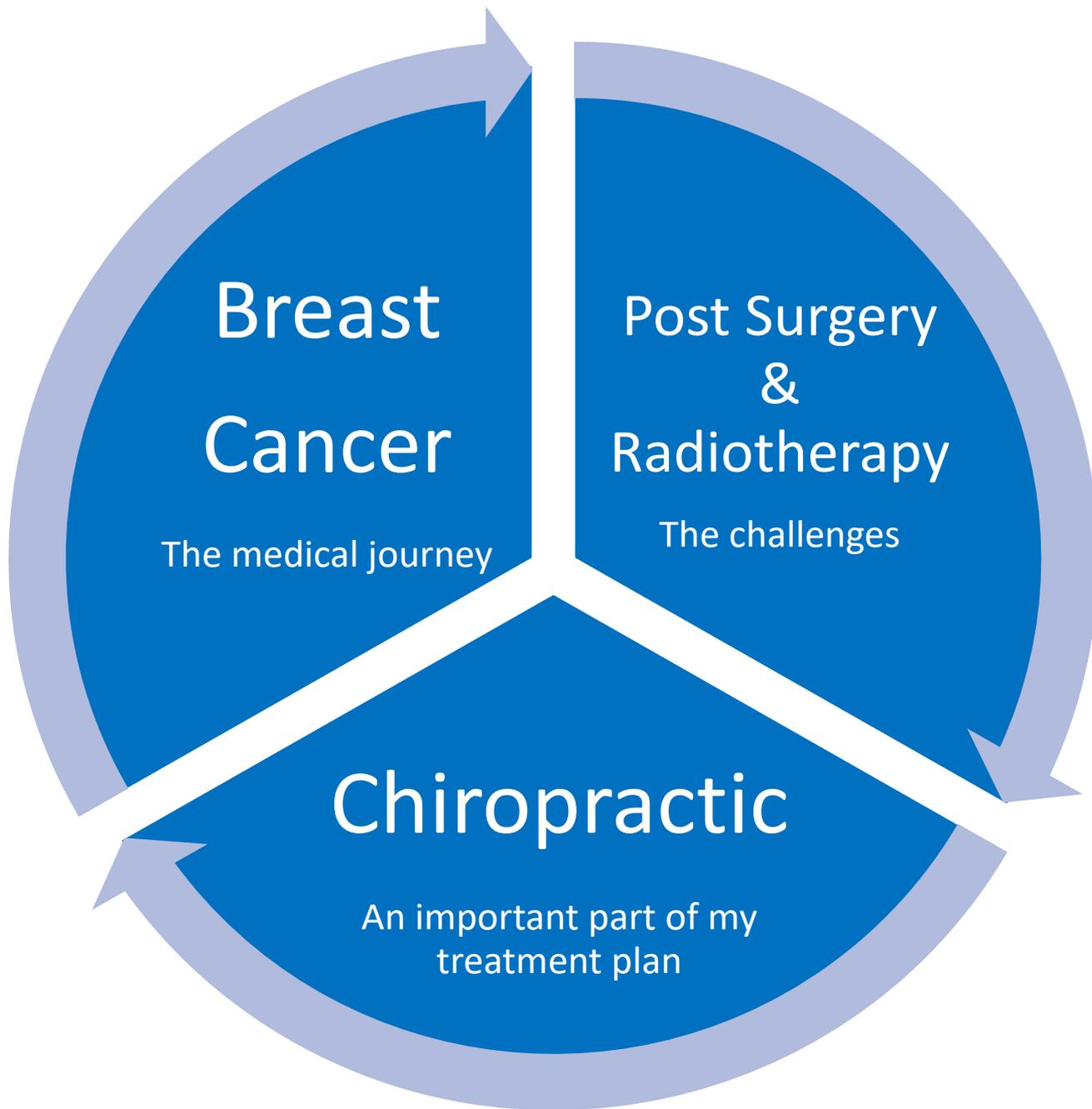


Liz Carson – Chiropractor

*Chiropractic/Osteopathy
as adjunctive therapies for*

Breast Cancer



Breast Cancer

The medical journey

Post Surgery & Radiotherapy

The challenges

Chiropractic

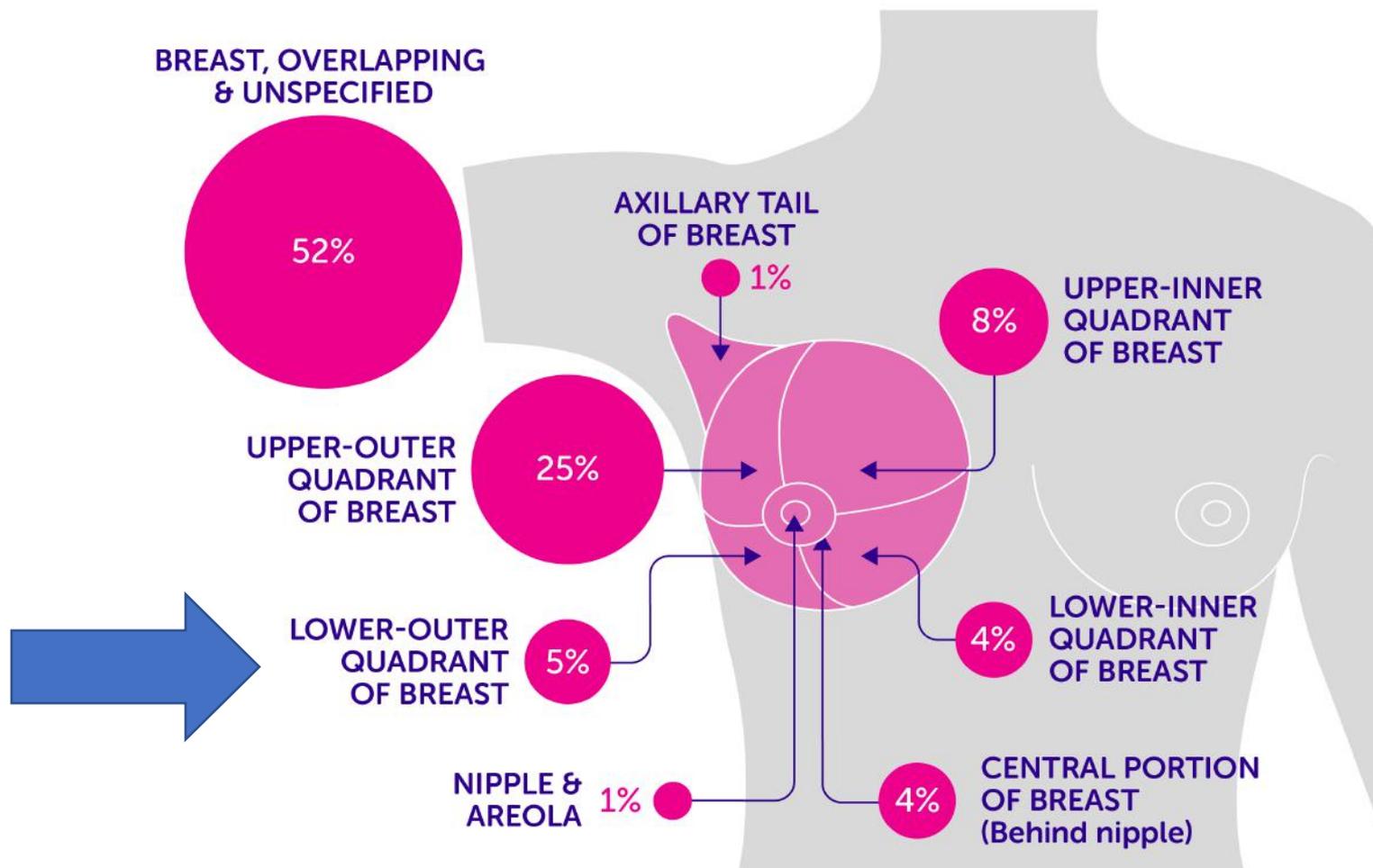
An important part of my
treatment plan

April 2013 – aged 54



