

The ROYAL MARSDEN

NHS Foundation Trust

Physiotherapy exercises for teenagers and young adults during stem cell transplant

Physiotherapy

Patient Information



NHS



**Teenage
and Young
Adults Team**

Goals

Our physiotherapists provide an appropriate environment where young people can exercise safely and they give advice about the benefits and precautions of exercise. There are two main types of goals:

- Early stage goals (relating to your initial diagnosis, treatment with chemotherapy and before your transplant) are to maintain and restore your strength, endurance, flexibility and range of movement in preparation for your transplant.
- Late stage goals (relating to when your neutrophils are above 1.0 and you are ready to be discharged from hospital) are to increase your strength, endurance and range of movement and to restore your physical function.

These goals should incorporate your own goals including things that are important to you. They should be agreed together between you and your physiotherapist at the initial assessment.



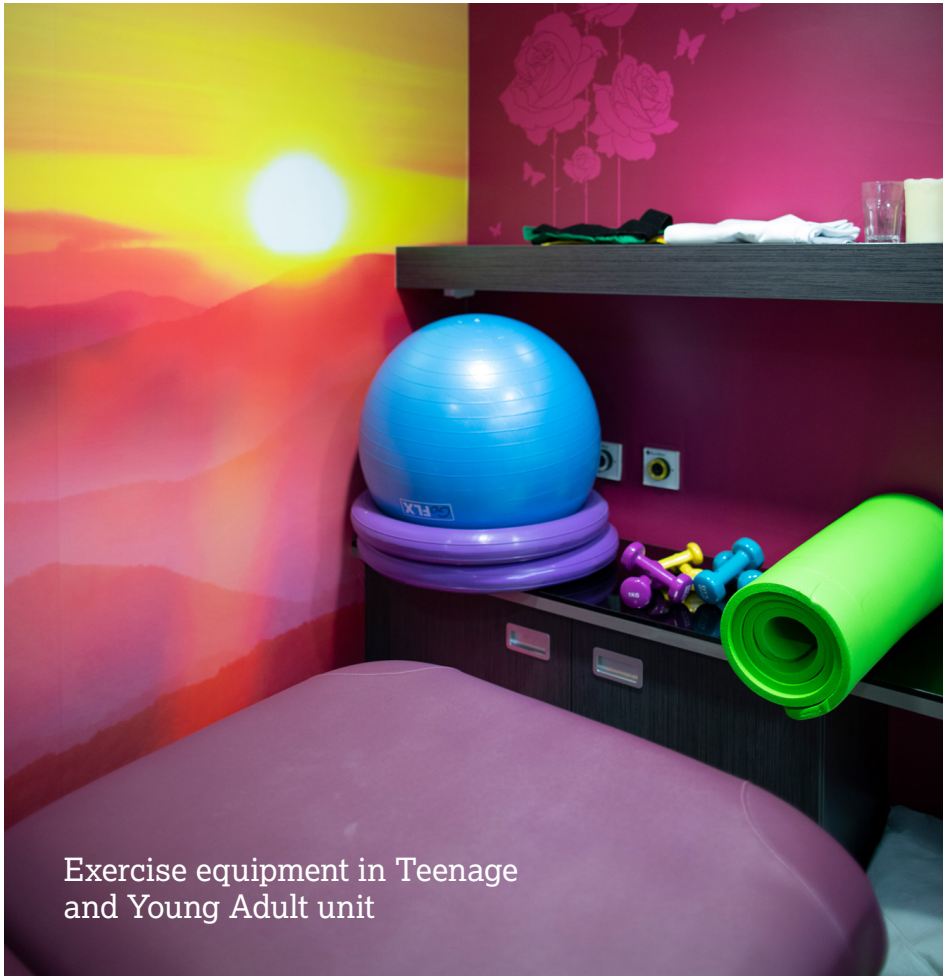
Plan

1. Following consent for your stem cell transplant, each TYA patient will have a physical fitness assessment by a physiotherapist.
2. At your initial assessment, the therapist will gather information about:
 - Diagnosis
 - Presenting condition
 - Past medical history
 - Social history
 - Occupation or education
 - Interests and goals
 - Pre-existing comorbidities (additional health issues) such as musculoskeletal, cardiac or respiratory issues
 - Current level of fitness.
3. According to your initial assessment and your current level of fitness:
 - We will provide you with an exercise programme tailored to your needs
 - Your exercise programme will be made up of a combination of aerobic and resistance exercises
 - Based on your assessment we will give you either a light 'yellow' resistance exercise band or a moderate 'red' resistance exercise band
 - We advise that you carry out your exercises for at least 30 minutes per session for a minimum of three times a week.

