of access/development (only 1 fellowship program in Canada)**

Specific
cancer-
related
impairments

Radiation fibrosis syndrome

Aromatase-Inhibitor – induced
arthralgias

Chemotherapy Induced Peripheral
Neuropathy

Post Mastectomy Pain Syndrome

Lymphedema

Radiation Fibrosis Syndrome

- ▶ Definition: insidious pathologic fibrotic tissue sclerosis that often occurs in response to radiation exposure.
- ▶ Umbrella term: radiation fibrosis syndrome (RFS) describes the myriad clinical manifestations of progressive fibrotic tissue sclerosis that result from radiation treatment.
- ▶ Three histopathological phases:
 - ▶ (1) a prefibrotic phase characterized by chronic inflammation
 - ▶ (2) an organized fibrosis phase with patchy areas of active fibrosis containing a high density of myofibroblasts in an unorganized matrix adjacent to poorly cellularized fibrotic areas of senescent fibrocytes in a dense sclerotic matrix
 - ▶ (3) a late fibroatrophic phase, characterized by retractile fibrosis and gradual loss of parenchymal cells

Head and Neck Issues

- ▶ Head Drop
- ▶ Trismus
- ▶ Cervical Dystonia
- ▶ Shoulder pain/dysfunction



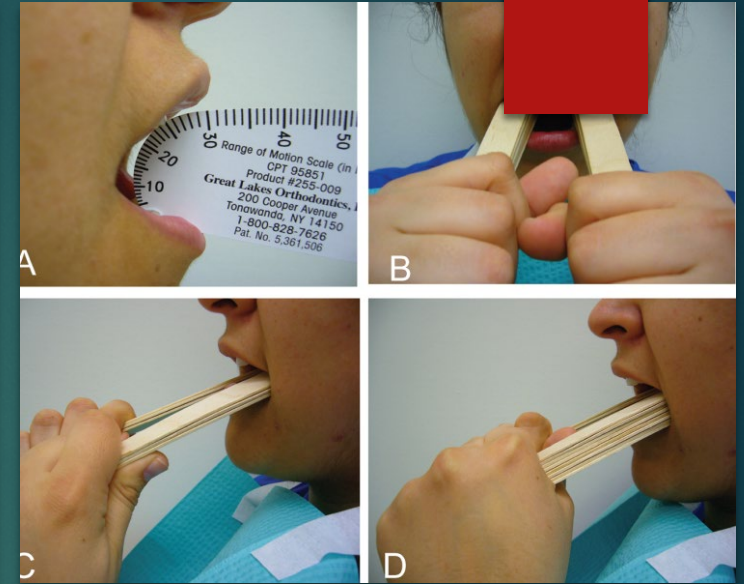
Radiation Fibrosis Syndrome

- ▶ Risk factors include field and amount of radiation (50 Gy), with lymphoma and Head and Neck cancers being high risk
- ▶ The neuromuscular complications of radiation stem from both direct and indirect effects of progressive fibrotic sclerosis on neural structures, including the brain, spinal cord, nerve root, plexus, all components of the peripheral nerve (motor, sensory, autonomic), and muscle



Treatment for RFS

- ▶ Exercise Program
- ▶ Tongue Depressors
- ▶ Devices (Therabite, Dynasplint, Headmaster)
- ▶ Neuropathic agents (oral, topical)
- ▶ TPI or Botulinum Toxin



Aromatase- Inhibitor- associated MusculoSkeletal Syndrome (AIMSS)

- ▶ Adjuvant treatment for ER+ breast cancers with anastrozole, letrozole or exemestane (superior to tamoxifen)
- ▶ 10 year therapy
- ▶ Incidence of musculoskeletal symptoms to be as much as 50%
- ▶ Usually presents as symmetrical pain or soreness in the hands, knees, hips, lower back, shoulders, and/or feet.
- ▶ It is often associated with early-morning stiffness and difficulty sleeping
- ▶ There may be additional extra-articular symptoms present, such as myalgia, fibromyalgia, neuropathy and carpal tunnel syndrome

