

Rehabilitation & Exercise and Breast Cancer

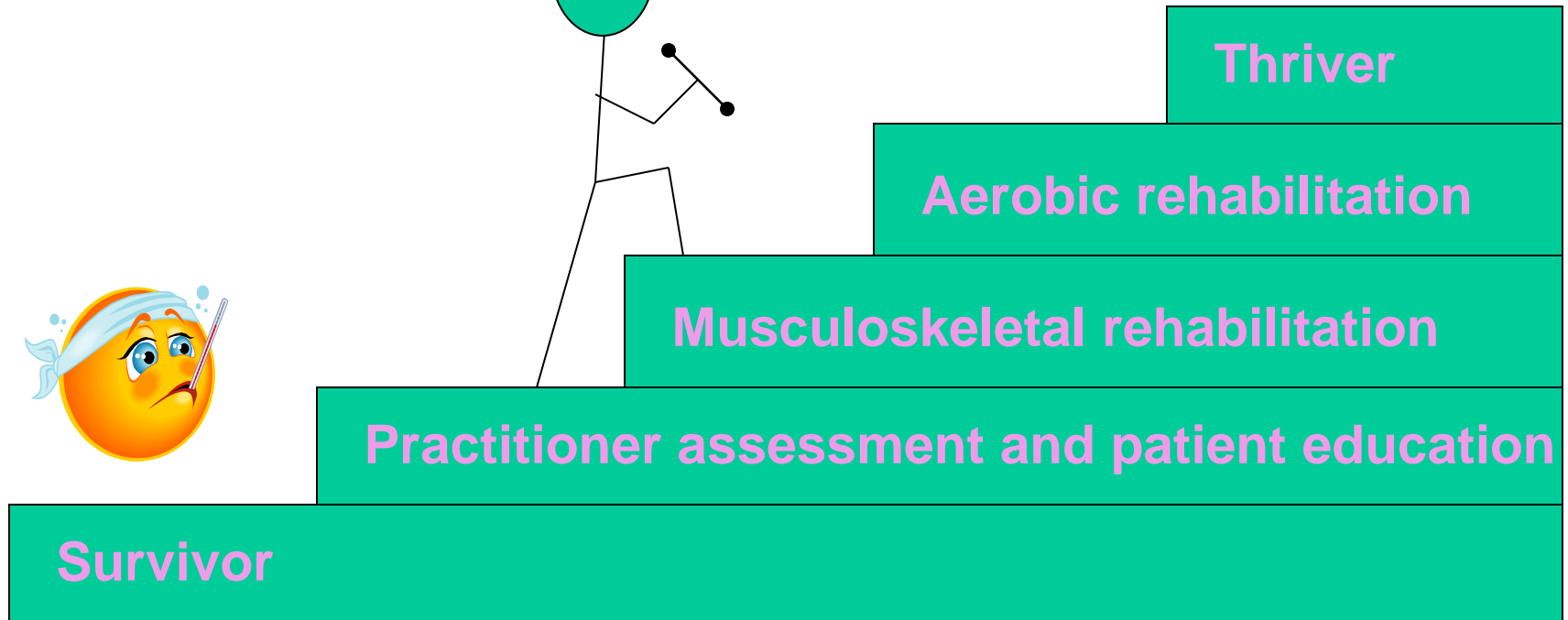
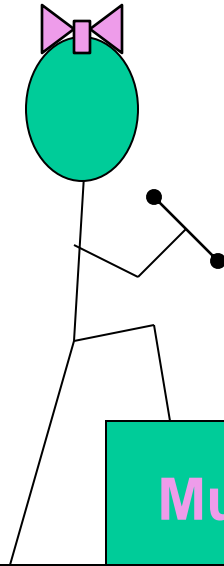
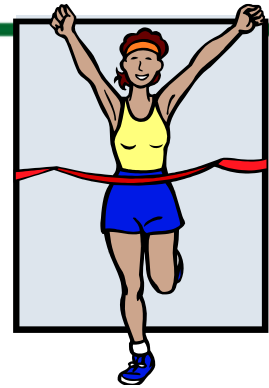
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Associate Professor
PM&R

 RUSH UNIVERSITY
MEDICAL CENTER

IT'S HOW MEDICINE

SHOULD BE

- Talk about the role of rehabilitation in Breast Cancer treatment and recovery
 - Musculoskeletal
 - Aerobic
 - Special topics
 - Lymphedema
- Thriving not just surviving!



Multiple Interventions

Surgical

Lumpectomy

Mastectomy

- Radical
- TRAM Flap
- Latissimus Dorsi Flap
- Unilateral
- Uilateral

Lymph Node Dissection

- Sentinel Node Procedure
- Resections

Reconstruction

Chemotherapy

Radiation

Chest Wall
Mammosite

Hormonal Therapies



Is There a Role for Rehabilitation??

- As early as 1976 (Winick, 1976; Amer J Surgery)
 - Memorial Sloan-Kettering Cancer Center Memorial Hospital, NYC
 - Post-Mastectomy Rehabilitation Group
- 1989 (Wingate, 1989; Arch Phy Med Rehab)
 - Rehabilitation after Mastectomy increases functional return
- 1999 (Pinto, 1999;Psyco-Oncology)
 - Need to address *both physical and emotional* issues

Is There a Role for Rehabilitation??

- **2005** (Karin, 2005; Acta Oncologica)
 - Is physiotherapy useful to breast cancer patients? – **Yes Indeed!**
- **2005 – RCT** (Lauridsen,2005; Acta Oncologia)
 - RC study clearly demonstrate improved shoulder function within 6-8 wks post op & if delayed (started 6 mo. out)
- **2007 EMG Changes** (Shamley, 2007; Breast Cancer Res Treat)
 - Upper trapezius; rhomboids, pec maj & minor
 - “mms associated with pain and disability **YET** not in direct field of surgery or

Is There a Role for Rehabilitation??

- **2008** (Kilgour, 2008; Breast Cancer Research and Treatment)
 - Home Exercise Program increased shoulder mobility
- **2008** (Shamley, 2008; Breast Cancer Research and Treatment)
 - Scapula dysfunction identified (3D Kinematics)

Is There a Role for Rehabilitation??

Heck Ya!!!!

A Complex Rehabilitation Intervention

- Dependent on the treatment intervention
- Each treatment intervention
 - **Treatment dependent** problem list
 - Mastectomy or Lumpectomy + complications
 - Radiation + complications
 - Chemotherapy + complications
 - Combination effects
 - **Patient dependent** problem list
 - Preoperative physical health
 - Preoperative physical limitations
 - Living conditions

~Healey 1971 ~

Role of Rehabilitation in the Care of the Patient with Breast Cancer

- *“Every opportunity must be given the cancer patient to continue ‘his’ life in dignity rather than in despair”*

Breast Surgery

No other body part is amputated or reconstructed without physical therapy intervention as the first line of the rehabilitation process except the breast

