



PHYSICAL WELLBEING AND PHYSIOTHERAPY

TYA STUDY DAY

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AIMS

Definitions

What happens during treatment

Side effects of treatment

Benefits of physical activity

Physiotherapy input

Recommendations & Resources

How

DEFINITIONS

Physical well being

'The lifestyle behaviour choices you make to ensure health, avoid preventable diseases and conditions, and live in a balanced state of body, mind and spirit'

Interconnected with mental, emotional and spiritual health

Physical activity

'defined as any bodily movement produced by skeletal muscles that requires energy expenditure'

'The underrated 'wonder drug'

→ Not just sport



WHAT HAPPENS DURING TREATMENT

Change of routine

Social isolation

Missing friends/family

Fear / worry

Stopped School/college/work

Stopped Extra Curricular Groups/ social clubs

Isolated in a side room/ward

Restriction of certain activities

Central and peripheral lines

Attachment to a drip stand

Education/Family beliefs



PHYSICAL SIDE EFFECTS OF TREATMENT

- Chemotherapy
- Radiotherapy
- Surgery

- *Psychological Changes*
- *Reduced Motivation*
- *Reduced Exercise tolerance*
- *Brain fog*
- *Fatigue*

CHEMOTHERAPY

- Muscle Weakness
- Cardiotoxicity
- Neuropathy
- Reduced bone density
- AVN
- Osteonecrosis
- Weight changes
- Delayed growth

Surgery

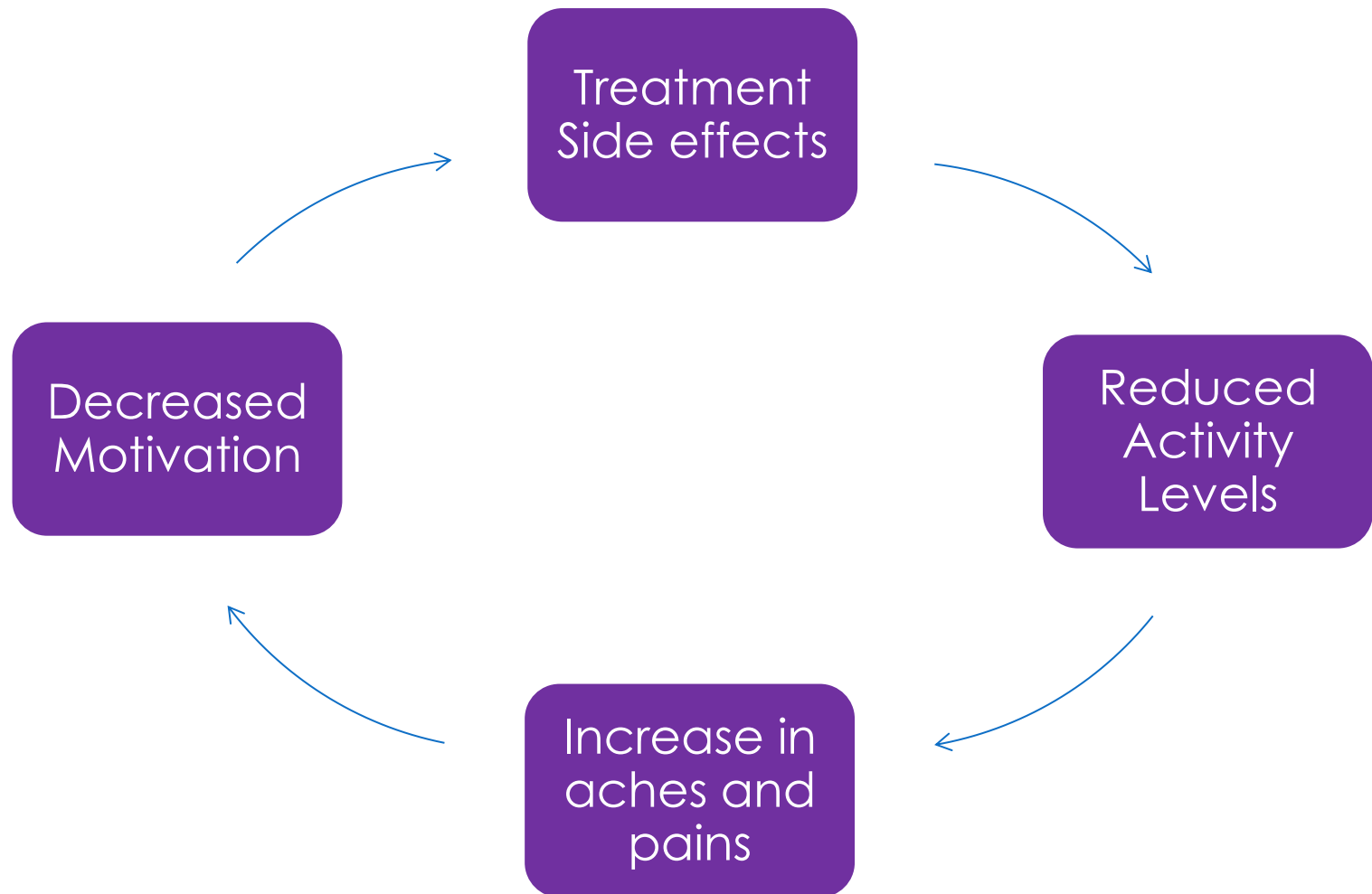
- Neurological damage
- Muscle weakness
- Lymphoedema
- Altered posture
- Altered biomechanics