Aromatase-Inhibitor-associated MusculoSkeletal Syndrome (AIMSS)

MRI studies conducted on patients taking aromatase inhibitors have shown the development of tenosynovial changes and increased intra-articular fluid in patients with AIMSS

Most of the symptoms will develop within the first two to three months of AI treatment

Discontinuation of treatment often occurs thus increasing risk of recurrence, progression and metastases

Aromatase-
Inhibitor-
associated
MusculoSkeletal
Syndrome
(AIMSS)

Acupuncture, electroacupuncture

Testosterone, Celebrex, switch, Cymbalta,
prednisolone bisphosphonates, diuretics, OTC
analgesics

Omega 3 fatty acids, Vit D, Vit E,
glucosamine/chondroitin

Aerobic and resistance exercises, aquatics,
walking, yoga

Chemotherapy-Induced Peripheral Neuropathy

- ▶ Causes: Taxanes, vinca alkaloids, platinum compounds, bortezomib, and thalidomide
- ▶ CIPN is mainly involved in a sensory stocking-glove peripheral axonal neuropathy though some patients experience motor symptoms such as weakness and autonomic neuropathy
- ▶ Pain, allodynia, loss of sensation, paresthesia, numbness, tingling, and gait disturbance
- ▶ Commonly occurs within 1 month after cessation of therapy

Chemotherapy- Induced Peripheral Neuropathy

- ▶ Moderate recommendation:
- ▶ To date, only Duloxetine and photobiomodulation (PBM) x 8 weeks can be considered to provide a modest benefit for patients with CIPN

Chemotherapy- Induced Peripheral Neuropathy

- ▶ Interdisciplinary treatment
- ▶ Neuropathic agents (Cymbalta, AEDs, TCAs, methadone, cannabinoids) oral & topical
- ▶ Desensitization, education, fall prevention
- ▶ Kinesiotape, mindfulness, TENS, acupuncture

Postmastectomy Pain Syndrome

- ▶ Pain lasting at least 3 months following any breast surgery not due to tumour recurrence or infection
- ▶ Neuropathic but many other multifactorial etiologies: damage to the intercostobrachial nerve, axillary nerve, or chest wall; phantom breast pain; incisional pain; MSK pain; neuroma; other nerves (intercostal, medial & lateral pectoral; thoracodorsal; long thoracic)
- ▶ Up to 70% of women; 44% with pain 4 years post-procedure
- ▶ Diffuse pain with localized emphasis to axilla, operative site, or ipsilateral arm; decreased range of motion and strength
- ▶ RF: Young age, low SES, ANLD, ICBN damage, adjuvant radiation, perioperative mood disorder

Postmastectomy Pain Syndrome: Contributors



Rotator Cuff Dysfunction

ICBN Neuralgia

Chest wall pain (neuroma, incisional pain)
Axillary web syndrome

Phantom breast pain

Postmastectomy Pain Syndrome: Treatments

- ▶ Amitriptyline
- ▶ Venlafaxine
- ▶ Topical capsaicin
- ▶ Acupuncture
- ▶ Autologous fat grafting

LYMPHEDEMA

- ▶ The abnormal accumulation of interstitial fluid and fibroadipose tissues
- ▶ Primary (Congenital) and **Secondary (Acquired from injury or infection)**
- ▶ Occurs when the lymphatic load exceeds the transport capacity of the lymphatic system, which causes filtered fluid to accumulate in the interstitium





Symptoms/diagnosis

SWELLING, (NOTE OVERLY TIGHT CLOTHING / JEWELLERY)

EXTREMITY SUBJECTIVE HEAVINESS, NUMBNESS, TINGLING

DECREASED MOBILITY, RANGE OF MOTION

PAIN AND/OR DISCOMFORT

INFECTION (TYPICALLY CELLULITIS)



