



### The Research – Physical activity & advanced cancer 1

- The feasibility and acceptability of active rehabilitation to patients with advanced disease is now well established
- Randomised controlled trial for 231 people living with advanced cancer.
  - Included twice weekly circuits – aerobic & resistance training for 8 wks or usual care
  - ↑ handgrip strength, shuttle walk distance & health related QOL
  - ↑ median survival 16.3 compared to 6.3 months

(Oldervoll et al., 2011)

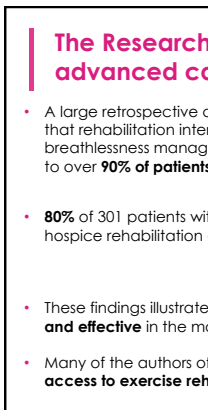


### The Research – Physical activity & advanced cancer 2

- A series of pilot studies offering a range of exercise rehabilitation interventions to patients with advanced stage cancer included:
  - **aerobic / endurance and resistance training**

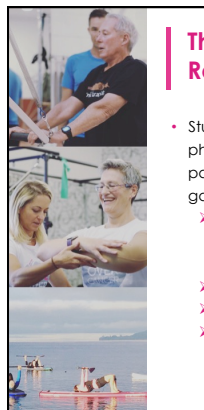
(van de Dungen et al. 2014) (Henke et al. 2014)  
(Mayo et al. 2014) (Jenson et al. 2014)

- Collectively, these outcomes suggest that along with being acceptable to patients, exercise rehabilitation appears effective in:
  - improving strength, fatigue, physical functioning, ADL functioning, social functioning, independence and QOL



### The Research – Physical activity & advanced cancer 3

- A large retrospective analysis of 572 terminally ill cancer patients found that rehabilitation interventions (including physical exercise, breathlessness management and relaxation strategies) were acceptable to over **90% of patients** (Jenson et al., 2014)
- **80%** of 301 patients with advanced cancer participating in inpatient hospice rehabilitation experienced improvement in function (Yoshioka H., 1994)
- These findings illustrate exercise rehabilitation initiatives are both **feasible and effective** in the majority of patients with advanced cancer
- Many of the authors of this research suggested the need for **improved access to exercise rehabilitation for this group** (Henke et al., 2014)



### The Research – Rehabilitation & QOL

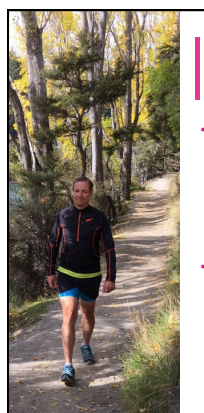
- Studies have found that in addition to perceived physical & emotional improvements in wellbeing, patients felt that engaging in exercise rehabilitation gave them:
  - a sense of meaning whereby they reclaimed control though active, positive involvement in their own health
  - greater choice
  - the opportunity to prolong independence
  - confidence and hope to face the future

(Malcolm L., 2014) (Turner K., 2010)



"I am actually doing something to keep well. That feels really good in the situation where cancer makes you feel very powerless because it's out of your control. I can get to the gym, I can walk, I can make my heart rate increase, I can strengthen my limbs as much as I'm able. That control is very good for someone who feels they have so little control..."

Diane



### Maintaining normality of daily life

- Improvements in physical function & maintenance of independence are the primary goals for providing exercise interventions to individuals with advanced cancer (Rainbird et al., 2009)

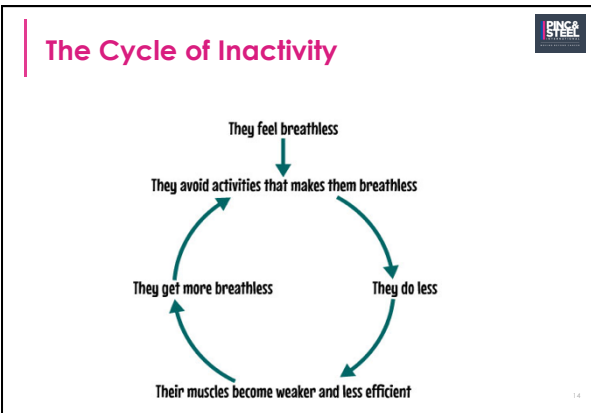
- Even mild increases in activity may foster the ability to regain a more normal lifestyle, & bolster capacity to be more functional and active in everyday life

(Dittus et al., 2017)



### Why is a focus on functional physical activity important?

- Multiple trials have shown a direct relationship between reduced symptom burden and increased physical activity (Bade et al., 2015)
- Functional measures improved in these trials include:
  - stair walking / balance / ability to get out of a chair (Dittus et al., 2017)
- Patients have identified issues that they are most concerned about are:
  - Not being able to do their usual activities
  - Not being able to care for themselves
  - The future (Baile et al., 2011)
- Maintaining function represents an important gateway to preserving independence and participation in meaningful activities that add to quality of life (Brovold et al., 2012, Cheng et al., 2014)
- It is easier to maintain function than it is to regain it once it is lost (Tryon et al., 2014)



### Breathlessness

- A major consequence of breathlessness is physical inactivity
- This limitation in functional ability is frequently accompanied by escalating anxiety levels and panic attacks (Salano et al., 2006)
- There is evidence for non-pharmacological active rehabilitation strategies including:
  - Exercise
  - Breathing techniques
  - Pacing
  - Positioning (Bausewein et al., 2008)
- Studies indicate the importance of rehab to focus people on gaining control over their breathing, being functionally active and living fully alongside breathlessness

### Cachexia 1

- Currently no effective therapy against cancer cachexia - important to implement strategies aimed at preventing or at least delaying this condition
- It is recommended that physical activity prescription should be applied as early as possible not only by people at risk for cachexia but also those with any sign of metabolic disturbance
- Early on people are generally likely to be less symptomatic, have less impairment, and retain an ability to increase muscle mass (Aversa et al., 2017) (Boyle et al., 2017)

