
Executive summary

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Therapeutic exercise is the prescription of muscular contraction and bodily movement ultimately to improve the overall function of the individual and to help meet the demands of daily living. It involves the positive and progressive application and adjustment of stress and forces of the appropriate type and amount to the body system to correct an impairment, improve musculoskeletal function, maintain a state of well being, or prevent dysfunction without causing injury.

Exercise therapy in the Netherlands

In the Netherlands, exercise therapy is practised by physiotherapists, Mensendieck exercise therapists and Cesar exercise therapists. In 2002, 17.2 percent of the Dutch population were seen by a physiotherapist. In 1985, this percentage was much lower, not even 10 percent. About 90 percent of the patients seen by a physiotherapist, Mensendieck exercise therapist or Cesar exercise therapist in the primary health care system are referred by their general practitioner. Sixty percent of these patients are between 25 and 55 years of age. Patients aged 55 and above are more often referred to a physiotherapist than to a Mensendieck exercise therapist or Cesar exercise therapist.

Most patients (87.5 percent) referred to a physiotherapist have disorders of the musculoskeletal system. A small proportion of referred patients have disorders of the sensory and nervous system or disorders of the respiratory system, 7.8 and 1.7 percent respectively. Most of the patients referred to a physiotherapist or exercise therapist have neck or back complaints. Almost 75 percent of the patients referred to a Mensendieck

exercise therapist or Cesar exercise therapist have complaints for more than 3 months. In contrast to this percentage, only 38 percent of the patients referred to physiotherapists have chronic complaints (> 3 months). Only a small portion of the patients who are referred to a physiotherapist (10.7 percent), Mensendieck exercise therapist (4.4 percent) or Cesar exercise therapist (5.7 percent) meet the criteria for reimbursement of the costs of long-term treatment.

The treatment given by exercise therapists consist of giving advice and therapeutic exercises. Physiotherapy treatment consist of giving advice, exercise therapy, massage therapy, or physical applications (e.g. laser-, electrotherapy or ultrasound therapy) or a combination of these applications. Most patients (83.9 percent) are individually treated in the physiotherapists practice; 11.9 percent are treated at home and 4.0 percent are treated in an institution (nursing home, residential care home). Only 2.0 percent of patients are treated in groups. Cesar and Mensendieck exercise therapists treat more than 95 percent of their patients on an individual basis, at their practice. Other patients are visited at home. In the physiotherapy practice, patients receive on average 10.9 treatments. There is considerable variation in the number of treatments given. On average, Mensendieck and Cesar exercise therapists give each patient 9.4 and 11.2 treatments respectively. Here, too, there is large variation in the number of treatments given.

The costs of exercise therapy in the Netherlands

In 1999, the Netherlands spent 36 billion euros on the health service. The combined costs of physiotherapy, Mensendieck exercise therapy and Cesar exercise therapy, are 2 percent of the total Dutch health care expenditure or 725.7 million euros. Almost half of the costs are related to musculoskeletal disorders. Neck and back problems are responsible for a quarter of the total costs of exercise therapy and physiotherapy.

Effectiveness of exercise therapy

The committee, responsible for this advisory report, has investigated the effectiveness of exercise therapy for disorders of the musculoskeletal system and connective tissue, the nervous system and sense organs, the respiratory system and the cardiovascular system. It selected disorders which are commonly treated by exercise therapists and physiotherapists, and which are associated with a considerable burden of disease. On the basis of a comprehensive analysis of the scientific literature (a *review of systematic reviews*), the Committee has drawn the following conclusions:

- Exercise therapy has been shown to be effective for patients with: cystic fibrosis, chronic obstructive pulmonary diseases (COPD), claudicatio intermittens, osteo-arthritis of the knee, as well as subacute and chronic low back pain.
- There are indications that exercise therapy is effective in patients with Parkinson's disease, ankylosing spondylitis, osteo-arthritis of the hip, and in those who have suffered a stroke.
- Exercise therapy is not effective in patients with acute low back pain.
- None of the studies showed that exercise therapy was harmful.
- There is insufficient evidence to support or refute the effectiveness of exercise therapy for patients with rheumatoid arthritis, shoulder complaints, neck complaints, RSI, asthma and bronchiectasis. For these disorders, the number of studies of good methodological quality is not sufficient to draw conclusions.

For almost all disorders, it is not yet clear which type of exercise therapy is the most effective (for example, individual treatment or group treatment). In patients with chronic low back pain, exercise therapy is more effective than continued care by their GP.

Recommendations for the health service

There is clear evidence that exercise therapy is effective for various disorders. Beside it, exercise therapy was not found to be harmful. Therefore, the Committee recommends that the trend in physiotherapy to emphasise exercise therapy should be strongly supported. In a number of disorders, there is insufficient evidence to support or refute the effectiveness of exercise therapy. For these disorders, the Committee recommends to investigate the effectiveness of exercise therapy. The literature survey has shown that exercise therapy is not effective in patients with acute low back pain. Therefore, the Committee recommends these patients not to be treated with exercise therapy. However, patients with acute low back pain are advised to remain active.

The above recommendations relate to the use of exercise therapy by physiotherapists, Cesar exercise therapists or Mensendieck exercise therapists. However, also GPs and medical specialists are important disciplines as they refer these patients for exercise therapy. Given the lack of relevant data, the Committee is unable to determine whether the indication for exercise therapy used by GPs and medical specialists is adequate. In the case of disorders for which exercise therapy has been proven to be effective, or where there are clear indications of its effectiveness, the Committee recommends that the use of exercise therapy should be considered, as a worthwhile option.

Recommendations for research

The Committee is unable to support or refute the effectiveness of exercise therapy in a number of disorders, due to a lack of systematic *reviews* and randomised controlled trials of good methodological quality. However, a lack of evidence or insufficient evidence is not a proof that exercise therapy is ineffective. Based on the frequently found favourable effects, the Committee recommends that the effectiveness of exercise therapy should be more intensively investigated. The Committee endorses a recent advisory report on physiotherapy, issued by the Advisory Council on Health Research, which gives priority to the evaluation of exercise therapy. With regard to future research, the Committee advises that (1) for disorders where evidence is lacking or insufficient, the effectiveness of exercise therapy should be further investigated according to current guidelines for the methodological quality and reporting of randomised controlled trials and systematic *reviews*; (2) the effectiveness of the various types of exercise therapy be compared; and (3) methods to maintain in the long term the short-term effects of exercise therapy should be developed and evaluated.