COMPLETE DECONGESTIVE THERAPY



Compression bandaging



Compression garments/systems



Manual Lymphatic Drainage (MLD)



Skin Care



Exercise

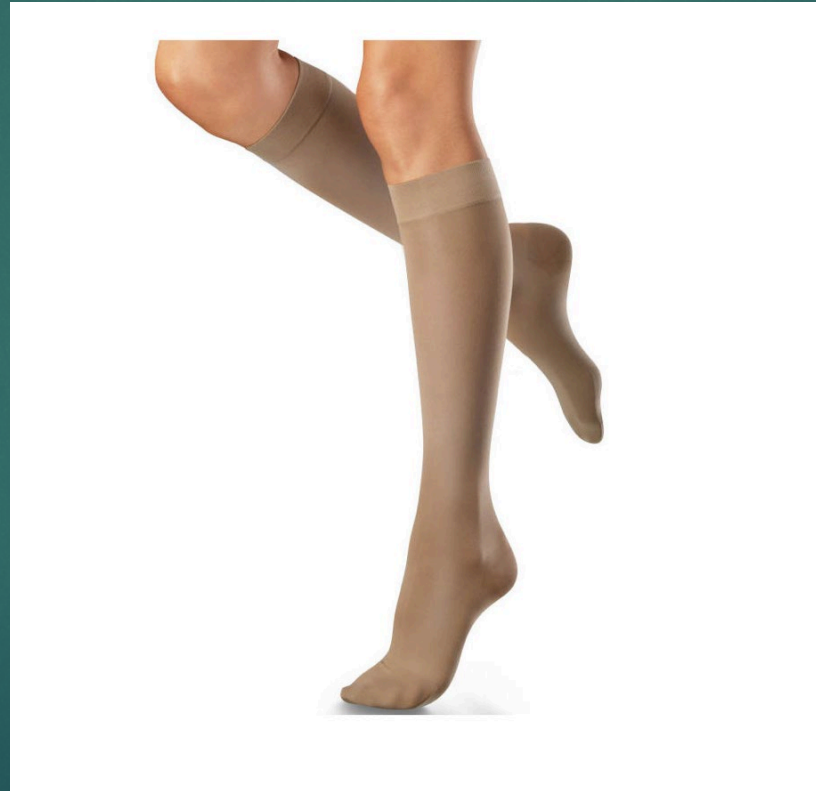
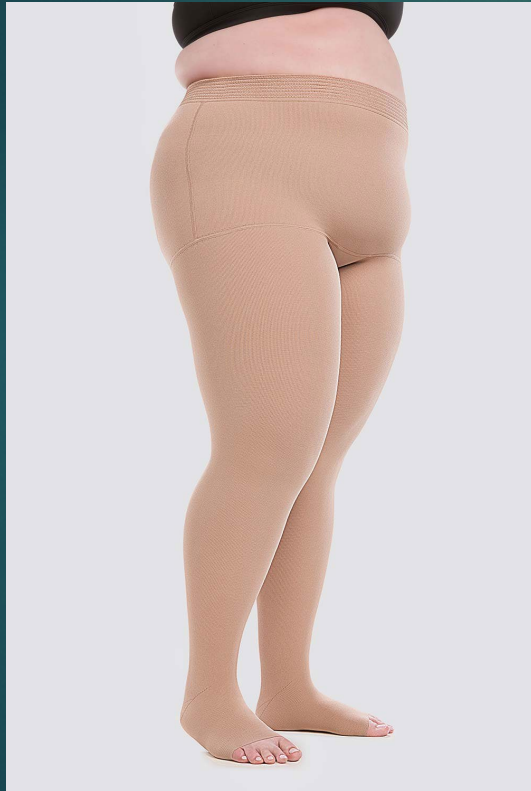


Education

OTHER TREATMENTS INCLUDE LOW LEVEL LASER, ACUPUNCTURE, KINESIOTAPING, COMPRESSION PUMPS

COMPRESSION GARMENTS

- ▶ Elasticity to prevent swelling
- ▶ Examples in Alberta: Medivan, Juzo, Venosan



