

Why is it important to be fit and strong for public health?

Importance of nutrition in sports

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Sports Medicine Specialist

Dietitian specialized in Sports Nutrition

Member of Nutritional Advisory Board of
Herbalife International



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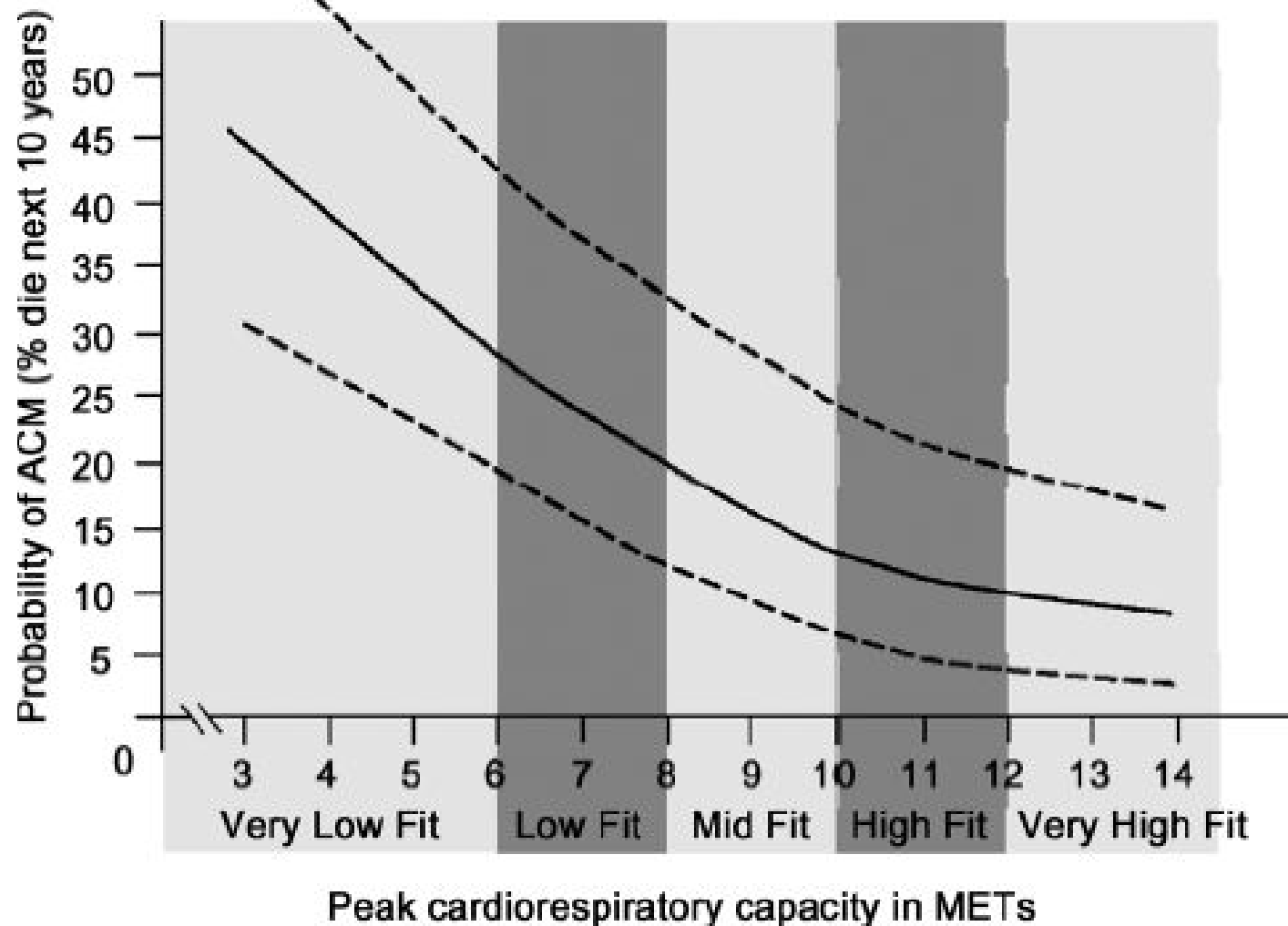


FIGURE 1—PFG 1: Risk of all-cause mortality for the next 10 yr for middle-aged males as a function of their initial level of peak cardiorespiratory fitness in metabolic equivalent units (METs).

What is EXERCISE?