If you are especially fatigued (tired), we advise you to carry out your exercises in 10 minute blocks and increase this as your energy returns.

During your transplant you may feel unwell, tired and less fit and so you may become less active. It is important, however, to carry out some form of exercise in order to:

- Help maintain your fitness
- Keep you flexible and maintain your muscle strength
- Prevent your joints stiffening up
- Prevent complications such as chest infections and deep vein thrombosis (blood clots).



Exercise equipment in Teenage and Young Adult unit

Keep moving

- Even on a not so good day, just get out of bed, walk around the room or sit out in a chair
- Try to wash, dress and spend some of the day sitting out of bed
- It is important to carry out the breathing, ankle and bed exercises if you are unable to get out of bed.



How much is enough?

You should be aiming to carry out at least **20-30 minutes** of activity **three times a week** at a **moderate intensity**. If you are unable to complete 20-30 minutes of activity, three separate 10 minute bursts throughout the day will add up and still be beneficial. At a moderate intensity, you should still be able to carry out a conversation and should feel slightly warm. Your heart should be working slightly harder compared to when you are resting.

Remember to concentrate on doing all the exercises slowly and controlled.

Reduce exercising if:

- You feel dizzy or it causes pain (inform the nurse, doctor or physiotherapist if this occurs)
- You have an infection
- If your blood count is low (your physiotherapist will guide you).

Outcome Measure Rate of Perceived Exertion

Your physiotherapist will use the tool below to assess your fitness level. The results will determine which set of exercises are suitable for you. We will give you a separate handout with a personal exercise programme tailored to your needs.

10m ISWT Assessment tool for HSCT patients (14-24 years old)

Patient name

Hospital number

	Pre-test	Post-test
HR		
SpO ₂		
Borg		
Predicted value		
Distance achieved		

Level 1															
Level 2															
Level 3															
Level 4															
Level 5															
Level 6															
Level 7															
Level 8															
Level 9															
Level 10															
Level 11															
Level 12															

Analysis

$$\text{ISWT}_{\text{pred}} = 1449.701 - (11.735 \times \text{age}) + (241.897 \times \text{gender}) - (5.686 \times \text{BMI})$$

male gender = 1 female gender = 0

Reason for stopping:

- Fitness level: >30% predicted
 30%–50% predicted
 >50% predicted
-

Outcome of physiotherapy assessment

1. Provide with individualised exercise programme
 - Level 1 – >30% $\text{ISWT}_{\text{pred}}$
 - Level 2 – 30%–50% $\text{ISWT}_{\text{pred}}$
 - Level 3 – >50% $\text{ISWT}_{\text{pred}}$
 2. Supported self-management
 3. One to one physiotherapy intervention
 4. Provide with an incentive spirometer
 5. Discuss the results with the medical team
-

Physiotherapist

Date

Rate of perceived exertion

Rating	Perceived exertion
6	No exertion
7	Extremely light
8	
9	Very light
10	
11	Light
12	
13	Somewhat hard
14	
15	Hard
16	
17	Very hard
18	
19	Extremely hard
20	Maximal exertion

This assessment will be repeated around 100 days after your transplant.

Exercise diary

	Exercise level			Outcome	
	1	2	3	How did I feel?	Other comments
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					

	Exercise level			Outcome	
	1	2	3	How did I feel?	Other comments
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					

	Exercise level			Outcome	
	1	2	3	How did I feel?	Other comments
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					

Contact details

Physiotherapy Department, Sutton

Tel: 020 8661 3098

The Royal Marsden Macmillan Hotline: 020 8915 6899

You can ring the hotline 24 hours a day, 7 days a week.

Call us straight away if you are feeling unwell or are worried about the side effects of cancer treatments.

This service provides specialist advice and support to all Royal Marsden patients, as well as to their carers, and both hospital and community-based doctors and nurses caring for Royal Marsden patients.



References

This booklet is evidence based wherever the appropriate evidence is available, and represents an accumulation of expert opinion and professional interpretation.

Details of the references used in writing this booklet are available on request from:

The Royal Marsden Help Centre

Freephone: 0800 783 7176

Email: patientcentre@rmh.nhs.uk

No conflicts of interest were declared in the production of this booklet.

Images on pages 1, 4 and 12 from Adobe Stock.

Should you require information in an alternative format, please contact The Royal Marsden Help Centre.

The patient information service is generously supported by The Royal Marsden Charity.

royalmarsden.org

Registered Charity No.1095197



Revised October 2022. Planned review October 2025
© The Royal Marsden NHS Foundation Trust RS-1633-03



Radiotherapy and
Chemotherapy Services
F538021 & F538022