COMPRESSION BANDAGING

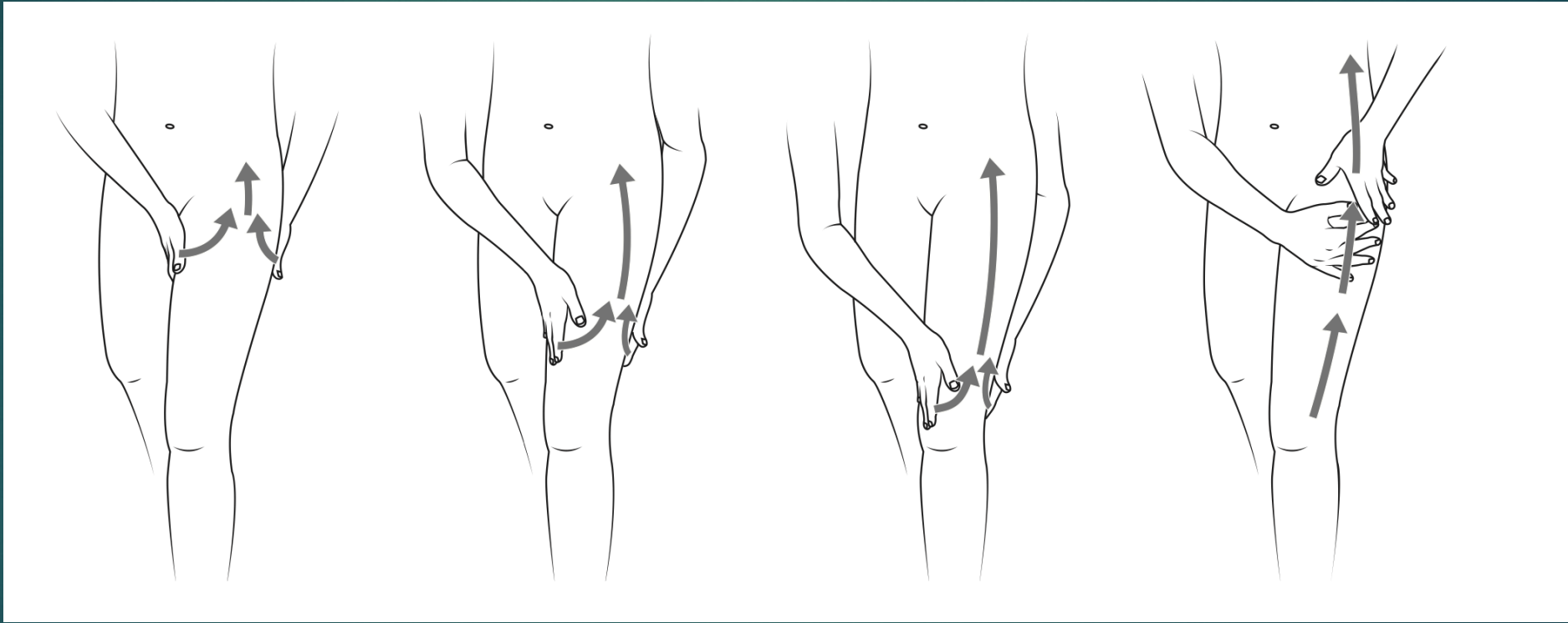
- ▶ Intended to be tight/restrictive to some extent to prevent swelling
- ▶ Examples in Alberta: Coban, Tubigrip



Source: Coban & Tubigrip Vendors

MANUAL LYMPHATIC DRAINAGE

- ▶ Lymphatic massage technique that enhances filling of the cutaneous lymphatics and improves dilation and contraction of the lymphatic vessels