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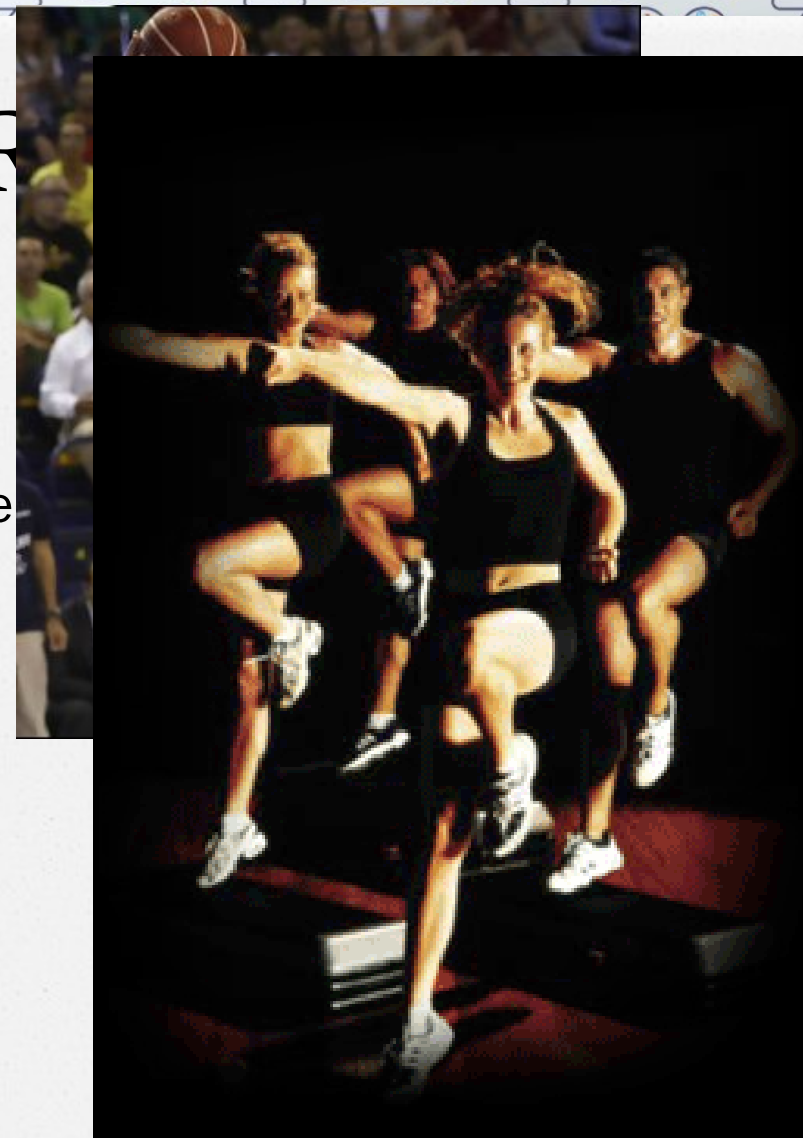
we EXERCISE



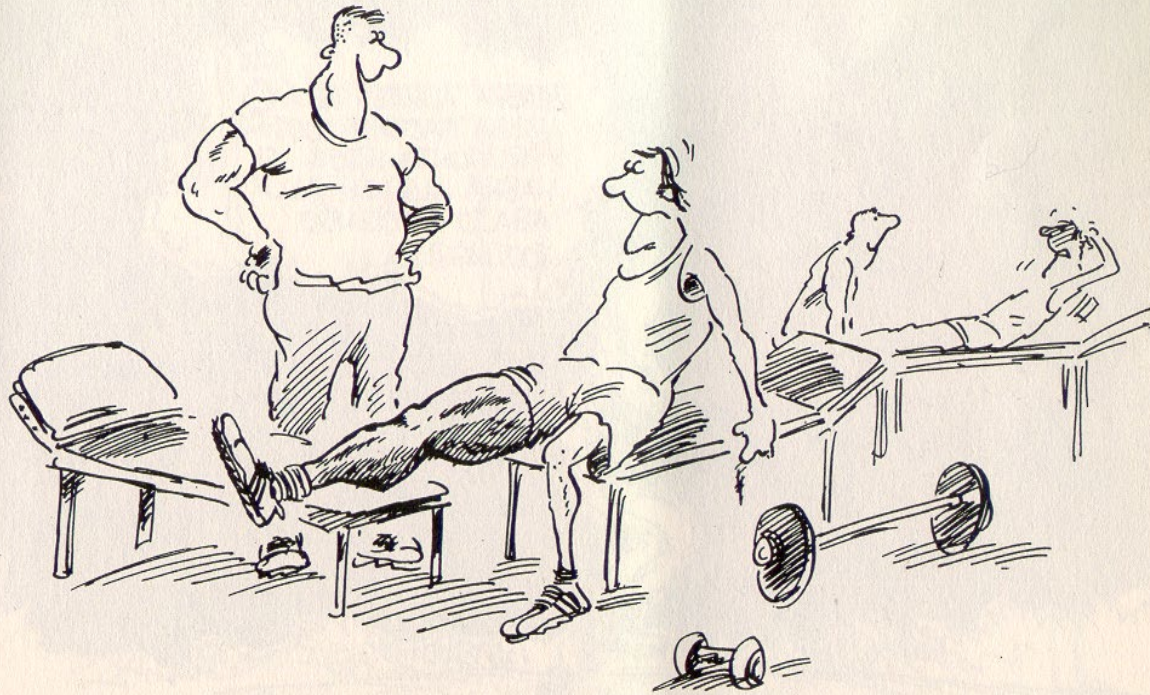
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o WE