Palpable – but not by the GP or Consultant

INVASIVE BREAST CANCER CASES: PERCENTAGE DISTRIBUTION BY ANATOMICAL SITE



**Ultrasound
To confirm**



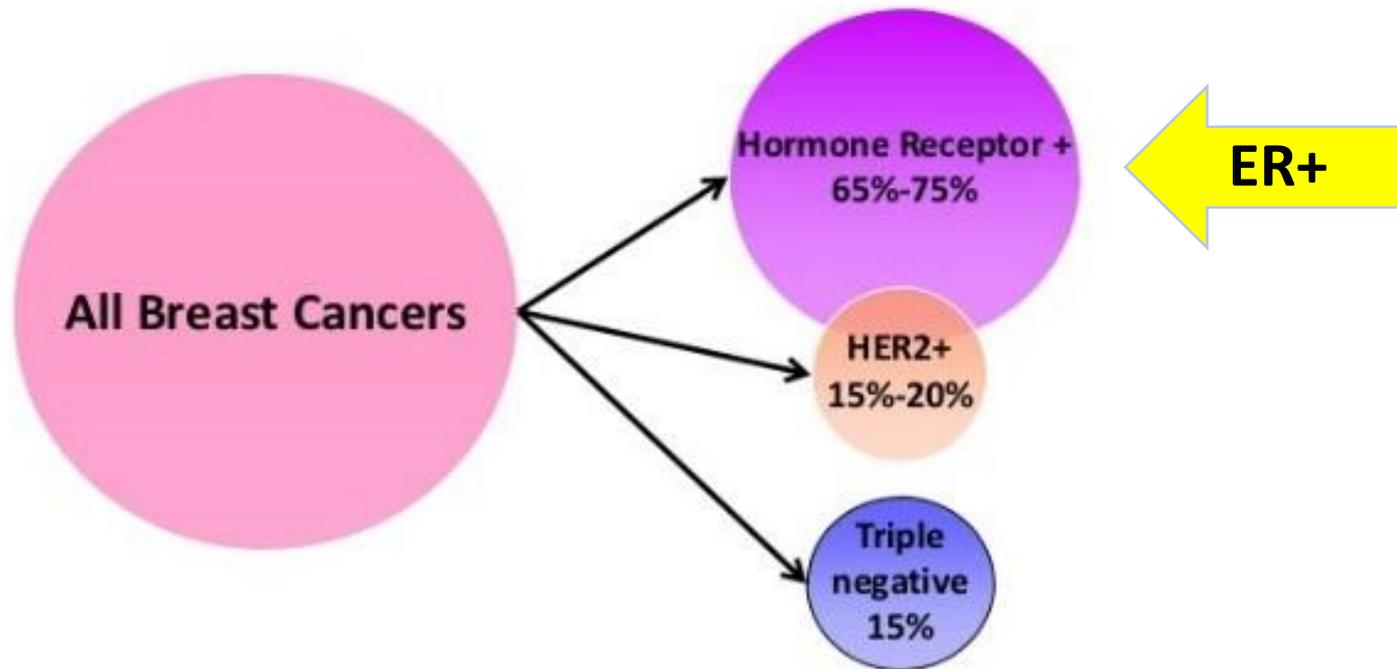
**Ultrasound
Guided Biopsy**

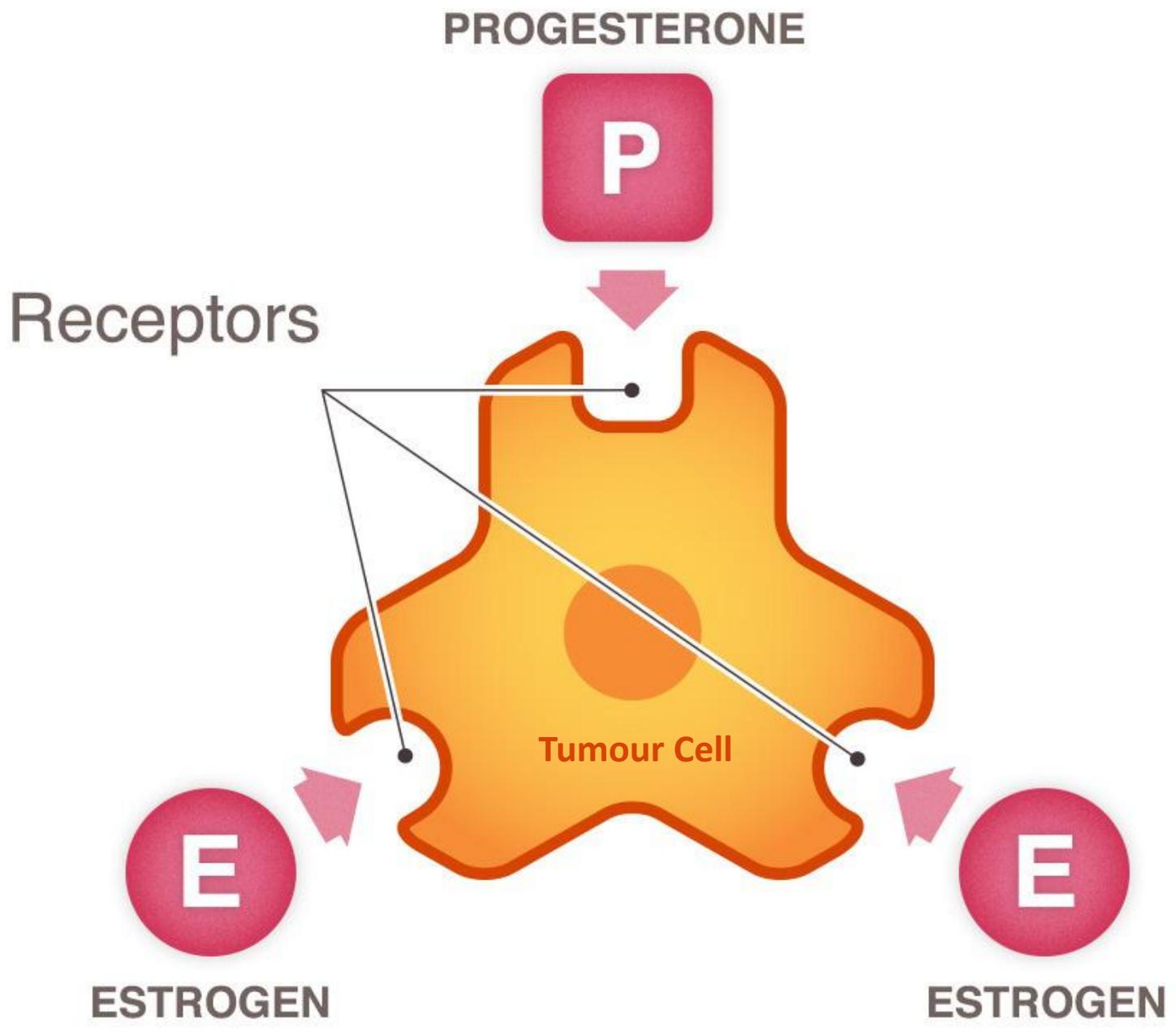


2 week wait for results

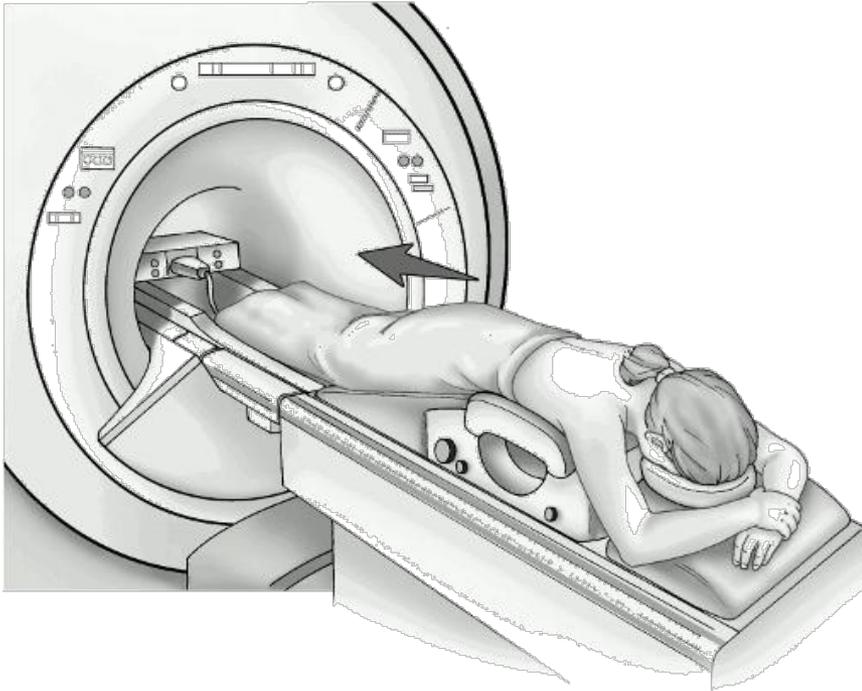
Grade 2 Invasive Lobular Breast Ca.

