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SPORT

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Progetto Scuola InForma

Work-shop:

Il Balance Training nello Sport

Relatore: Dr. Carlo Castagna

Area: Informazione-Documentazione e Ricerca

Relatore



Corso di Laurea Science Motorie
Roma Tor Vergata

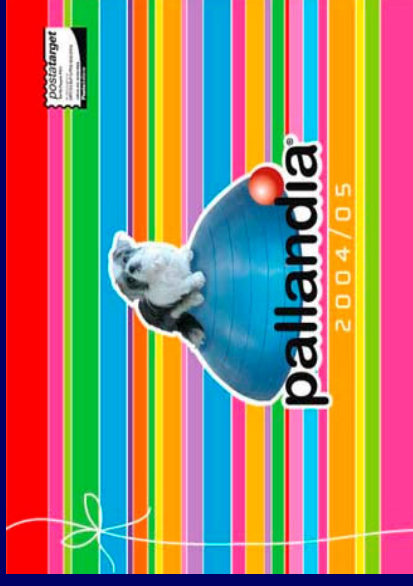
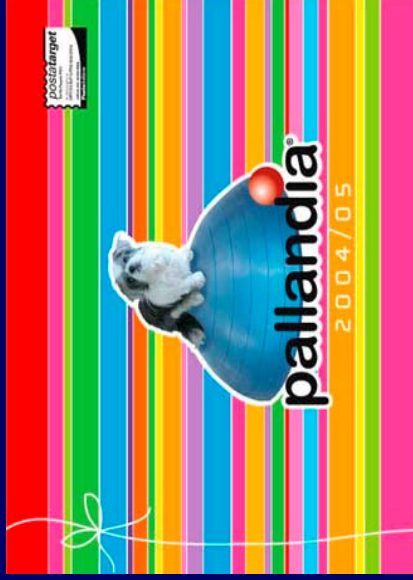
Dr. Carlo Castagna

Responsabile SRS Marche area:
Informazione-Documentazione & Ricerca

Preparatore Fisico

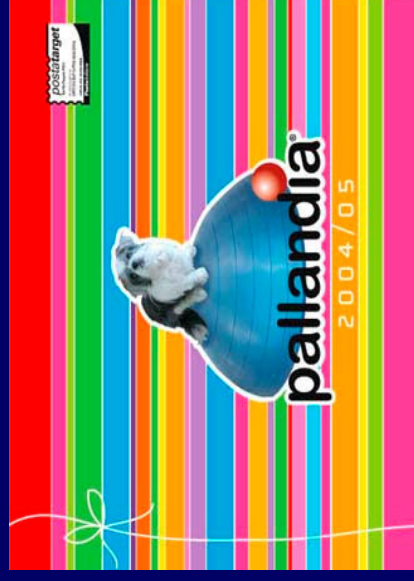
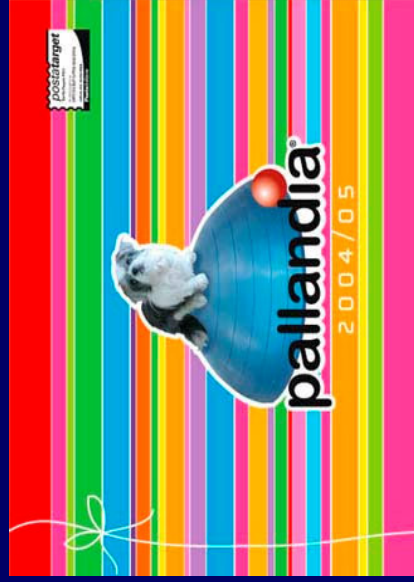
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Sommario

Balance Training:

- Cosa è?
- Perché impiegarlo?
- Come utilizzarlo?

Obiettivi Work-shop:

- **Conoscenza Base BT:
Esercizi Fisici x
Prevenzione Infortuni &
Miglioramento Performance**

Che cosa è il BT?

- **Esercitazioni**
 - **Equilibrio**
 - ↑ **Consapevolezza**
 - ↑ **Forza & Coordinazione**

Intervento

- **Muscoli di stabilizzazione**
 - **Sistema visivo**
 - **Vestibolare**
 - **Propriocettivo**

Finalità BT

+Prevenzione infortuni

↑Miglioramento Tecnica

↑ Miglioramento Prestazione

Obiettivi BT

↑ **Equilibrio**

↑ **Postura**

↑ **Controllo Movimento**

↑ **Forza Funzionale**

Protocolli di Intervento

Trattamenti

Basati

Sull'evidenza

Scientifica

Fonte

The logo for bmj.com, featuring the text "bmj.com" in white lowercase letters on a blue rectangular background.

Exercises to prevent lower limb injuries in youth sports: cluster randomised controlled trial

Odd-Egil Olsen, Grethe Myklebust, Lars Engebretsen, Ingar Holme and Roald Bahr

BMJ 2005;330:449-; originally published online 7 Feb 2005;
doi:10.1136/bmj.38330.632801.8F

