

# Movement & Exercise

Doing it matters!





DEPARTMENT OF HEALTH AND HUMAN SERVICES

Alt  
therapies

Self management &

# Lacks external validity

Does the same thing happen in another setting?

Pharmacology – moderate (oral),  
Strong (CSI) – Short term

Exercise – Strong evidence

**Effective treatment options for musculoskeletal pain in primary care: A systematic overview of current evidence – PLoS One 2017**



Telling these guys to just 'stop eating' or 'cheer up' is like telling people to **'just exercise'**

*“Differences in the definition of adherence used, measurement and estimative of how many patients do not comply with their prescribed exercises vary, but evidence converge on a figure of 50% or higher”*

Reina - 2009

Biggest challenge for an active **PATIENT** driven approach to therapy maybe less about telling them **WHAT** to do but **WHY** they are doing it and **HOW** it is going to get done!



Unfortunately this message is as sexy as fat bastard!

We spend too much time thinking (& arguing) about the **WHAT**.

**NEWS FLASH**

We currently have no idea what  
**TYPE** of exercise is superior!

- Sets
- Reps
- Loads
- Frequency

# Beliefs & expectations

Understanding that the psychological affects the physical/biological

- Knowledge
- Improved expectation
- Motivation
- Engagement



# Beliefs about back pain

Ben Darlow. 2016

- 69% of people believe they should take it easy
- 59% believe if an activity causes pain it should be avoided in the future
- 55% believe exercise risk outweighs the benefit
- 35% believe bed rest is mainstay of therapy

This is a **PROBLEM** for an active approach to back pain!





- Psychological factors, such as **patient expectation** and pain self-efficacy should be formally assessed using standardised measures.
- Psychological factors were consistently associated with outcome. In comparison, clinical examination findings, suggestive of a structural diagnosis, were not consistently associated with the outcome of physiotherapy management.
- Physicians referring patients to physiotherapy should reinforce a positive expectation of recovery as a result of physiotherapy treatment.

**Psychological factors are associated with the outcome of physiotherapy for people with shoulder pain - Chester 2016**

# Does how you do depend on how you think you'll do?

A systematic review of the evidence for a relation between patients' recovery expectations and health outcomes – Mondloch 2001

- Consistency across the studies reviewed and the evidence they provided support the need for clinicians to clarify patients' expectations and to assist them in having appropriate expectations of recovery



- Individual expectation: an overlooked, but pertinent, factor in the treatment of individuals experiencing musculoskeletal pain. Bialosky et al. Phys Ther. 2010
- How Well Do You Expect to Recover, and What Does Recovery Mean, Anyway? Qualitative Study of Expectations After a Musculoskeletal Injury. Carroll et al. Phys Ther. 2016
- Expectations predict chronic pain treatment outcomes. Pain. Cormier et al. 2016

If you **BELIEVE** it will work, it probably will! (to some degree)

- **Mind-set matters: exercise and the placebo effect.**

Crum & Langer. Psychol Sci. 2007

- Weight
- Blood pressure
- Body fat
- Waist to hip ratio
- BMI



# How do we find out about expectations?

- Previous exercise experiences? – positive or negative
- Perception of exercise as a treatment?
- Expectation of therapy in general?
- Expectation of recovery scale?



- If you don't believe in the treatment or a successful outcome you probably will not engage with it!
- Expectations too high OR too low affect both the process and outcome
- Are you measuring outcome meaningfully?
- Patient specific functional scale

**adherence**



## Adherence

- Feeling of obligation to the trial or the scientific process of the trial which increased their motivation or ability to adhere with the prescribed treatment

## Self efficacy

- *“I felt it was something I could manage myself and I could control what I was doing.”*

## Education on expected recovery time

- *“At first I expected to see an improvement within a few weeks but it was so small. They tried to encourage me saying it was a long haul and by the end they said it would be six to nine months. I think it might have helped to know the six to nine month time frame at the beginning.”*

Exploring experiences, barriers, and enablers to home- and class-based exercise in rotator cuff tendinopathy: A qualitative study – Sandford et al, 2017



# Pain

- Serves as both a motivator and barrier.
- Perceived benefit important



## Making it better

*“It’s easier to do the exercises when you can feel a definite benefit. It’s always hard to exercise to prevent something from getting worse.”*

## Making it worse

*“Those exercises were hurting me and I was not benefitting at all.”*

*“There was one exercise that I was given earlier that I thought at the time might have made things worse, so I stopped doing it”*

## Equipment is a key enabler or barrier



Theraband!