Nancy Roberg, PT, DPT MEd

Musculoskeletal Considerations

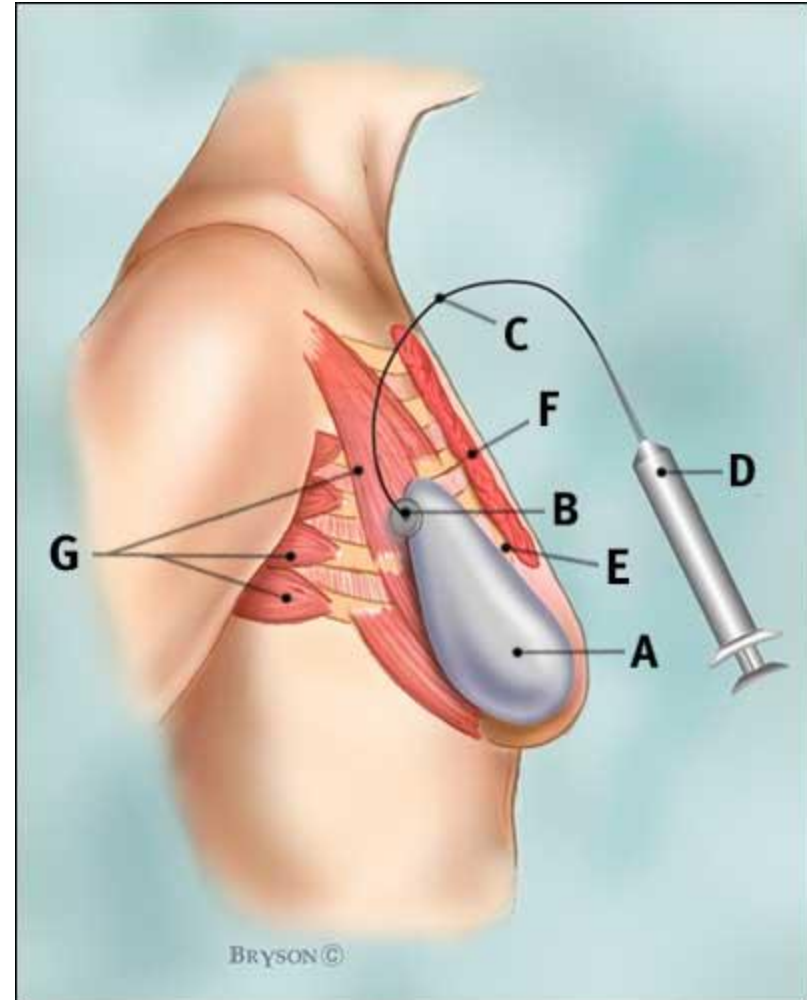
- Types of Reconstruction
- Anatomy
- Complications

Types of Reconstruction

- Breast Implants
- Latissimus Dorsi Flap
- TRAM Flap

Tissue Expander

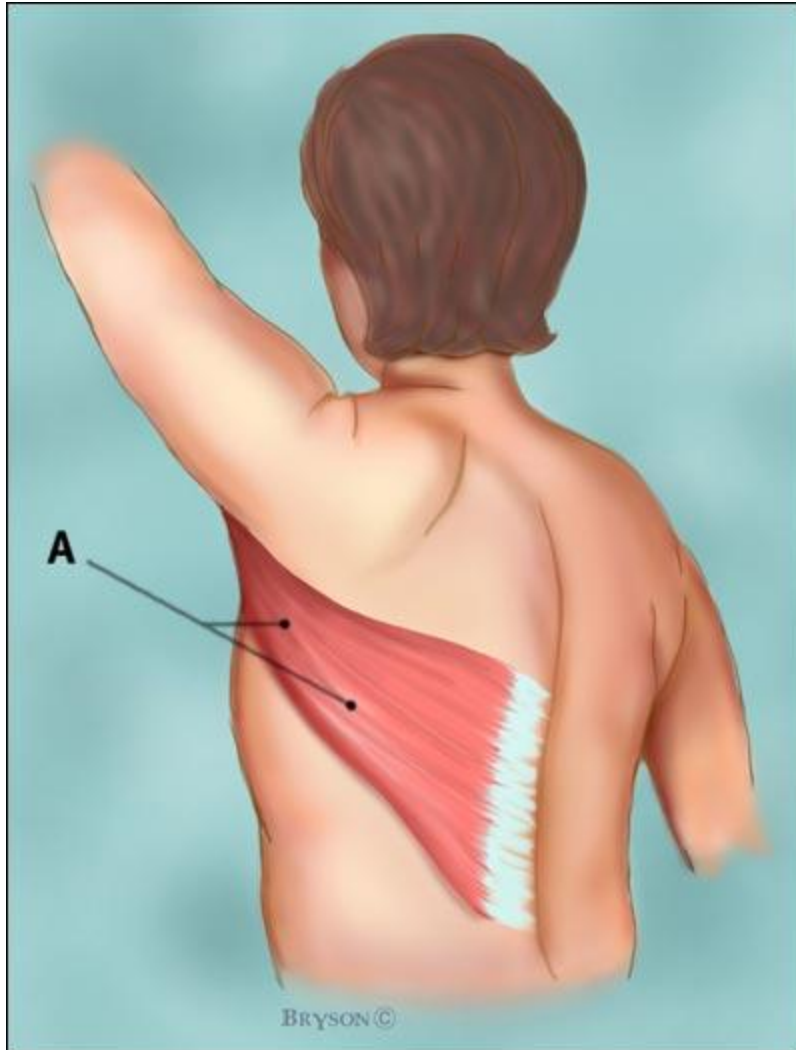
- A** Tissue expander-filled
- B** Port
- C** Catheter
- D** Syringe
- E** Ribs
- F** Pectoralis major muscle
- G** Other muscles of the chest wall
(3 lines to one letter)



Side view of breast area with filled tissue expander in place

Latissimus Dorsi Flap

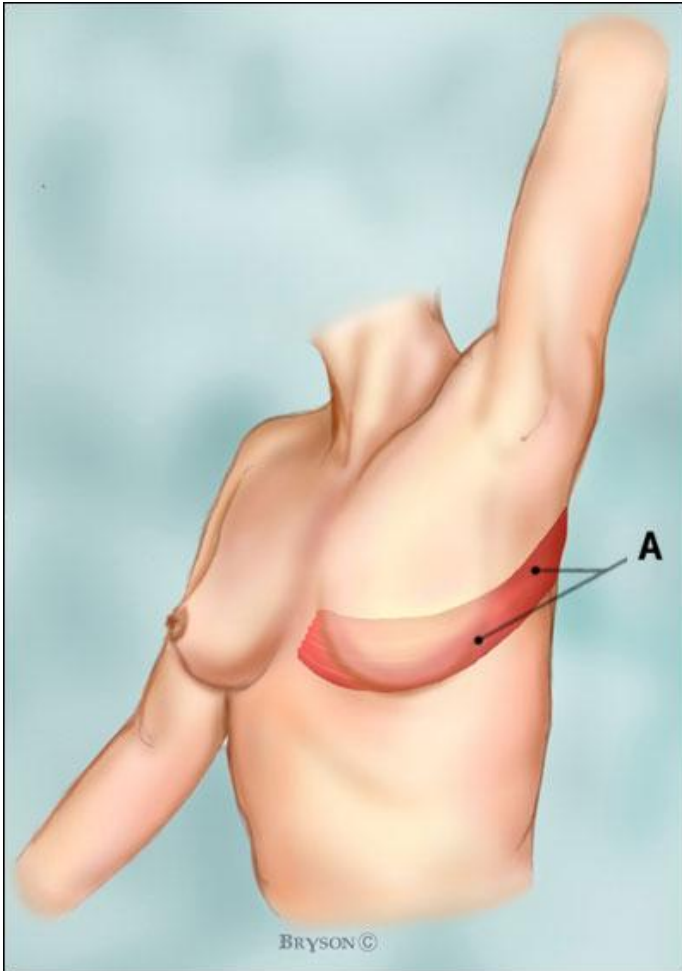
- Autologous Tissue
- 1977
- 2 day hospitalization
- Implant often required
- Complication- capsular contraction