Training Study: Scopo

Effetti Riscaldamento

Infortunati Caviglia Ginocchio

Training Study: Soggetti

120 Squadre

61 Sperimentali n=958

59 Controllo n=879

Training Study: Intervento

Miglioramento Tecnica
Controllo Neuro-muscolare
Equilibrio
Forza

Training Study: Variabili

Incidenza

Infortuni Acuti

Caviglia

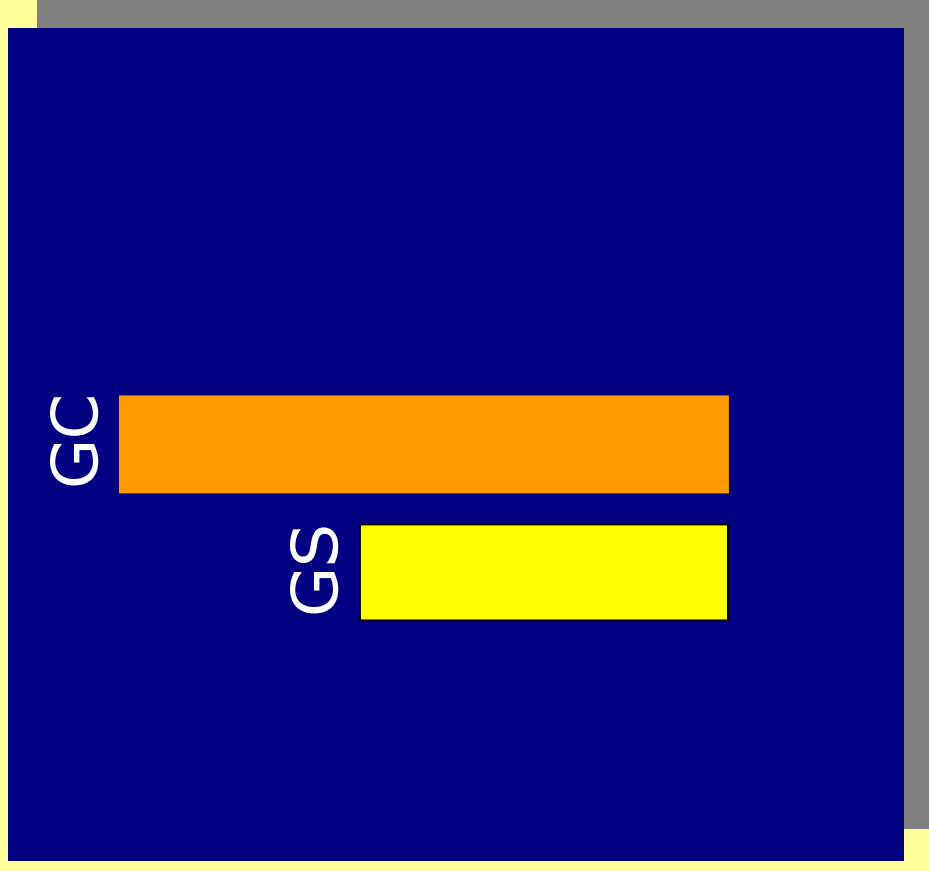
Ginocchio

Training Study: Risultati

Infortunati:

❖ **GS n=48**

❖ **GC n=81**







Protocollo: Warm-Up

Corsa:

30" x es.

Navetta

Dietro & Laterale

Avanti Gin. Alte e Slanci

Carioca

Laterale con Slanci Braccia

Avanti con Torsioni

Avanti con Arresti

Allunghi

Protocollo: Warm-Up

Tecnica:

5x30"

Salto e Atterraggio

Tagli e Posizione

Protocollo: Warm-Up

Equilibrio:

2x90" x es.

**Struttura
Instabile**

Passaggi Palla due Gambe

Squat 1 o 2 Gambe

Passaggi Palla 1 Gamba

Palleggi Occhi Chiusi

Spinte con Opposizione

Protocollo: Warm-Up

Forza Potenza:

3x10rip.

Squat 80°

Balzi Alternati

Salti Avanti

Tiro in Sospensione

Forza Ecc. Flex.

Ginocchio

Protocollo: Warm-Up

Forza Potenza:

3x10rip.



Box 2: Programme of warm-up exercises used to prevent injuries

Warm-up exercises

(30 seconds and one repetition each)

Jogging end to end

Backward running with sidesteps

Forward running with knee lifts and heel kicks

Sideways running with crossovers (“carioca”)

Sideways running with arms lifted (“parade”)

Forward running with trunk rotations

Forward running with intermittent stops

Speed run

Technique

(One exercise during each training session; 4 minutes and 5×30 seconds each)

Planting and cutting movements

Jump shot landings

Balance

(On a balance mat or wobble board, one exercise during each training session; 4 minutes and 2×90 seconds each)

Passing the ball (two leg stance)

Squats (one or two leg stance)

Passing the ball (one leg stance)

Bouncing the ball with eyes closed

Pushing each other off balance

Strength and power

(2 minutes and 3×10 repetitions each)

One quadriceps exercise:

Squats to 80° of knee flexion

Bounding strides (*Sprunglauf*)

Forward jumps

Jump shot—two legged landing

“Nordic hamstring lowers” (2 minutes and 3×10 repetitions each)

Training Study: Intervento

Allenamenti:

Fase Pre-Campionato

❖ 15 Sessioni consecutive

Campionato

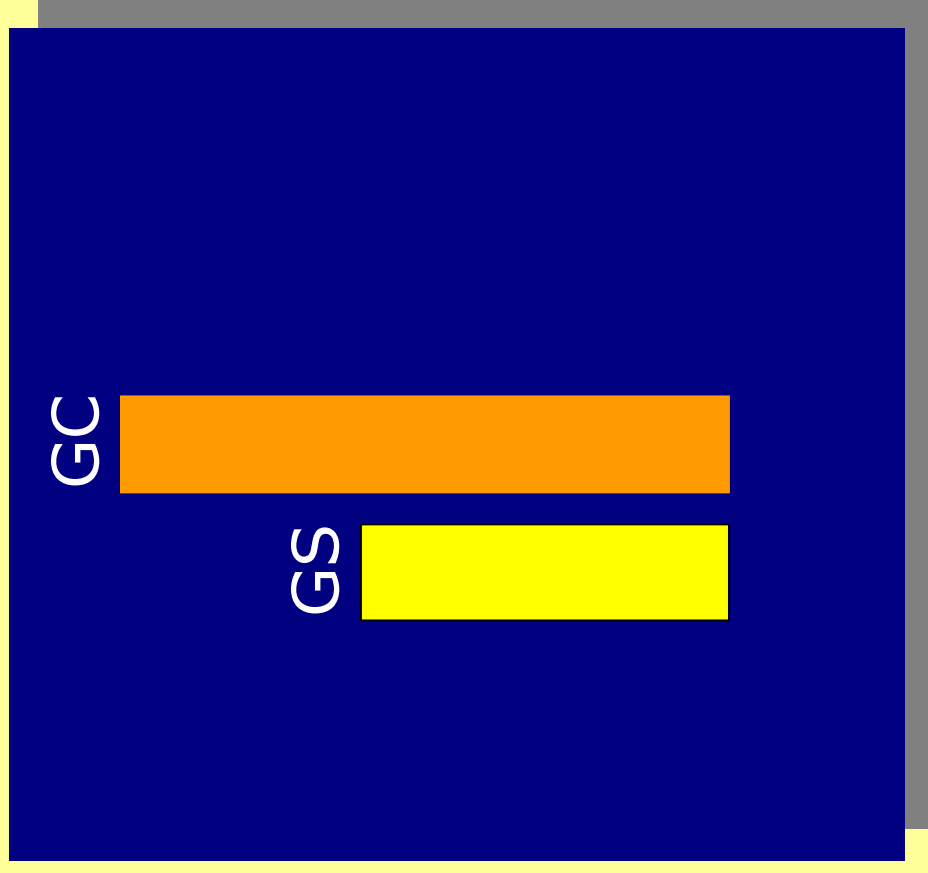
❖ 1 Sessione settimana

Training Study: Risultati

Infortunati:

❖ **GS n=48**

❖ **GC n=81**



Fonte

ORIGINAL RESEARCH

Effect of Neuromuscular Training on Proprioception, Balance, Muscle Strength, and Lower Limb Function in Female Team Handball Players

Inger Holm, PT, PhD, Merete Aarstrand Fosdahl, PT,* Astrid Friis, PT,* May Arna Risberg, PT, PhD,†
Grethe Myklebust, PT, PhD,‡ and Harald Steen, MD, PhD**

Objective: Introduction of a neuromuscular training program will increase muscle strength, balance, and proprioception in elite female handball players.

Design: Prospective intervention study.

Conclusion: The ACL injury prevention training program improved dynamic balance in an elite team handball players.

Key Words: team handball, prevention program, balance, proprioception, muscle strength, functional tests

(Clin J Sport Med 2004;14:88–94)

Training Study: Intervento

**Miglioramento Tecnica
Controllo Neuro-muscolare
Equilibrio**

Training Study: Intervento

Allenamenti:

Fase Pre-Campionato 5-7w

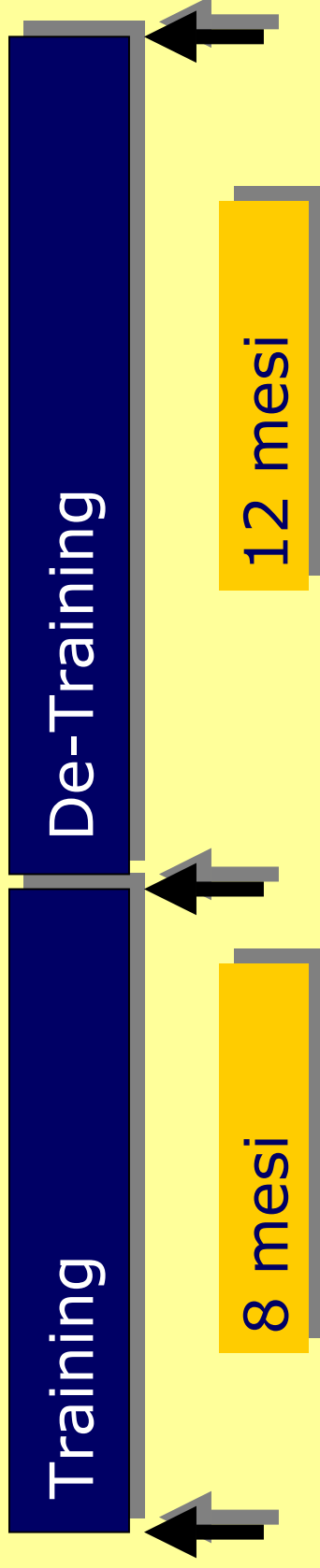
❖ 3 Sessioni Settimana

Campionato

❖ 1 Sessione settimana

Training Study: Intervento

Protocollo

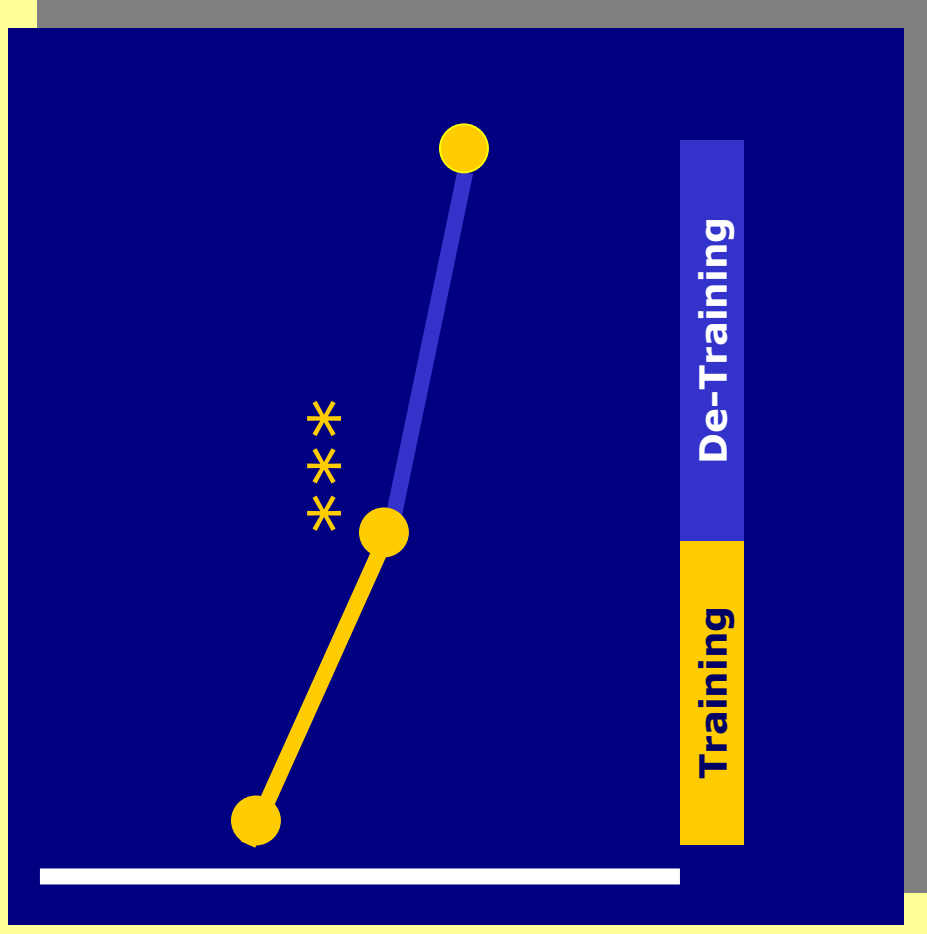


Training Study: Risultati

Equilibrio

↑ **Dinamico** [+16%]

— **Statico**



Fonte

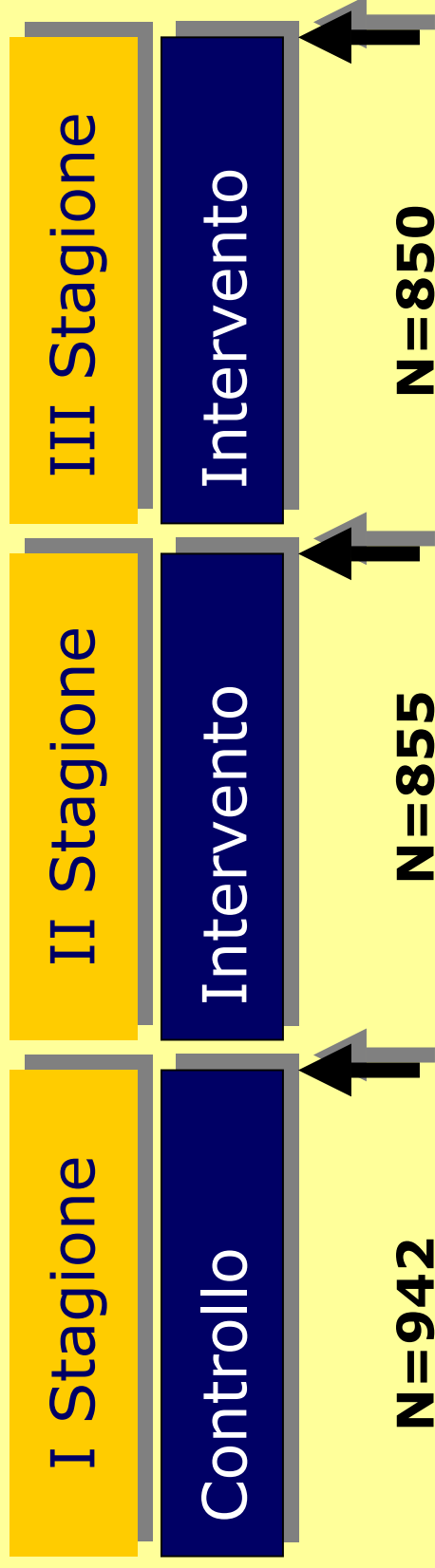
Clinical Journal of Sport Medicine, 13:71-78
© 2003 Lippincott Williams & Wilkins, Inc., Philadelphia

Prevention of Anterior Cruciate Ligament Injuries in Female Team Handball Players: A Prospective Intervention Study Over Three Seasons

*Grethe Myklebust, MSc, PT, *†Lars Engebretsen, MD, PhD, *Ingeborg Hoff Brækken, MSc, PT,
*Arnhild Skjølberg, PT, *Odd-Egil Olsen, MSc, PT, and *Roald Bahr, MD, PhD

**Oslo Sports Trauma Research Center, Norwegian University of Sport and Physical Education, and †Oslo Orthopedic University Clinic, Oslo, Norway*