- o LEISURE, looking for
 - o ENJOYING and keeping health condition



TRAINING: concept of ADAPTATION



Tomorrow we will start with the other leg

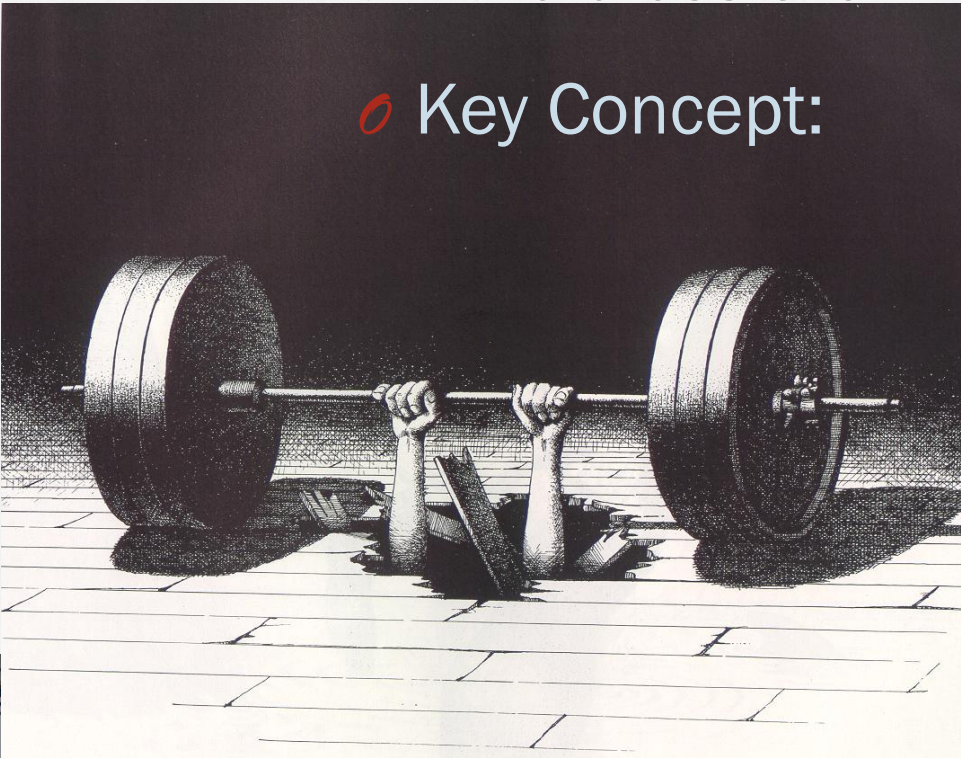
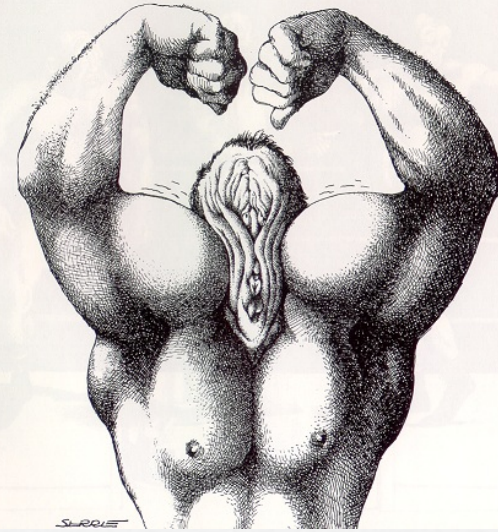
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point.

Assimilation of tra

- o Capability of the athlete to assimilate training loads with adaptati
- o If we cross the limit: injury of fatigue.

o Key Concept:

RECOVERY





Contents lists available at ScienceDirect

Journal of Science and Medicine in Sport

journal homepage: www.elsevier.com/locate/jsams



Original research

The higher the better? Interval training intensity in coronary heart disease

Trine Moholdt^{a,b,*}, Erik Madssen^{a,c}, Øivind Rognm

^a K.G. Jebsen Center of Exercise in Medicine, Department of Circulation and Medical Imaging, Oslo, Norway

^b Department of Public Health and General Practice, Norwegian University of Science and Technology, Trondheim, Norway

^c Department of Cardiology, St. Olav's Hospital, Trondheim, Norway & Department of Clinical Medicine, Trondheim, Norway

^d Clinical Services, St. Olav University Hospital, Trondheim, Norway

50 60
Threshold exercise

FIGURE 2—PFG 2: An exercise-old exercise intensities needed to reach levels of initial peak CR capacity.

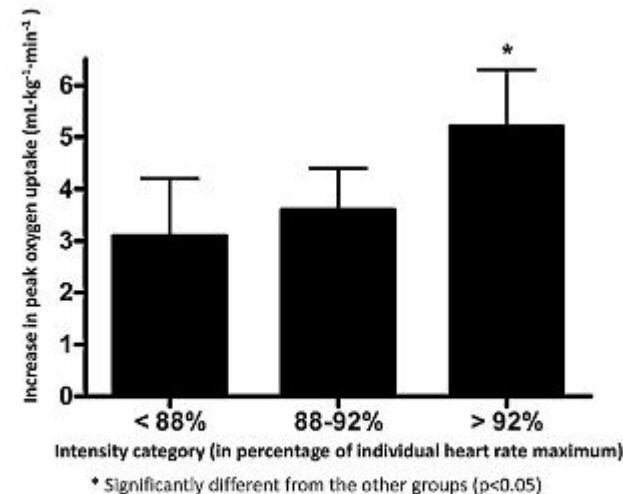
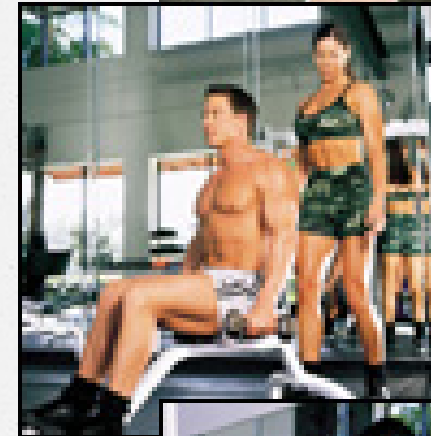


Fig. 2. Increase in VO_{2peak} according to exercise intensity categories. Percentages are exercise intensity in the last two minutes of each four-minute interval, relative to individual HR_{max} .

