12e Post O.N.S. Meeting

Stichting Oncowijs

Cancer prehabilitation, Wat is nieuw aan de horizon?

Sophie Bunskoek, verpleegkundig specialist, medische oncologie, UMCG

Julie Silver

MD, associate professor,
Harvard Medical School, Boston

Belangrijkste vraag

Kan prehabilitatie oncologische resultaten verbeteren?

andere vragen

- Wat is prehabilitatie?
- Kan prehabiltatie ervoor zorgen dat de gezondheidsstatus beter is na behandeling dan bij diagnose?
- Kan prehabilitatie ziekenhuisopnamens verminderen?
- Zullen de kosten stijgen of dalen door prehabilitatie?

Wat is prehabilitatie?

Kanker prehabilitatie is een onderdeel van revalidatie en is gericht op het verbeteren van specifieke doelen

Interventies tussen het tijdstip van stellen van diagnose en het begin van de behandeling

Om het te bevatten is het belangrijk om oncologische revalidatie te begrijpen

Oncologische revalidatie

Gericht op verbeteren van beperkingen

Zowel gericht op fysieke training,
arbeidsintegratie en mentale aspecten

Uitgevoerd door speciaal opgeleide professionals

Beperkingen bij kanker

In een onderzoek van 163 vrouwen met gemetastaseerd mammaca:

Hoeveel p

92%

Hoeveel g

530

Hoeveel procent kreeg revalidatie?

<2%

In een onderzoek van 529 ouderen met kanker:

Hoeveel zouden in aanmerking

Hoeveel kregen het?

9%

Unnecessary suffering

Revalidatie is onderdeel van medische zorg

Cheville AL et al, J Clin Onc, 2008. Pergolotti M et al., J Geriatric Onc., 2015

Best practice revalidatie

- Screening bij diagnose, vaststellen baselinelevel
- Gerichte verwijzing bij beperkingen of verwachtte beperkingen: diëtist, fysio, logepedist, psycholoog etc
- Indien geen beperkingen: beweegadvies

Hoeveel procent van de kankerpatienten heeft beperkingen?
65-90%

Hoeveel procent van de overlevers heeft baat bij bewegen?
>90%

Distress & Disability

Biol Blood Marrow Transplant 2014, Bevans MF et al
**Symptom distress predicts long-term health and well-b
allogenic stem cell transplatation survivors**

"..physical symptom distress negatively affected all outcomes.."

Psychooncology, 2011, Penttinen H.M. et al.
**Quality of life and physical performance and activity of
patients after adjuvant treatments**

"physical performance and activity level were the only factors that correlated positively to QoL"

Med J Aust.,2010, Banks JE et al.
**Is psychological distress in people living with cancer r
fact of diagnosis, current treatment or level of disabilit
from a large Australian study.**

"The risk of psychological distress …relates much more strongly to their level of disability

Cancer epidermiol biomarkers prev 2012, Weaver KE et al.
**Mental and physical health-related quality of life among
survivors: population estimates from 2010 national Hea
study**.

Many more cancersurvivors had poor QoL due to physical problems than emotional onses

Wat als kanker overlevers geen revalidatie krijgen?

Work,2013, Silver JK, et al

Cancer rehabilitation may improve function in survivors and decrease the economic burden of cancer tot individuals and society

Cancer, 2014, Silver, JK

Cancer rehabilitation and prehabilitation may reduce disability and early retirement

Semin Oncol Nurs. 2015, Silver JK

Cancer prehabilitation and its role in improving health outcomes and reducing health costs

- Onnodige beperkingen voor de overlever
- Onnodige finaciële lasten voor de overlever, naasten en maatschappij

Prehabilitatie is een belangrijk onderdeel van beperkingen georiënteerde revalidatie