A Latissimus dorsi muscle

Woman with latissimus dorsi muscle in place

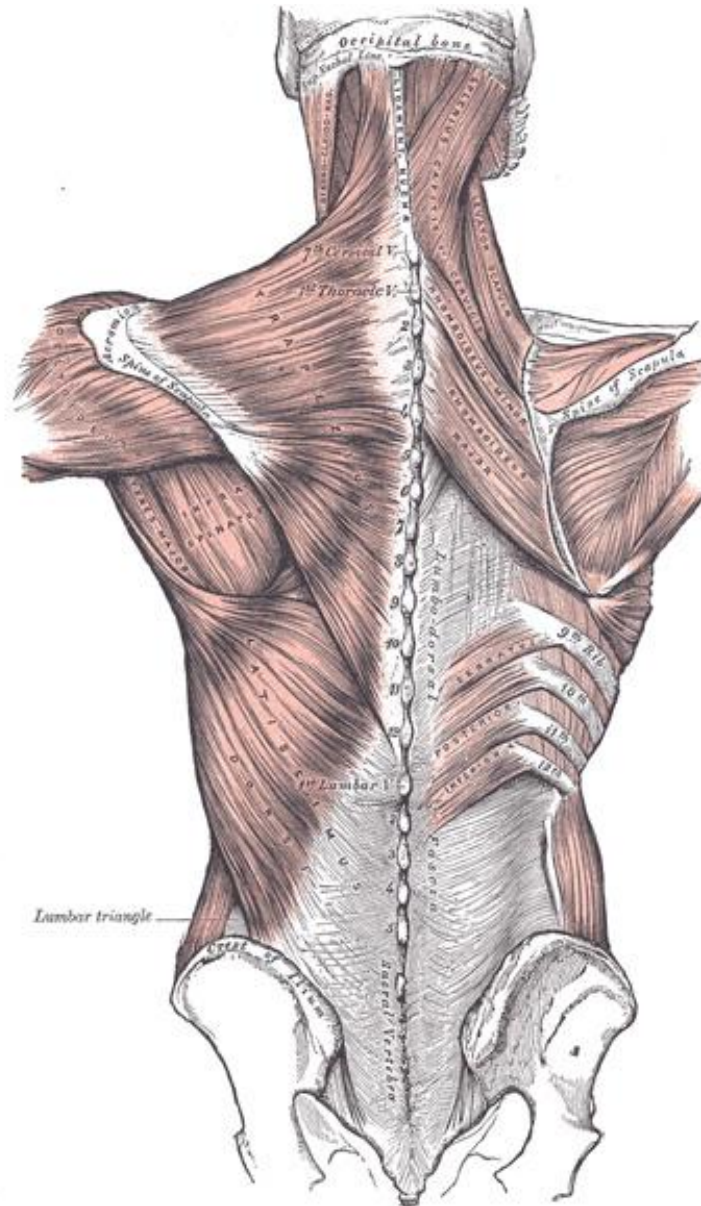
Latissimus Dorsi Flap



A Latissimus dorsi muscle in new location to re-create breast

Woman with latissimus dorsi muscle swung forward to re-create the new breast

Latissimus Dorsi

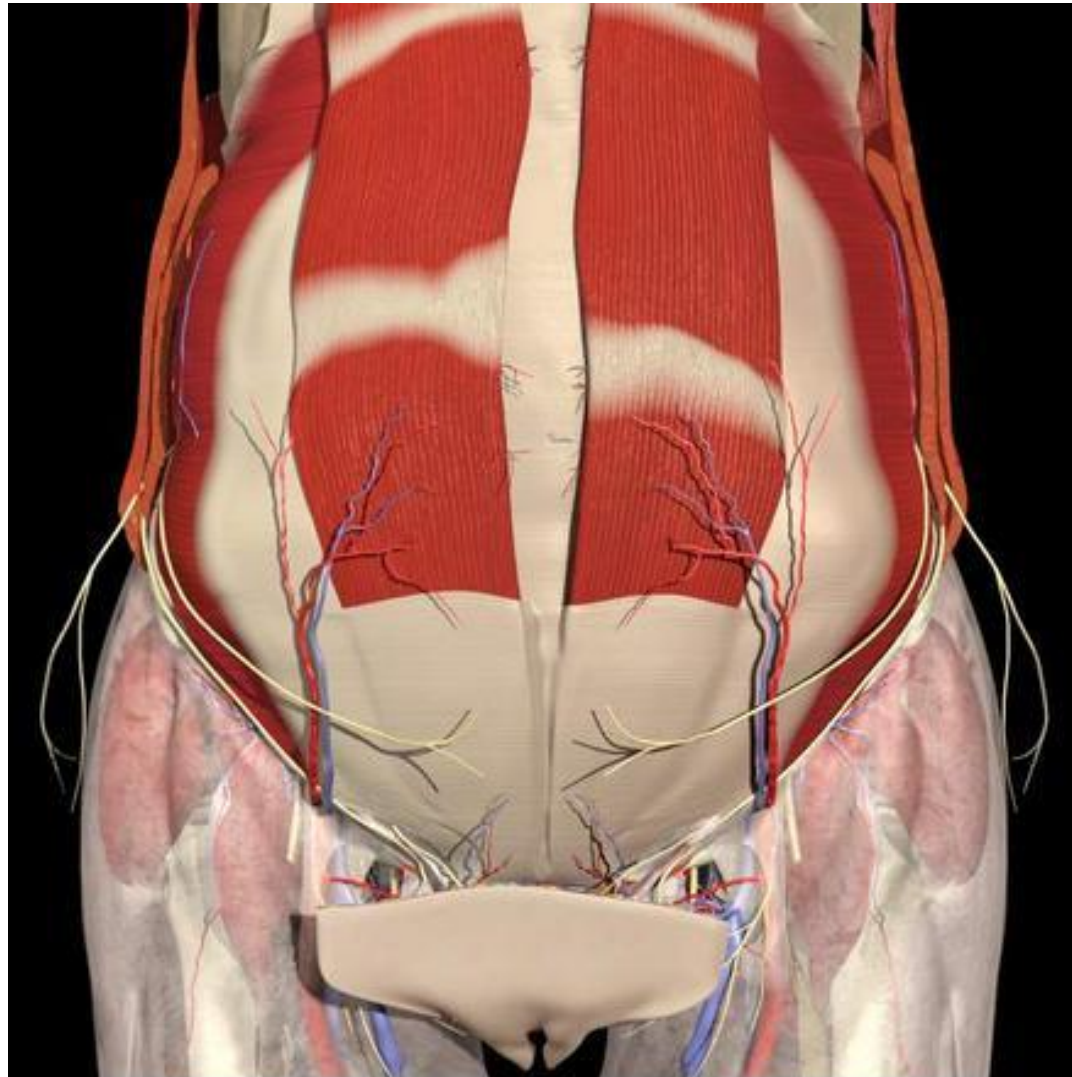


Latissimus Dorsi Flap

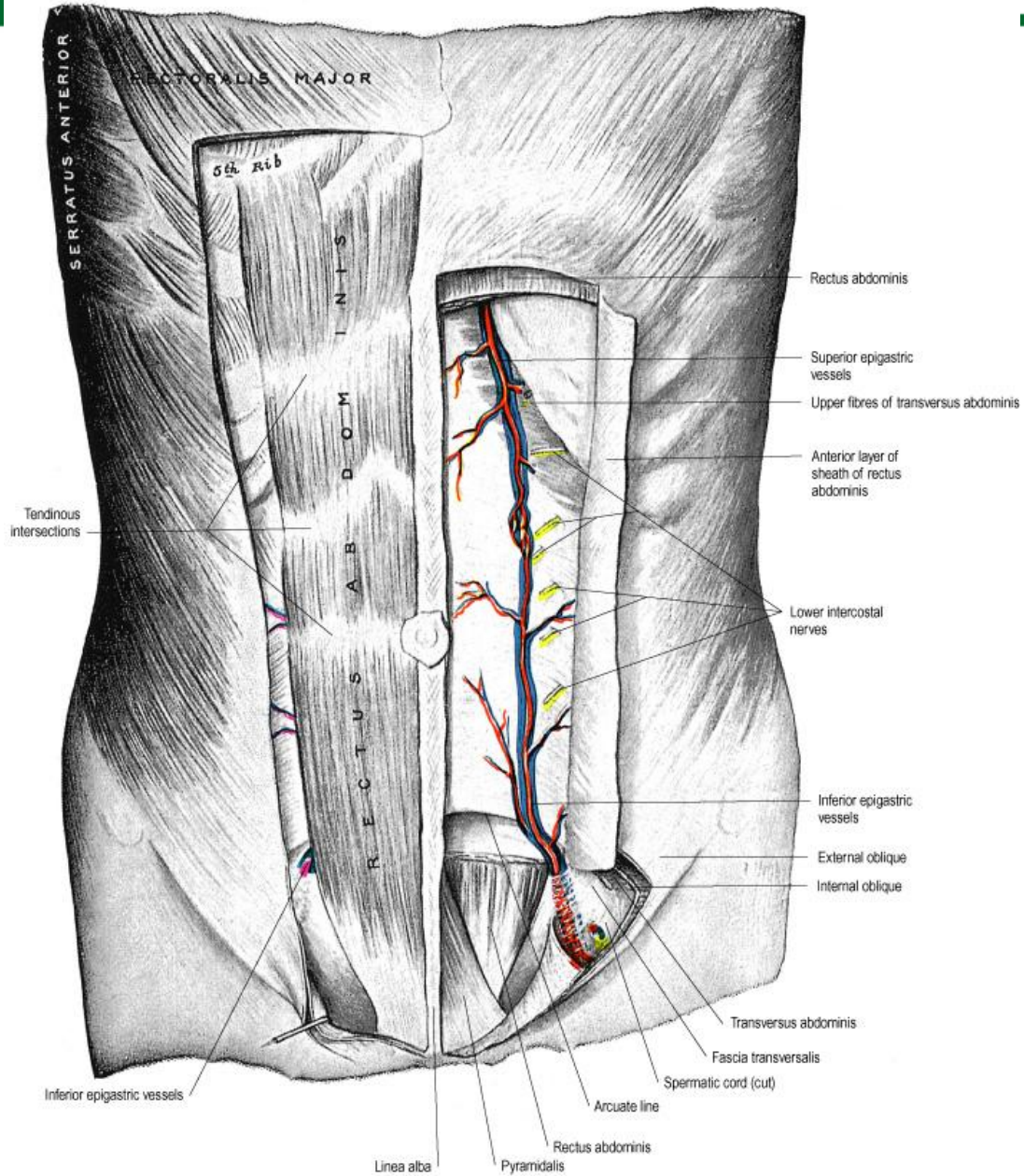
- Up to 30% patients with reduced strength
- Up to 40% patients with decreased function for higher level activities
 - Overhead reach
 - Vacuuming
 - Heavy lifting
 - » Adams Ann Plastic Surg 2004
