



# Being Active With and Beyond Cancer

Di Fox – Move More Worcestershire

## Macmillan's Vision

**“To ensure that everyone living with and beyond cancer is aware of the benefits of physical activity and enabled to choose to become and to stay active at a level that is right for them.”**

# Quiz!



Adults should take part in 150 minutes of physical activity per week – True or False

What percentage of cancer patients are active to recommended levels?

10%

23%

47%

60%

It is safe for patients to exercise through all stages of their cancer – True or False

What percentage of people LWBC have 3 or more long term conditions?

18%

29%

38%

43%

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# Physical activity guide for adults



## Be active

To keep your heart and mind healthy

## Build strength

To strengthen muscles, bones and joints

## Improve balance

To help reduce your chance of falling

How often?

**150**

minutes of moderate activity a week

or

**75**

minutes of vigorous activity a week

**2**

days a week

**2**

days a week

Walk



Run



Gym



Dance



Gardening



Sport



Aerobics



Tai chi



Swim



Stairs



Carry bags



Bowling



**Sit less**

TV



Sofa

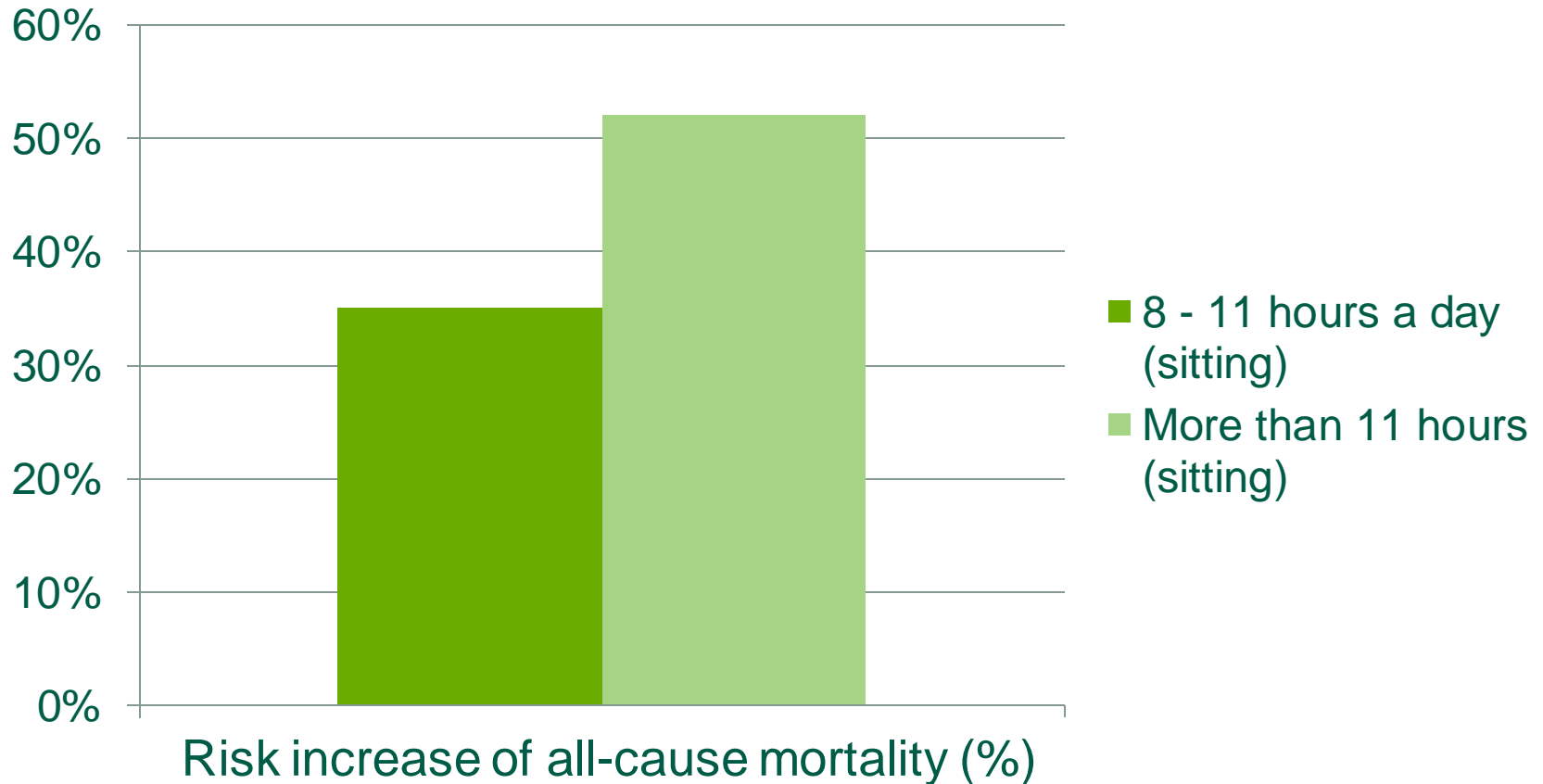


Computer



Break up long periods of sitting down to help keep your muscles, bones and joints strong.

# Sedentary behaviour



Pavey et al., (2012) cited in de Rezende, L.F.M, López, J.P., Rodrigues, V.K., Matsudo. & Luiz, O.C. (2104). Sedentary behavior and health outcomes among older adults: a systematic review. *BMC Public Health* 2014, 14:333

# Herefordshire & Worcestershire

Within Herefordshire and Worcestershire, 163,400 people are inactive. This is similar to the England average but we are performing better than the regional average.

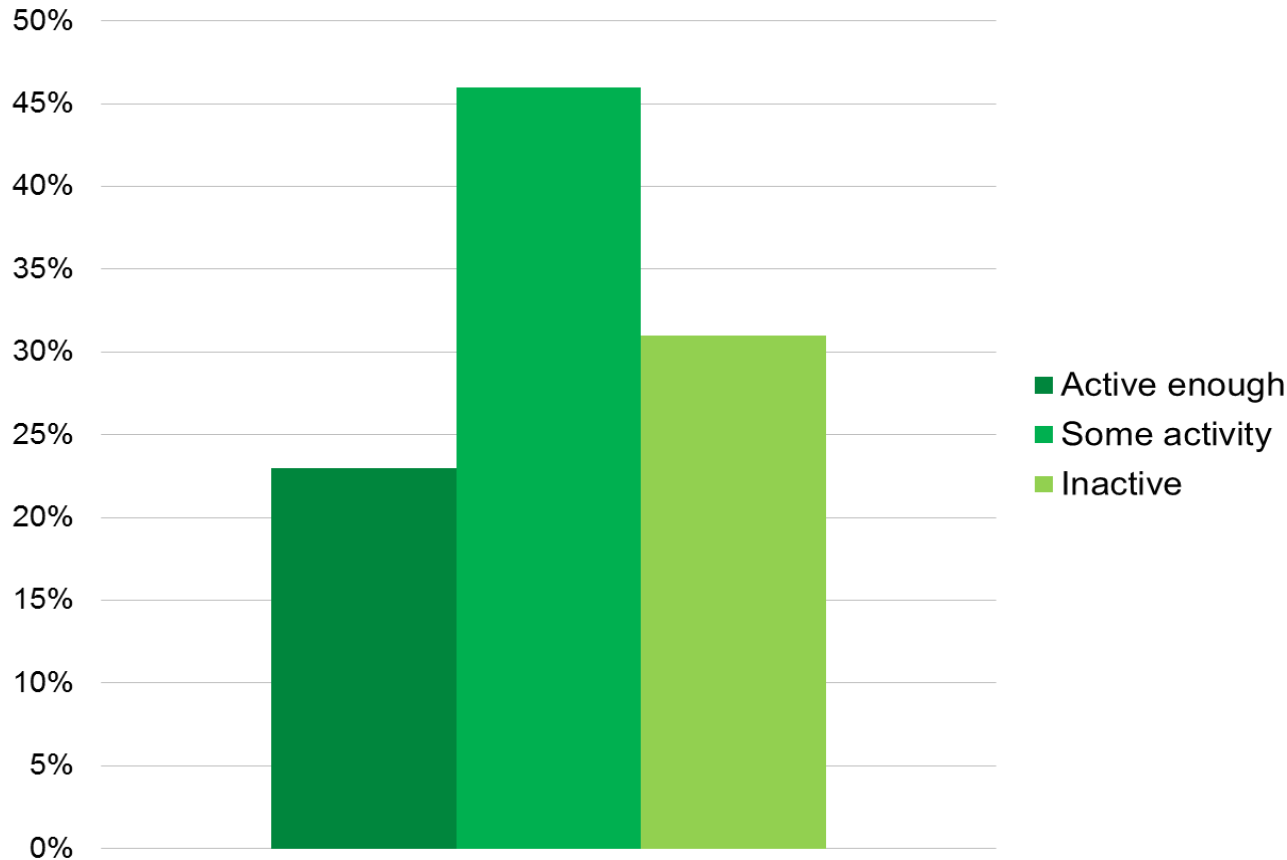
	Active	Fairly Active	Inactive
England	60.6%	13.8%	25.6%
West Midlands	56.7%	14.2%	29.1%
Worcestershire	62.9%	12.7%	24.4%
Herefordshire	59.1%	15%	25.9%