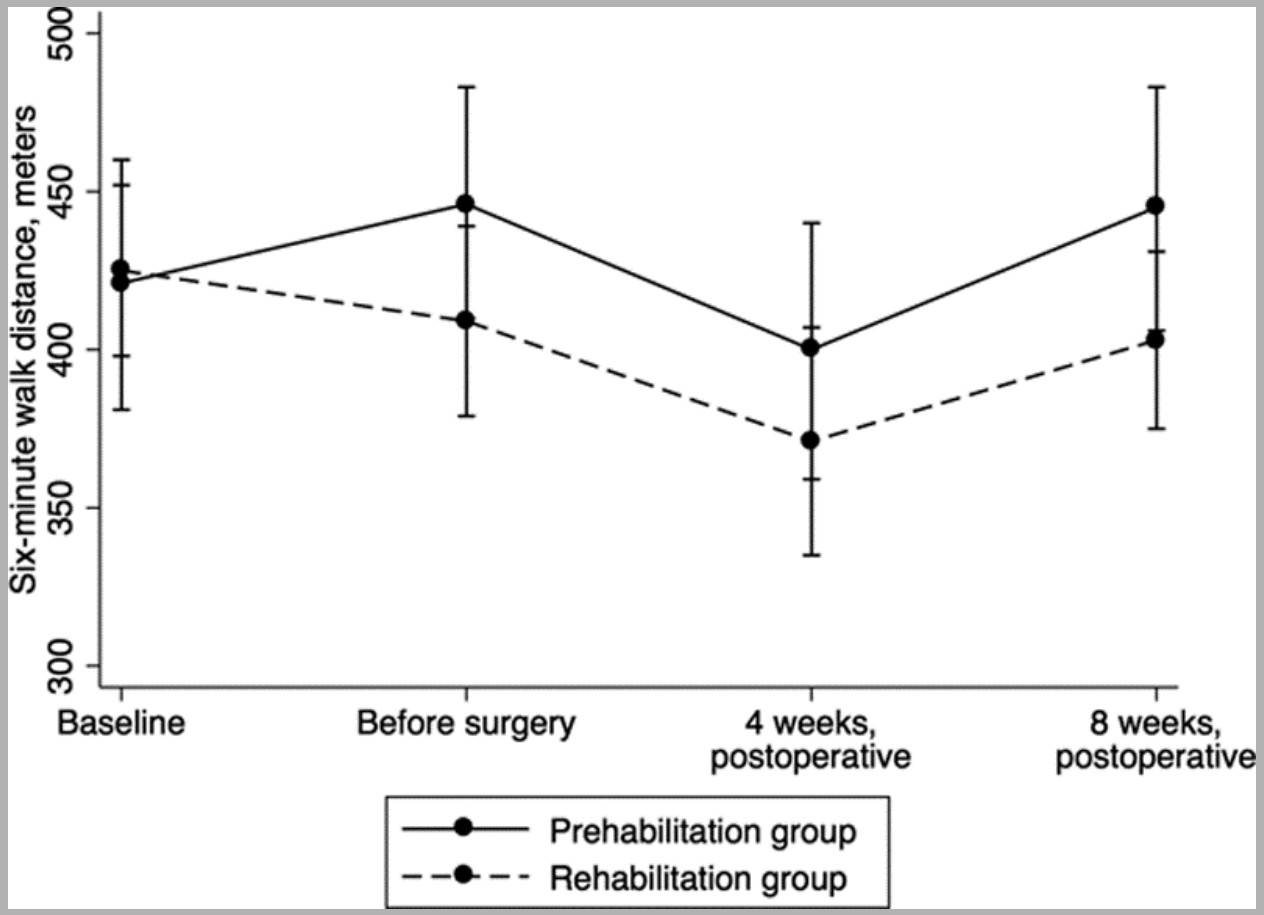
Prehabilitatie verschilt van revalidatie omdat het is gericht op het verbeteren van iemands functioneren “vooruitlopend op komende stressfactoren”

Mayo Ne, et al. Surgery, 2011

Belangrijke onderdelen prehabilitatie

- Weinig tijd tussen diagnose en start behandeling
- Gericht op resultaten (evidence based)
  - Bijv opnames
  - Wondinfecties
  - Complicaties
  - Heropnames
- Gebaseerd op protocollen

Kan iemand beter worden dan vóór start?



A Randomized Control Trial in Patients Undergoing Colorectal Resection for Cancer

Chelsia Gillis, R.D., M.Sc., Chao Li, M.D., M.Sc., Lawrence Lee, M.D., M.Sc., Rashami Awasthi, B.Sc., Berson Augustin, B.Sc., Ann Gamsa, Ph.D., A. Sender Liberman, M.D., Barry Stein, M.D., Patrick Charlebois, M.D., Liane S. Feldman, M.D., Francesco Carli, M.D., M.Phil.

ABSTRACT

Background: The preoperative period (prehabilitation) may represent a more appropriate time than the postoperative period to implement an intervention. The impact of prehabilitation on recovery of functional exercise capacity was thus studied in patients undergoing colorectal resection for cancer.

Methods: A parallel-arm single-blind superiority randomized controlled trial was conducted. Seventy-seven patients were randomized to receive either prehabilitation (n = 38) or rehabilitation (n = 39). Both groups received a home-based intervention of moderate aerobic and resistance exercises, nutritional counseling with protein supplementation, and relaxation exercises initiated either 4 weeks before surgery (prehabilitation) or immediately after surgery (rehabilitation), and continued for 8 weeks after surgery. Patients were managed with an enhanced recovery pathway. Primary outcome was functional exercise capacity measured using the validated 6-min walk test.