 - » Clough Plast Reconstr Surg 2002

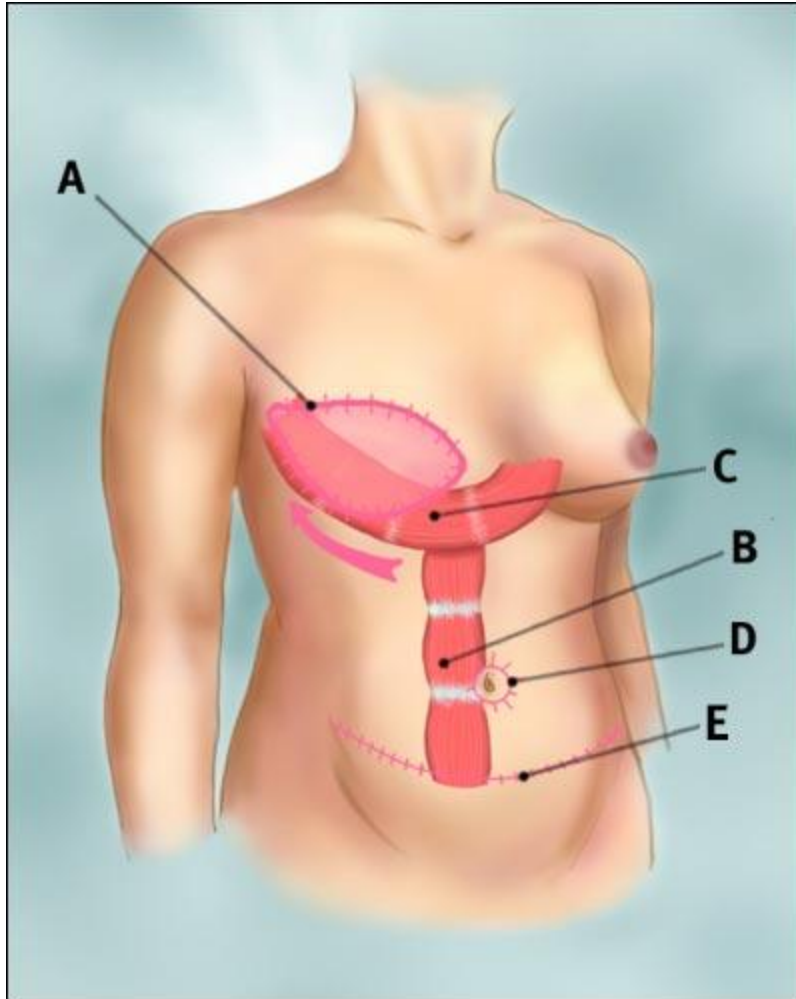
Tram Flap

- Transverse Rectus Abdominis Muscle
- Most Popular Autologous Reconstruction Option following Mastectomy
- “Tummy Tuck”
- 1982



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A Lines of reconstructed breast incisions

B Right trans rectus abdominis muscle

C Left TRAM muscle is swung over to re-create the new breast

D Incision circle of re-positioned "belly button" incision

E Line of abdominal surgery

Woman in process of trans-rectus abdominis muscle (TRAM) reconstruction.