Clinical Breast Cancer Subsets

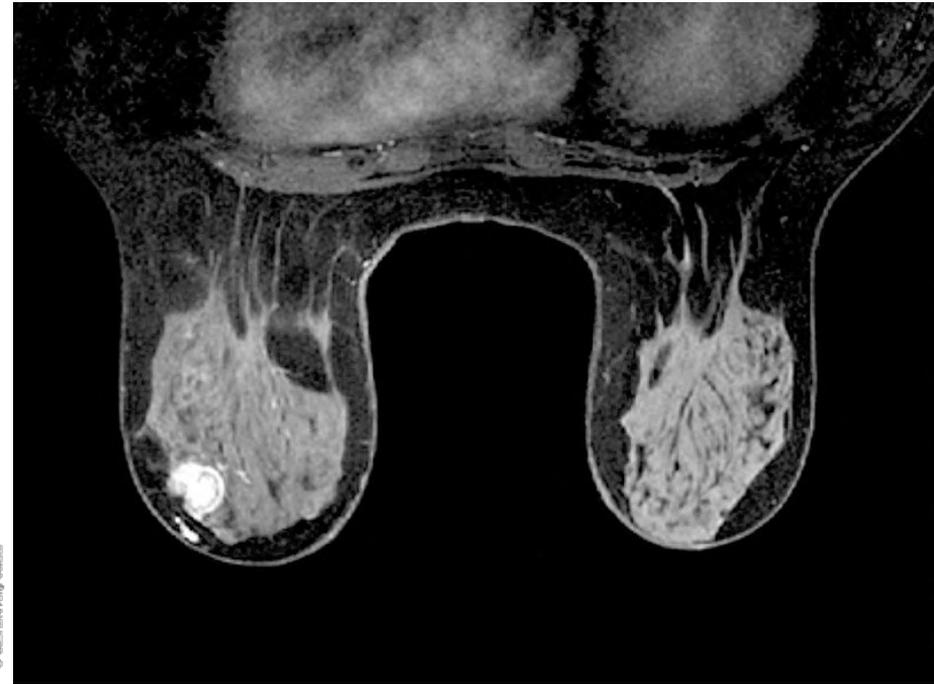




Breast MRI using contrast gadolinium.

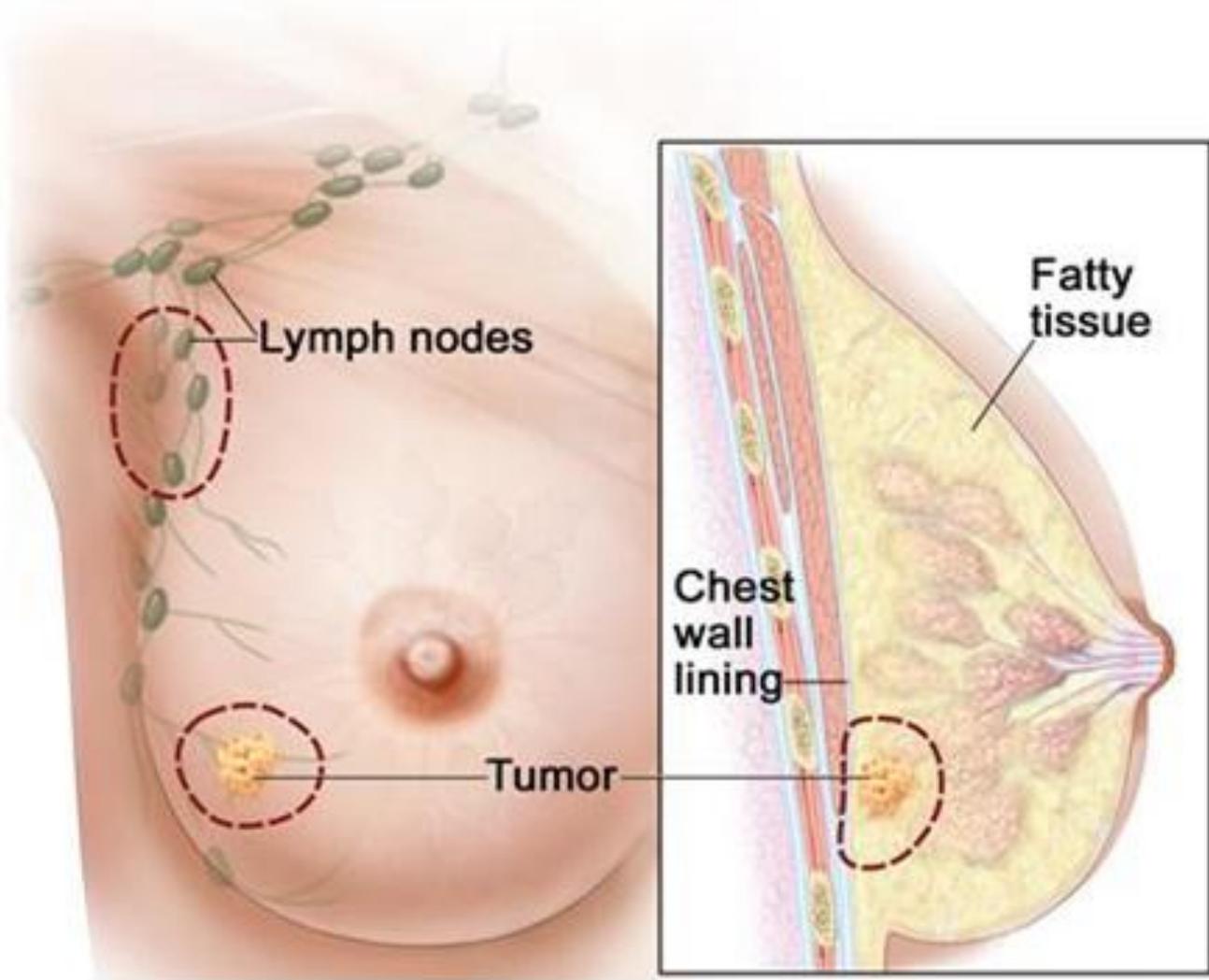


Breast MRI



© Sam and Amy Collins

Makes your pee go green!



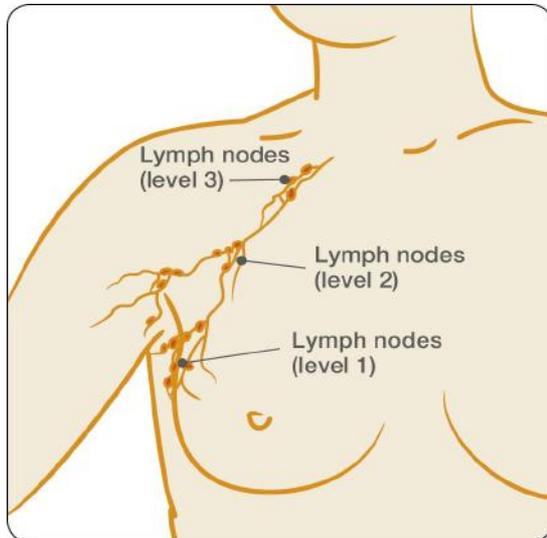
Sentinel lymph node biopsy

Sentinel node biopsy - used to determine whether cancer has spread beyond a primary tumor into the lymphatic system.

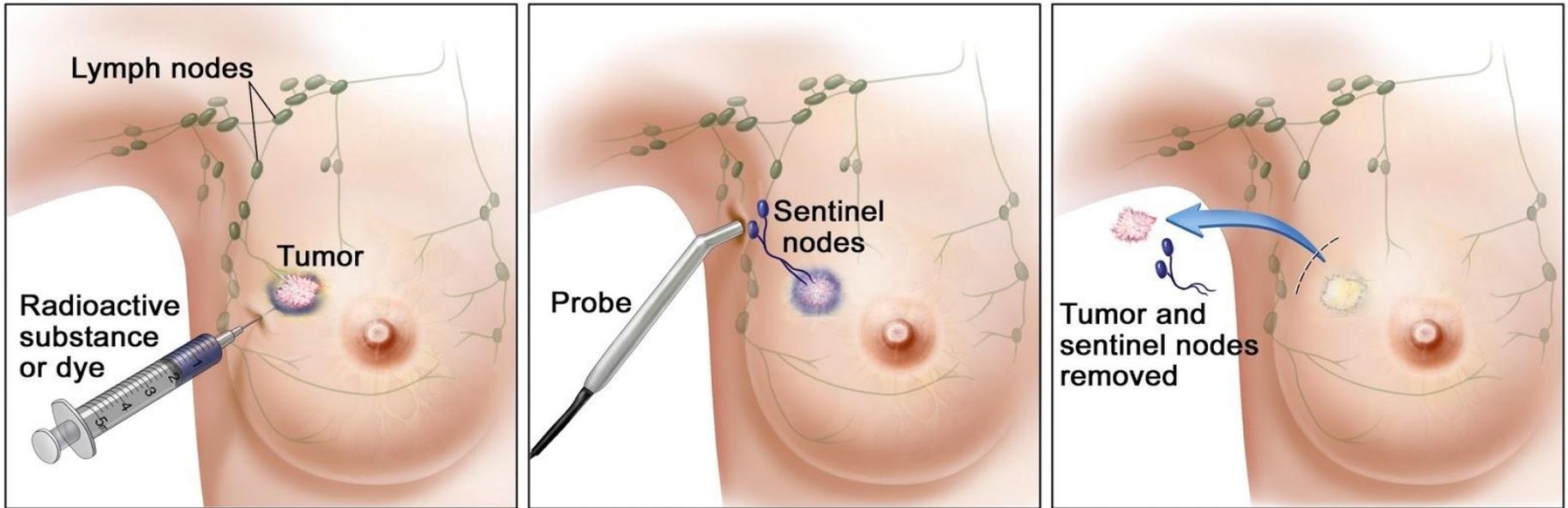
The sentinel nodes are the first few lymph nodes into which a tumour drains.