Training Study: Intervento



Risultati

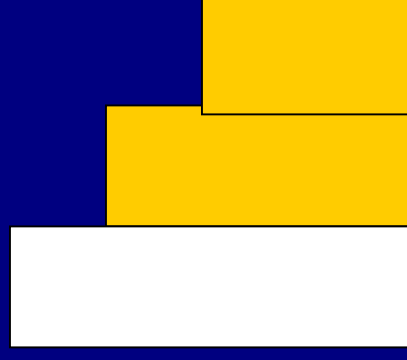
Infortunati ACL

Controllo 29 {13}

I Stagione 23 {6}

II Stagione 17 {5}

N° Inf ACL



Stagioni

Fonte

Core Stability Exercises On and Off a Swiss Ball

Paul W. Marshall, PG Dip Sci, Bernadette A. Murphy, PhD

ABSTRACT. Marshall PW, Murphy BA. Core stability exercises on and off a Swiss ball. *Arch Phys Med Rehabil* 2005; 86:242-9.

Objectives: To assess lumbopelvic muscle activity during different core stability exercises on and off a Swiss ball.

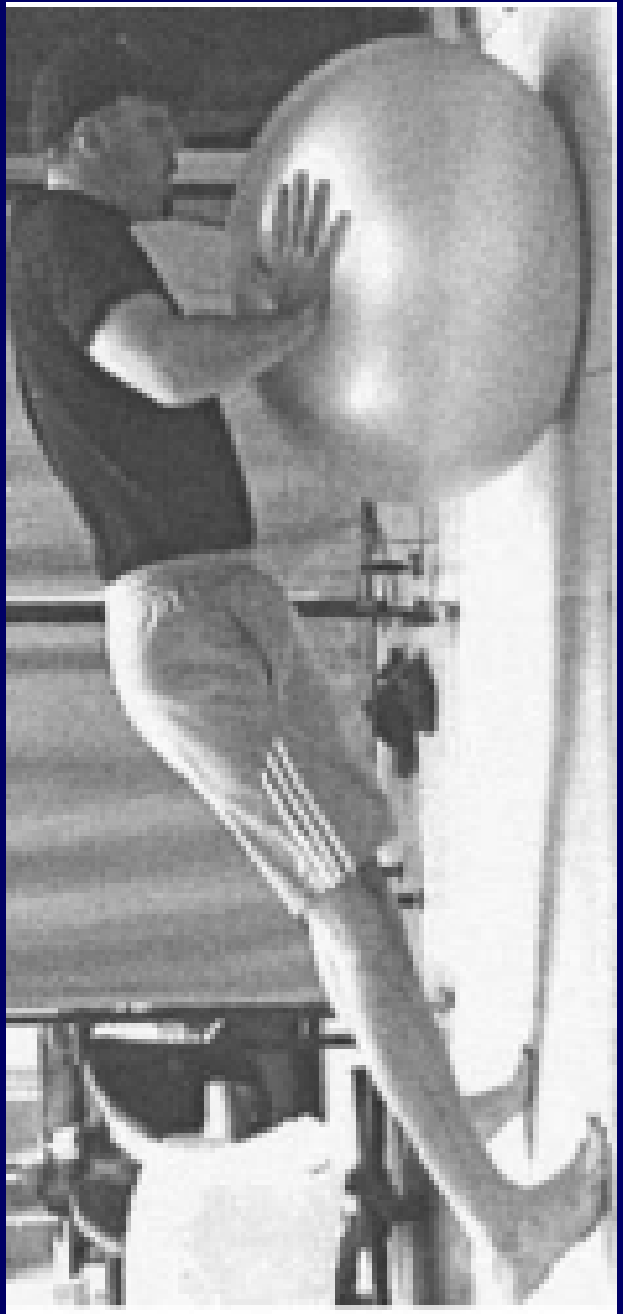
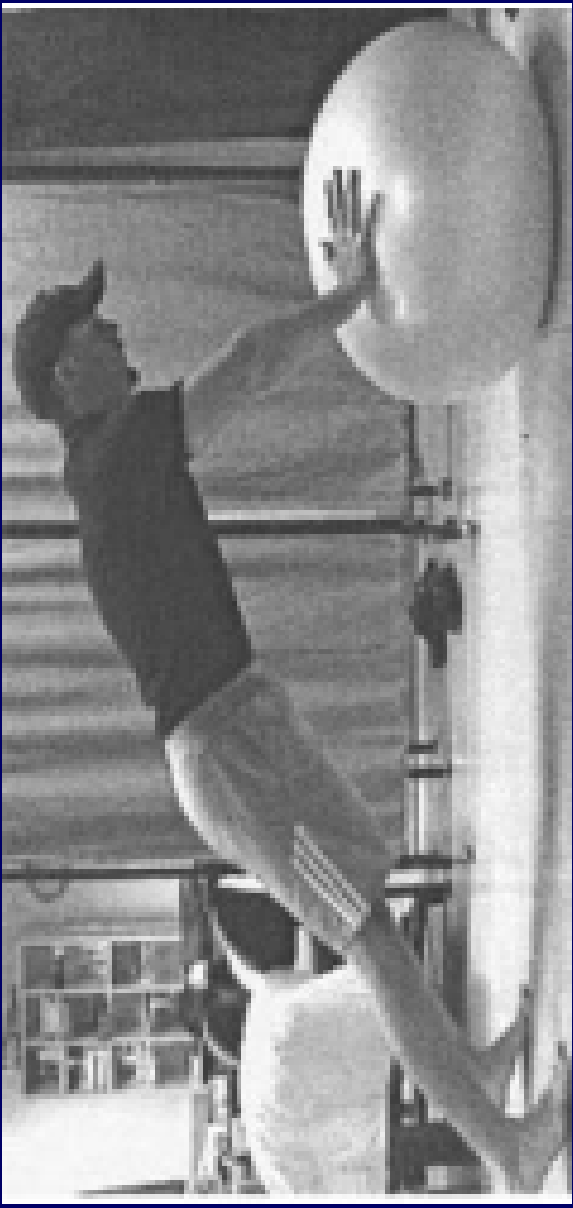
Design: Prospective comparison study.

