Course Title: PNF in the Pool

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1012 Harrison Ave #3 Harrison OH 45030
www.fitnesslearningsystems.com 1-888-221-1612

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NFPT 1.0, NCSF 2.0, YMCA 4.0, NSPA 4.0

Author/s:

Terri Mitchell B.A., PTA, ATRI

Terri Mitchell began her aquatic fitness career in the early 80’s. She has been a Training Specialist for the Aquatic Exercise Association (AEA) since 1986. Ms. Mitchell is AEA’s 1992 recipient of the Aquatic Fitness Instructor of the Year award. Her aquatic therapy career began at St. David’s Rehabilitation Center in Austin, Texas in 1991. In 2001 she received the Dolphin Award from the Aquatic Therapy and Rehab Institute (ATRI). Ms. Mitchell contributed to the AEA Aquatic Personal Training Manual, as well as the Leadership Training Skills curriculum. She is an experienced presenter, and has shared her skills and knowledge globally. Ms. Mitchell is currently on staff at The University of Texas at Austin, as well as a practicing PTA at St. David's at the Heritage.

Julia Meno-Fettig B.S., CTRS, ATRI

Julia Meno-Fettig is the founder/owner of Therapeutic Aquatics, Inc. and aquaticcentral.com specializing in consulting information and rehabilitation. She is a presenter for the Aquatic Therapy Rehab Institute, Inc. and is the author and publisher of The "Bad Ragaz Ring Method Visual Instructional Manual and Video". Also co-author and producer of "PNF in The Pool" Video. She is the recipient of the ATRI 2002 Tsunami Spirit Award for her innovation, creativity and implementation of new ideas. Her workshops are received enthusiastically by both national and international audiences.

David Ogden P.T., CLT, CPO

David Ogden was on the staff at Children's Hospital in San Francisco before joining a private practice (Johansen's Physical Therapy in San Francisco). In 1984 he joined the
rehabilitation staff at Maryvale Samaritan Medical Center in Phoenix, where he was introduced to aquatic therapy by Lynette Jamison, MOT, OTR/L. Mr. Ogden has coauthored an aquatic therapy book and several aquatic articles for national publications focused on therapy and rehabilitation. He has also authored DREAMBIRD, an award winning picture book for children, published by Illumination Arts in 1997. It has been translated into Italian and also native Hawaiian. It is used as a teaching resource in the Hawaiian school system.

Course Summary:

This course offers basic education about PNF (Proprioceptive Neuromuscular Facilitation) patterns for the arms and legs and PNF techniques appropriate for performance in the aquatic environment. PNF patterns are crucial to basic function and are the first patterns to go in the aging, injury, or disease process. Help your clients maintain and reinforce these patterns. Also shared are approaches and methods developed by the authors over a period of years working with a variety of diagnoses. A knowledge and application of PNF patterns enables the aquatic practitioner to determine functional muscular imbalances during client performance and to address them. Video demonstration of the exercises reinforce the concepts.

Objectives:

Upon completion of this course, you will be able to:

1. Explain what PNF movements are and how we use them in everyday activities.
2. Properly perform PNF diagonal movements and teach them to patients, clients or class participants.
3. Implement PNF patterns in an aquatic therapy program.
4. Implement PNF movements in a land based therapeutic setting.
5. Incorporate PNF movements into aquatic fitness classes.

Outline:

What is PNF?
   The Philosophy of Using PNF Patterns
   PNF Characteristics
   We Use PNF Movements Everyday
   How are PNF techniques primarily used in the therapeutic setting?
   The Rotational Component of Movement is the First to be Lost.
   PNF in Activities of Daily Living
   Why Bother Learning PNF Patterns?

PNF Patterns:
   PNF Patterns Overview
   PNF Diagonal Patterns
PNF Diagonal Details
PNF Bilateral Patterns
Considerations
Practice the Movements

PNF in the Aquatic Environment:
Benefits of PNF in the Aquatic Setting
Progression with PNF Patterns
Increasing Intensity
Some Absolutes
Proper Warm-Up
Pre-stretch
Sample Stretches

PNF in the Therapy Pool:
Introduction
Pool Side
Free Standing
Deep Water
Seated
Gait
Training
Supine
Prone

PNF in the Fitness Pool:
Introduction
Sample Water Fitness Moves
Activities and Games

Bibliography:

Impermanent loss is when you provide cryptocurrency to a liquidity pool, and the price of your deposited tokens changes since you deposited them. So, impermanent loss happens when the price of the assets in the pool changes. But how much is it exactly? We can plot this on a graph. Note that it doesn’t account for fees earned for providing liquidity. Here’s a summary of what the graph is telling us about losses compared to HODLing: 1.25x price change = 0.6% loss. 1.50x price change = 2.0% loss. PNF is the method of enhancing neuromuscular responses through stimulation of proprioceptors. What are the components of the philosophy of PNF? What are the general characteristics of the PNF movement patterns? Each pattern has a diagonal course in the frontal plane. Each pattern has a rotational or spiral component along the long axis of the limb. The rotational component determines which muscle groups are activated. Movement patterns cross the sagittal mid-line of the body. Movement is pain free, but not effort free. Movements emphasize the visuo-motor and audio-motor coordination. The patterns of the extremities are named for the components of motion occurring at the proximal joint of the limb. The pooling (POOL) layer reduces the height and width of the input. It helps reduce computation, as well as helps make feature detectors more invariant to its position in the input. The two types of pooling layers are: Max-pooling layer: slides an $(f, f)$ window over the input and stores the max value of the window in the output. Average-pooling layer: slides an $(f, f)$ window over the input and stores the average value of the window in the output. In this chapter, we illustrate the position of the PNF concept within the current holistic treatment spectrum. Furthermore, we show how the PNF concept works in conjunction with the assessment and treatment of our patients. On the one hand, a detailed assessment of the clinimetry findings (measurements) and the experience and expertise of the therapist are necessary for making clinical decisions. On the other hand, scientific knowledge about motor learning and motor control plays an important role in determining the treatment goals.