What kind of exercise?

- Aerobic, endurance exercise:
 - Increase caloric expenditure
 - Improve fat mobilization
- Strength exercise:
 - Keep/protect muscle mass
 - We even can increase muscle mass (Hypertrophy)
- Interval exercise:
 - Higher caloric expenditure
 - Together with maintenance of muscle mass (type II fibers)



SPECIAL COMMUNICATIONS

What types of exercises improve muscular fitness? Many types of resistance training equipment can be used to improve muscular fitness.

Quality of

BUILD MUSCLE, IMPROVE HEALTH: BENEFITS ASSOCIATED WITH RESISTANCE EXERCISE

by Wayne L. Westcott, Ph.D.



abdominals and lumbar extensors, is important.

David P. Swain, Ph.D., FACSM.

ines, Ph.D., FACSM; Barry Ionté, Ph.D., FACSM; I-Min man, Ph.D., FACSM; and

Resistance exercise is medicine:



**AMERICAN COLLEGE
of SPORTS MEDICINE®**

Progression Models in Resistance Training for Healthy Adults

POSITION STAND

training continues to be the gold standard for health professionals when prescribing exercise programmes. However, resistance training has a wealth of unique benefits over those of aerobic training. It is these unique benefits that demonstrate the necessary role of resistance training in health promotion. The aim of this article is to demonstrate that resistance training is equally, and in some cases superior, to aerobic training in its health-promoting benefits, such as the increasing and/or maintenance of lean body mass and bone mineral density. As such, resistance training should

To build/keep muscle tissue, we need a continuous protein delivery



The Journal of Nutrition
Nutrient Requirements and Optimal Nutrition

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Dietary Protein Distribution Positively Influences 24-h Muscle Protein Synthesis in Healthy Adults¹⁻³

Madonna M. Mamerow,⁴ Joni A. Mettler,⁴ Kirk L. English,⁴ Shanon L. Casperson,⁶ Emily Arentson-Lantz,⁴ Melinda Sheffield-Moore,⁶ Donald K. Layman,⁷ and Douglas Paddon-Jones^{4,5*}

⁴Division of Rehabilitation Sciences, ⁵Department of Nutrition and Metabolism, and ⁶Department of Internal Medicine, The University of Texas Medical Branch, Galveston, TX; and ⁷Department of Food Science and Human Nutrition, University of Illinois at Urbana-Champaign, Champaign, IL

Protein breakdown

Meal

Meal

Meal

Protein loss

Phillips. Nutrition '04



ELSEVIER

Contents lists available at ScienceDirect

Nutrition

journal homepage: www.nutritionjournal.com



Review

Synergistic effects of resistance training and protein intake: Practical aspects

Lucas Guimarães-Ferreira Ph.D.^a, Jason Michael Cholewa Ph.D.^b,
Marshall Alan Naimo Ph.D.^c, X.I.A. Zhi Ph.D.^{d,e}, Daiane Magagnin^f,
Rafaele Bis Dal Ponte de Sá^f, Emilio Luiz Streck Ph.D.^f,
Tamiris da Silva Teixeira^f, Nelo Eidy Zanchi Ph.D.^{f,*}

^aLaboratory of Experimental Physiology and Biochemistry, Center of Physical Education and Sports, Federal University of Espírito Santo, Vitória/ES, Brazil