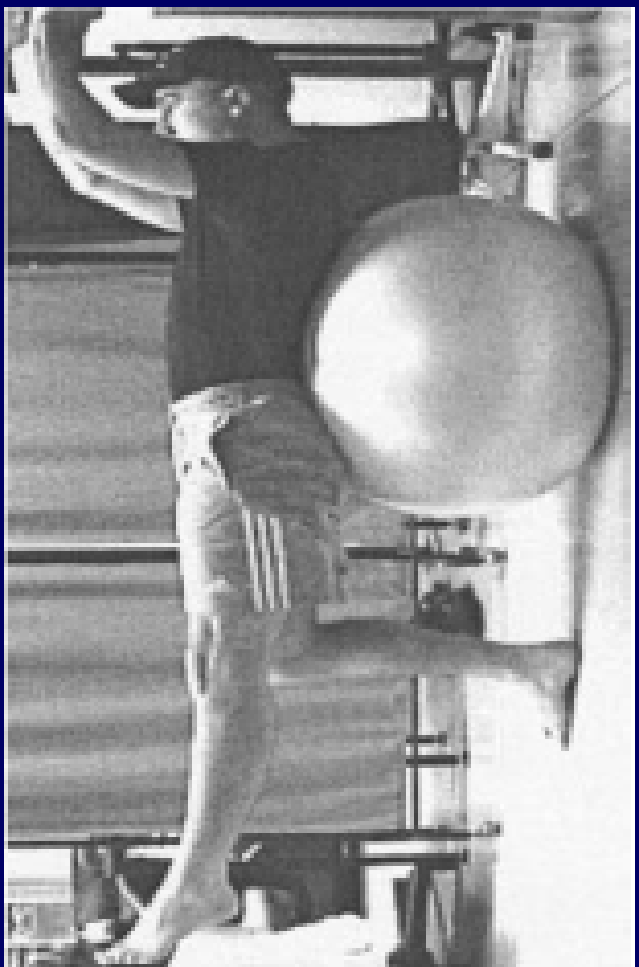
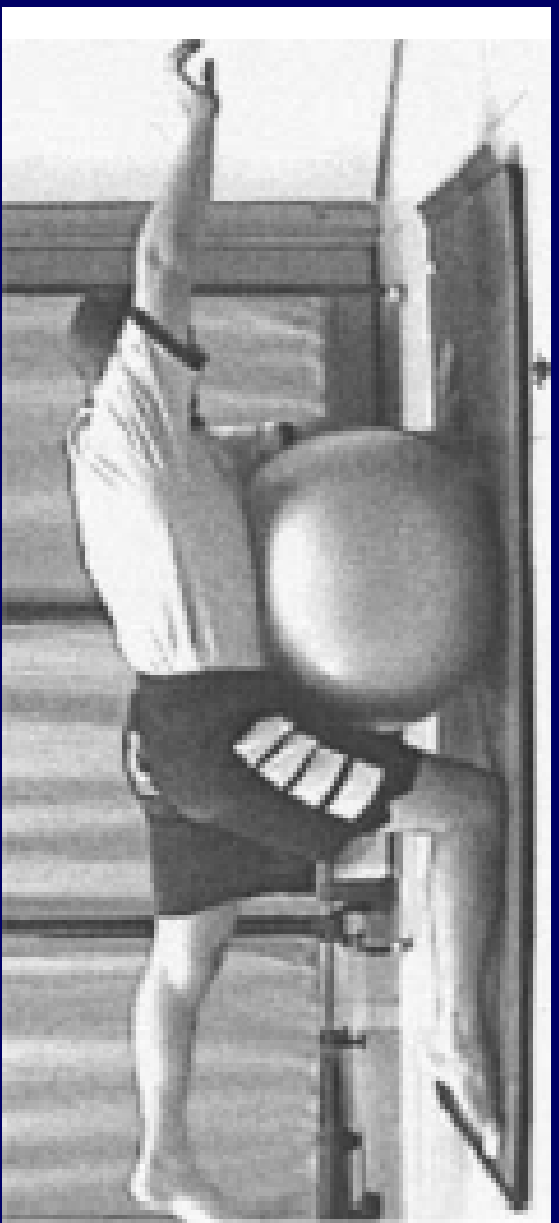
Setting: Research laboratory.

