

## WHY ALL PARKINSON PATIENTS DESERVE PHYSIOTHERAPY

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Physiotherapy would be unnecessary if there would be a real solution for patients with Parkinson's disease (PD). But unfortunately there is still no definitive cure for PD. Current pharmacological and neurosurgical treatment can symptomatically suppress the symptoms, and thereby improve the quality of life substantially. Medication and neurosurgery are, however, only partially effective, as they do not relieve all symptoms, or sometimes even induce complications. For example, dopamine replacement therapy can sometimes lead to orthostatic hypotension or „on-period“ freezing of gait, and thus worsen the risk of falls (1). Many patients therefore seek complementary therapeutic approaches, and often this involves allied health professionals such as physiotherapists.

Physical therapists primarily aim to improve the performance of a limited activity or a participation problem. They achieve this by teaching patients or their caregivers to employ compensatory strategies. These compensatory strategies help to restore motor control defects that result from focal brain dysfunction, by exploiting residual and still intact brain circuitries to "bypass" the defective neural machinery. An example is the use of cueing strategies that engage intact cortical pathways and sensory systems, to compensate for the defective basal ganglia (2). Another behavioral compensational strategy is to teach patients to prevent falls through avoidance of dual tasking. A third physiotherapy intervention is physical exercise. Physical exercise has scientifically proven to be effective in improving balance in PD. In addition, animal studies suggest that physical activity and exercise could perhaps slow down disease progression in PD (3). However, it remains unclear whether the insights gathered from the simplified and controlled animal models can be applied to a much more complex scenario in humans with PD. To date, no study has examined whether exercise can induce structural or functional brain alterations in PD, and how such neuroplasticity might occur. In addition, no studies have been published evaluating the ability of PD patients to change their sedentary lifestyle into a physically active lifestyle. In order to find out whether PD patient can indeed change their lifestyle, we launched a large, multicentre randomized trial termed the ParkFit study; now involving 586 patients (4) the results of this trial will be available in 2012.

The effectiveness of physiotherapy interventions has long been questioned because of serious methodological shortcomings in evaluative research, but fortunately physiotherapy is now increasingly changing into evidence-based practice. Based on all available scientific evidence, we developed the Dutch national guideline for physiotherapy in PD (5). This guideline was developed according to international accepted standards for guideline development (AGREE) and provides recommendations based on good scientific evidence. The guideline has meanwhile been adopted by the Association of Physiotherapists in Parkinson's disease Europe (APPDE) and is freely available via internet ([www.appde.eu](http://www.appde.eu)). This Dutch guideline forms the basis for a new European guideline for Physiotherapy in PD, which will be developed in 2011 in collaboration with the APPDE and European members of the World Confederation of Physiotherapy and the European Parkinson's Disease Association (EPDA).

Although the development of an evidence based guideline is an important step in improving the quality of physiotherapy care, additional steps are needed. In the Netherlands the number of physiotherapists is large, so the majority of physiotherapists treat only 3 or 4 patients with PD each year. Treating complex PD patients with such a limited Parkinson-specific experience is absolutely inadequate. We therefore developed the ParkinsonNet concept to tackle this issue (6). ParkinsonNet comprises a professional regional network within the catchment area of hospitals. ParkinsonNet aims to: (1) improve PD-specific expertise among allied health personnel, by training a selected number of therapists according to evidence-based guidelines; (2) enhance the accuracy of referrals by neurologists; (3) boost patient volumes per therapist, by stimulating preferred referral to ParkinsonNet therapists; and (4) stimulate collaboration between therapists, neurologists, and patients. To become a member of ParkinsonNet, allied health professionals are asked to follow a basic teaching course to learn more about PD and its treatment according to evidence-based guidelines. In addition, ParkinsonNet professionals are trained to collaborate with each other and with neurologists, Parkinson nurses and general practitioners. Currently, almost 700 physical therapists, 250 occupational therapists and 250 speech therapists are working together in one of 70 regional ParkinsonNet networks. Recently the ParkinsonNet trial has been published, where we evaluated the merits and cost-effectiveness of the ParkinsonNet health care approach to usual care (7). The results of this large study (involving 699 patients) showed that ParkinsonNet increases the quality of care, and this comes with considerable cost savings (some 1400 euro per year per patient). In this way ParkinsonNet improves the quality of allied health care in PD, and ascertains that patients can receive optimal

physiotherapy care. So, we feel that each patient with PD deserves to be treated by a physical therapist with sufficient Parkinson-specific expertise, and who intends to provide a treatment intervention in accordance with evidence based guidelines for physiotherapy in Parkinson's disease.

**References:**

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