Results: Median duration of prehabilitation was 24.5 days. While awaiting surgery, functional walking capacity increased (≥20 m) in a higher proportion of the prehabilitation group compared with the rehabilitation group (53 *vs.* 15%, adjusted $P = 0.006$). Complication rates and duration of hospital stay were similar. The difference between baseline and 8-week 6-min walking test was significantly higher in the prehabilitation compared with the rehabilitation group (+23.7 m [SD, 54.8] *vs.* −21.8 m [SD, 80.7]; mean difference 45.4 m [95% CI, 13.9 to 77.0]). A higher proportion of the prehabilitation group were also recovered to or above baseline exercise capacity at 8 weeks compared with the rehabilitation group (84 *vs.* 62%, adjusted $P = 0.049$).

Conclusion: Meaningful changes in postoperative functional exercise capacity can be achieved with a prehabilitation program. (ANESTHESIOLOGY 2014; 121:937-47)

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Disclosures:
Dr Silver is the cofounder of Oncology Rehab Partners, LLC, which developed the STAR Program (Survivorship Training and Rehabilitation). Dr Baima has no disclosures. Financial disclosure statements have been obtained, and no conflicts of interest have been reported by the authors or by any individuals in control of the content of this article.

0894-9115/13/9208-0000/0
American Journal of Physical Medicine & Rehabilitation

DOI: 10.1097/PHM.0b013e31829b4afe

REVIEW & ANALYSIS

Cancer Prehabilitation

An Opportunity to Decrease Treatment-Related Morbidity, Increase Cancer Treatment Options, and Improve Physical and Psychological Health Outcomes

ABSTRACT

Silver JK, Baima J: Cancer prehabilitation: an opportunity to decrease treatment-related morbidity, increase cancer treatment options, and improve physical and psychological health outcomes. Am J Phys Med Rehabil 2013;92:00–00.

Cancer prehabilitation, a process on the continuum of care that occurs between the time of cancer diagnosis and the beginning of acute treatment, includes physical and psychological assessments that establish a baseline functional level, identifies impairments, and provides targeted interventions that improve a patient's health to reduce the incidence and the severity of current and future impairments. There is a growing body of scientific evidence that supports preparing newly diagnosed cancer patients for and optimizing their health before starting acute treatments. This is the first review of cancer prehabilitation, and the purpose was to describe early studies in the noncancer population and then the historical focus in cancer patients on aerobic conditioning and building strength and stamina through an appropriate exercise regimen. More recent research shows that opportunities exist to use other unimodal or multimodal prehabilitation interventions to decrease morbidity, improve physical and psychological health outcomes, increase the number of potential treatment options, decrease hospital readmissions, and reduce both direct and indirect healthcare costs attributed to cancer. Future research may demonstrate increased compliance with acute cancer treatment protocols and, therefore, improved survival outcomes. New studies suggest that a multimodal

TABLE 2 Examples of cancer prehabilitation areas of focus

Musculoskeletal
Balance/gait
Joint range of motion
Therapeutic exercise (for specific issues)
General exercise (to increase physical activity)
Stress/distress/coping
Pain
Swallowing
Speech
Sleep
Fatigue
Cognitive function
Cardiovascular function
Pulmonary function
Smoking cessation
Alcohol reduction/cessation
Skin protection
Diet/nutrition
Urinary continence
Bowel/ostomy care
Activities of daily living (ADLs)
Instrumental activities of daily living (IADLs)
Assistive devices
Durable medical equipment
Home safety
Workplace accommodations
Psychosocial support
Supportive oncology symptom management
Integrative oncology interventions
Other services

Silver JK, Baima J. Cancer prehabilitation: an opportunity to decrease treatment-related morbidity, increase cancer treatment options, and improve physical and psychological health outcomes. Am J Phys Med Rehabil. 2013 Aug;92(8):715-27.

