Physical activity and mental well-being for older adults

Prof Adrian Taylor

"I'm not chasing youthfulness. I'm chasing health. People have been brainwashed to think that after you're 65, you're finished." - Charles Eugster

Swiss seniors compete in 'elderly Olympics'

Want to age well - how about never retiring?
- Most ≥ 65 yr olds have ≥ 2 or more conditions
- Most ≥ 75s yr olds have ≥ 3 or more conditions
People living in deprived areas develop multi-morbidity 10 years before those living in the most affluent areas.
Mental health problems are strongly associated with the number of physical conditions that people have, particularly in deprived areas (data from Scotland)
Clustering of poor health behaviours and the links between physical and mental health

![Diagram showing interconnected health behaviors and their links to depression, low mood, job strain, stress, obesity, type 2 diabetes, physical activity, sport, exercise, alcohol, fat intake, smoking.]

**Figure 1** The Mediating Role of Health Behaviors in the Reciprocal Relationship Between Mental and Physical Well-Being

A guide to the talk:

Evidence to practice

A new wave of pragmatic research
  TREAD
  BAcPAc
  e-coachER

Summary
Physical activity linked to mental health conditions: from neuroscience to translation.

Anxiety & stress, Sub-clinical affect, mood, well-being, Cognitive function, decline, dementia, Self-esteem, eating disorders, Schizophrenia (+ve/-ve symptoms), Quality of life for those with chronic conditions (eg, heart disease, stroke, etc), Substance use/misuse (addictions), Depression,
A framework for evidence to practice (MENPA, Taylor & Faulkner (2014), 7, 1-5.)

- **Overcoming barriers** (The tough sell)
- **Behavioural support**
- **Intervention dose:** level of intensity
- **Sedentary Physical activity**
  - ‘structured’
  - ‘lifestyle’
- **Mediators**
  - Psycho-social
  - Biological
  - Environmental
- **Mental Health**

**Intervention dose:** level of intensity

**Physical activity dose:** FITT
So what does the evidence tell us about using exercise to treat depression?
7.4.1.4

Physical activity programmes for people with persistent subthreshold depressive symptoms or mild to moderate depression should:

- be delivered in groups with support from a competent practitioner
- consist typically of three sessions per week of moderate duration (45 minutes to 1 hour) over 10 to 14 weeks (average 12 weeks).

Guidelines and perceived barriers for patients & GPs

1. Structured activity implies cost, inconvenience, self-confidence and professional support.
2. 45-60 mins may be off-putting – needs progression & brief activity
3. 10-12 weeks suggests no shorter-term effect
4. Based on a fitness model cf. lifestyle model
Most research interventions have been:

intensive (in terms of support)

intensive (for the participant).

Which raises questions about generalisability:
Do we have an evidence-base for older people?
Types of physical activity (for older people):

Nintendo Wii (gaming), & e- and m-health
Yoga, mindfulness, green exercise …
High intensity intervals
Aquatic-based
Dance/music-based
Supervised/Group v home based
Exercise referral
Pedometer based (self-monitoring & goal setting)
Sedentary behaviour reduction
For those with physical health conditions
Other reviews of research with older people

Findings:
Standard mean difference (between groups) was $= -0.38$ (in favour of exercise group). Dose of exercise prescribed $= 90-180$ mins per week.
Other UK research

Exercise for depression in care home residents: a randomised controlled trial with cost-effectiveness analysis (OPERA)

M Underwood,* SE Lamb, S Eldridge, B Sheehan, A Slowther, A Spencer, M Thorogood, N Atherton, SA Bremner, A Devine, K Diaz-Ordaz, DR Ellard, R Potter, K Spanjers and SJC Taylor

2013, NIHR (HTA Report)

Findings:
Generally good engagement in the intervention but NO clinically meaningful reduction in depression v control.
So how can we package exercise and physical activity (PA) support to be acceptable & effective for older people?

Of course we have to listen to older people.
And we need to understand the causes of common mental health problems & low well-being in old age:

Less valued and declining capability with age (for most), ‘Passive (disempowered) patient’ & poverty, Loneliness/isolation

All relate to 3 basic human needs (Self-Determination Theory).