Participants: Eight healthy volunteers from a university population.

obliques.^{4,5} These muscles are the prime movers for trunk or hip flexion, extension, and rotation. Local stability refers to the deep, intrinsic muscles of the abdominal wall, such as the transverse abdominus and multifidus. These muscles are associated with the segmental stability of the lumbar spine during gross whole body movements and where postural adjustments are required.^{4,6,8}

The validity of both the concept of core stability and the optimal training protocols for core stability requires investigation. For example, an exercise such as abdominal hollowing





Risultati

↑ Attività:

Obliqui Esterni Interni

Trasverso Addome

Retto Addome

Lombo Sacrale

Fonte


Archives of Orthopaedic and Trauma Surgery
Including Arthroscopy and Sports Medicine

© Springer-Verlag 2005

10.1007/s00402-005-0793-7

Original Article

A controlled prospective case control study of a prevention training program in female team handball players: the German experience

Wolf Petersen¹ , Christoph Braun², Wiebke Bock³, Kirsten Schmidt³,
Andre Weimann¹, Wolf Drescher², Elisabeth Eiling², Richard Stange¹, Thomas Fuchs¹,
Jürgen Hedderich⁴ and Thore Zantop¹

Training Study: Intervento

1 Stagione

Sperimentale n=134

Controllo n=142



Infortunati

LCA CVG

1 7

5 11



Trunk Muscle Responses to Demands of an Exercise Progression to Improve Dynamic Spinal Stability

Krista L. Clarke Davidson, MSc, Cheryl L. Hubley-Kozey, PhD

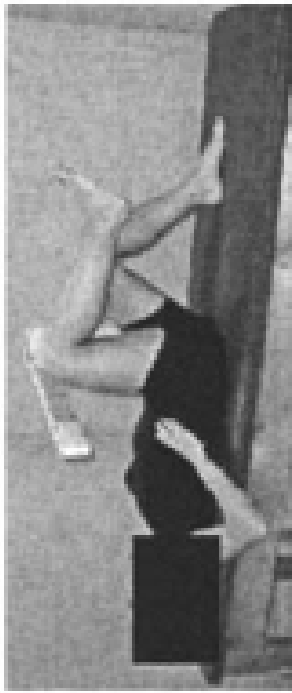
ABSTRACT. Clarke Davidson KL, Hubley-Kozey CL. Trunk muscle responses to demands of an exercise progression to improve dynamic spinal stability. *Arch Phys Med Rehabil* 2005;86:216-23.

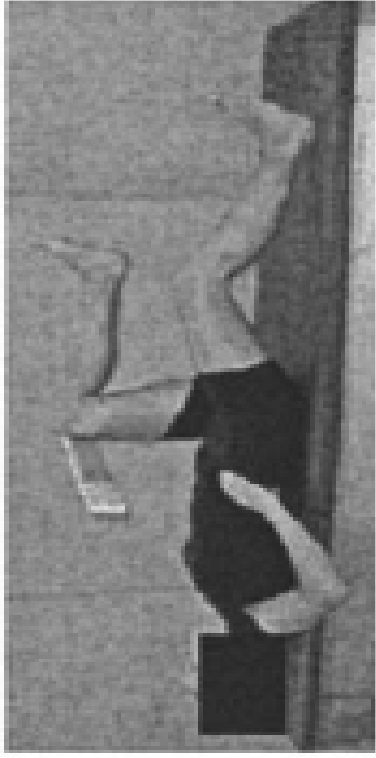
Objectives: To compare relative activation amplitudes among abdominal and trunk extensor muscle sites of healthy people performing a leg-loading exercise protocol aimed at progressively challenging spinal stability.

Design: A prospective, comparative, repeated-measures design.

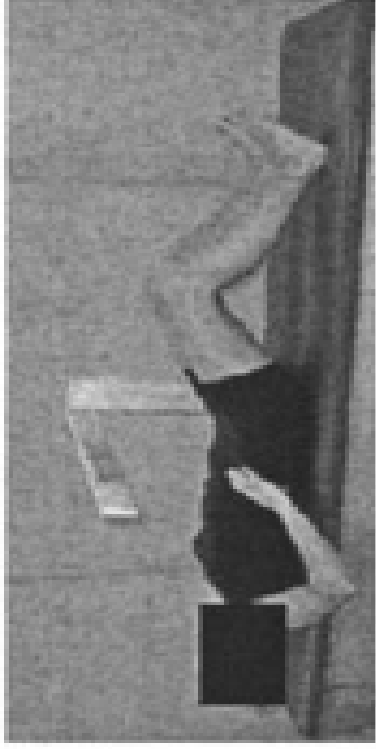
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IMPROVING THE ABILITY of muscles to respond to perturbations that potentially disrupt spinal stability is important in protecting the motion segments against repetitive microtrauma^{1,2} that potentially leads to low back disorders.³ Increasingly common in fitness, athletic, and rehabilitation training regimes^{2,4-8} are dynamic stabilizing exercise protocols focused on improving strength, endurance, and neuromuscular

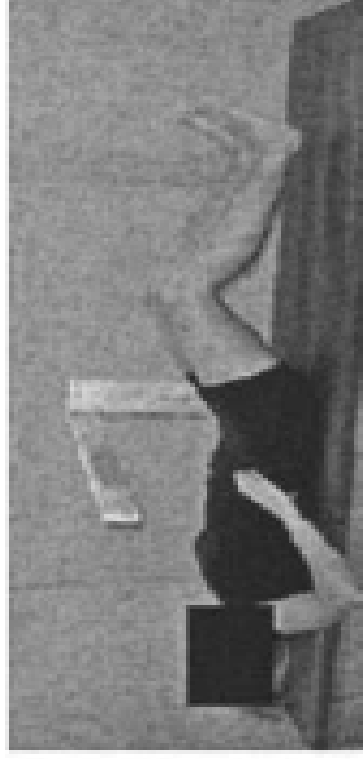




Level 3



Level 5



Fonte

Journal of Strength and Conditioning Research, 2005, 19(1), 51-60
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NEUROMUSCULAR TRAINING IMPROVES PERFORMANCE AND LOWER-EXTREMITY BIOMECHANICS IN FEMALE ATHLETES

GREGORY D. MYER,¹ KEVIN R. FORD,¹ JOSEPH P. PALUMBO,¹ AND TIMOTHY E. HEWETT²

¹Cincinnati Children's Hospital Research Foundation Sports Medicine Biodynamics Center and Human Performance Laboratory, Cincinnati, Ohio, 45229; ²Departments of Pediatrics and Orthopaedic Surgery, The University of Cincinnati College of Medicine, and Department of Rehabilitation Sciences, the College of Allied Health Sciences, Cincinnati, Ohio 45267.

