

# **PROVEN THERAPEUTIC EXERCISE TECHNIQUES**

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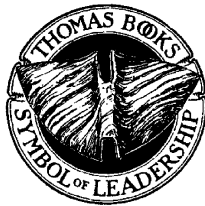
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# PROVEN THERAPEUTIC EXERCISE TECHNIQUES

**Best Practices for Therapists and Trainers**

*By*

**R. ERIC OESTMANN, PH.D., M.S., P.T.**



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## PREFACE

There are numerous books written on therapeutic exercise. Some specify unique techniques such as Pilates or Tai Chi, whereas others are extremely generic listing every possible exercise imaginable. The problems with both genres of exercise books are simple. If specific, they do not allow for eclectic exercise techniques and often require specialized equipment. If generic, they are not specific enough to be effective, nor efficient.

Health care professionals today are under constant financially based pressures to provide the most effective treatment in the most efficient time frame. Outcomes are vitally important. Financial savings are even more important as third party payers provide fuel for the health care economy. Therefore, effective outcomes with efficient costs are only possible within an exercise research basis.

While there are several professional journals and magazines that routinely contain information on exercise research, few practitioners have time to peruse them let alone learn the techniques and apply them correctly. Thus, the reason for creating this book is to review the past 20 years of research on therapeutic exercises and combine that knowledge base with over 8 years of clinical practice in order to provide a focused, yet eclectic book of therapeutic exercise for health care practitioners, especially physical therapists, physical therapy assistants, and athletic trainers.

The advantages of this book are obvious. Only those exercises that are researched and clinically proven to be effective and efficient will be found in this book. It simply saves the practitioner the time of performing independent research, participating in continuing education, and applying trial/error based learning. It saves the patient and their third party payers time and money as well.

While healthcare practitioner income is dependent on the number and length of treatments, gone are the days when we could just put a pa-

tient in the gym for an hour or two several times a week for an indefinite period of time. Third party payers are widely applying “Optimal Recovery Guidelines” (ORG) for certain diagnoses. These limitations require a focused treatment approach and the latest efficacious methods used. Those who hold steady to the practices of the past will soon become extinct.

Therefore, the format of this book is to provide empirical and research based exercises proven to work for a variety of diagnoses and conditions. Thus, only the absolutely “best” and most effective exercises are included in this book. It does not mean there are no other exercises to alleviate the conditions herein contained. It simply means that these have research data to back their efficacy and empirical evidence to support them. Pictures detail the correct exercise techniques along with descriptions of how they are to be performed.

Therapeutic exercise is the treatment mainstay of physical therapists, physical therapy assistants, and athletic trainers among other healthcare professionals. As I have discussed earlier in the preface, current therapeutic exercise books are either too specific or too general to be of significant benefit in today’s healthcare environment. That environment, of course, being one controlled by third party payers and the “Optimal Recovery Guidelines” that often specifies a limited number of treatments per diagnosis regardless of outcomes. Therefore, this book has been specifically designed to provide “Proven” therapeutic exercise techniques for certain medical conditions in order to maximize effectiveness in a minimal amount of time.

These exercise techniques are “Proven” by researching over 20 years of MEDLINE and CINAHL databases for research articles related to therapeutic exercises yielding positive outcomes. This process has been an ongoing process as the proven therapeutic exercise research is correlated with over 8 years of clinical practice as a physical therapist. In fact, when I first started this process of creating a database of efficacious therapeutic exercises in 1995, I searched the research articles as far back as the 1950’s. A unique finding occurred when I realized that the research “wheel” has a tendency to be reinvented nearly every 15 to 20 years.

By this I mean that there are research articles in the 1950’s that have largely been reproduced in the 1970’s and again in the 1990’s with similar results. While many attribute this to good inter-rater reliability and validity, it simply reinforces the validity of limiting research to what

has been done in the past 20 years. Furthermore, most current research references point to the previous data and works available. Thus, the reason for concentrating on the past 20 years of published and peer-reviewed research is established.

What has resulted from this combination of published research being confirmed or denied through clinically empirical findings is a system of effective and efficient therapeutic exercise intervention for any stage of patient injury. While other therapeutic exercise techniques may be effective for the conditions herein contained, we feel the ones in this book are the most focused and yield the outcomes desired in a minimum amount of treatment time.