Pre-Operative: Post-Operative Education

- Use handouts for follow up reference but ***DON'T just hand them the handouts!***
- Introduction to post-operative ROM progression ~ *they can start immediately*
- Introduction to post-operative limitations ~ *just give them a realistic heads up*
- Introduction to post-operative soft tissue interventions
 - Arnica gel for inflammation
 - Tea tree oil for tissue healing
 - Lymph edema Issues

Pre-Operative: Post-Operative Education

- Introduction to other post-operative care issues
 - Lifting – “nothing over 10 #”
 - Large shampoo and conditioner bottles
 - Wet laundry
 - Pot filled with water
 - Dinner plates
 - Vacuuming
 - Opening doors
 - Fastening a seat belt ~ location of seat belt
 - Sleeping positions
 - Getting out of bed
- Co-Contraction and Stabilization from opposite Pectoralis Major

Pre-Operative: Post-Operative Education

- Educate Family & Significant others
 - Expected limitations
 - Mom can't be “the one” anymore
 - The one to organize everything
 - Do the shopping
 - Laundry
 - House cleaning
- How do family and friends learn to help the “Do-er”
- How does the “Do-er” figure out how to accept the help

Shoulder Dysfunction

- Upper Limb Morbidity and Surgery
 - At 4 weeks post-op
 - Decreased flexion and abduction associated with functional limitations
 - Modified radical mastectomy patients more affected than lumpectomy
 - » Morimoto 2003

Shoulder Dysfunction

- Upper Limb Morbidity and LND
 - Significant impairment of shoulder flex/abd/horiz add seen in ALND, not SLND
 - » Peintenger Br J Cancer 2003
 - SLND less morbidity at 1 year but both groups have significant changes in shoulder assessment
 - » Reitman Ann Surg Oncol 2004
 - More extensive axillary clearance correlates with increased functional limitations of UE and shoulder
 - » Haid Euro J Surg Oncol 2003

Shoulder Dysfunction

- Upper Limb Morbidity and Radiation
 - Irradiated patients had loss of ROM and strength of ipsilateral shoulder
 - » Blomqvist Acta Oncol 2004

Radiation and Chemotherapy

- Both treatments are significant factors in predicting impaired shoulder AROM
 - » Reitman Ann Surg Oncol 2004

Shoulder Dysfunction

- Recovery of shoulder function
 - Early exercise is effective in facilitating and maintaining the recovery of shoulder movement over the first 2 years post-op
 - » Box Breast Cancer Res Treat 2002
- Recovery of limb function
 - Impaired shoulder mobility persists three months after surgery
 - » Gosselink J Surg Oncol 2003

Shoulder Dysfunction

Management-Physical Therapy

No thermal modalities

Early shoulder AROM < 90 degrees until drains removed

Stretch pectoralis major and minor

Can lead to Rotator Cuff problems later if tight

Normalize scapulothoracic rhythm

Can lead to thoracic pain later

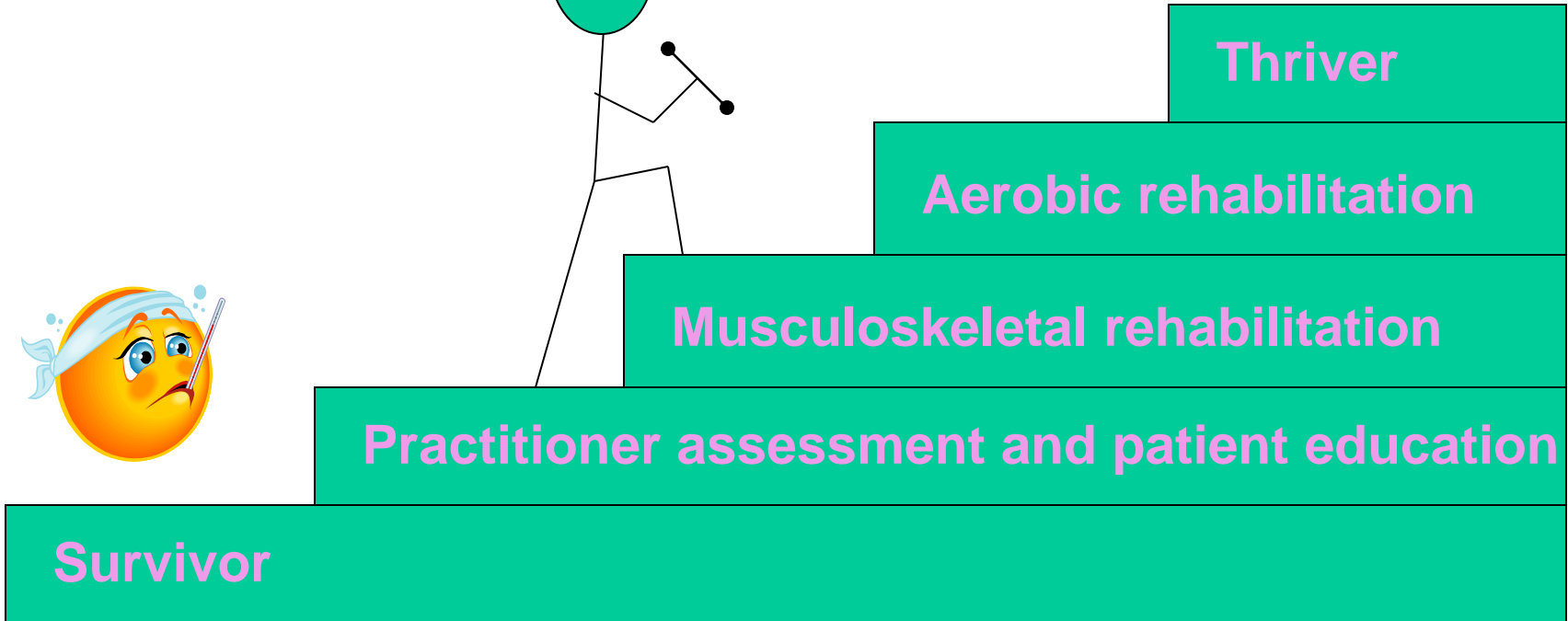
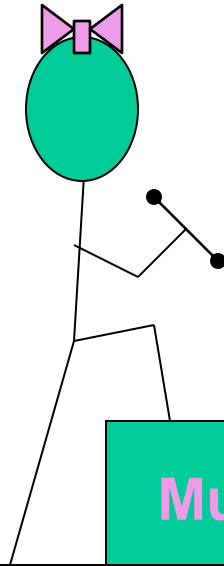
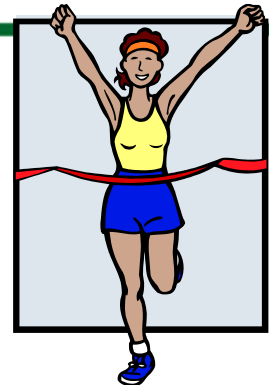
Home program with low weights, high reps

The Gift: Opportunity to “ReBuild”

- Posture
- Trunk/Core
- Pelvic Floor
- Shoulder
- Low back
- Upper extremity
- Fitness level
- Self awareness



Life as a New Bowl of Cherries!