Radiotherapy

- Concentration and memory difficulties
- Fatigue
- Muscle weakness
- Lymphoedema
- Delayed growth



EXERCISE, A VICIOUS CYCLE



WHY BE ACTIVE?

- Sport England – 1/3 of adults are not engaging in recommended levels of activity.
- Reduces the risk of HTN, stroke, diabetes, breast and colon cancer, improve bone and functional health and help to manage energy level and weight control.
(WHO)

It feels good!



BENEFITS OF ACTIVITY DURING TREATMENT

- Helps clear chemotherapy
- Helps stimulate bone marrow
- Keeps chest clear
- Improves mood
- Reduce anxiety
- Maintains bone density
- Maintain healthy weight
- Decrease pain
- Reduces constipation
- Manages fatigue
- Improve muscle strength
- Improve sleep quality



BENEFITS OF ACTIVITY AFTER TREATMENT

- **Increases** bone density
- **Improves** lung function
- Maintain and promote healthy weight
- Psychological
- **Reduces risk** of recurrence
- **Reduces risk** of secondary problems
- Improve confidence
- Increase cardiovascular fitness
- Improve social networks, decrease isolation



WHEN IS PHYSIOTHERAPY

- Physiotherapy involved due to the acquired disabilities or due to the resultant medical management of the cancer.
- Immediately
- **Maturity/ skeletal development**
- **Transition into adulthood**
- At time of relapse
- When - Input varies dependent on age
Under 2, 2-10, 10+, **TYA's**



PHYSIOTHERAPY CASELOAD

- Bone tumours (Osteosarcoma & Ewing's sarcoma)
 - Leukemia
 - Lymphoma's
 - CNS tumours
-
- Liaison between Paediatric and Adult Services
 - Not always designated TYA provision

WHAT IS THE ROLE PHYSIOTHERAPY

Comprehensive assessment

Monitoring symptoms → highlighting complications

Liaison with MDT

Preparation for surgery

Return to activity/sport

Pain & Fatigue management

Exercises

Improve confidence & motivation

Return to activity/sport

Education (other therapists, driving support, school, college, work)

SUPPORT
PHYSICAL
WELLBEING

STEROID MYOPATHY

- Damage to the muscle fibres
- Myopathy causes changes in the muscle fibres:
 - atrophy (shrinkage)
 - fatty deposits
 - necrotic areas
 - increased interstitial connective tissue between fibres.
- Acute steroid myopathy has a rapid onset
- Can take months to resolve

STEROID MYOPATHY

SIGNS & SYMPTOMS

- Aches around thighs and back
- Falling over
- Increased inactivity
- Unable to sit up from lying
- Laboured running, intolerance to exercise
- difficulty with stairs/getting on and off the floor
- Fatigue

SIMPLE TEST

Squat to pick something off the floor

Stand up from a chair without using your hands



PERIPHERAL NEUROPATHY

- Damage to the peripheral nerves as a side effect of cancer treatment, affects both sensory and motor nerves.
- Vinca alkaloids, vinblastine, vincristine, vinorelbine
- Platinum based, cisplatin, carboplatin