TABLE 3 Goals and benefits of cancer prehabilitation[a]

Pretreatment baseline	Assess and document
Pretreatment impairments	Identify and reduce
Pretreatment physical functioning	Improve
Pretreatment psychological functioning	Improve
Treatment options	Increase
Cancer treatment compliance	Increase
Treatment-related impairments	Prevent or reduce
Unnecessary testing[b]	Reduce
Time to recovery milestones	Reduce
Hospital lengths of stay	Reduce
Home care therapy visits	Reduce
Rehabilitation outpatient visits	Reduce
Hospital readmissions	Reduce
Risk for future comorbidities[c]	Reduce
Risk for cancer recurrence	Reduce
Risk for second primary cancer	Reduce
Disability	Decrease
Mortality	Decrease
Physical health outcomes	Improve
Psychosocial health outcomes	Improve
Time to return to work status	Reduce
Occupational function	Improve
Health-related quality-of-life	Improve
Direct healthcare costs	Decrease
Indirect healthcare costs	Decrease

After meeting the first goal of cancer prehabilitation—establishing a pretreatment baseline—and implementing appropriate interventions thereafter, the physical, psychological, and/or financial benefits of prehabilitation can be seen along the entire continuum of cancer care.

[a]This is not meant to be a complete list.

[b]For example, metastatic work-ups for musculoskeletal pain.

[c]For example, osteoporosis or heart disease.

Contents lists available at SciVerse ScienceDirect

Surgical Oncology

journal homepage: www.elsevier.com/locate/suronc

Review

A systematic review of pre-surgical exercise intervention studies with cancer patients

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Lung
Prostate
Colorectal

ABSTRACT

Background: Recent reviews suggest that enhancing fitness and functional capacity prior to surgery can accelerate post-surgery recovery and reduce mortality. However, the effect of pre-surgical exercise interventions in cancer patients is not fully explained. The aim of this paper is to systematically review the available literature regarding pre-surgery exercise training interventions in cancer patients and examine their effects on physiological outcomes as well as quality of life (QOL) and length of hospital stay.

Methods: Relevant studies were identified through a search on MEDLINE, PreMEDLINE, AMED, MEDLINE Daily Update, CINAHL and SPORTDiscus. All randomized controlled trials (RCTs) and non-RCTs that had some form of physical exercise undertaken prior to surgery were included. Descriptive characteristics such as participant characteristics, study design, types of cancer, length of study, and primary outcomes were extracted. Methodological rigour was assessed using a modified Delphi List. Due to the heterogeneity and the dearth of pre-surgical studies, we were limited to a systematic review rather than a meta-analysis.

Results: Eighteen studies were included consisting of a total of 966 participants. Lung cancer studies were the predominant group represented. Most of the studies prescribed an aerobic intervention programs done prior to surgery. Mode, frequency, duration, and intensity of exercise intervention varied across the different cancer groups. The majority of studies showed preliminary positive change in clinical outcomes with significant improvements in the rate of incontinence, functional walking capacity and cardiorespiratory fitness.

Conclusion: Pre-surgical exercise may benefit cancer patients through positive effects on function and physical capacity. Surgical oncologists may consider pre-surgical exercise interventions as a potential adjuvant therapy to improve patients' outcomes.

Support Care Cancer. 2015 Feb;23(2):365-70. doi: 10.1007/s00520-014-2363-4. Epub 2014 Aug 6.

Preoperative nutritional support in cancer patients with no clinical signs of malnutrition-prospective randomized controlled trial.

Kabata P[1], Jastrzebski T, Kakol M, Król K, Bobowicz M, Kosowska A, Jaśkiewicz J.

⊕ Author information

Abstract

PURPOSE: Preoperative nutrition is beneficial for malnourished cancer patients. Yet, there is little evidence whether or not it should be given to nonmalnourished patients. The aim of this study was to assess the need to introduce preoperative nutritional support in patients without malnutrition at qualification for surgery.

METHODS: This was a prospective, two-arm, randomized, controlled, open-label study. Patients in interventional group received nutritional supplementation for 14 days before surgery, while control group kept on to their everyday diet. Each patient's nutritional status was assessed twice-at qualification (weight loss in 6 months, laboratory parameters: albumin, total protein, transferrin, and total lymphocyte count) and 1 day before surgery (change in body weight and laboratory parameters). After surgery, all patients were followed up for 30 days for postoperative complications.

RESULTS: Fifty-four patients in interventional and 48 in control group were analyzed. In postoperative period, patients in control group suffered from significantly higher ($p < 0.001$) number of serious complications compared with patients receiving nutritional supplementation. Moreover, levels of all laboratory parameters declined significantly ($p < 0.001$) in these patients, while in interventional arm were stable (albumin and total protein) or raised (transferrin and total lymphocyte count).

CONCLUSIONS: Preoperative nutritional support should be introduced for nonmalnourished patients as it helps to maintain proper nutritional status and reduce number and severity of postoperative complications compared with patients without such support.