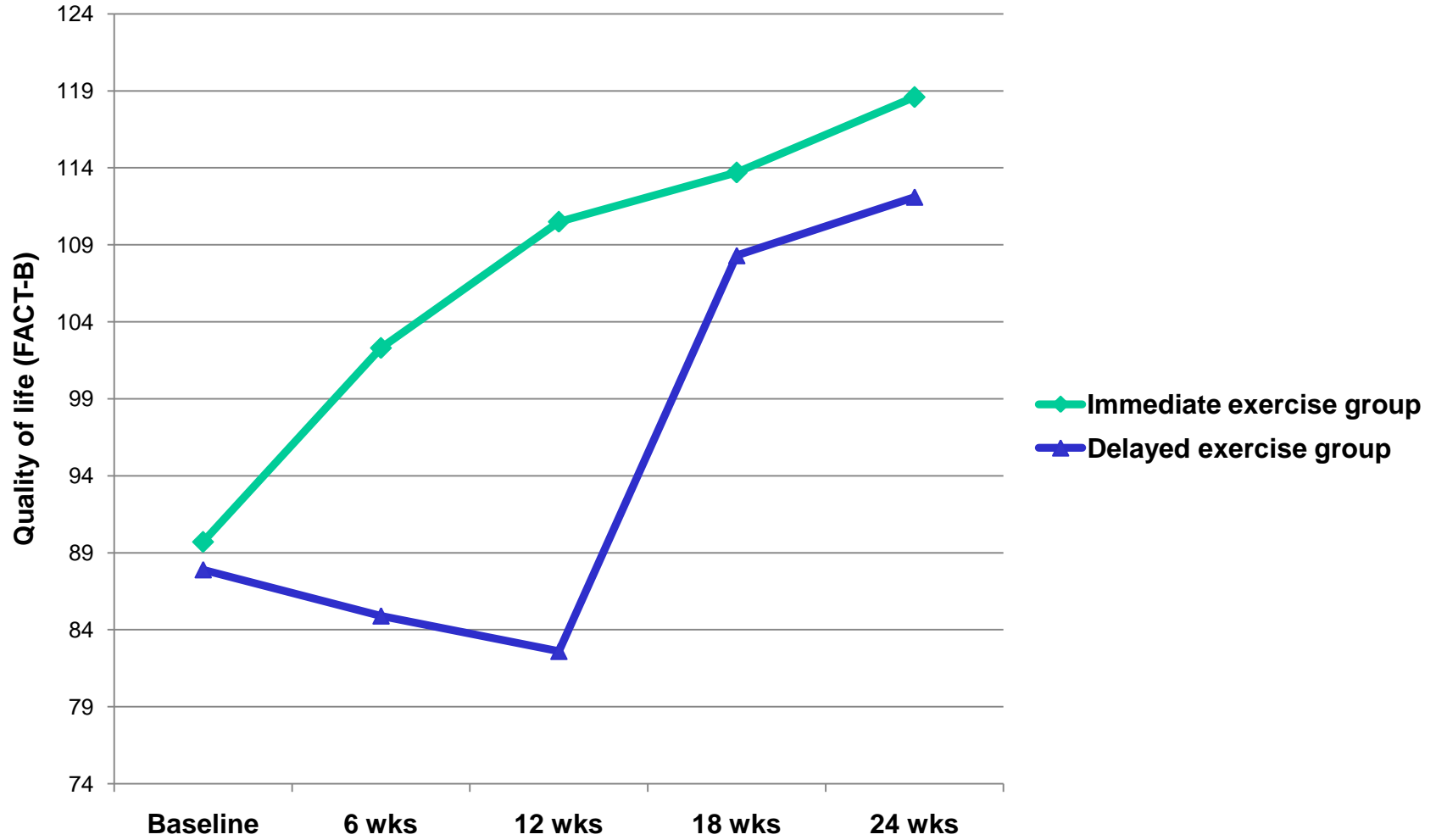
Thrivers

Aerobic rehabilitation

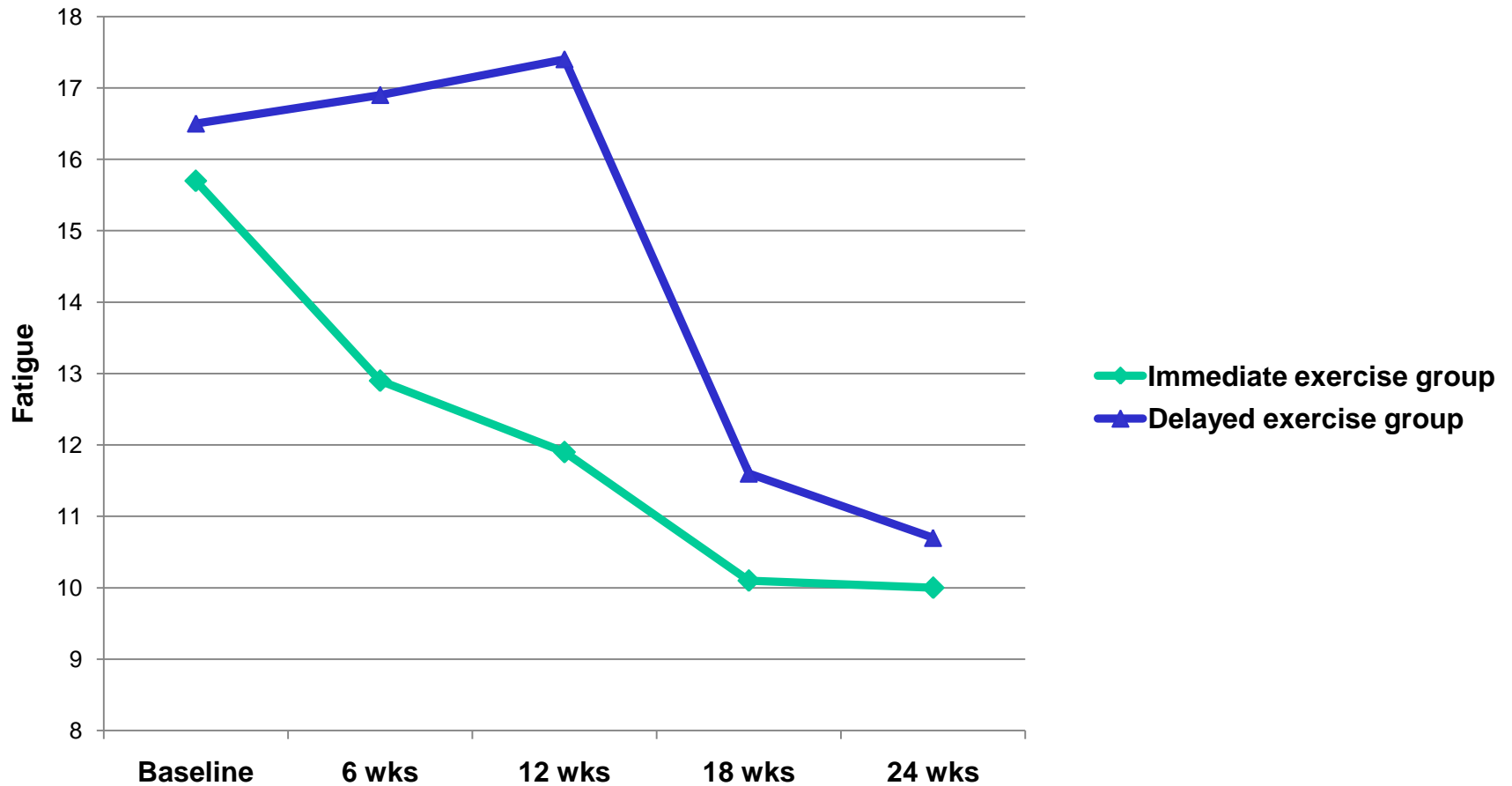
Musculoskeletal rehabilitation

Practitioner assessment and patient education

Survivor



Milne, et al, Breast Cancer Res Treat (2008) 108:279-288



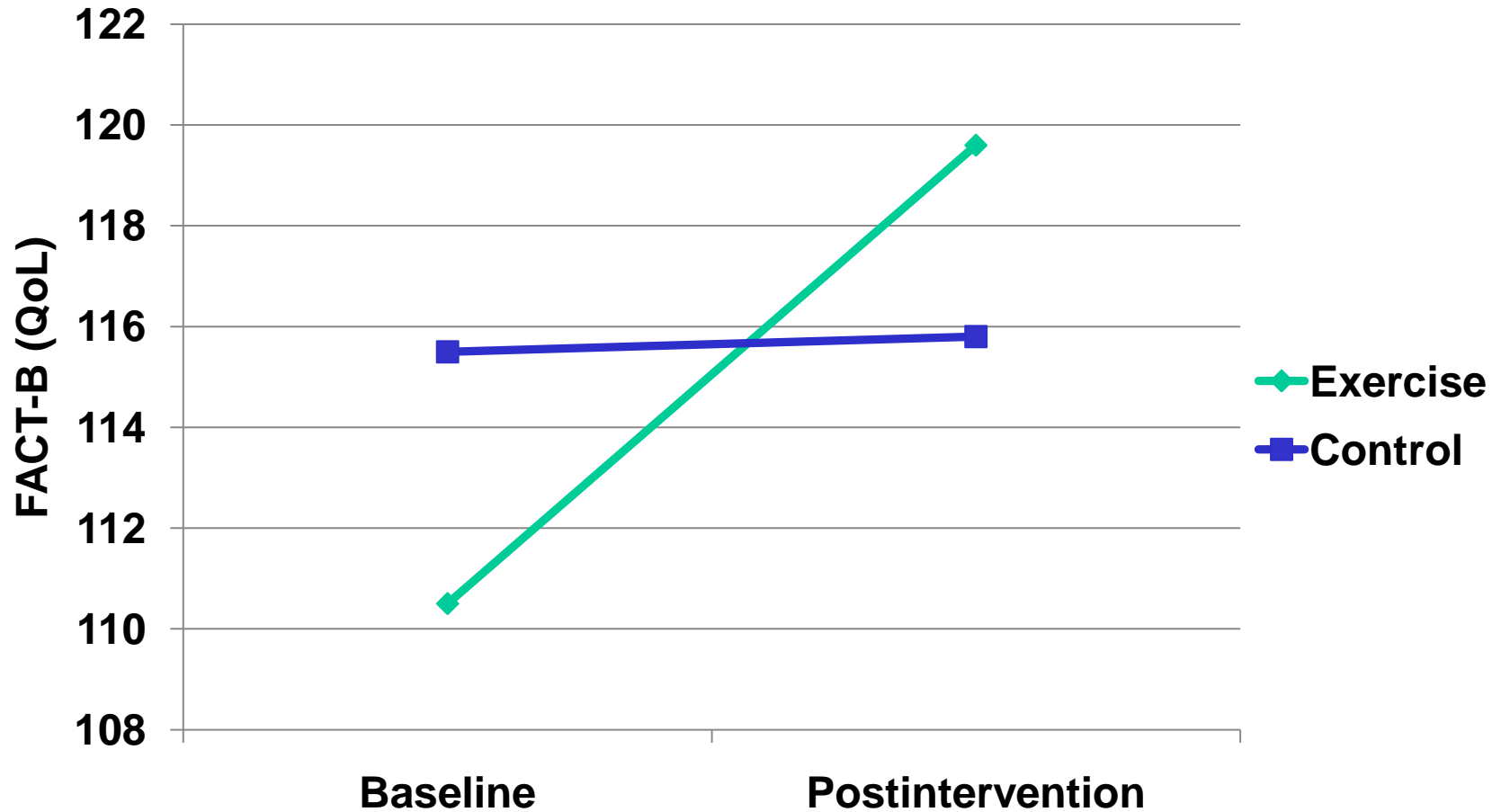
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Patients often do not receive exercise guidance after treatment

- **Anecdotal experience:**
 - “No one told me what to do. I had to find the right exercises on the internet.”
 - “No bridge exists between the surgeon and the patient.”
 - “It is not enough to be handed a piece of paper and told to follow these exercise instructions.”
- **Oncologist/physician recommendations:**
 - Patients report that only 34% to 41% of oncologists provide exercise recommendations with only 4% referring pts to an exercise specialist

