

# Effectiveness of the Physical Therapy Godelive Denys-Struyf Method for Nonspecific Low Back Pain: Primary Care Randomized Control Trial

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## Abstract and Introduction

### Abstract

**Study Design:** A simple blind, random controlled clinical trial.

**Objective:** To assess the effectiveness of physiotherapy treatment based on the muscular and articular chains Godelive Denys-Struyf (GDS) method for nonspecific low back pain (LBP) in primary care.

**Summary of Background Data:** Despite a systematic review by the European COST ACTION B13 Low back pain: guidelines for its management, there are still many unresolved questions regarding the effectiveness of the different physical therapy treatments used for LBP. Setting: 21 physicians and physiotherapists in 7 Primary Care Centers and 6 researches in the Complutense University of Madrid (Spain). Participants: 137 patients diagnosed with nonspecific LBP.

**Methods:** The control group underwent 15 sessions of conventional physiotherapy in Primary Care Centers, and the experimental group received 15 GDS treatment sessions. Pain was evaluated by Visual Analogical Scale (VAS), functional disability by Oswestry questionnaire, and quality of life by the physical and mental components of SF-36 questionnaire. Outcome measures were assessed before treatment (A1), at the end of treatment (A2), and at 3 months (A3), and 6 months (A4) of follow-up.

**Results:** Repeated measures analysis of variance revealed that at the end of treatment and 3 months later, subjects in both groups showed less pain, reduced functional disability, and an improved quality of life, though improvements were greater in the GDS group.

Six months after treatment, patients in the GDS group continued to show reduced pain ( $VAS_{(A4-A1)} = -3.54$ , 95% CI: -4.18 to -2.90) while VAS scores in the control group returned to initial values ( $VAS_{(A4-A1)} = 0.15$ , 95% CI: -0.36 to 0.67).

**Conclusion:** Treatment of nonspecific LBP using the GDS method provides greater improvements in the midterm (6 months) in terms of the pain, functional ability, and quality of life perceived by patients than the conventional treatment based administered in primary care.

### Introduction

Low back pain (LBP) is an incapacitating disease that affects many persons worldwide. The prevalence of LBP over a lifetime is 60% to 84%<sup>[1]</sup> and the yearly incidence has been estimated at 5% to 25%, with a peak produced between the ages of 25 and 45 years. In European countries, this entity generates a cost representing 1.7% to 2.1% of a country's gross domestic product<sup>[2,3]</sup> because it is among the health problems responsible for most sick leave.<sup>[4]</sup>

The Spanish National Health Service is a universal and publicly-funded health care system. In Spain, LBP accounts for over 2 million visits to a Primary Care Centre (PCC) per year.<sup>[5]</sup>

Although nonspecific LBP is a defined clinical condition, because it is the result of a biomechanical alteration

caused by postural or functional overload, countless physiotherapy strategies have been proposed to manage this type of LBP.<sup>[6]</sup> When we embarked on this study in 2005, the most relevant systematic reviews of the treatment of acute and chronic mechanical LBP indicated there was no scientific evidence (level A) supporting the effectiveness of most physiotherapeutic methods<sup>[7,8]</sup> in the absence of clinical trials of sufficient quality for their conclusions to have any clinical implications.<sup>[9]</sup>

In 2007, a practical guide to the management of LBP (COST B13)<sup>[10-12]</sup> was prepared by 14 European groups of LBP experts. Among the recommended treatments, we find most of the techniques that form the basis of the muscular and articular chains, or Godelive Denys-Struyf (GDS) method, assessed here<sup>[13-15]</sup> although no level A clinical trial has yet been performed on the GDS method itself. The muscular and articular GDS method (or muscle and joint chains GDS method) was developed by the Belgian kinesiotherapist Godelive Denys-Struyf.

## **Experimental Group Treatment: GDS Method**

The GDS<sup>[16,17]</sup> method is based on a combination of individual manual therapy sessions and group sessions in which spinal stabilization exercises (for transversospinalis or multifidus muscles, transverses abdominis muscles) are performed along with exercises that work other muscles promoting spine stabilization such as those of the pelvic floor, diaphragm, *etc.* At the end of these sessions the patients are given instructions on how to perform simple maintenance exercises as part of a home exercise program of individualized exercises. The GDS method is a physiotherapy procedure classed as a specific treatment modality and is based on balancing the muscle tensions that provoke nonspecific subacute and chronic LBP through biomechanical alterations that affect lumbar-pelvic and spinal stability. The 3 different types of session (individual, group, and home care) are focus on recovering the 3 elements that confer lumbar-pelvic stability: musculoskeletal structure, musculature, and central nervous control of this musculature.<sup>[18]</sup> The muscle chains concept links these 3 elements.<sup>[19-22]</sup>

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