Active: doing at least 150 minutes moderate intensity activity a week

Fairly Active: doing 30-149 minutes moderate intensity activity a week

Inactive: doing less than 30 minutes moderate intensity activity a week

# Activity levels in people with cancer



Department of Health .(2012). Quality of life of cancer survivors in England. Report on a pilot survey using Patient Reported Outcome Measures (PROMS). London: Stationery Office.



# The barriers and motivators to physical activity



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## Shared with general population

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## Cancer-specific

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### Motivations

- **Spend time with family/friends**
- **Increase quality of life**
- **Prove you still can**
- **Stay fit and healthy**
- Personal time
- To feel good
- Expand social circle

- Self-efficacy
- Returning to normal
- Gaining control
- Social support
- Spend time with people like them
- Improve strength and fitness after treatment

### Barriers

- **Lack of confidence**
- **Lack of motivation**
- **Embarrassment, fear**
- **Looking after family**
- Weather
- Dislike gym; not the sporty type
- Health condition (not cancer)
- Time/Distance

- Fatigue
  - Anxiety around safety
  - Too hard
  - Weight gain during treatment
  - Family or health professionals discourage it
  - Uncomfortable in classes
  - Uncomfortable using communal changing rooms
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# Physical activity after cancer - an evidence review



**Reduces the  
consequences  
of treatment**



**Reduces  
co-morbidities**



**Reduces  
Disease  
Progression**



**Decreases  
mortality**



**Decreases  
recurrence**

Thomas, R.J., Holm, M., & Ali-Adhami, A. (2014). Physical activity after cancer: An evidence review of the international literature. *BJMP*; 7(1)