*“you can do it everywhere and anywhere.”*

*“The elastic band, I think, is worth the money and I liked being able to go up the levels..I felt like I was progressing.”*

## Location matter?



YES.....and NO!

- One group of participants received a gym-based exercise program for 12 months (gym group). The other group received a home-based exercise program for 12 months with telephone follow-up for the first 10 weeks (home group).
- Similar long-term clinical outcomes and long-term exercise adherence are achieved with the two approaches examined in this study
- It matters if it matters to the **PERSON**

Gym-based exercise and home-based exercise with telephone support have similar outcomes when used as maintenance programs in adults with chronic health conditions

# Should exercise be painful?



Err.....maybe?

Why?

- Allows greater dosage – Does this matter?
- Potentially highlights pain does not equal damage
- Small statistical benefit (small effect) in short term – Clinical diff?

Why not?

- May affect adherence & external validity
- How much pain is OK? How long should it take to subside?
- More work needed on the parameters, framing & dosage
- No medium or long term difference

Should exercises be painful in the management of chronic musculoskeletal pain? A systematic review and meta-analysis – Dean et al. 2017

# What can we do?

- Educate that a certain amount of pain is OK
- Modify exercises/movement to attempt to decrease pain
- Give self management tools to help to modify & increase self efficacy
- Frequency
- Load
- Repetitions
- Sets

# The 5 **A**'s checklist for Self management using EXERCISE

**A**ware of **WHY** they are doing it and **HOW** it will help them?

**A**dequate instructions? - Do they have them to refer to? Could be video, written or by email.

**A**re they confident in performing the exercise? - Find out!

**A**greed level of discomfort? - VAS score? Define discomfort vs pain?

**A**bility to regress or progress exercise based on level of discomfort? - Load/ROM/Variation/Sets/Reps.



# Is your exercise program adding or taking away?

Stress is a BIG factor....are you adding more?

- Unrealistic program
- Already stressed adds more to an overloaded system (allostatic load)
- Need too much time
- Emphasis on a special program that can't be performed
- They hate it!

## Chronic psychological stress impairs recovery of muscular function and somatic sensations over a 96-hour period - 2014

- In all analyses, higher stress was associated with worse recovery.

## Strength gains after resistance training: the effect of stressful, negative life events - 2008

- High life stress may lessen a person's ability to adapt to weight training. It may benefit coaches to monitor their athletes' stress both within and outside the training setting to maximize their recovery and adaptation.



What are the barriers to exercise adherence?

Barriers to treatment adherence in physiotherapy outpatient clinics: A systematic review.

Jack *et al.* Man Ther. 2010

# #1 - PAIN – Making it worse

Dosage



Education



Self management



# What are the barriers to adherence?

## Low self efficacy

- "How confident do you think you will be at doing the exercises or sticking to the program?"
- Planning, helping to build efficacy
- Build confidence

## Envisaging lots of barriers to exercise

- Find out what they might be? Family? Work? Don't like gyms?
- Planning to overcome these perceived barriers
- "It won't help" - Educate how it could.

# What are the barriers to adherence?

## Current low levels of exercises or failed exercising

- Find out current activity levels
- Why have they previously failed
- Set realistic level for treatment

## Low levels of support

- Provide support network
- Adequate access to instructions

## Anxiety and depression

- Exercise can help! Educate.
- Referral

# What are the barriers to adherence?

Medina et al. 2009. **Predictive factors to adherence for home exercise program for neck and low back pain.** BMC

## Individual factors

- **# 1 - Exercise fits daily routine**
- Positive emotional support
- Have enough time – Discuss best time & use reminders such as smartphone
- Self efficacy
- Previous participation and adherence

## Physiotherapist behaviors

- Clarifying doubts and questions
- Supervising exercises in health centre
- Asking about adherence at home
- Justifying usefulness of exercises



# What are the barriers to adherence?

- Time is a key factor
- 1 or 2 exercises
- They can do different things – e.g strength, variety , RFD etc
- They can change throughout rehab process



# What are the barriers to adherence?

Participants had more bonding to the exercise program when:

- Provider gave more knowledge about the problem
- Promoted feedback and motivation
- Reminders to exercise
- Monitored their results and adherence

Reina *et al.* BMC 2009

# What are our take homes?



- The **PERSON** exercising matters!
- The need to know **WHY** they are doing something
- They need to know **HOW** to do it and **HOW** does it fit into their lives
- They need **support, feedback** and be able to ask **questions**
- Find out about **potential barriers** & provide **motivation**
- **Educate** and help **plan** to to address self efficacy
- Always remember the effects of exercise are more than just **physical**