Interactive CardioVascular and Thoracic Surgery Advance Access published May 12, 2014

Interactive CardioVascular and Thoracic Surgery (2014) 1–13
doi:10.1093/icvts/ivu126

STATE OF THE ART – THORACIC

Perioperative physiotherapy in patients undergoing lung cancer resection

Ana Rodriguez-Larrad[a], Ion Lascurain-Aguirrebena[a], Luis Carlos Abecia-Inchaurregui[b] and Jesús Seco[c,d,*]

possible to conduct a meta-analysis. The most important finding of this systematic review is that presurgical interventions based on moderate-intense aerobic exercise in patients undergoing lung resection for lung cancer improve functional capacity and reduce postoperative morbidity, whereas interventions performed only during the postoperative period do not seem to reduce postoperative pulmonary complications or length of hospital stay. Nevertheless, no firm conclusions can be drawn because of the heterogeneity of the studies included.

Anaesthesia 2014, 69 (Suppl. 1), 26–34 doi:10.1111/anae.12490

Review Article

Patient frailty: the elephant in the operating room

R. E. Hubbard[1] and D. A. Story[2]

Prehabilitation to Enhance Perioperative Care

Francesco Carli, MD, MPhil, FRCA, FRCPC[a,*], Celena Scheede-Bergdahl, MSc, PhD[a,b]

KEYWORDS

• Surgery • Elderly • Cancer • Prehabilitation • Exercise • Nutrition

KEY POINTS

- Despite advances in surgical care, there remain patients with suboptimal recovery; elderly patients, especially those with cancer and limited protein reserve are at highest risk for negative postsurgical outcomes.
- Although more traditional approaches have targeted the postoperative period for rehabilitation, it has been shown that the preoperative period is most effective for intervention.
- Surgical prehabilitation is an emerging concept, deriving from the realization that effective perioperative care must include in addition to the clinical and pharmacological preparation of the surgical preparation, preoperative physical, nutritional and psychological optimization.

THE STRESS OF SURGERY AND TRAJECTORY OF RECOVERY

Tissue trauma, physical inactivity, quasi-starvation and psychological distress represent major stresses to the body. In turn, immediate systemic changes are initiated,

ONS | Congress

Oncologist. 2012;17(8):1120-8. Epub 2012 Jul 2.

Safety of weightlifting among women with or at risk for breast cancer-related lymphedema: musculoskeletal injuries and health care use in a weightlifting rehabilitation trial.

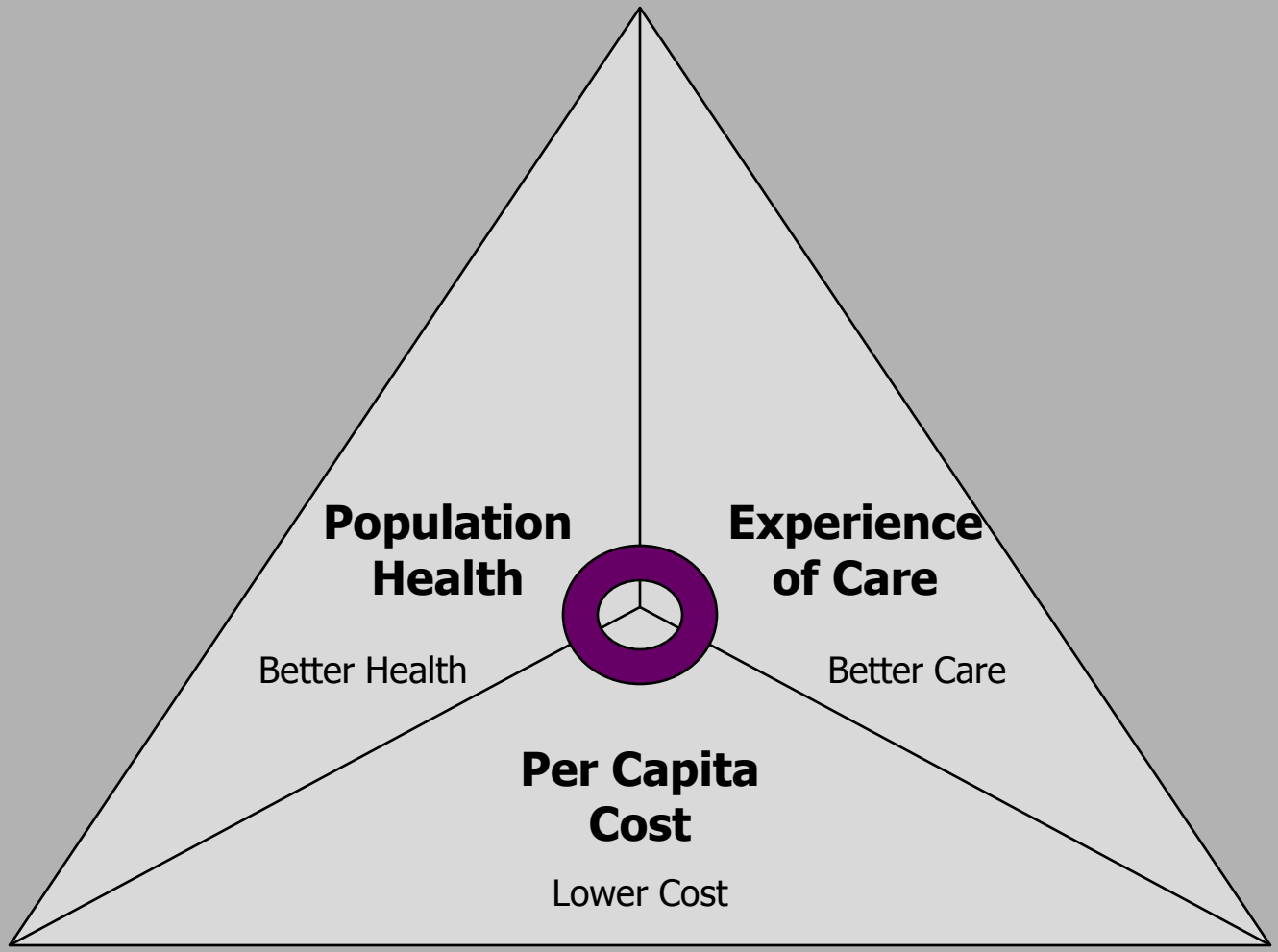
Brown JC, Troxel AB, Schmitz KH.