Therapeutic exercise techniques are recommended accordingly by general tissue(s) involved; specific diagnosis; stage of injury, (i.e. acute, sub-acute, and chronic). Pictures and descriptions of efficacious therapeutic exercise techniques are included in each section and referenced accordingly at the end of each chapter. The final section of the book contains information on massage and joint mobilization/manual therapy among other special interest areas that are not often found in other therapeutic exercise texts.

It would be presumptuous to assume that we can provide specific exercise recommendations that are backed up with research data for every musculoskeletal diagnosis contained in the ICD-9 code book. However, we have covered a substantial number of diagnoses that are referred to physical therapists, physical therapy assistants, athletic trainers, and other rehab professionals.

Throughout this text, we have chosen to limit the number of exercises between 6 and 8. There are great reasons for this. First, is the fact that a home exercise program is nearly always appropriate for patients in the present healthcare environment. Second, is the fact that patient compliance with home exercise programs is only 50 percent with 6 to 8 exercises. The compliance rate goes down exponentially with an increasing number of home exercises. In fact, research has shown that patient compliance drops to less than 10 percent for home exercise programs of 12 exercises or more.

In addition, I firmly believe in an integrated or eclectic treatment approach for all patients. It is rare that a patient will heal effectively and efficiently when just one treatment is applied. This is precisely why we have recommended adjuncts to the proven therapeutic exercises that may include, modalities, joint mobilizations and manual therapy, mas-

sage, etc. These are only suggestions. Of course the clinician must always apply their own judgment in determining which suggestions are applicable and which are not.

In this book we assume the reader has the baseline knowledge of pertinent anatomy, joint mechanics, and muscle function/innervation for the region of the body to be treated. For quick reference we have included a short summary of anatomical information in Appendix 1. A chart listing normal ranges of motion for the body joints is also included in Appendix 2. In addition, we assume the reader is skilled and trained in differential diagnosis.

It is also important to remember that this is not a book of protocol. It is NOT a cook book. Subsequently, it is vitally important for the clinician to determine if any, part, or all of the “proven” exercises apply to the particular patient being treated before proceeding. Patient condition, goals, and response to treatment should be the obvious deciding factors in the choice of treatment intervention.

**Disclaimer:** Every treating clinician must rely on sound clinical judgment and evaluation findings when developing specific patient treatment plans.

This author wishes to extend a special thanks to my family and Mr. Michael Payne Thomas of Charles C Thomas, Publisher who have been supportive and helpful in this venture.

Eric Oestmann

**“Tell me and I will forget. Show me and I may remember. But, involve me and I will understand.” Confucius**

The organization, research summaries and pictures in this book are all designed to do more than tell or show the reader. They are designed to involve you in the process of developing and implementing the most efficacious therapeutic exercise rehabilitation plan possible.



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# **PROVEN THERAPEUTIC EXERCISE TECHNIQUES**



## **Part 1**

# **INTRODUCTION**





## Chapter 1

# GENERAL THERAPEUTIC EXERCISE CONSIDERATIONS

- I. Therapeutic Exercise Preparations:** 1,3,4,5,6,10,12,14,18,21,24,26,27,29, 30,31,34,35,36,38,39,42,43,44,45,47,48,52,54,56,57,63,64,65,66,67,68,69,73,74,75,76,77,78,79,83, 85,86,87,91,93,94,97,98,106,108,109,110,111,115,118,120,123,125,126,130,132,135,137,138,139, 142,144,148,149,150,151
- A. General Evaluation Considerations:**
1. The clinician should perform a detailed initial evaluation/assessment on each client prior to proceeding with the proven therapeutic exercise techniques.
    - a. Medical records **MUST** first be extensively reviewed.
    - b. Contraindications/Precautions **MUST** be noted.
    - c. Physician orders (if applicable) **MUST** be obtained and followed.
    - d. Musculoskeletal evaluation and differential diagnosis procedures can now commence.
  2. In addition to the preliminary information obtained it is important to:
    - a. Determine the stage of the injury with each patient, (i.e., acute, subacute, or chronic) in order to determine what type of therapeutic exercise and/or modality treatments are most appropriate.
    - b. Acute injuries generally last 2 to 4 days after occurrence and are characterized by pain, swelling, redness, heat, and decreased function.
      - i. Therapeutic exercise treatment during the acute stage generally consists of passive range of motion to active assistive range of motion therapeutic exercise.