SIGNS AND SYMPTOMS

- Sensation → pins and needles, burning pain
- Increased sensitivity → touch can be painful
- Pain
- Numbness → loss of sensation to fingertips and feet
- Muscle weakness → loss of muscle strength to dorsiflexors of ankle and small muscles of the hands and feet
- Loss of reflexes → tendon TA, brachioradialis
- Symmetrical, peripheral progresses proximal



VINCRIStINE NEUROPATHY

Lower limb

- Tip toe walk
- Loud foot slapping gait,
- Repeated sprained ankles
- High stepping gait
- Calf cramps
- Pain when walking first thing in the morning
- Difficulty putting on shoes

Upper limb

- Difficulty with writing
- Difficulty doing buttons and laces
- Difficulty carrying objects
- Cramps in hands
- Sensation loss, P&N

TREATMENT

- Early recognition
- Gabapentin
- Splints or Serial casting
- Stretches
- Theraputty

QUICK TEST

Walk on your heels

Walk along a line

Tap your toes



BONE DENSITY & FRACTURES

- Bone Mineral Density in later life is proportional to Peak bone mass achieved in adolescence
- Disease eg, sarcoma or leukaemia
- Treatment related
 - Steroids – higher cumulative dexamethasone dose, methotrexate, radiotherapy, ifosfamide etc
 - Nutritional- malnutrition, vit D deficit
 - Less Active/ immobility
 - Decreased muscle mass= decreased bone formation
 - Growth Hormone deficiency

Se:1
Im:1



tibia & fibula AP/LAT

AVASCULAR NECROSIS

- Found in 1.1-9.3% of ALL survivors
- Significant risk factors were
 - Age 9-20 years
 - ?gender
 - High BMI
 - Higher cumulative dose of Dexamethasone
- Typical time of onset was 12-18months post chemo
- Hips and knees most commonly affected

SIGNS AND SYMPTOMS

- Worsening joint pain
 - Restricted movement
 - Lower limb, pain with weight bearing
 - Positive trendelenburg
 - Difficulty with positions of rest and sleep
-
- X-Ray
 - MRI



RECOMMENDATIONS / RESOURCES

DOH

- CHILDREN AND YOUNG PEOPLE (5–18 YEARS)
 - moderate to vigorous intensity at least 60 minutes every day
- ADULTS (18+)
 - 150 minutes a week of moderate intensity
- Macmillan Move more - Your guide to becoming more active'
- TYA - IAM



EXERCISE IN DISGUISE

Every day
activities

Trips to the
park

Gym with
friends

Social
clubs

Sports
teams

Family
activities

Activity
groups

Walking
pets

Household
jobs

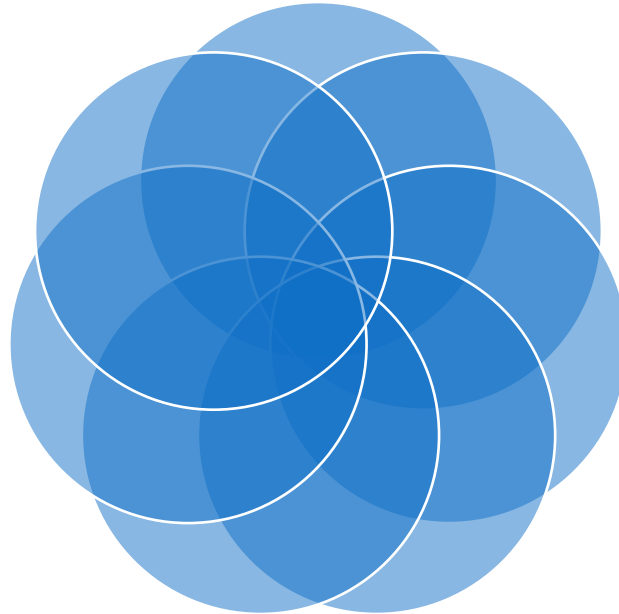
GOAL SETTING

**What do I want
to achieve?**

**Why do I want
to achieve this
goal?**

**What
obstacles can
I expect?**

**How will I
achieve this
goal?**



**When do I want
to achieve this
goal?**


**What is
required to
achieve this
goal?**

Think SMART!

TOP TIPS FOR IMPROVING ACTIVITY!

- Top tips for improving activity!
- Find something you want to do
- Make it fun
- Build it into routine
- Start small
- Build up slowly
- Try things as a family / with friends





'If physical activity were a
drug it would be hitting the
headlines'

Professor Jane Maher, Macmillan cancer Support Chief
medical Officer

QUESTIONS?