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ABSTRACT. Clarke Davidson KL, Hubley-Kozey CL. Trunk muscle responses to demands of an exercise progression to improve dynamic spinal stability. *Arch Phys Med Rehabil* 2005;86:216-23.

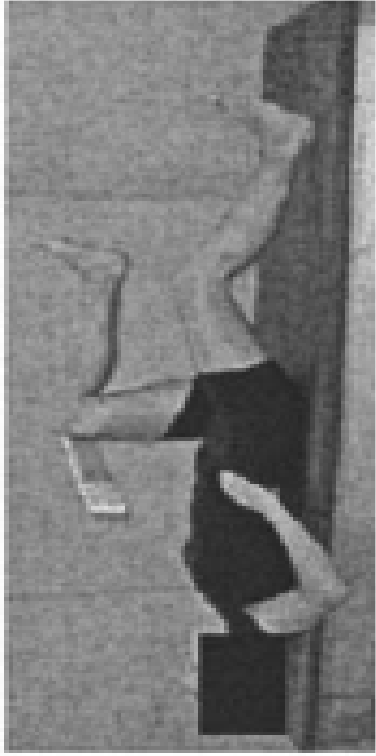
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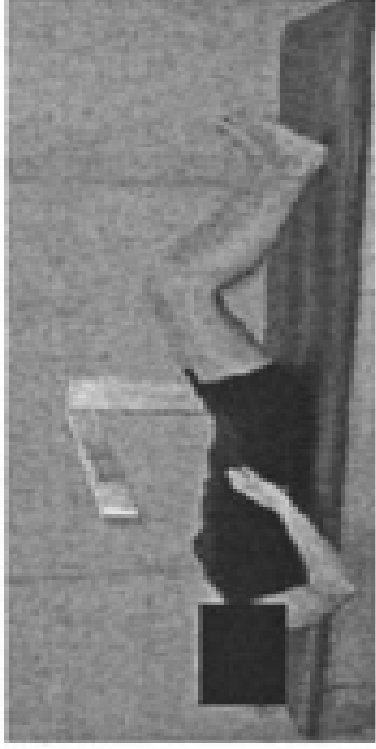
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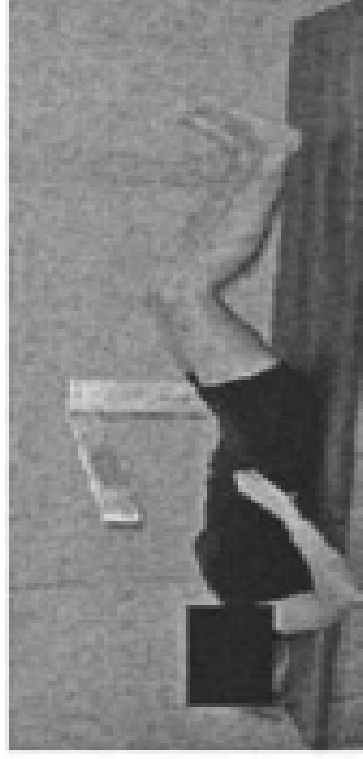




Level 3



Level 5



Fonte

Journal of Strength and Conditioning Research, 2005, 19(1), 51-60
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Esercizi



Esercizi

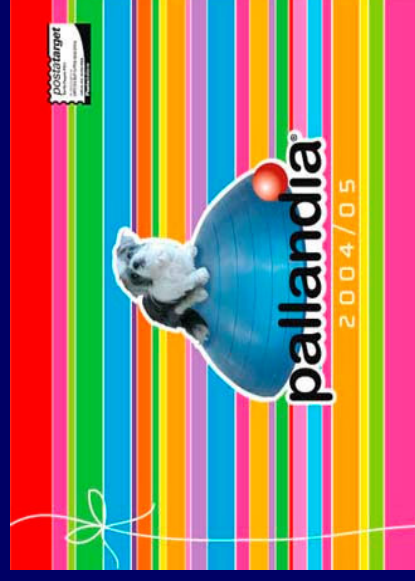
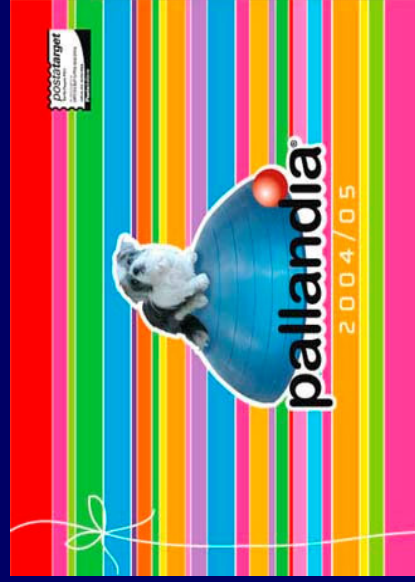


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