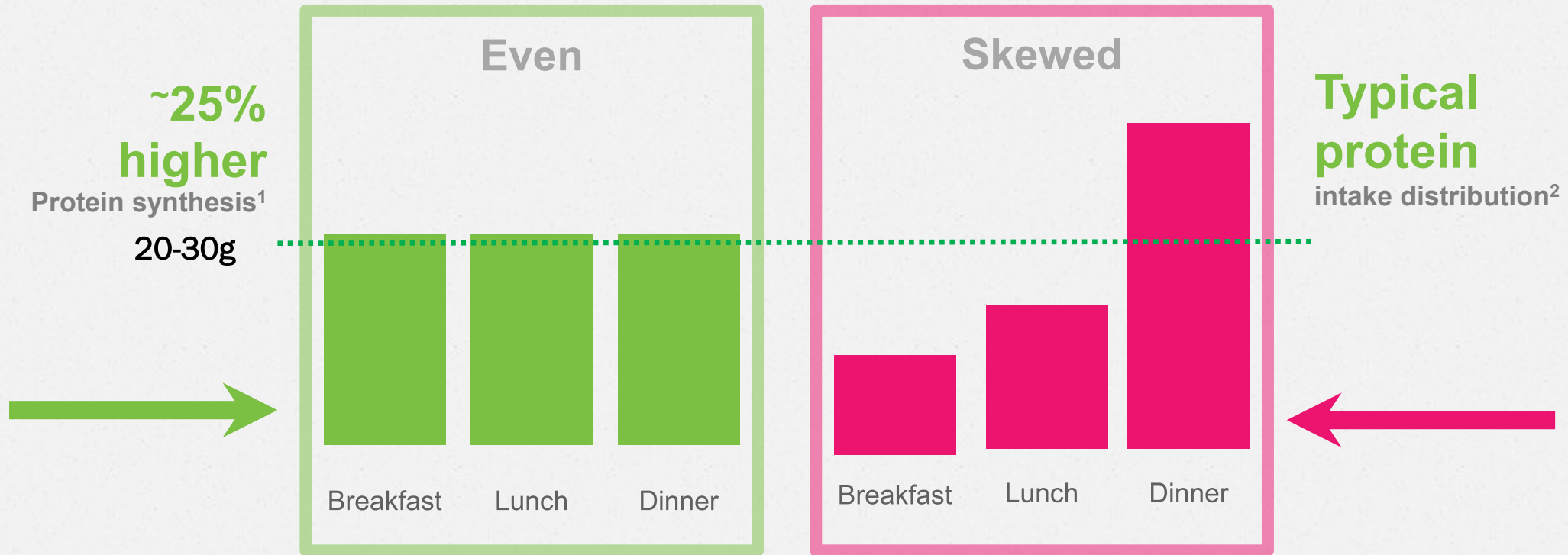
^bDepartment of Kinesiology Recreation and Sport Studies, Coastal Carolina University, Conway, South Carolina, USA

^cDivision of Exercise Physiology, West Virginia University School of Medicine, Morgantown, West Virginia, USA

^dExercise Physiology Laboratory, Department of Exercise Physiology, Beijing Sport University, Beijing, PR China

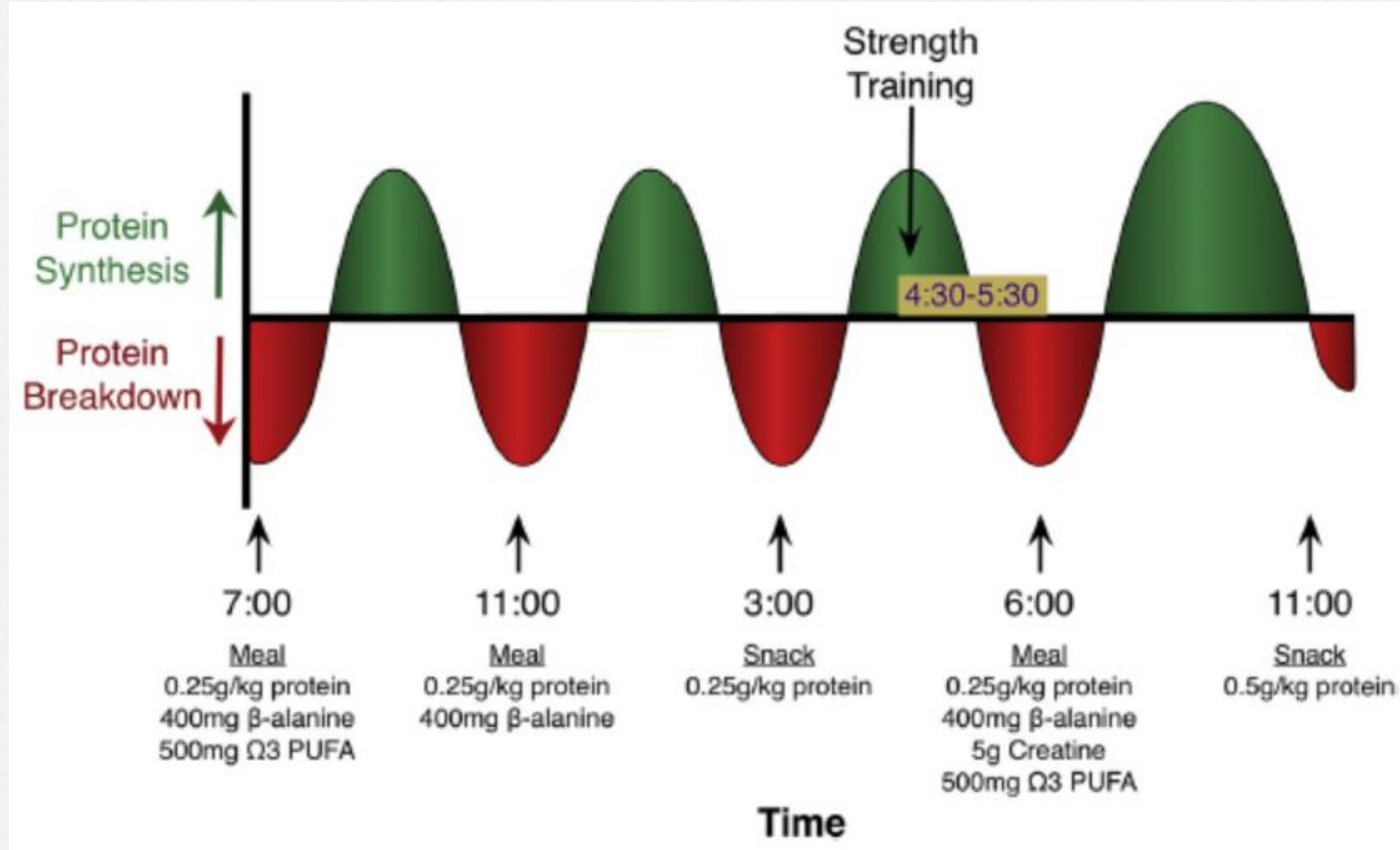
^eExercise Physiology and Biochemistry Laboratory, College of Physical Education, Jianggangshan University, Ji'an, Jiangxi, PR China