M.P.H., University of Pennsylvania School of Medicine, 423 Guardian Drive, 8th Floor, Blockley Hall, Philadelphia, Pennsylvania 19104, USA. schmitz@mail.med.upenn.edu.

Abstract

Introduction. It has been noted that only 14% of all clinical trials are translated into practice. The objective of this paper is to promote translation of an efficacious rehabilitative exercise program for breast cancer survivors by clarifying for clinicians the safety profile of participants (e.g., rates of musculoskeletal injury and referral to medical professionals), and to use this evidence to make recommendations on the appropriate training of health and fitness staff who would be capable of safely, effectively, and sustainably delivering the program. Methods. Breast cancer survivors with and at risk for lymphedema were randomized to twice-weekly weightlifting or standard care for 1 year. An injury survey and health care evaluation were administered after 1 year and in 3-month intervals, respectively. Results. The cumulative incidence and rate of injury were higher in the weightlifting than in the control group. The injury rates were 2.3 and 0.3 per 1,000 bouts of weightlifting among breast cancer survivors with and at risk for lymphedema, respectively. Among breast cancer survivors with or at risk for lymphedema, 20.9% in the weightlifting group had an encounter with a health care provider that required cessation or dose modification of weightlifting. Conclusion. Despite the demonstrated efficacy of weightlifting, musculoskeletal injuries and other health problems did occur. Therefore, for the successful translation of this rehabilitative intervention into clinical practice, health and fitness professionals working with breast cancer survivors need the knowledge, skills, and abilities that clarify their scope of practice to address these health care needs.

Triple aim


Population Health
Better Health
Experience of Care
Better Care
Per Capita Cost
Lower Cost

Triple aim in cancer care

Kunnen we patiënten gezonder en gelukkiger maken---met minder bezoeken, minder onnodige onderzoeken (bijv onderzoek botmeta's bij spier en gewrichtsklachten), en lagere kosten?

Yes we can!

Als we beperkingen vroeg signaleren en efficiënt en effectief behandelen

Casus

pt met triple negatief borstkanker, 3 jaar na chirurgie, radiotherapie en chemotherapie.

Symptomen: pijn in de schouder in de nacht.

Zijn we bezorgd over metastasen?

Vervolg casus

Diagnose: frozen shoulder, behandeling is pijnstilling en fysiotherapie.

Maar pte kan niet werken, waardoor niet?

Conclusie: bepalen baseline, snel anticiperen op problemen voorkomt onnodig stress en kosten

Casus 2

Pijn in de elleboog aan de niet-geopereerde kant en ze laat dingen vallen.

Doen we diagnostiek?

Diagnose: tennis elleboog tgv overbelasting (door ontzien van de geopereerde kant)

Casus 3

Symptoom: duim blijft vastzitten en haar vingers tintelen.