# The potential biochemical pathways



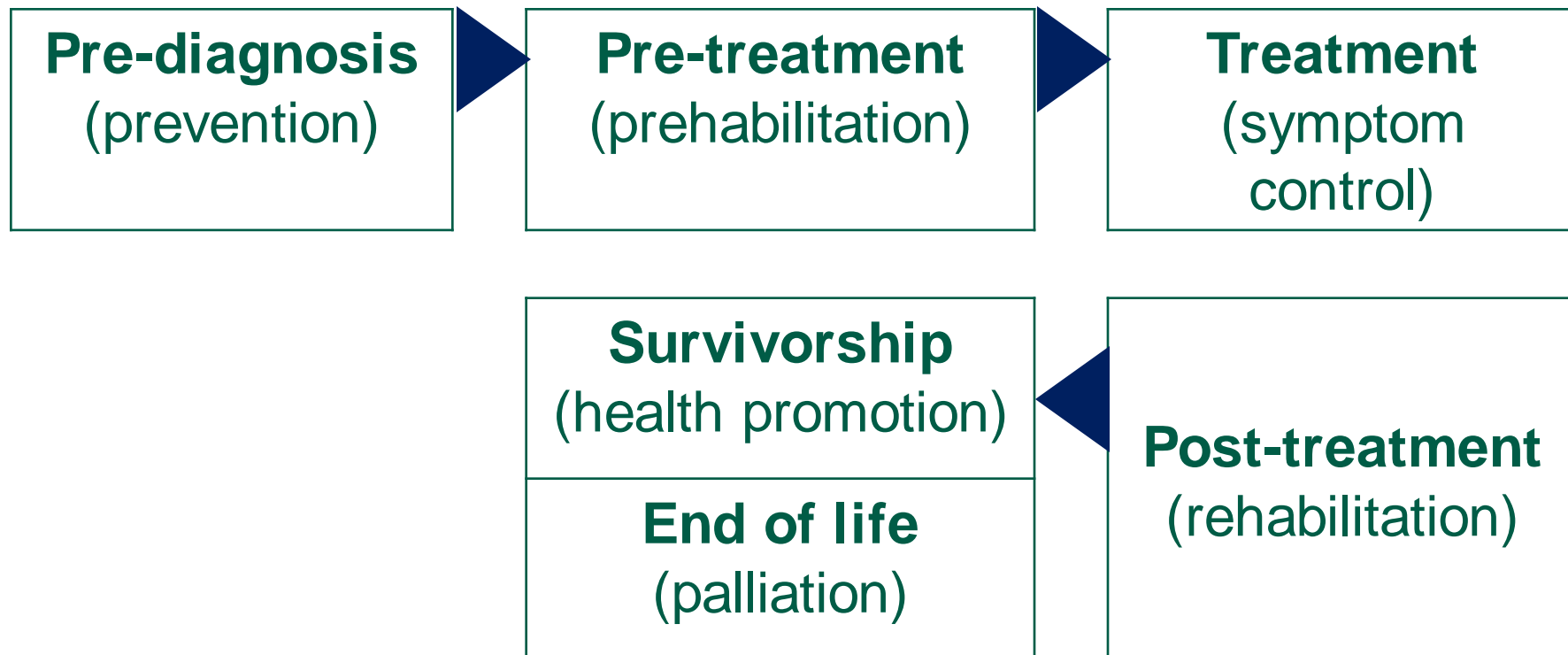
Class of effector molecule	Effector molecule	Effects of PA on the effector molecule
Cell growth regulators	IGF1 IGFBP3	Decreased levels Increased levels
Proteins involved in DNA damage and repair	BRCA1 BRCA2	Increased expression Increased expression
Regulator of apoptosis and cell cycle arrests	p53	Enhanced activity
Hormones	Oestrogen Vasoactive intestinal protein Leptin	Decreased levels Decreased levels Decreased levels (indirect)
Immune system components	NK cells Monoocyte function Circulating granulocytes	Enhanced activity Enhanced activity Increased proportion

Thomas, R.J., Holm, M., & Ali-Adhami, A. (2014). Physical activity after cancer: An evidence review of the international literature. *BJMP*; 7(1)

**"EXERCISE IS SAFE  
BOTH DURING AND AFTER  
MOST TYPES OF  
CANCER TREATMENT."**

Schmitz, K.H., Courneya, K.S., Matthews, C., Demark-Wahnefried, W., GALVÃO, D.A., Pinto, B.M, et al. (2010). American College of Sports Medicine Roundtable on Exercise Guidelines for Cancer Survivors. *Medicine & Science in Sports & Exercise*; 42:1409–26.

# PHYSICAL ACTIVITY



**EVERY STAGE OF  
CANCER CARE**

# Current guidelines



## During Cancer Treatment

Exercise to tolerance which depends on individual fitness and treatment side effects.

CV 3-5/wk, 20-30 min, 55-75% HRR (RPE 11-14)

Resistance 2x/wk

Flexibility/ROM on most days

## Post Treatment

May have specific rehabilitation needs.

Accumulate at least 30 minutes of moderate intensity exercise (60-80% HRR/11-14 RPE) on 5 days per week.

