

LYNN ROCHESTER: EXERCISE IN PARKINSON'S – WHY BOTHER?

Summary by Alison Williams, Member Parkinson's UK Edinburgh Branch (Terminology Notes are given at the end of the Summary)

What do we mean by exercise?

Exercise for everyone, and especially PwPs, is a set of planned, structured and repetitive activities that promote better strength, balance, flexibility, endurance (how long we can do something) for our bodies and our brains (complex cognitive function).

Exercise can be everyday physical activities such as walking, gardening, climbing stairs, housework, shopping; or specific exercise such as gym classes, swimming, tennis, etc.

Why should we exercise?

Activity for everyone, not just PwPs, has an impact on our whole body. As well as our motor functioning (walking, moving, etc), as we age exercise protects us against depression, diabetes, cancer, dementia and cardiovascular disease.

Exercise activities for PwPs in particular:

- protect and preserve function (what we can do and how well we can do it);
- modify the progression of our symptoms (we can slow them down);
- maintain our physical condition, prevent deconditioning; and
- repair and restore brain function (improve the uptake of dopamine and possibly repair neural pathways) [caveat: this research is on-going and results so far are based solely on animal studies].

There is a growing evidence base that exercise impacts cognition and mood, hence wellbeing.

What is the evidence that it is beneficial?

Professor Rochester went through the research evidence in depth including:

- trials about symptom management strategies like cueing (Note 1);
- measurements of what exercise activities improve gait in relation to speed, endurance, freezing of gait (FOG), the clinical benefits especially in smoothing on-off fluctuations (Note 2);
- trials concerning the efficacy of Tai Chi in motor function, strength and balance;
- trials involving complex cognitive-motor activities e.g. using the Nintendo Wii Fit games console, treadmill training programs augmented by a virtual reality screen;
- studies concerning the types of exercise that might help in prevention of falls.

More trials are needed but what is apparent is that **one size doesn't fit all**. Parkinson's symptoms are as varied as the people who have them, and activities that work at low

severity of symptoms may not fit for people with high severity. There is a strong suggestion that **combination** of exercise type is best and **complex cognitive-motor** activities can also be particularly beneficial.

The PDSAFE Project

Professor Rochester talked about the PDSAFE Research Project – an on-going physiotherapy trial incorporating a personalised home-based exercise programme designed with a physiotherapist and the use of personalised demonstration videos. Information published by the BMC Neurologist Journal includes:

“Falls amongst people with Parkinson's (PwP) result in significant disability and reduced quality of life. There is emerging evidence that exercise-based and physiotherapeutic interventions are of benefit for improving fall risk factors, such as balance. However, the benefit, in terms of preventing falls, is mixed. The development of effective interventions has been identified as the highest research priority for this population. The aim of this trial is to establish the effectiveness and cost-effectiveness of a novel, home-based physiotherapy programme, compared with usual care, on falls amongst PwP.”

www.ncbi.nlm.nih.gov/pubmed/25971244

What stops us exercising?

- Fear of injury – “I might fall; overdo it and strain something; hurt myself.”
- Time – “I haven't got the time to do this.”
- Confidence – “I don't feel able to do this; it's too scary; everyone else is going so fast.”

Okay, how do we go about it?

1. ***Make up our own programme:*** We should tailor our exercise regimes to our own needs and capacities. Think of the different ingredients of a set of “exercise habits” and mix our own from activities that promote:

- Strength (weight training, resistance exercise, gardening, computer games)
- Balance & co-ordination (home exercises, martial arts such as Tai Chi, gardening, dancing, computer games)
- Flexibility (stretching, home exercises, yoga, Pilates, computer games)
- Endurance (treadmill, bike, walking at pace, swimming)

Comparisons of different types of exercise show that all have a beneficial effect. A COMBINATION works best.

Do it within our own range of possibility; low intensity activity is as effective as high intensity.

2. **Have a routine:** Make it every day and structured; keep an exercise diary; use a step-measure.
3. **Do it together:** Maximise the enjoyment by doing it in a community setting whenever possible. Get a buddy or a personal trainer.
4. **Start small and build up.**

What do we need to pay attention to?

Health professionals need to look at patients' walking (rhythm and pace). The earlier the referral to a Physiotherapist takes place, the better. Maintenance of movement, increased balance and prevention of falls are easier to manage at an early stage. Don't wait until symptoms are far advanced when it will be much more difficult to help the PwP to manage them.

The **most important thing** is personal control by each PwP over:

What exercise we do, why we do it, how it fits our needs and our own particular set of symptoms, both motor and non-motor.

The **more we sit, the less we exercise; the less we exercise, the more we sit, the less we can move.**

Terminology Notes:

1. **Cueing** refers to external cues being applied in the form of visual, auditory and tactile information that can trigger movements or can provide rhythmic or spatial support to improve the quality of movements.
2. The "**on-off**" phenomenon refers to a switch between mobility and immobility in levodopa-treated patients, which occurs as an end-of-dose or "wearing off" worsening of motor function or, much less commonly, as sudden and unpredictable motor fluctuations.