Sentinel node biopsy involves injecting a tracer material that helps the surgeon locate the sentinel nodes during surgery. The sentinel nodes are removed and analyzed in a laboratory.

If the sentinel nodes are free of cancer, then cancer is unlikely to have spread, and removing additional lymph nodes is unnecessary.



Sentinel lymph node biopsy

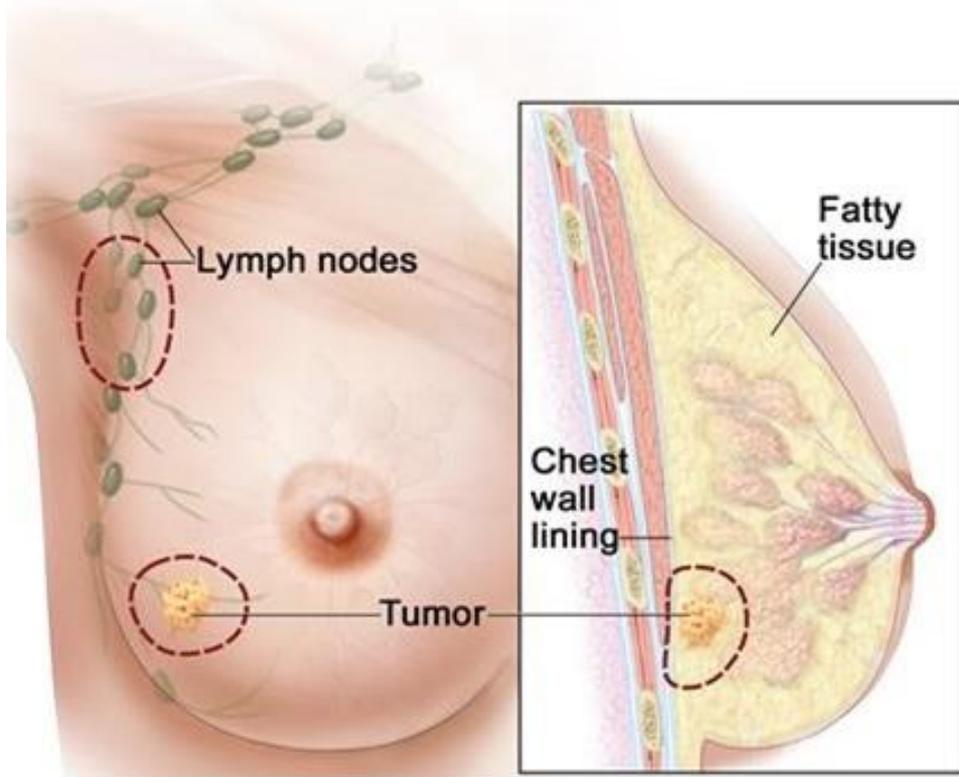


Only lymph nodes that are 'hot' and/or blue are removed

Breast Conserving Surgery

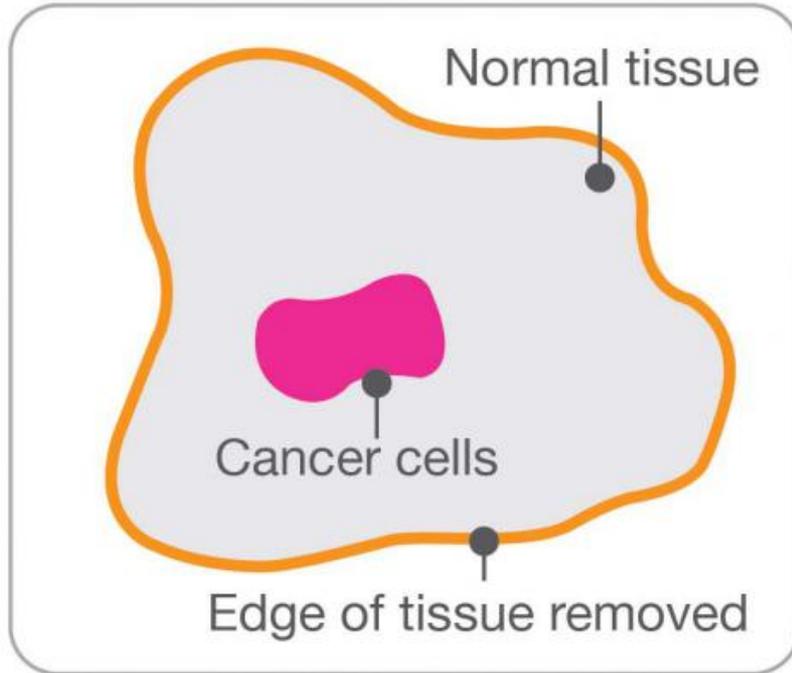
The aim is to remove the whole tumour with a clear margin of healthy tissue around it.



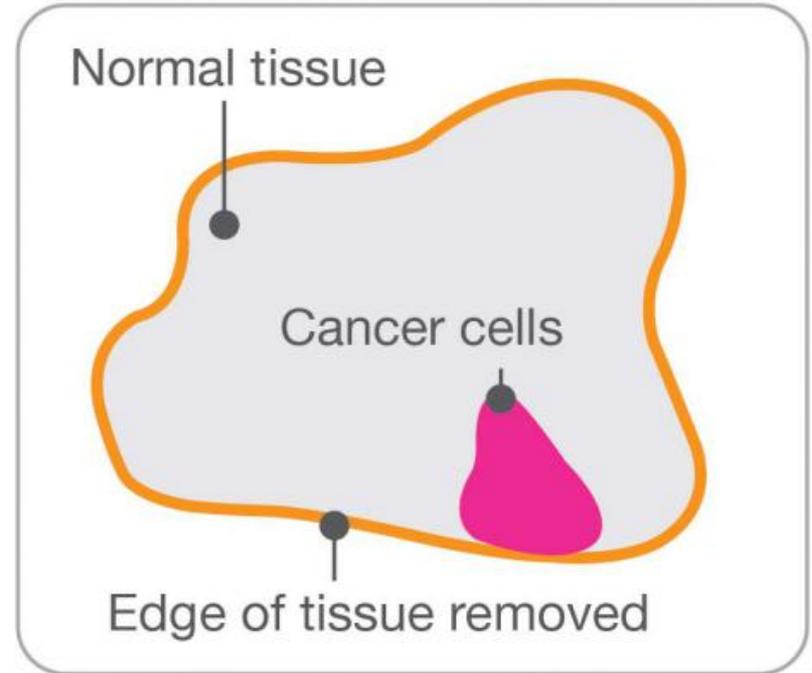


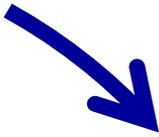
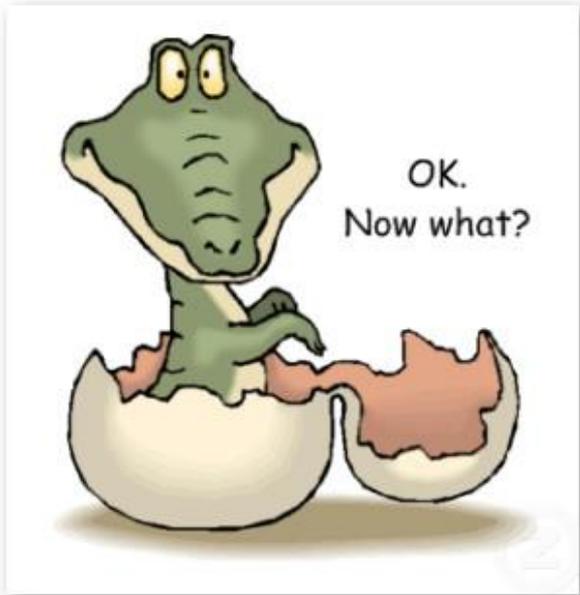
Wide local excision