Protein intake daily distribution



1. Mamerow MM, et al. J Nutr. 2014 Jun; 144(6): 876–880.

2. Paddon-Jones, D., et al. Am J Clin Nutr 2015;101(Suppl):1339S–45S.



CK controls (basketball)

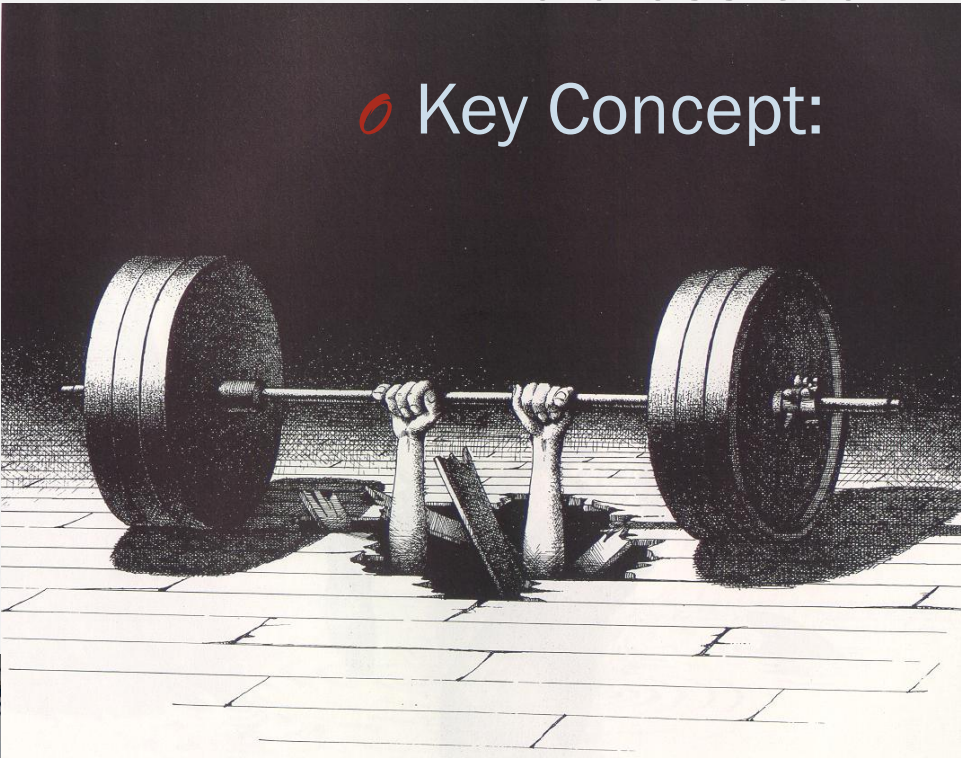
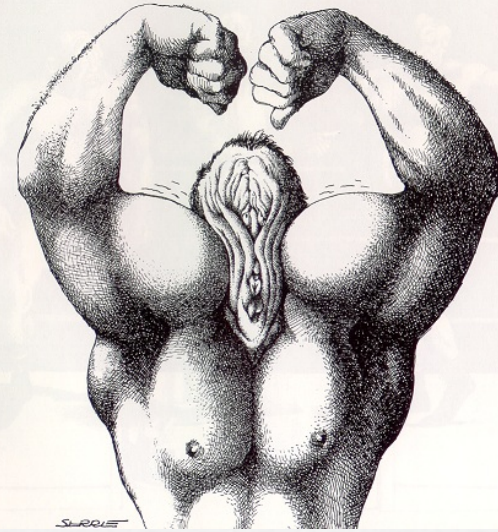
4	663	454	101
5	285	255	88
6	903	449	306
8	481	354	178
11	389	362	173
12	531	512	154
13	325	250	132
15	567	581	101
16	1208	651	
17	1593	704	264
18	1765	447	225
Average	791,8	456,3	172,2

Assimilation of tra

- o Capability of the athlete to assimilate training loads with adaptati
- o If we cross the limit: injury of fatigue.

o Key Concept:

RECOVERY

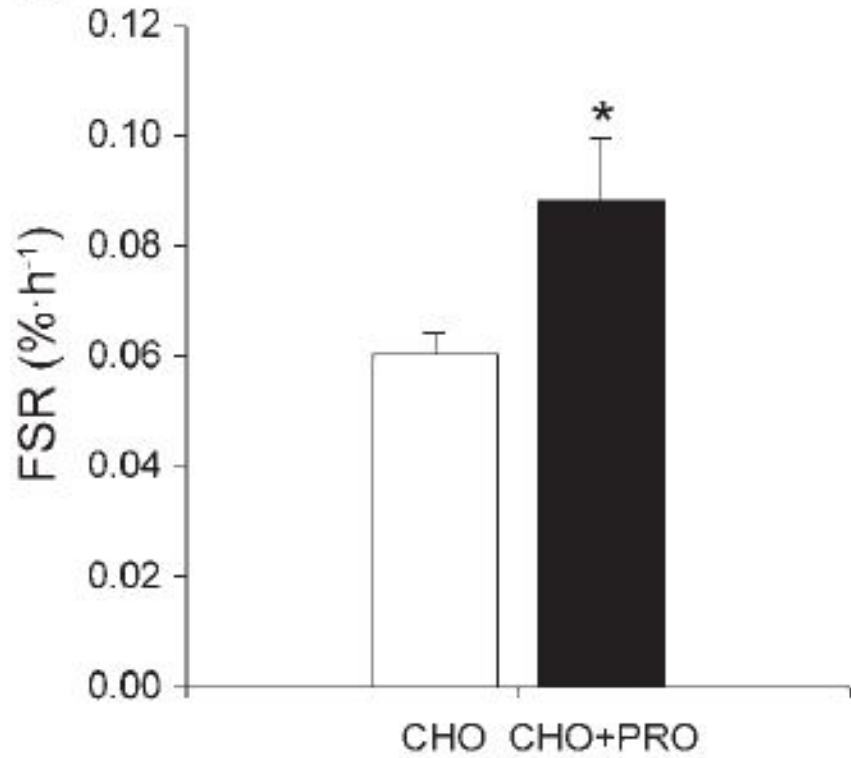


Recovery

- Training is always catabolic, decrease performance, is during recovery when improvement, adaptation, takes place
- So the athlete body is working... 24hours a day, not only when training
- Recovery depends on
 - Good nutrition
 - Good rest

protein turnover

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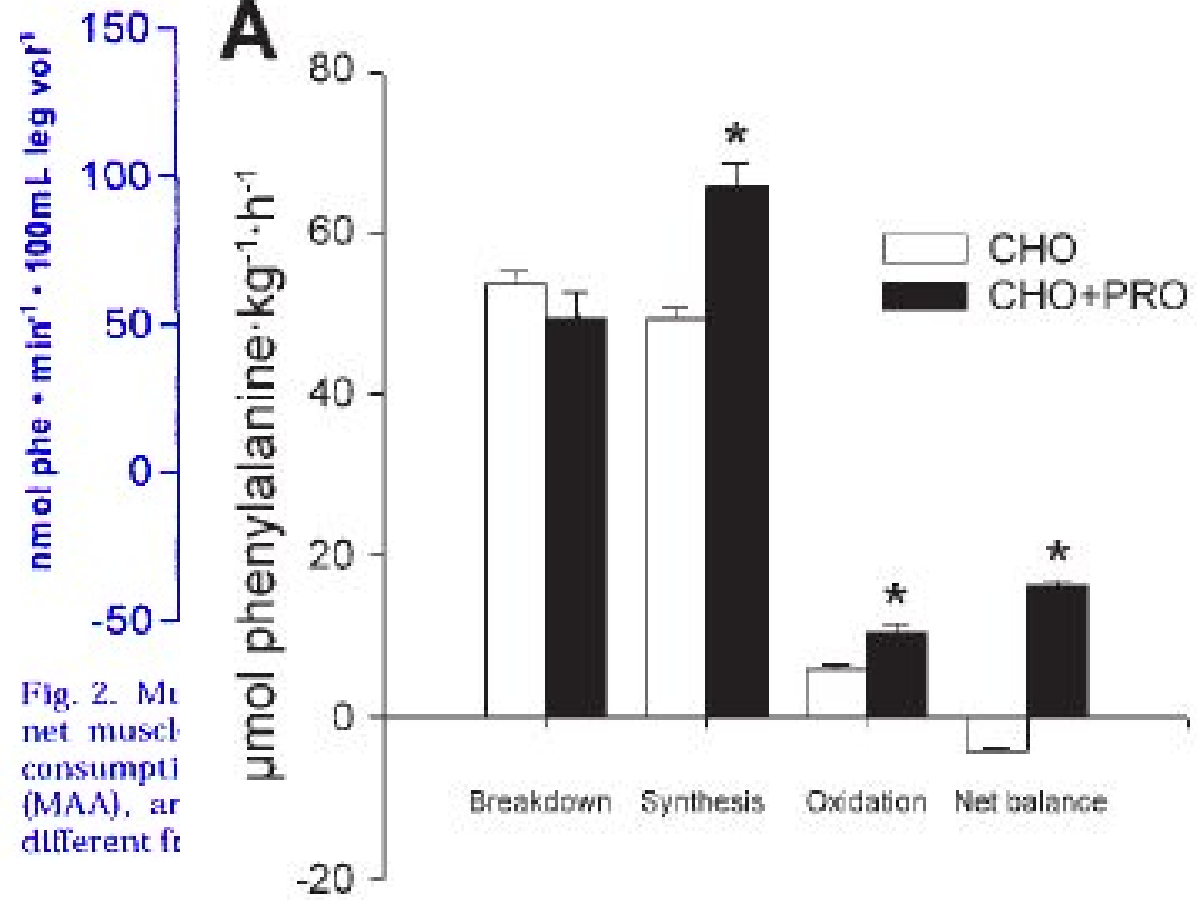