- **Low-intensity, symptom-limited – probably helpful but not well-studied; individualized exercise dose**
- **Moderate intensity – helpful; most studied; exercise dose ranged from 15 to 45 minutes, 3 to 5 days per week; > 60 mins/session may increase fatigue suggesting maximum effective dose**
- **High intensity only in otherwise healthy individuals who have recovered from cancer therapy**

- **Several reviews of randomized trials suggest that exercise (supervised, home-based, various intensities) result in improved QoL**
- **As little as 30 minutes, 3 times per week is associated with better QoL (Blanchard, et al, Preventive Medicine 2003)**



15 wks, 105 mins/wk, vigorous, supervised, Courneya, et al, JCO 2003

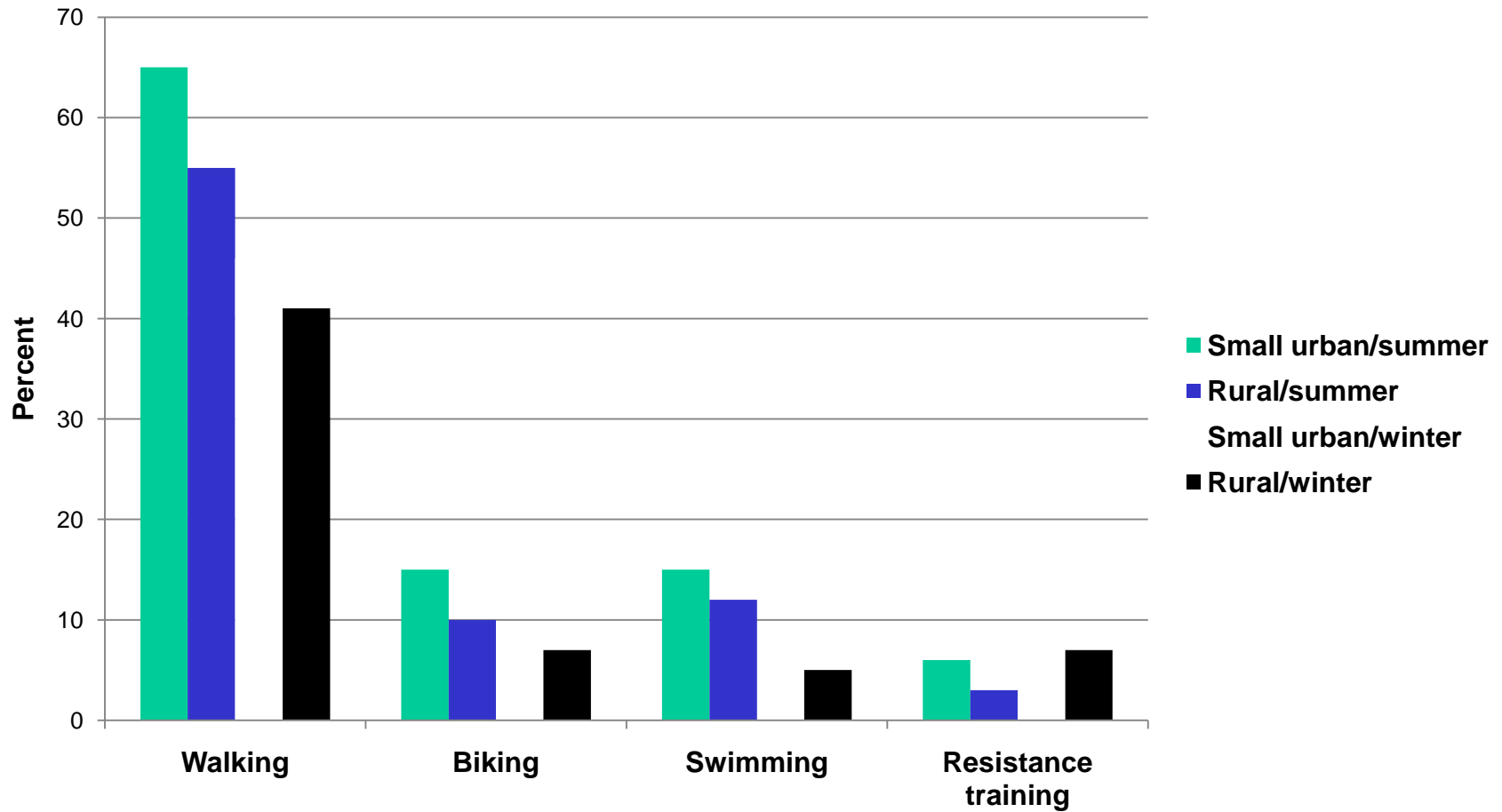
Exercise Prescription

Aerobic exercise recommendations during the 6 months after completing breast cancer treatment