Moet er diagnostiek gedaan worden?

Diagnose: trigger finger en CTS.

Waarom?

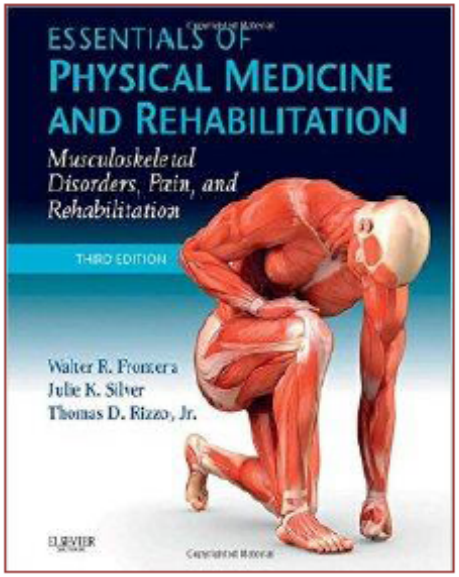
How many impairments did we just discuss?

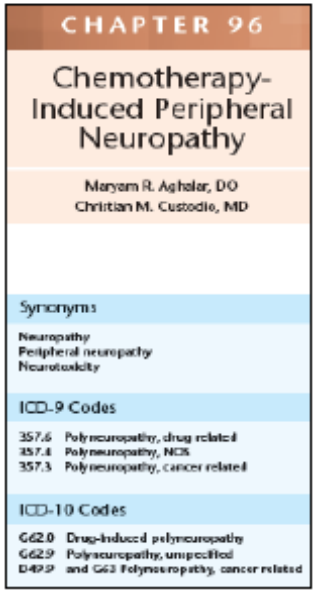
- Rotator cuff impingement
- Adhesive capsulitis (frozen shoulder)
- Lateral epicondylitis (tennis elbow)
- Median neuropathy (carpal tunnel syndrome)
- Trigger finger

PLoS One. 2014 May 9;9(5):e96748. doi: 10.1371/journal.pone.0096748. eCollection 2014.

Treatment related impairments in arm and shoulder in patients with breast cancer: a systematic review.

Hidding JT[1], Beurskens CH[2], van der Wees PJ[3], van Laarhoven HW[4], Nijhuis-van der Sanden MW[3].





CHAPTER 96

Chemotherapy-Induced Peripheral Neuropathy

Maryam R. Aghalar, DO
Christian M. Custodio, MD

Synonyms

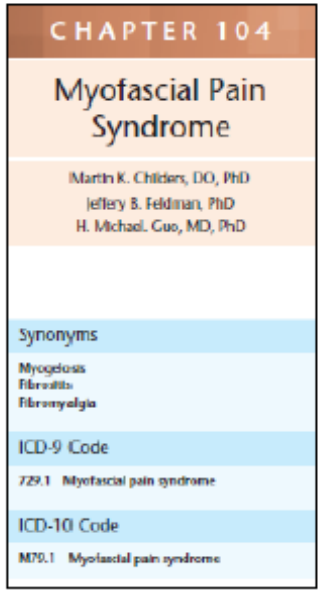
Neuropathy
Peripheral neuropathy
Neurotoxicity

ICD-9 Codes

357.6 Polyneuropathy, drug related
357.4 Polyneuropathy, NOS
357.3 Polyneuropathy, cancer related

ICD-10 Codes

G62.0 Drug-induced polyneuropathy
G62.9 Polyneuropathy, unspecified
D49.9 and G63 Polyneuropathy, cancer related