Negative (clear) margins



Positive margins

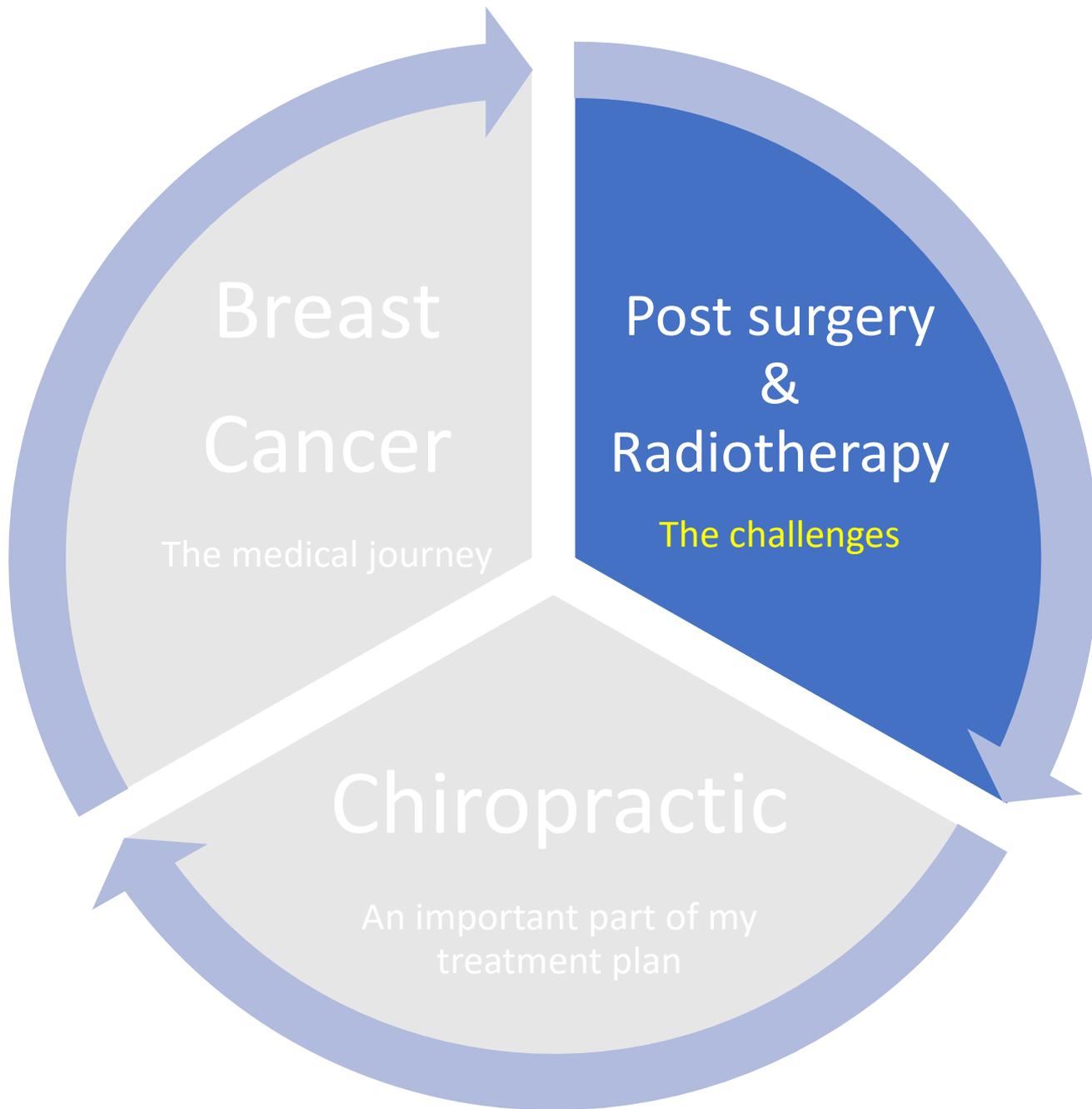




Radiotherapy

Anastrozole - nonsteroidal aromatase inhibitors.
Works by decreasing the amount of oestrogen the body produces.





Breast
Cancer

The medical journey

Post surgery
&
Radiotherapy

The challenges

Chiropractic

An important part of my
treatment plan



Post Surgery & Radiotherapy Neuro & MSK Challenges

Some evidence for you

25 – 50% have persistent postsurgical pain



¹Kehlet H, *Lancet*, 2006

Research presented at the 2015 American Society of Clinical Oncology (ASCO) Breast Cancer Symposium found that most women who had breast cancer surgery **still had some type of arm problem** (ranging from mild to severe) **10 years after surgery.**

Problem = pain and/or ROM

Chronic Pain following Breast Cancer Surgery

60 -80% Sensory abnormalities in the intercostobrachial nerve distribution

25% Will develop intercostobrachial neuralgia

Aetiology of Musculoskeletal Problems During and After Breast Cancer Treatment

Breast Conserving Surgery (BCS) – Wide Local Excision

Sentinal Lymph Node Biopsy

Cording

Radiotherapy – Costochondritis - Fatigue

Joint and Muscle Pain – surgery and/or hormone therapy

Quality of Recovery Advice

Little, if any, NHS rehabilitation resources

AXILLARY WEB SYNDROME

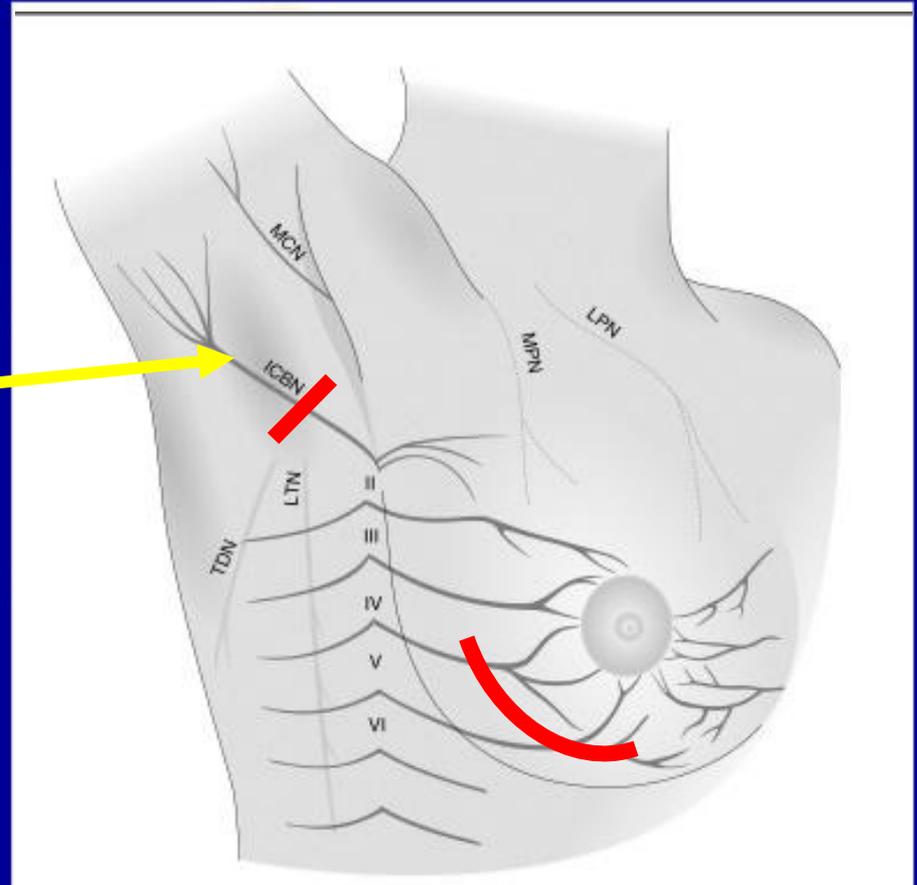


- Can be seen after any axillary surgery
- Presents as a series of tender, cord-like structures that are visible and palpable beneath axillary skin
- Cords can extend down the arm, into forearm

Prevalence of **60 – 70 %** in BCS

NUMBNESS

- At incision site after lumpectomy or lymph node biopsy
 - Intercostobrachial nerve often sacrificed during axillary dissection
 - Even if preserved, may be stretched or injured



Shoulder Restriction and Loss of Function Post Surgery

Short Term:

Significant loss of shoulder ROM reported **2-3 months post surgery**
(Gosselink et al, 2003; Reitman, 2003)

Long Term:

Loss of ROM **reported by 26% of women 15 year post BCS**
(Karki et al, 2005; Blomqvist et al, 2004)

Nature of Restriction:

Flexion and abduction most limited (Blomqvist et al, 2004)

ROM restriction greater for patients who underwent BCS and received radiation (Blomqvist et al, 2004)

Discontinuation of driving during treatment is a relatively common occurrence.