PM&R Services: Procedures in Cancer Survivorship

- ▶ Procedures
 - ▶ Botox
 - ▶ Spasticity
 - ▶ Radiation Fibrosis Syndrome
 - ▶ Post-mastectomy Reconstructive Syndrome
 - ▶ Trigger point injections
 - ▶ Radiation Fibrosis Syndrome
 - ▶ Post-mastectomy Reconstructive Syndrome
 - ▶ Joint injections
 - ▶ EMG

Rehabilitation Oncology Team (Calgary)

Physiotherapy

Occupational Therapy

Therapy Assistant

Speech Language Pathology

Physiatry

Rehabilitation Oncology Care

Loss or changes in range of motion, strength, balance

Fatigue, deconditioning

Changes in activities of daily living

Speech and swallowing changes

Neuropathies (chemotherapy induced peripheral neuropathies)

Neurological impairments (often brain tumors)

Radiation Fibrosis (scar tissue post-RT)

Trismus (lock jaw)

Cognitive changes (memory, attention)

Secondary lymphedema caused by cancer/ treatment

Facilitating return to work

Physiatry: Dr George Francis

- ▶ 1.5 clinics per week (3 half days)
- ▶ Waitlist time: 2 weeks - 3 months
- ▶ Referrals: Triageed by our team. Patients often see OT and/ or PT while on physiatry waitlist
- ▶ Listed on the [Alberta Referral Directory](#) (ARD) under Rehabilitation Oncology



HRN: Sex: DOB: yyyy/mm/dd

Last Name: First and Additional Name:

PH: Gender: Age in Years:
Addressing Physician: Encounter #:

Address: Street, City, Province, Postal Code

Telephone Number: Data of Admittance: yyyy/mm/dd Family Physician:

Generic Referral

Please type directly into the form. Where indicated, required referral information may be attached. Please ensure referral meets specific referral requirements where these are available.

Date (yyyy-MM-dd)	Refer to	Fax
Referring provider/source		Phone
Address		Fax
Family Physician		
Guardian/Appointed Agent (if applicable)		
Patient Guardian Name	Phone	Relationship
Referral Information		
Reason for referral		
Type of referral <input type="checkbox"/> New referral <input type="checkbox"/> Re-referral <input type="checkbox"/> 2nd opinion <input type="checkbox"/> Urgent referral <input type="checkbox"/> Service/consultant is aware of urgent referral Reason for urgency _____		
Specialist seen previously <input type="checkbox"/> No <input type="checkbox"/> Yes ▼		
If Yes Date seen	If Yes Diagnosis	Diagnosis Date (yyyy-MM-dd)
Prior hospital admission (past 2 years) <input type="checkbox"/> No <input type="checkbox"/> Yes (if yes, when and where?) _____ <input type="checkbox"/> Currently hospitalized, where? _____		
Past Medical History		<input type="checkbox"/> Attached
Current Medications/Allergies		<input type="checkbox"/> Attached
Requested Action		
<input type="checkbox"/> Confirm and/or advise diagnosis		<input type="checkbox"/> Assume future management of patient within area of expertise
<input type="checkbox"/> Confirm and/or advise management, including medication		<input type="checkbox"/> Telephone consultation
<input type="checkbox"/> Assume management for this problem and return patient after care		<input type="checkbox"/> Patient education
Processing Requirements (Check if included)		
<input type="checkbox"/> Blood work	<input type="checkbox"/> Diagnostic imaging	<input type="checkbox"/> Consultant letters
<input type="checkbox"/> Discharge summaries	<input type="checkbox"/> Microbiology	<input type="checkbox"/> Pathology
Factors that may affect consultation/care		
Specific patient request		
<input type="checkbox"/> Physician _____	<input type="checkbox"/> Location _____	
Language _____	<input type="checkbox"/> Interpreter required	
Physical limitations _____		
Social/Psychological _____		
Economic _____ Other _____		
For office use only		
Name	Signature	Designation
		Date (yyyy-MM-dd)

Rehabilitation Oncology - Physiatry at Holy Cross Centre

Alberta Health Services - CancerControl Alberta

Estimated time to routine appointment: Within 3 months

SERVICE DESCRIPTION

Rehabilitation Oncology (South) programs cancer physiatrist provides assessment, treatment and management of cancer-related side effects to help improve function and quality of life.

