



▲ Dr Peter Wright, Hayley Marriott and Dr Alba Solera-Sanchez

Exercise pathways in paediatric oncology, from hospital to school

Dr Peter Wright, Hayley Marriott and Dr Alba Solera-Sanchez, researchers at Oxford Brookes University, explain the benefits of staying physically active during and after treatment and explore how we can work collaboratively to improve physical activity pathways and support for children and young people.

Did you know that in the past, patients were generally advised to rest and reduce physical activity levels when undergoing cancer treatment? However, it was found that lengthy periods of inactivity had negative effects on people's physical and mental health. In 1999, the first research study that showed a positive association between physical activity and health benefits in adolescents with cancer was published. Since then, several studies have found that being physically active both during and after cancer treatment has many benefits for children and young people, such as helping manage side effects like fatigue and pain and enhancing physical fitness and psychological wellbeing.

While we now understand much more about how physical activity and exercise can help young patients, research has shown that physical activity levels are almost always reduced during treatment. For many children and young people, this reduction in physical activity can be seen for years after treatment finishes.

Why does this happen?

It's thought that this change in physical activity can be associated with treatment

side effects, hospital stays, over protection and fear. As the benefits of physical activity were not recognised in childhood cancer patients until the early 2000s, exercise support and provisions for patients haven't historically been well integrated into healthcare and society. However, some amazing work and research is now being conducted in the UK and overseas to provide better exercise recommendations and pathways for children and young people during and after treatment.

In other countries, such as Germany and Norway, exercise therapy is commonly offered to young people with cancer as part of their healthcare provision. Physiotherapists and exercise therapists work together to support young people to be more active, both during and after treatment. Some hospitals even have climbing walls, gyms and swimming pools to use during and after treatment.

Some countries also have rehabilitation hospitals where young people are supported by different specialists including physiotherapists, exercise specialists, psychologists, dietitians and teachers. During stays, patients get to try out lots of different activities and adapted equipment that helps make getting active more accessible.

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Being physically active from hospital to school

Encouraging physical activity across all stages of treatment and different settings is essential to creating a sustainable and effective pathway for young people. That's why the inclusion of patients, families, healthcare and exercise professionals, teachers and coaches in active conversations and initiatives is paramount to supporting young people to become more active in hospital, at home, in clubs and at school.

Top tips for patients and families

Increasing physical activity levels can sometimes be challenging while having treatment. Nevertheless, there are different ways to increase physical activity, whether this is at home, in hospital, or at school. For instance, why not explore how technology could help you exercise? Did you know that there are some great apps that track your daily steps? Trying to set goals can help to increase physical activity levels and there are fun apps that will help with movement, such as Active Arcade and Pokemon Go.

Activity days are a great way to explore the benefits of physical activity and try out lots of different sports and activities. Check out events such as 'Do it For You' at Sheffield Children's Hospital, 'Get Active' at Great Ormond Street Hospital and 'Let's Move' at Oxford Brookes University, which are all organised for children and young people affected by cancer.

Attending these events allows you to explore several ways to be active as well as learn how you could adapt physical activity to suit your individual needs. This can be a great way to build confidence and learn new skills, as well as a great opportunity to meet other families and share experiences.

Charities also play a fundamental role in supporting children and young people with cancer. They may organise events, offer individualised exercise programmes or provide equipment to support young people's involvement in sport and physical activity.

Top tips for professionals

As well as physiotherapists and exercise professionals, consultants, nurses, play therapists, teachers and coaches also play a crucial role in supporting children and young adults to move more. The Faculty of Sport and Exercise Medicine UK developed an online resource called 'Moving Medicine' to help healthcare professionals integrate physical activity conversations into routine clinical care as well as provide information and activities to patients and families. For anybody that is interested in knowing more about the effects of physical activity for different conditions, the online 'evidence finder' summarises key findings and research papers. More information can be found at www.movingmedicine.ac.uk.

Creating a sustainable exercise pathway

While some amazing work and research is being conducted in this area, it's important to continue to improve physical activity pathways across all stages of treatment and settings. A multidisciplinary and collaborative approach is needed to create a culture where we support children and young people to move more during treatment and beyond.

To establish and improve physical activity pathways, we recommend:

- ▶ empowering the active involvement of children, young people and their families
- ▶ increasing knowledge exchange and collaboration between organisations and professionals

- ▶ ensuring adequate communication of evidence and guidelines
- ▶ creating specific educational programmes for healthcare professionals, teachers and coaches
- ▶ developing exercise-friendly settings, within clinical environments, school and the community
- ▶ the integration of evidence-based exercise interventions, within clinical and community settings

Get Strong to Fight Childhood Cancer

The FORTEe study 'Get Strong to Fight Childhood Cancer' is an international research project that brings together 16 institutions from eight European countries. FORTEe is one of the world's largest studies in paediatric exercise oncology, receiving funding from the European Union's Horizon 2020 Research and Innovation Grant.

The study aims to investigate the effect of an individualised exercise programme and adapted digital health technologies, in children and young people aged between four and 21 years old who are undergoing intensive cancer treatment. The goal of the research is to implement paediatric exercise oncology as an evidence-based standard in clinical care for all childhood cancer patients across Europe and beyond.



Better quality of life



Better fitness and energy levels



Less time spent in hospital



Improved mental health

EXERCISE BENEFITS IN CHILDHOOD CANCER



Stronger bones



Increased muscle mass and muscle strength



Better immune function



Move around more easily