Loss of cervical range of motion makes driving uncomfortable and unsafe.

2 RCTs demonstrated that progressive shoulder resistance training combined with C Spine & shoulder range-of-motion exercises and stretching was more effective than “standard physiotherapy.”

Chemo - Neuropathy & Instability

 Chemotherapy-induced peripheral neuropathy, is the most prevalent neurologic complication of cancer.

 It is estimated that peripheral neuropathy may develop in 50% to 60% of patients.

 Wampler et al screened patients with breast cancer after treatment with taxanes and found significant postural instability – **Falls risk!**

 Interventions include balance training, an emphasis on using visual compensation for proprioception, and orthotics. Patients need education about foot care and environmental hazards such as rugs.

Hilkens, PH, Verweij, J, Stoter, G, Vecht, CJ, Putten, WL, Bent, MJ. Peripheral neurotoxicity induced by docetaxel. *Neurology*. 1996; **46**: 104- 108.

Wampler, MA, Topp, KS, Miaskowski, C, Byl, NN, Rugo, HS, Hamel, K. Quantitative and clinical description of postural instability in women with breast cancer treated with taxane chemotherapy. *Arch Phys Med Rehabil*. 2007; **88**: 1002- 1008.

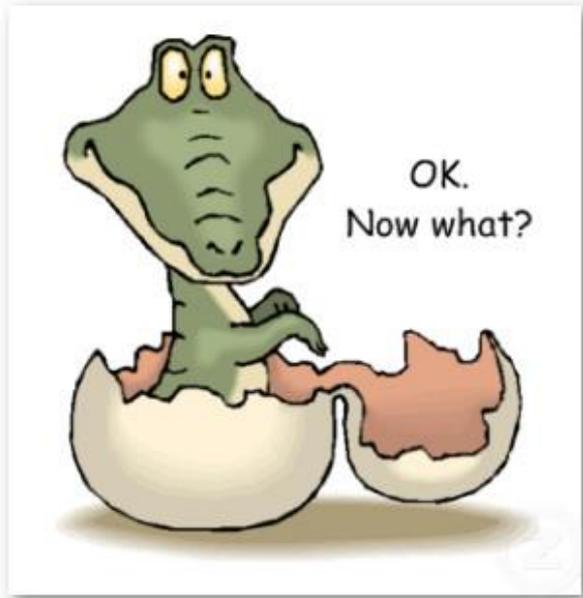
Weakness Post Surgery

Significant **decrease in strength** in shoulder flexion and abduction 15 months post surgery (Blomqvist et al, 2004)

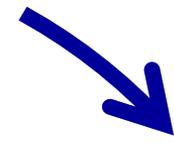
EMG abnormalities in upper trapezius and rhomboids with associated reduction in shoulder function post surgery (Shamley, 2007)

Effect of Radiation on Connective Tissue (Sassi et al, 2001; Gerber, 1992)

- **Acute effects** – inflammation, pigmentation, local pain
- **Long-term effects** – fibrosis:
 - Increased turnover of type I collagen
 - Increased cross-linking of Type I collagen



✓
Surgery



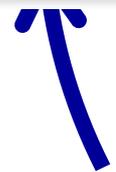
~~Chemotherapy~~



Anastrozole - nonsteroidal aromatase inhibitors.
Works by decreasing the amount of oestrogen the body produces.



Radiotherapy
✓



Radiotherapy



20 Sessions

Brachial Plexus Neuropathy following Radiotherapy for Breast Carcinoma is well cited

After Radiotherapy

Late-delayed myelopathy may develop.

Often **damages nerves** in the arms and breast

Results in weakness or loss of sensation

Costochondritis very common

- Usually related to operative positioning
- Involves paresis of arm with sensory changes distinct from minor sensory disturbances caused by injury to intercostobrachial nerve



Radiation Fibrosis

Another frequently seen soft-tissue complication of cancer treatment.

Fibrosis often begins with inflammation during radiation therapy, with fibrosis that ***can occur up to 10 years after radiation therapy*** is completed (but most commonly in the first two years)

Long-term sequelae include contracture and loss of muscle mass.

Conservative management with manual release techniques, and stretching exercises help to improve range of motion.

Fatigue

Fatigue is a common and frequently disabling symptom in cancer patients and cancer survivors.

Specific to breast cancer, fatigue is reported by a substantial majority of patients during their initial treatment (surgery, radiation, and/or chemotherapy).

In addition, although estimates vary widely, **approximately 33% of individuals with breast cancer report persistent fatigue up to ten years** into survivorship.

Fatigue in long-term breast carcinoma survivors: a longitudinal investigation. *Bower JE, Ganz PA, Desmond KA, Bernards C, Rowland JH, Meyerowitz BE, Belin TR Cancer. 2006 Feb 15; 106(4):751-8.*

Fatigue in breast cancer survivors: occurrence, correlates, and impact on quality of life. *Bower JE, Ganz PA, Desmond KA, Rowland JH, Meyerowitz BE, Belin TR J Clin Oncol. 2000 Feb; 18(4):743-53.*

Fatigue



“Fatigue feels as if I’m trying to walk up to my neck in a deep, muddy river, wearing heavy, deep-sea diver boots, carrying shopping bags full of rocks”

Cancer-related fatigue (CRF) is extremely common impacting 78%

CRF is defined as an “overwhelming and sustained exhaustion and decreased capacity for physical and mental work...not relieved by rest.”

Mental Health

IT'S OKAY TO
NOT BE OKAY





How about a nice
cup of "Shut the
Hell up?"

The number of self-righteous blowhards I have met who thought they'd cracked the code on my cancer.....

..... and had some pet theory on how to cure it



Guilt and Fear



It's your fault. You brought it on yourself.

You used deodorants

You didn't have kids

You got hit in the breasts playing sport

You wore an underwire bra

You should've quit that stressful job

Psychiatric considerations in the oncology setting

PTSD Common in Cancer Patients

1-in-5 individuals who receive a cancer diagnosis live with PTSD for many months, and in some cases, many years after diagnosis.

In adults, the typical presenting symptoms of PTSD include periods of intrusive repetition of the stressful event (nightmares, flashbacks, re-experiencing old traumas, avoidance of situations, hyperarousal like restlessness and pacing, startle responses, and intrusive thoughts) along with avoidance, emotional numbness, and depression.

Cancer Therapy-Related Cognitive Dysfunction

“Chemobrain” or “cancer therapy-associated cognitive change” is an entity that has been identified in patients with a variety of cancers who have received chemotherapy and hormonal therapy, and have experienced difficulty in executive functions, multitasking, **short-term memory recall, and attention.**

Up to 75% of patients may experience cognitive impairment, **and impaired processing speed.**

Nelson, CJ, Nandy, N, Roth, AJ. Chemotherapy and cognitive deficits: mechanisms, findings, and potential interventions. *Palliat Support Care*. 2007; **5**: 273- 280.

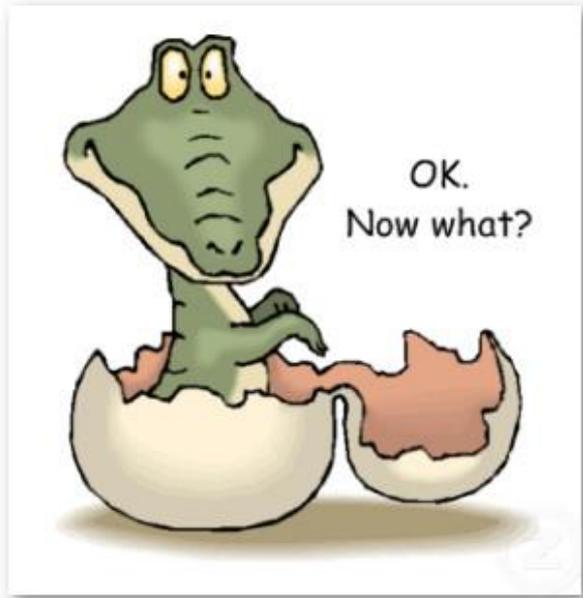
Hurria, A, Somlo, G, Ahles, T. Renaming “chemobrain.” *Cancer Invest*. 2007; **25**: 373- 377.