- **In general (until more evidence is available), current public health recommendations apply (e.g., 30 minutes of moderate intensity exercise at least 5 days per week with resistance training)**
- **Increase to 180 minutes per week for cancer mortality benefit**
- **Individualized based on:**
 - **Desired outcome**
 - **Deconditioning/other medical problems**

- **Assess risk/benefits**
- **Refer if indicated based on comorbidities and/or severe deconditioning**
- **TMST, if indicated**
- **Start slow**
- **Proper shoes**
- **Educate about symptoms to report (e.g., worsening lymphedema, chest pain)**
- **Adequate hydration**
- **Loose fitting clothes**
- **Warm up/cool down**

Exercise preferences of breast cancer survivors



Other exercise elements most preferred by breast cancer survivors

- **Moderate intensity (64 to 65%)**
- **Outdoors and/or at home (63 to 65%)**
- **Company:**
 - **No (41%)**
 - **Family/friend (35% to 38%)**

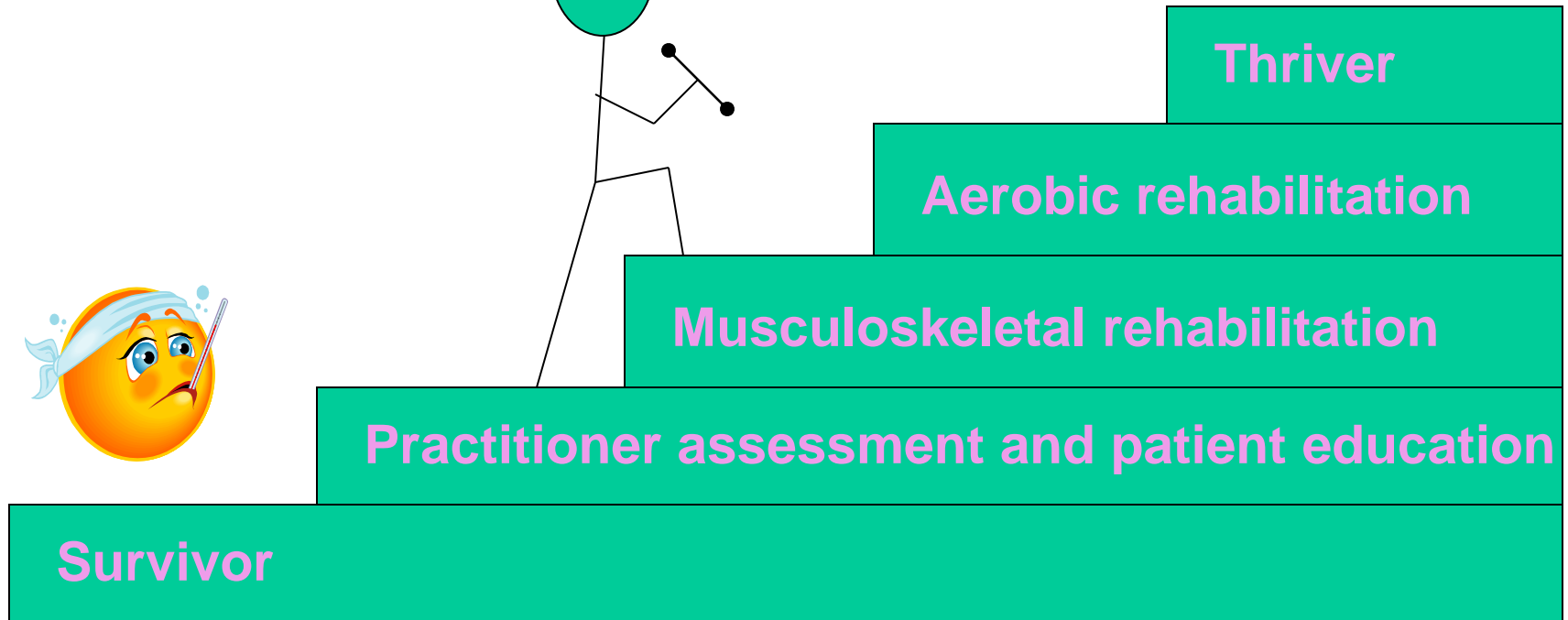
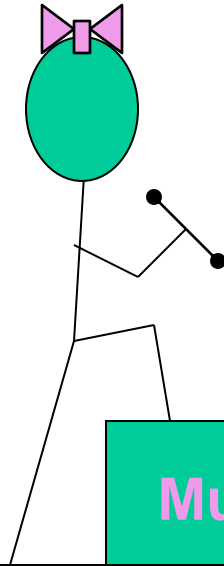
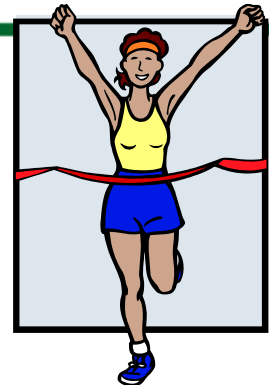
- **Sedentary**
 - may prefer low intensity
- **Younger age**
 - may prefer outdoor exercise
- **Lower social support**
 - may prefer exercising at home (inside), alone, and at low intensity
- **Fatigue**
 - may prefer not to exercise in the morning

- **One size does not fit all**
- **Start slow, no matter what you think**
- **Encourage social support, enjoyment, and safety**
- **Equipment/shoes may not be ideal**
- **Educate about how to check heart rate and/or accurately assess perceived exertion so that adequate intensity levels can be reached**

- ***Exercise for Health: An Exercise Guide for Breast Cancer Survivors***
(<http://www.behaviouralmedlab.ualberta.ca/research.cfm>)
- ***Celebrate Strength! A fitness DVD made for and by breast cancer survivors***
(www.survivorstraining.org/dvd)
- ***American Cancer Society*** (www.cancer.org)
- ***Living Beyond Breast Cancer***
(<http://www.lbbc.org/>)

- **Summary rather than detailed review**
- **Did not specifically address alternative approaches such as yoga, tai chi, etc.**

- **Evidence-based exercise recommendations for breast cancer survivors**
- **Optimal exercise intensity, frequency, and duration for outcomes of interest**
- **The effect of exercise on understudied breast cancer side effects**



Physical Therapy Intervention and LE

- UE exercise does not increase limb size
 - McKenzie J Clin Oncol 2003
 - Harris J Surg Oncol 2000

- At one year: Exer group=11% incid LE;
Control group=30% incid LE (n=65)
 - Box Breast Cancer Res Treat 2002

Physical Therapy Intervention and LE

- UE exercise important as higher rate of rotator cuff dysfunction in LE patients

Arch PM&R 85(12) 1939-42 2004

Lymphedema

- Prescription for Manual Therapy
- Complex decongestive therapy
 - Trained therapist in CDT
 - May be either PT or OT
 - Patient requires wrapping supplies
 - Short stretch bandages
 - Padding for skin protection
 - Foam for highly fibrotic patients

Girl Power



Enabling Survivors to be Thrivers!

Questions??