Physiatrists are medical doctors who have completed specialized training in physical medicine and rehabilitation. Patients seen by physiatry benefit from earlier identification and treatment of rehabilitation issues potentially stemming from the cancer itself or treatment plans. Physiatrists focus their treatment on function by treating the whole person, not just one problem area. Physiatry can assist with medical management along the cancer experience from diagnosis, treatment and survivorship.

Assessment and treatment approaches include:

- electromyography (EMG) and nerve conduction studies
- symptom management such as pain, joint stiffness, deconditioning, fatigue, numbness in hands and feet (peripheral neuropathy), spasticity
- corticosteroid joint injections, trigger point injections and botulinum toxin injections
- prescriptions (for medications and return to work/school/ leisure recommendations)
- referrals to rehabilitation professionals such as occupational therapy, physiotherapy and speech language pathology
- referrals for community-based programs such as Community Accessible Rehabilitation, Palliative Home Care, Alberta Cancer Exercise program and Alberta Healthy Living

Physiatry visits are offered in-person and virtually (phone and online platforms like Zoom). Your doctor will get a written report after your assessment.

REFERRAL PHONE

403-476-2910

REFERRAL FAX

403-476-2457

URGENT REFERRAL PROCESS

Mark referral URGENT and fax to 403-476-2457 and call clinic coordinator to discuss at 403-476-2448.

The following urgent referrals are typically seen within 1 to 2 weeks and may be seen by physiatry and/ or physiotherapy:

- Functional and rehabilitation concerns affecting return to work or upcoming cancer treatment in the next 2-4 weeks, requiring a physician's prescription/ recommendations
- Acute trismus (lockjaw) on radiation treatment
- Palliative pain and/or lymphedema issues
- Bone metastases with falls risk
- Shoulder ROM delaying the start of radiation
- Recent falls / high falls risk (i.e. falls occurred within the past 4 weeks)
- Recent cellulitis from lymphedema (recent= within the last 4 weeks)
- Upcoming lymphedema surgery (surgery date is in next 2-4 weeks)

Referral Triage



Urgent: 1-2 weeks



Semi-urgent: 2 weeks



Routine: 6-8 weeks



Referrals are made to the program (i.e. we will triage the referral and involve the necessary disciplines to meet patients' goals/needs)

Cancer Survivorship Programs in Calgary

- ▶ **Rehabilitation Oncology Program – Holy Cross Centre**
 - ▶ <https://www.albertahealthservices.ca/cancer/Page17173.aspx>
- ▶ **Psychosocial Oncology Program – Holy Cross Centre**
 - ▶ <https://www.albertahealthservices.ca/cancer/Page17172.aspx>
- ▶ **Wellspring**
 - ▶ <https://wellspringcalgary.ca>
- ▶ **ACE - Alberta Cancer Exercise Program**
 - ▶ <https://www.albertacancerexercise.com>
- ▶ **Breast Cancer Supportive Care Centre**
 - ▶ <https://www.breastcancersupportivecare.ca>
- ▶ **Cancer Care Alberta – Group Classes**
 - ▶ <https://www.albertahealthservices.ca/cancer/Page16323.aspx>

Summary

Cancer rehabilitation = multidisciplinary treatment of cancer survivor symptoms and functional impairments

Cancer physiatry is one component of this

Learning Objectives

1

Define 4 stages of cancer rehabilitation

2

List 5 issues that cancer physiatry can address/help manage

3

Know how to refer to the rehabilitation oncology program

Questions/thoughts for you:

- ▶ What questions can you ask cancer survivors in your practice to ensure they are functioning well?
- ▶ Are you comfortable with the referral process to cancer physiatry/rehabilitation oncology?
- ▶ Are you aware of cancer rehabilitation options in the community?