Capacity to Consent To or Refuse Treatment

A psychiatric consultation is often requested to assess the capacity of a patient to give informed consent or to refuse a procedure critical to survival.

Questions related to capacity are **more common when a patient refuses recommendations than when a patient is agreeable**, despite the degree to which their cognition and understanding may be compromised

Stowell, C, Barnhill, J, Ferrando, S. Characteristics of patients with impaired decision-making capacity. Paper presented at: Academy of Psychosomatic Medicine 54th Annual Meeting; November 14-18, 2007; Amelia Island, Florida.



✓
Surgery



~~Chemotherapy~~

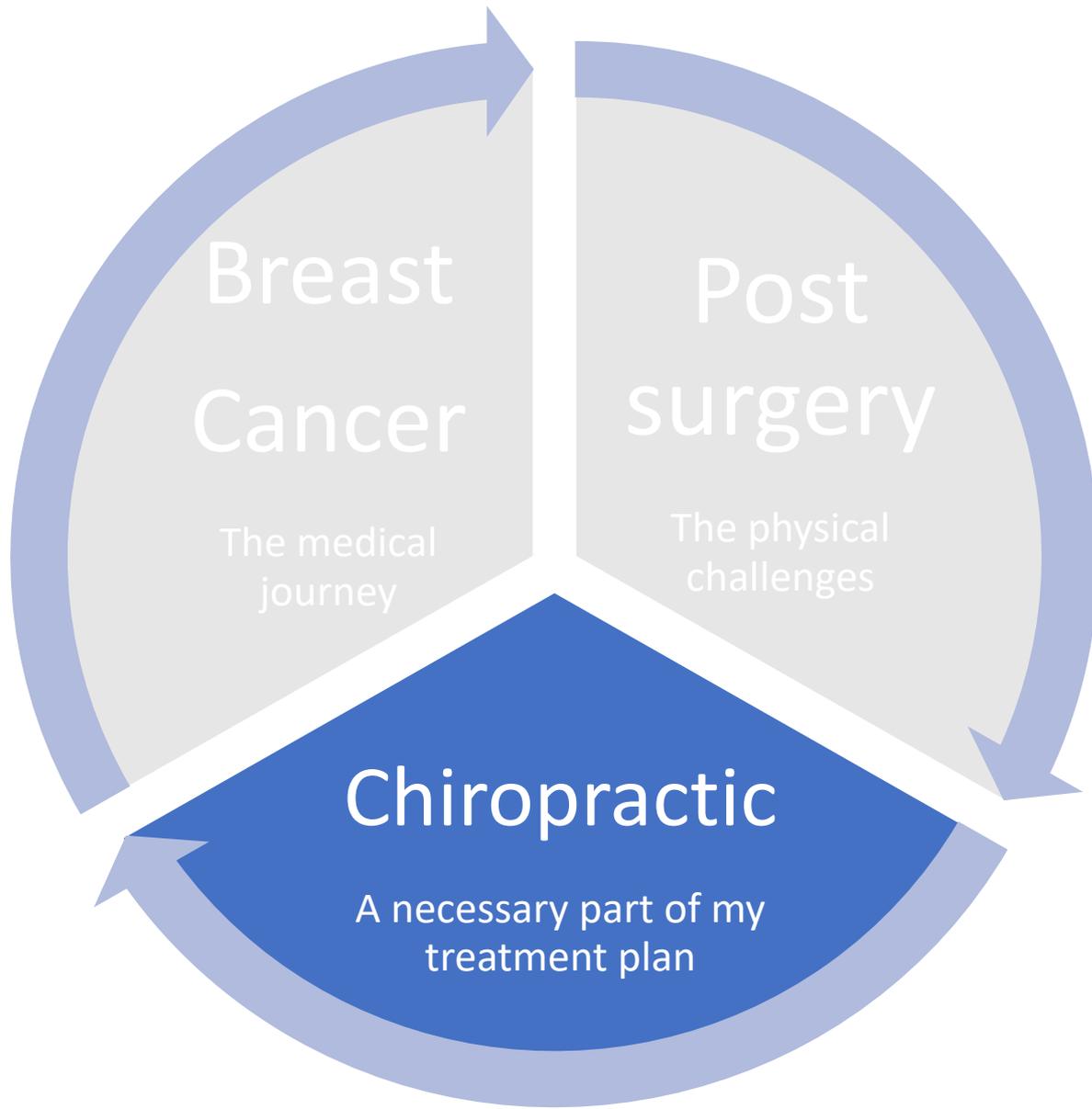


✓
Hormone
Therapy



✓
Radiotherapy





Breast
Cancer

The medical
journey

Post
surgery

The physical
challenges

Chiropractic

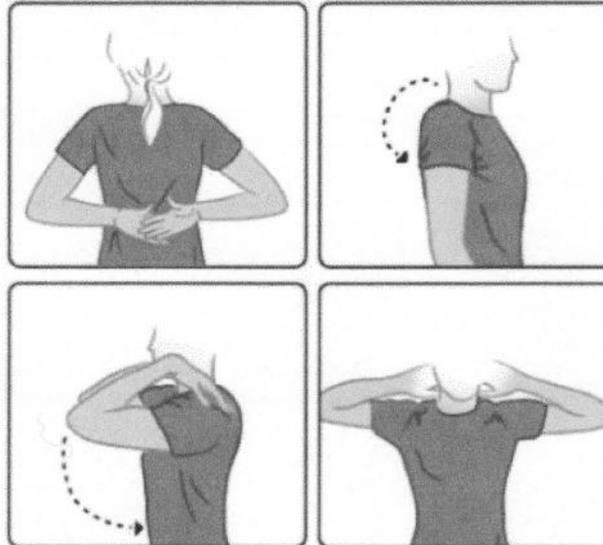
A necessary part of my
treatment plan

This is what I was given by the physio before being discharged

Not the full leaflet

breast
cancer
care
the breast cancer
support charity

Exercises after breast cancer surgery



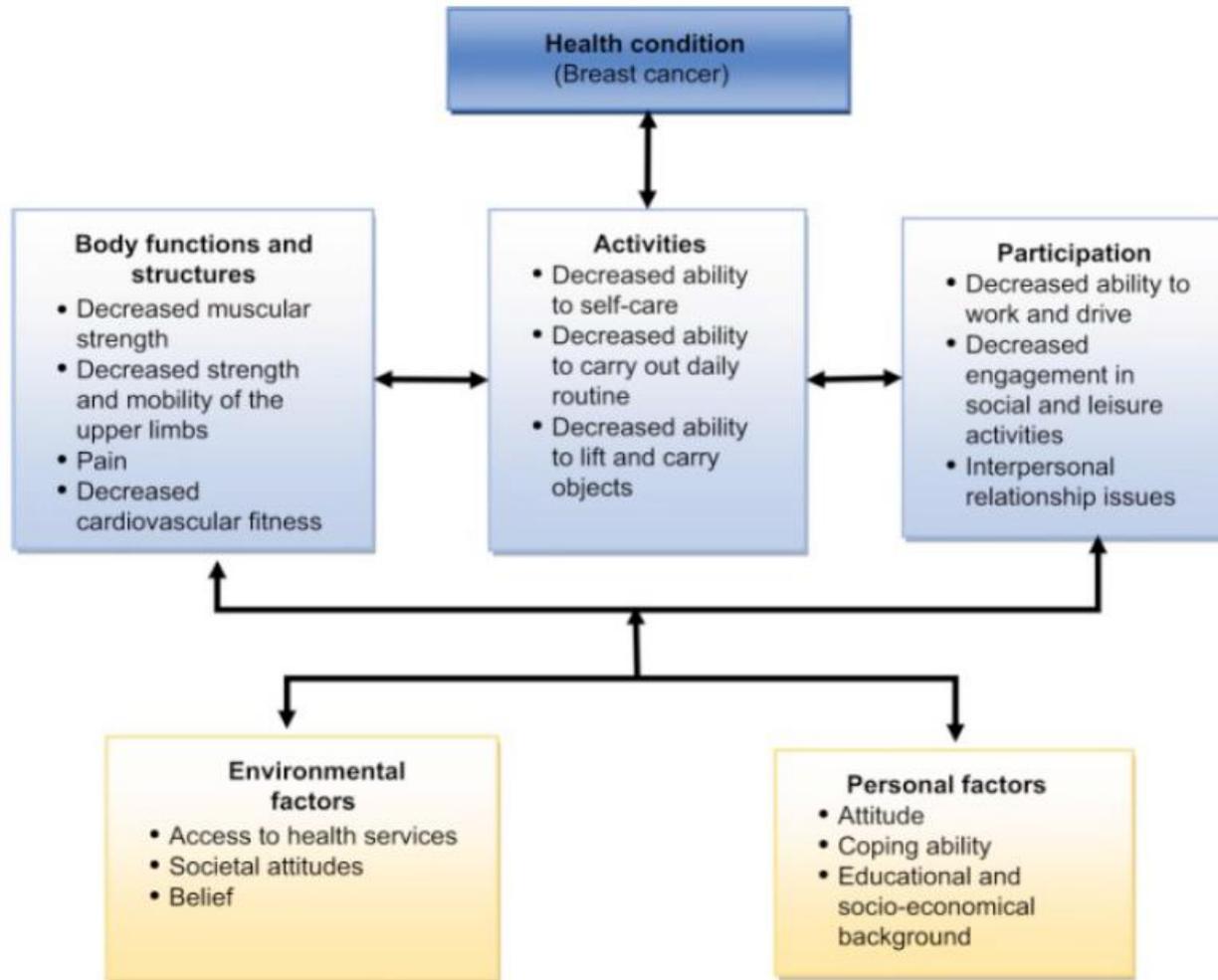
QoL

Optimizing post-acute care in breast cancer survivors: a rehabilitation perspective

