

06: PHYSICAL ACTIVITY AND MENTAL HEALTH

Depression

People with severe mental illness such as schizophrenia, depression or bipolar disorder have poorer physical health and a shorter life expectancy of at least 10 years compared to the general population.^{1,2}

The commonest physical illness being cardiovascular disease and severe depression is associated with a 78% higher risk of developing cardiovascular disease and an 85% increased risk of cardiovascular -related death.³ This excess cardiovascular mortality in schizophrenia and bipolar disorder is attributed in part to the increased modifiable coronary risk factors of:^{2,4}

- unhealthy diets
- obesity
- smoking
- diabetes
- hypertension
- hyperlipidaemia

In most of these conditions lifestyle factors of physical activity plays an important role.

Prevention of depression with physical activity:

Studies examining whether physical activity might be protective against the risk of depression later in life have shown promising positive effects.⁵

- Evidence appears effective from childhood (9-15yrs) and lasting up to twenty years later.⁶
- The majority of this protective effect was at low levels of activity and observed regardless of intensity.
- It has now been suggested that up to 12% future cases of depression could be prevented by just 1 hour of physical activity per week.⁷

Treatment of depression with physical activity:

There is some good evidence that regular moderate intensity physical activity is effective in the acute treatment of mild to moderate depression and in reducing depression in adult non-clinical populations.⁸⁻¹¹ It also can help reduce the risk of relapse.⁹

Studies suggest that activity may alleviate depressive symptoms in the general population and also that depressive symptoms may be a barrier to activity, i.e. the relationship is bidirectional.¹² As for the most effective form of activity, moderate intensity exercise is effective but low intensity exercise appears to have no effect.¹³ Recent meta-analysis of the adult population, suggested that moderate intensity physical activity interventions, aerobic activity, and if supervised by exercise professionals, can have a greater effect on major depressive disorders.^{14,15} In children and young adults (up to age 20) differing exercise intensities fail to show any significant effect.¹⁶ However, within this age the scientific evidence is still limited to form firm conclusions.¹⁶

Physical activity matched to an individual's preferred intensity has also been shown to improve mental health outcomes and exercise adherence rates.¹⁷ When preferred intensity exercise was combined with motivational support it improved the reduction of depressive symptoms, quality of life and exercise adherence rates.¹⁸

Advice on physical activity should be given in conjunction with antidepressant medication and or psychotherapy treatments.¹⁹

NICE guideline CG90 on Depression in adults: The treatment and management of depression in adults recommends:¹⁹

For people with persistent sub threshold depressive symptoms or mild to moderate depression, one choice is to offer referral for a structured group physical activity programme which 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)

Anxiety

Many studies have evaluated the effect of physical activity on anxiety and some link physical activity to a consistent reduction of anxiety symptoms.^{10,20,21} This is best seen in state anxiety with less evidence in trait states.^{20,21} But the research on children and young adults remains limited¹⁶ so physical activities may be more effective as an adjunctive treatment for anxiety disorders and appears less effective when directly compared with antidepressant drug treatment.²²

Schizophrenia

Physical activity can play an important part in the treatment of schizophrenia. Physical activity has been shown to significantly reduce negative symptoms of mental state and improve the control of positive symptoms.^{23,24}

The physical health of people with severe mental illness such as schizophrenia, depression and bipolar disorder is often poor with a high risk of premature death and a shorter life expectancy of at least 10 years.^{1,2} This excess cardiovascular mortality in schizophrenia and bipolar disorder is attributed in part to the increased modifiable coronary risk factors of:^{2,4}

- unhealthy diets
- obesity
- smoking
- diabetes
- hypertension
- hyperlipidaemia

In most of these conditions lifestyle factors of physical activity plays an important role.

A small number of studies on people with schizophrenia, have so far shown a positive effect of physical activity on physical health, cardiometabolic factors, quality of life, positive and negative symptoms.^{1,2,25} There is also now, some evidence that physical activity can improve cognitive functioning among people with schizophrenia, particularly with higher doses of intervention.^{25,26} Increasing physical activity should be advocated to all people with psychosis or schizophrenia.²⁷



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NICE guideline CG 178 on Psychosis and Schizophrenia in adults: treatment and management recommend:²⁸

- Before starting antipsychotic medication: an assessment of nutritional status, diet and level of physical activity
- People with psychosis or schizophrenia, especially those taking antipsychotics, should be offered a combined healthy eating and physical activity programme by their mental healthcare provider

Sleep and psychological wellbeing

Physical activity has been shown to improve the quality of sleep,^{29,30} whilst many studies have shown improved wellbeing with physical activity training.³¹ Improved psychological wellbeing is also the most common comment made on self-reported feedback questionnaires.²⁰

The Well-being feelings of Exercise

Relaxed	Satisfied	Clear Minded
Positive	Calm	Fitter
Worthwhile	Alive	Invigorated
Good	Healthy	