CHAPTER 104

Myofascial Pain Syndrome

Martin K. Childers, DO, PhD
Jeffery B. Feldman, PhD
H. Michael Guo, MD, PhD

Synonyms

Myogelosis
Fibrositis
Fibromyalgia

ICD-9 Code

729.1 Myofascial pain syndrome

ICD-10 Code

M79.1 Myofascial pain syndrome

CHAPTER 109

Post-Mastectomy Pain Syndrome

Justin Rhatta, MD, FAAPMR

Synonyms

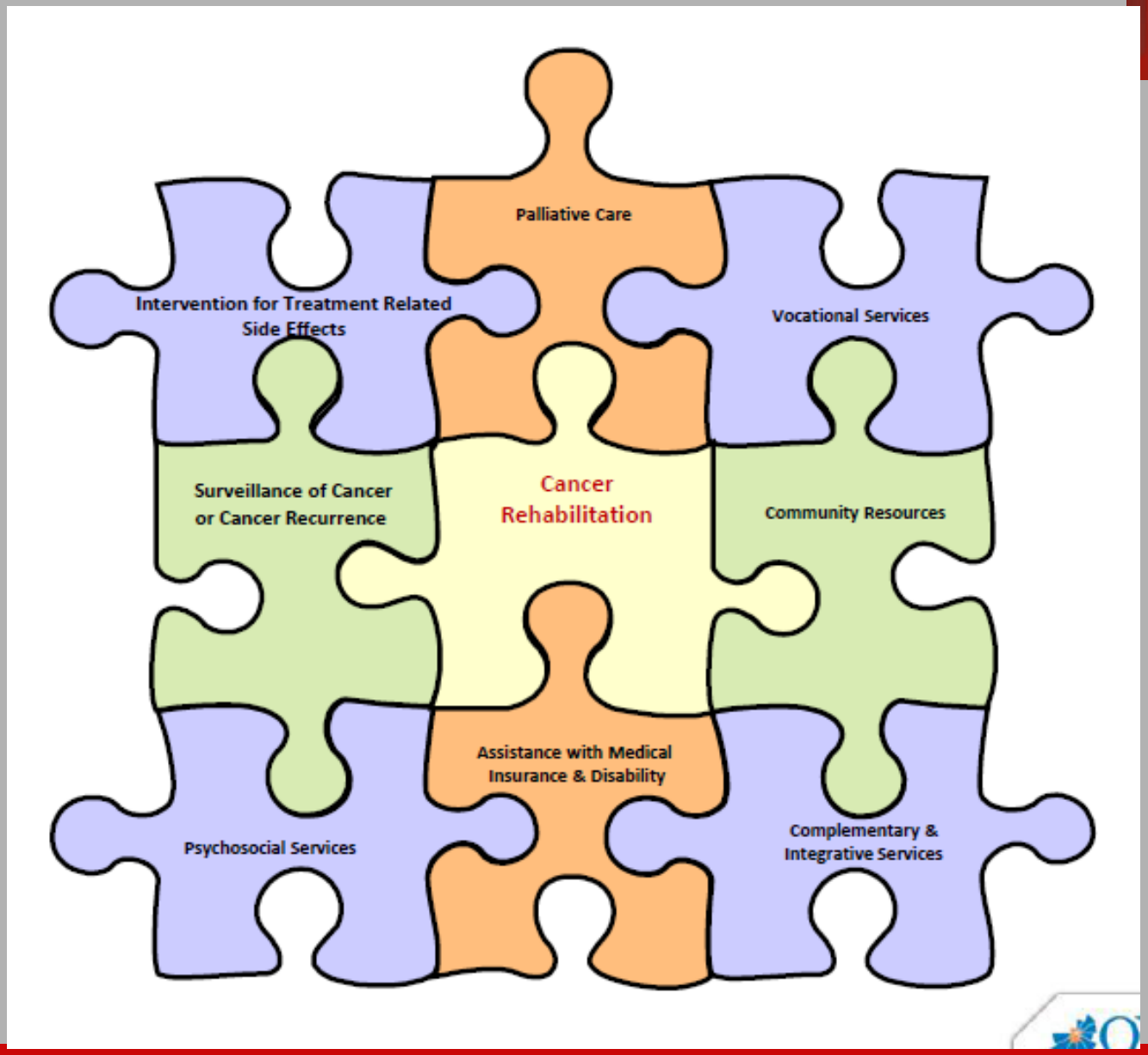
Post–axillary dissection pain
Mastodynia

ICD-9 Codes

457.1 Lymphedema
338.28 Chronic postoperative pain

ICD-10 Codes

I89.0 Lymphedema, not elsewhere classified
G89.28 Chronic postoperative pain


Palliative Care
Intervention for Treatment Related Side Effects
Vocational Services
Surveillance of Cancer or Cancer Recurrence
Cancer Rehabilitation
Community Resources
Assistance with Medical Insurance & Disability
Psychosocial Services
Complementary & Integrative Services

Implementatie prehabilitatie

- Multidisciplinair
- Evidenced based
- Investering is noodzakelijk
- Duurt een aantal maanden
- Voor je het resultaat volledig hebt bereikt duurt 3 tot 5 jaar..

Toekomst

- Meer en beter wetenschappelijk onderzoek
- Meer begrip voor belangrijke rol revalidatie
- Groeiende behoefte bij patiënten en oncologen aan revalidatie.
- Dalende kosten door revalidatie
- Meer betrokkenheid van de eerste lijn
- Betere vergoedingen
- Revalidatie is geen optie maar standaard onderdeel van kwalitatieve oncologische zorg