The focus of rehabilitation is on managing disability, reducing sequelae and symptoms, and enhancing participation and societal reintegration, to achieve the highest possible independence and the best QoL

Rehabilitation interventions should be considered early for maintaining functional capacity and reducing the risk of losing important abilities or independence and should be individualized depending on disease phase, functional deficits, personal requirements and specific goals.

QoL



Interactions between the components of the international classification of functioning, disability and health in breast cancer.¹³

Optimizing post-acute care in breast cancer survivors: a rehabilitation perspective. Bhasker Amatya,^{1,2,3} Fary Khan,^{1,2,3} and Mary P Galea^{1,2,3} J Multidiscip Healthc. 2017; 10: 347–357.

Psychiatric considerations in the oncology setting 2015

Encourages **non-psychiatrists** to improve identification and treatment of psychosocial distress and psychiatric syndromes, and to request formal psychiatric consultation in appropriate situations.

My Rehabilitation Issues Post Surgery

I. Upper Quadrant and Trunk Dysfunction

- Very restricted Shoulder Range of Motion and 8/10 pain on movement.
- Chest Wall Pain / Costochondritis
- Weakness of Upper Extremity

II. Cording

- Axilla

III. Numbness of left lateral breast and nipple

IV. Fatigue

V. Mental health – anxiety & depression

Cording

Harmless, but uncomfortable, and limits shoulder ROM.

Managed well with:

Massaging the area

Stretching

Graston most effective for me

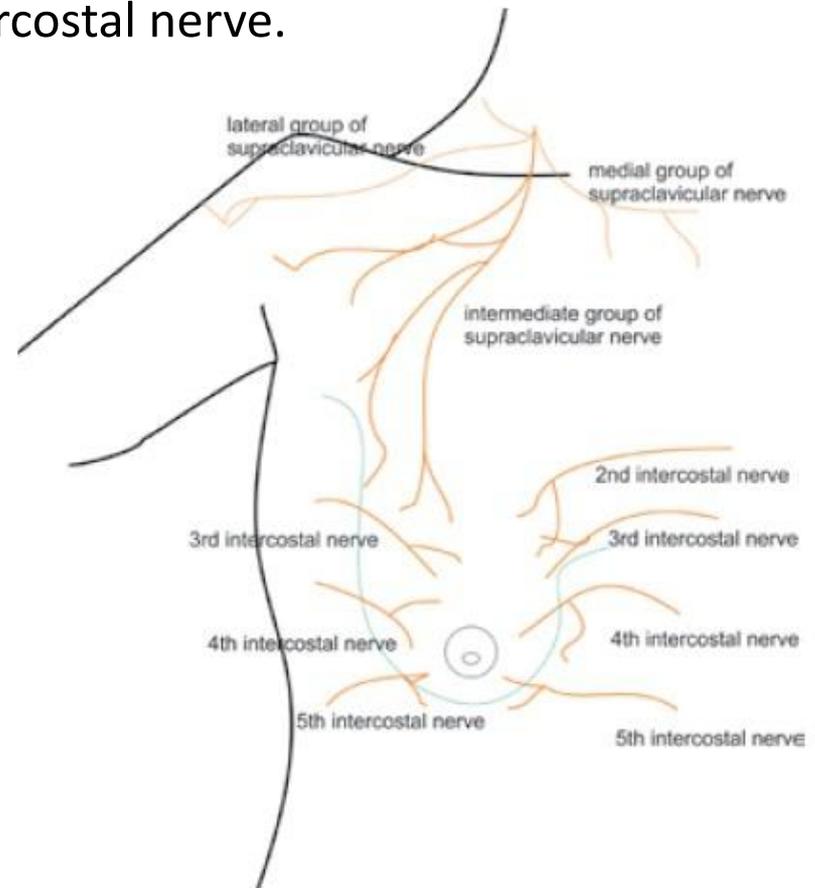
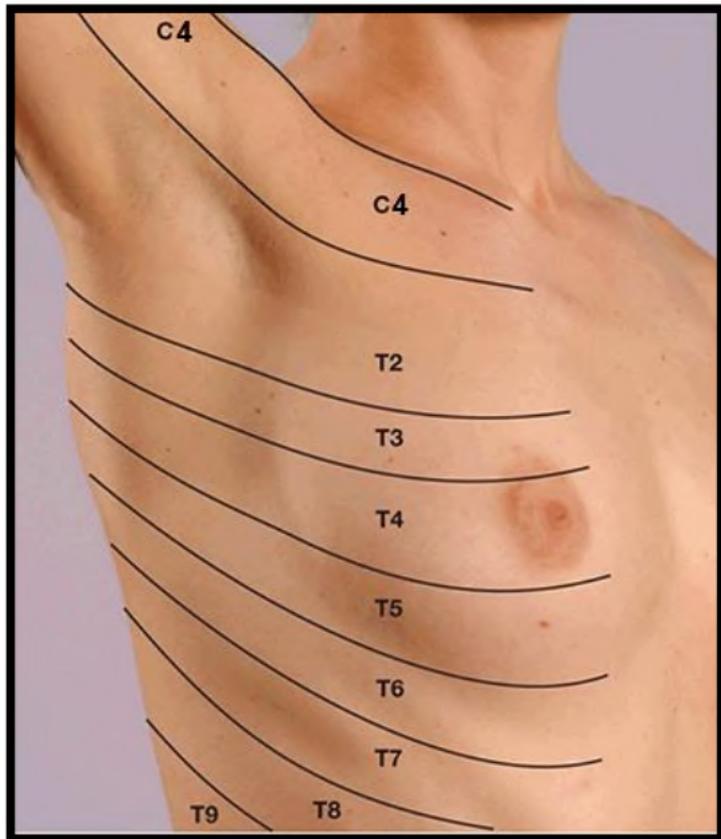


Numbness of Breast & Flaccid Nipple

Innervation

The skin surface of the breast is innervated by the first to sixth intercostal nerves and a supraclavicular branch of the superficial cervical plexus.

The nipple is innervated by the fourth intercostal nerve.



Common Interdisciplinary Rehabilitation Team Strategies

SERVICE	PURPOSE	EXAMPLES
Diagnostic imaging	Diagnose etiology of impairment	MRI for diagnosis of adhesive capsulitis or “frozen shoulder” in a patient with breast cancer
Neurological Testing	Diagnosis of neuropathy or myopathy	Diagnose long thoracic nerve palsy or “winging scapula”.
Cardiovascular conditioning	Mitigate fatigue	Treat postchemotherapy fatigue
Therapeutic exercise	Address specific muscle imbalances	Address shoulder dysfunction in a patient post breast cancer surgery
Manipulation and soft-tissue mobilization	Improve range of motion	Address sequelae associated with radiation fibrosis syndrome
Thermal and electrical modalities	Control pain	TENS for neuropathic pain
Oral and topical analgesics	Control pain	Patch for post surgery pain
Mental health counseling	Evaluate and improve psychological well-being	Recommend specific coping strategies for decreasing anxiety

We **CAN** help

Mobilisation, manipulation and exercise is effective.

But remember:

- **Fatigue** – bite size chunks – quality, not quantity
- **Radiotherapy** - rib softness, costochondritis, skin sensitivity, fibrosis
- **Hormone Therapy** – bone density
- **Mental Health** – signpost your patient to support services
 - **Consent** and ability to understand your instructions
 - Encourage & measure progress