Progress to vigorous intensity exercise (>80% HRR) - 3 days per week only with appropriately screened clients

# Cancer safety considerations



Potential risk	Precaution
Exacerbate symptoms	Avoid high intensity; modify based on site of treatment
Immune suppression	Avoid high intensity/volume & public places while white blood cell counts are low
Bone fractures	Avoid high impact/contact with bone metastases/osteoporosis risk
Falls	Avoid activities needing balance with dizziness/frailty/peripheral neuropathy
Anaemia	Keep to light intensity activities until resolved
Hernia	Anyone with a stoma should start with low resistance exercise and progress slowly to avoid herniation
Lymphoedema	<b>Prevention-</b> progress resistance exercises gently <b>Patients with lymphoedema-</b> avoid strenuous repetitive exercise with affected limb and wear compression garment

<b>Moderate-intensity Physical Activity (Approximately 3-6 METs)</b>	<b>Vigorous-intensity Physical Activity (Approximately &gt;6 METs)</b>
Requires a moderate amount of effort and noticeably accelerates the heart rate.	Requires a large amount of effort and causes rapid breathing and a substantial increase in heart rate.
Examples of moderate-intensity exercise include:	Examples of vigorous-intensity exercise include:
<ul style="list-style-type: none"> <li>• Brisk walking</li> </ul>	<ul style="list-style-type: none"> <li>• Running</li> </ul>
<ul style="list-style-type: none"> <li>• Dancing</li> </ul>	<ul style="list-style-type: none"> <li>• Walking / climbing briskly up a hill</li> </ul>
<ul style="list-style-type: none"> <li>• Gardening</li> </ul>	<ul style="list-style-type: none"> <li>• Fast cycling</li> </ul>
<ul style="list-style-type: none"> <li>• Housework and domestic chores</li> </ul>	<ul style="list-style-type: none"> <li>• Aerobics</li> </ul>
<ul style="list-style-type: none"> <li>• Traditional hunting and gathering</li> </ul>	<ul style="list-style-type: none"> <li>• Fast swimming</li> </ul>
<ul style="list-style-type: none"> <li>• Active involvement in games and sports with children / walking domestic animals</li> </ul>	<ul style="list-style-type: none"> <li>• Competitive sports and games (e.g. Traditional Games, Football, Volleyball, Hockey, Basketball)</li> </ul>
<ul style="list-style-type: none"> <li>• General building tasks (e.g. roofing, thatching, painting)</li> </ul>	<ul style="list-style-type: none"> <li>• Heavy shovelling or digging ditches</li> </ul>
<ul style="list-style-type: none"> <li>• Carrying / moving moderate loads (&lt;20kg)</li> </ul>	<ul style="list-style-type: none"> <li>• Carrying / moving heavy loads (&gt;20kg)</li> </ul>



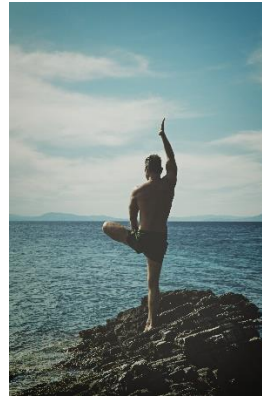


# Rate of Perceived Exertion

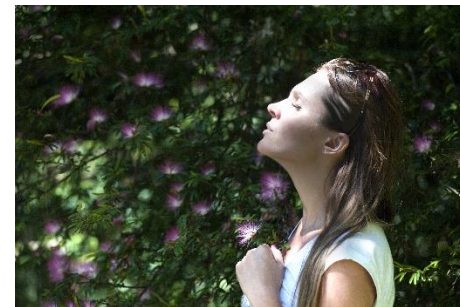


0	Resting
1	Very Easy
2	Somewhat Easy
3	Moderately Easy
4	Somewhat Hard
5	Hard
6	Harder Still
7	Very Hard
8	Really Very Hard
9	Very, Very Hard
10	Exhausting

# What Could It Mean To Me?



## Improve Quality of Life





# Di's Experience



# Any questions?

For more information, please contact Di Fox on  
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[movemoreworcestershire@worc.ac.uk](mailto:movemoreworcestershire@worc.ac.uk)