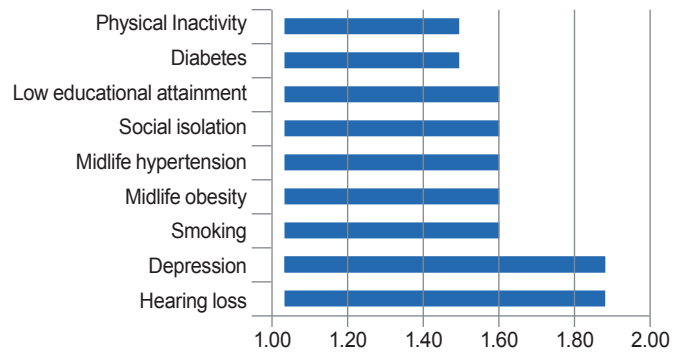
Dementia

Dementia is a term used to describe a group of symptoms including memory loss, confusion, mood changes and difficulty with day to day tasks. It encompasses several forms with Alzheimer’s disease being the commonest and vascular dementia the second, followed by dementia with Lewy bodies.

The risk of dementia rises with age, with 1 in 14 people over 65 affected.³² Globally the World Health Organisation has estimated there were 47 million people worldwide with dementia in 2015 and this figure is predicted to rise to 131.5 million by 2050.³³

Given steady increases in life expectancy, dementia is now a huge public health burden and there is therefore an urgent need to identify modifiable risk factors that prevent or delay its onset. In vascular dementia, the risk is thought to increase amongst those with a family history, hypertension, high cholesterol, smoking and diabetes, with all of these vascular factors being potentially open to modification by physical activity.³⁴ Across all forms of dementia, it has been recently felt that 35% of dementia may be caused by nine potentially modifiable risk factors, one of which being physical inactivity (see diagram).³⁵

Relative risk for Alzheimer’s disease³⁵



Prevention of dementia with physical activity: There are several meta-analyses of observational studies suggesting evidence that people who follow recommended levels of physical activity have a reduction in risk of cognitive decline in the order of 18-30%.³⁶⁻⁴² Higher levels of physical activity are thought to be associated with better cognitive function and a 20% lower risk of cognitive impairment in the highest quartile of activity.⁴²⁻⁴⁵

Ideally, random controlled trials (RCT’s) would determine whether implementing an increase in physical activity would lead to an improvement in cognitive decline. A recent meta-analysis⁴⁶ of RCT’s of exercise in over 50 year olds has shown physical activity interventions improved cognitive function significantly, regardless of cognitive status. Whilst another meta-analysis reported no overall evidence that exercise improves cognition in healthy older adults.⁴⁷

In addition, a recent long term study of 10,000 people followed over 28 years⁴⁸ coupled with other recent studies^{47, 49, 50, 51} has challenged the previous thinking by finding no overall protective effect of physical activity.

The 2017 Lancet Commission on Dementia prevention, intervention and care³⁵ suggests that “*the potential mechanisms for physical exercise to improve cognition or prevent dementia are indirect effects on other modifiable risk factors, such as obesity, insulin resistance, hypertension, hypercholesterolaemia and general cardiovascular fitness, and via direct neurological effects such as increased neurogenesis, cerebral blood flow and BDNF concentrations.*”⁵²⁻⁵⁴

In conclusion, it is presently thought that physical activity is beneficial for brain function and may delay a decline in cognitive function. “In spite of this link there is not yet sufficient scientific evidence that physical activity can reduce the risk of brain disease that causes dementia (e.g. Alzheimer’s disease).”⁵⁵

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Treatment of established dementia with physical activity:

The results from random controlled exercise interventions to improve cognitive and functional outcomes for this population are also mixed, but there is evidence that exercise has no adverse effects and can lead to:⁵⁶⁻⁶¹

- Enhanced mobility
- An improved ability to perform daily functional activities
- A reduction of the burden on family members
- A possible improvement in some elements of cognitive functioning

At present, the recommendation stands that the elderly with dementia engage in physical activity for their cardiovascular and cerebrovascular health, for the reduction in the incidence of diabetes and obesity and for protection against frailty.

Exercise as a fall prevention measure amongst the healthy elderly is well established, but recent meta-analyses also suggest that physical activity has a positive effect on the prevention of falls in those with cognitive impairment^{62,63} and Parkinson's disease.⁶³

NICE guideline NG97⁶⁴ on Dementia focuses the guidance on managing the risk of falling for people with dementia (in community and inpatient settings) by using NICE guidance on falls in older people (see next section of this resource). When using this guidance:

- Take account of the additional support people living with dementia may need to participate effectively
- Be aware that multifactorial falls interventions may not be suitable for a person living with severe dementia

Key message:

Exercise is an important part of any treatment plan for a patient with mental health problems. It can increase their quality of life and lead to fewer hospital admissions.

Consider:

1. Auditing your mental health patients to see if they have been offered any physical activity advice.
2. Advising on diagnosis of the importance of this lifestyle approach for their own well-being.

Benefits to health professionals:

Reduced admissions, drug costs, appointments and visits.

Signpost patients to:

[The Royal College of Psychiatrists](#) has information for health professionals and patients. Or the [Alzheimer's Society](#) for dementia advice and support.

Extracted from the Wales HEIW CPD module on physical activity [Motivate2Move](#). Now part of the RCGP Clinical Priority on physical activity and lifestyle. Review Dec 2020

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