Need to feel a sense of:
Competence
Control (autonomy)
Connection (relatedness)
3 UK studies to support people with a history of or current depression

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A pragmatic multi-centred RCT to evaluate exercise as a treatment for depression in primary care (TRial of Exercise And Depression - TREAD)

- Funders: HTA grant: (2006-2012) (£1m study)
- PI: Prof Glyn Lewis (U. of Bristol)
- Expertise: Psychiatry, Exercise Science, Primary Care, Trials, Statistics, Qualitative methods, Health Economics
- Co-applicants:
  - Exeter: J. Campbell (Peninsula Medical School), A. Taylor (SHS)
Rationale and development of the physical activity counselling intervention for a pragmatic TRial of Exercise and Depression in the UK (TREAD-UK)

Anne M. Haase a,*, Adrian H. Taylor b, Kenneth R. Fox a, Helen Thorp a, Glyn Lewis c
Physical Activity and Mental Health

This leaflet is for anyone who wants to know:

- how being active can make you feel better
- how exercise can help depression
- how active you need to be to feel better
- how to get more active safely.

Introduction

Exercise keeps our hearts and bodies healthy. But how?

We often talk about the mind and body as though they are completely separate – but they aren’t. The mind can’t function unless your body is working properly – but it also works the other way. The state of your mind affects your body.

So – if you feel low or anxious, you may do less and become less active – which can make you feel worse. You can get caught in a harmful cycle:

Why bother with exercise?

To work properly, your body needs regular exercise - and most of us feel good when we are active.
Behaviour change techniques (Maximising the 3 Cs)

Competence
- Discussed issues around definitions and types of PA
- Explored beliefs about value and confidence to do PA
- Goal setting & self-monitoring

Control
- Negotiated timeframe of intervention/session contacts
- Elicited and explored expectations of intervention and PA

Companionship
- Provided support
- Explored strategies for support from significant others
Facilitated physical activity as a treatment for depressed adults: randomised controlled trial

N = 271. No difference in means at 4 months (95% CI), 0.88 (-3.53, 1.76), p = 0.51
Integrating Behavioural Activation and Physical Activity promotion (BAcPAc):
A pilot randomised controlled trial with depressed patients.

Prof Adrian Taylor,
Dr Paul Farrand,
&
M. Hillsdon, R. Taylor,
F. Warren, C. Greaves,
C. Green, P Evans, C.
Pentecost (RA)
Combining behavioural activation with physical activity promotion for adults with depression: findings of a parallel-group pilot randomised controlled trial (BACpAC)

Claire Pentecost, Paul Farrand, Colin J. Greaves, Rod S. Taylor, Fiona C. Warren, Melvyn Hillsdon, Colin Green, Jo R. Welsman, Kat Rayson, Philip H. Evans and Adrian H. Taylor
A multi-centred RCT of an augmented exercise referral scheme (ERS) using web-based behavioural support in individuals with metabolic, musculo-skeletal and a history of depression.

- **Funders:** HTA grant: (2015-2019) (£1.3m study)
- **PI:** Prof Adrian Taylor
- **Expertise:** Exercise Science, Primary Care, Trials, Statistics, Qualitative methods, Health Economics
- **Co-applicants:**
  - **Plymouth:** A. Taylor & Jones, Peninsula Clinical Trials Unit
  - **Exeter:** R. Taylor, Green, Dean, Greaves, Campbell
  - **Southampton:** Yardley & Little,
  - **Birmingham:** Jolly
  - **Edinburgh:** Mutrie
  - **Marjon:** Ben Jane
  - **Cornwall:** Erwin & Woolf
The e-coachER support system
* There is evidence that exercise can improve mental health and well-being, both acutely and chronically.

* We need to find the most acceptable, effective, sustainable, and cost-effective ways to support those with or at risk of depression to increase physical activity to improve mood.
Other research


**Genetic Moderators of the Impact of Physical Activity on Depressive Symptoms**

Vonetta M. Dotson, Ph.D.\(^1,2\), Fang-Chi Hsu, Ph.D.\(^3\), Taimour Y. Langae, Ph.D.\(^4,5\), Caitrin W.

**Sample:**
N=396 community-dwelling adults aged 70–89 years

**Findings:**
Men randomized to the PA arm showed the greatest decreases in somatic symptoms, with a preferential benefit in male carriers of the BDNF Met allele.
• Improve the physical health and wellbeing of people with mental health problems.
• Improve the mental health and wellbeing of people with long term physical conditions.
• Do social media portrayal of athlete masters really help?
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