### Cachexia 2

- A focus on physical activity has the advantage of directly targeting the patient's lived experience of cachexia, which is often typified by **reduced**:
  - ability to perform daily tasks & activities
  - participation in work, social life and society
- Supporting continued or renewed participation may bring meaningful outcomes as people prioritise their **independence** in:
  - self-care, domestic and leisure activities (Wheelwright et al., 2013)
- Exercise should be:
  - adapted to individual needs
  - comorbidities detected and treated early
  - adequate nutritional support provided (Aversa et al., 2017)


### Fatigue

- Fatigue is a frequently seen symptom in palliative care patients (80 – 90%)
- Fatigue is argued as being associated with:
  - anxiety, depression, pain, breathing difficulties, insomnia, loss of appetite, nausea and dizziness
- Exercising is known to have positive effects on fatigue, however there are less studies in advanced cancer patients
- Enjoyment of exercise type, energy protection techniques and regular physical activities can help reduce fatigue (Narayanan, et al., 2009) (van Weert et al., 2006)

### Bone metastases


- In current practice - patients with bone metastases advised to:
  - avoid high intensity aerobic and resistance training = citing bone fragility, possibility of exacerbating the disease, or inability of patients with advanced cancer to benefit
- New research has established that a rest strategy can hasten decline and reduce survival
- Researchers at Edith Cowan University In Perth investigated effects of individualised exercise program for patients with breast and prostate cancer with bone mets. The exercise programs maintained training to the body while avoiding fragile bone sites.
  - Patients who completed the exercise intervention showed significant improvements in neuromuscular strength (11%), aerobic fitness (5%), walking speed (12%), physical activity (24%) and muscle mass (3%) without any increase in bone pain or adverse events

(Australia, Cancer Council. "Exercise effective for bone cancer patients." Medical News Today Dec. 2014) 19



### Prescribing exercise 1

- Moving towards = exercise medicine
- A patient with advanced cancer needs to be:
  - assessed / key issues and what matters to them determined
  - exercise prescribed to help people maintain independence and stay as physically capable as possible
- Graded conditioning program prescribed from as little as 5 mins per day
- Functional exercise to strengthen large muscle groups critical for mobility and ADLs
- Physical activities people are interested in.



### Prescribing exercise 2

- It is important when talking to people about exercise – that you let them know that it is within their reach – it is not about lifting heavy weights at the gym or going for a run
- Some days people may be able to do more than other days
- If exercise is delivered in the right way for each person and the things they are experiencing then we can generate therapeutic effects which will influence their quality of life in a positive way



### Increasing activity – changing behaviour

- For most people with advanced cancer engaging in exercise rehabilitation demands a change in behaviour
- First step = inform patients, families & other health professionals of possible benefits of having patients increase their levels of physical activity
- Identify and explore any concerns that could limit their engagement = such as fear of breathlessness etc
- Patients positive health beliefs & behaviours should be reinforced

### 50 Reasons to exercise

1) Lifts your mood	26) Strengthens your bones
2) Improves learning abilities	27) Strengthens your heart
3) Builds self-esteem	28) Improves posture
4) Keeps your brain fit	29) Prevents colds
5) Keeps your body fit & able	30) Improves appetite
6) Boosts mental health	31) Improves cholesterol levels
7) Boosts your immune system	32) Lowers blood pressure
8) Reduces stress	33) Lowers risk of (certain) cancers
9) Makes you feel happier	34) Lowers risk of diabetes
10) Has anti-ageing effects	35) Fights dementia
11) Improves skin tone & colour	36) Eases back pain
12) Improves sleeping patterns	37) Decreases osteoporosis risk
13) Helps prevent strokes	38) Reduces feelings of depression
14) Improves joint function	39) Prevents muscle loss
15) Improves muscle strength	40) Increases energy & endurance
16) Alleviates anxiety	41) Increases sports performance
17) Sharpens memory	42) Increases pain resistance
18) Helps to control addictions	43) Improves balance & coordination
19) Boosts productivity	44) Improves oxygen supply to cells
20) Boosts creative thinking	45) Improves concentration
21) Improves body image	46) Helps with self-control
22) Gives you confidence	47) Increases sex drive & satisfaction
23) Helps you keep focused in life	48) Lessens fatigue
24) Improves eating habits	49) Makes life more exciting
25) Improves longevity	50) Improves <b>Quality of Life</b>

Palliative care is an approach that improves the **quality of life** of patients and their families facing the problem.

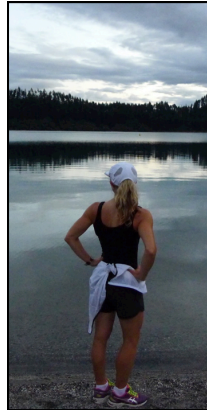
Associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual.

(WHO 2016)

Ref: Exercise Medicine Australia

### Proactive referrals to a cancer rehab physiotherapist

- Will help to maximise the benefits of physical activity for people with advanced cancer
- Referral at early stage of mobility compromise is important
  - For example – if a patient mentions feeling a bit unsteady when walking to their local shop –refer early rather than waiting until marked deterioration in mobility ..... Patient is unable to walk to their local shop following a recent fall



## Summary

- With research leading to new and improved treatments for secondary cancer, people are now living longer with the disease than ever before and there is a growing need for exercise rehabilitation
- Exercise interventions can support independence, prevent further health complications and provide a means to help those with advanced cancer to “live well” for as long as possible
- **“Person-centred” exercise rehab should be tailored to each person’s personal priorities and involve collaboration from the whole multidisciplinary team**

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