Fig. 2. Mu
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Two main goals during recovery

- o Recovery of the fuel/gas
- o It means glycogen recovery
- o Recovery of the muscle structure
- o Repairing tissue damage
- o Rebuilding the muscle...
- o ...Beyond the initial state: ADAPTATION

REGULATION OF MUSCLE GLYCOGEN REPLETION, MUSCLE PROTEIN SYNTHESIS AND REPAIR FOLLOWING EXERCISE

John L. Ivy

Exercise Phy
University of

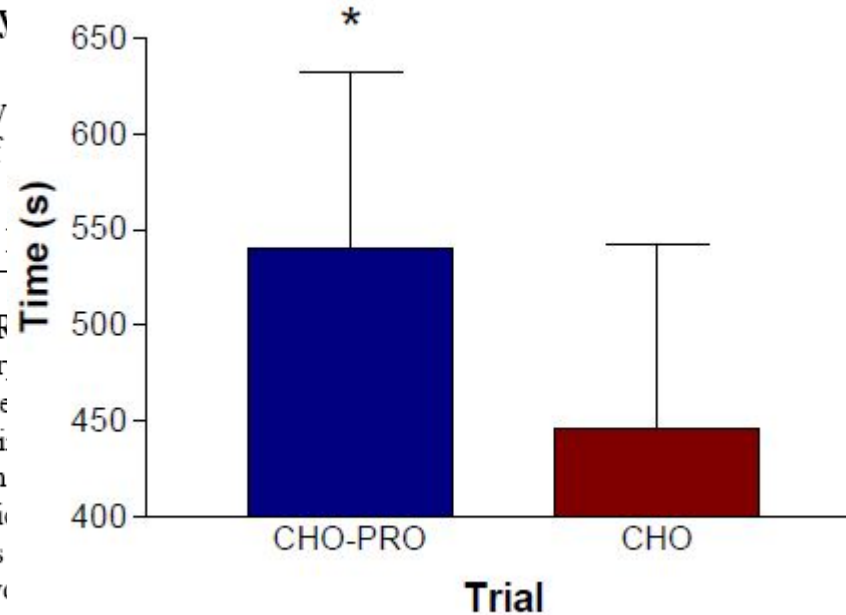
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carbohydrate supplement. This will also promote protein synthesis and reduce protein degradation, thus having the added benefit of stimulating muscle tissue repair and adaptation. Moreover, recent research suggests that consuming a carbohydrate/protein supplement post exercise will have a more positive influence on subsequent exercise performance than a carbohydrate supplement.

KEY WORDS: Carbohydrate, nutrients, insulin, glucose, amino acids.



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Do we need supplements in sports?

- For sure if we want to optimize our training/performance.
- First: a good basic nutrition can be achieved with the help of the right supplements (vits, shakes, omega 3,...).
- Second: supplements can help on keeping the best weight/BC in our sport
- Third: getting the right rehydration that is not only water.
- Forth: taking care of the nutrients your body need for recovery/adaptation (recovery shake).

What is a nutritional supplement?

- Something we add to cover a deficit/need
- Components of the common diet
- But purified or in higher concentrations
- Trying to improve the athlete diet
- But they are not "magic" nor medicine



Early life

Adult life

Older life
Minimising loss

Dietary protein intake is associated with lean mass change in older, community-dwelling adults: the Health, Aging, and Body Composition (Health ABC) Study¹⁻³

DOI Number: 10.5958/0976-5506.2019.00025.1

Effects of Strength Training Exercises on Physical Parameters and Quality of Life among Older Adults in Selected Geriatric Homes in Kerala, India

Nisha B S¹, Dhanyamol K S², Devika Shaji², Rebecca Seguin³

¹Assistant Professor; ²iv year B.sc Nursing student, Amrita College of Nursing, Amrita Vishwa Vidyapeetham

Research paper

Effect of grip strength on mental health

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^aDepartment of Health Administration, College of Health Science, Dankook University, Cheonan, Republic of Korea

^bInstitute of Health Promotion and Policy, Dankook University, Cheonan, Republic of Korea

Conclusion: Dietary protein may be a modifiable risk factor sarcopenia in older adults and should be studied further to determine its effects on preserving LM in this population. *Am J Clin Nutr* 2008;87:150-5.

KEY WORDS Body composition, sarcopenia, dietary protein, aging

Weight training in older people?

The New England Journal of Medicine

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Volume 330

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Number 25

EXERCISE TRAINING AND NUTRITIONAL SUPPLEMENTATION FOR PHYSICAL FRAILTY IN VERY ELDERLY PEOPLE

MARIA A. FIATARONE, M.D., EVELYN F. O'NEILL, C.T.R.S., NANCY DOYLE RYAN, D.T.,

KAREN M. CLEMENTS, M.P.H., GUIDO R. SOLARES, PH.D., MIRIAM E. NELSON, PH.D.,

SUSAN B. ROBERTS, PH.D., JOSEPH J. KEHAYIAS, PH.D., LEWIS A. LIPSITZ, M.D.,

AND WILLIAM J. EVANS, PH.D.

Research article

Open Access

The Feasibility of performing resistance exercise with acutely ill hospitalized older adults

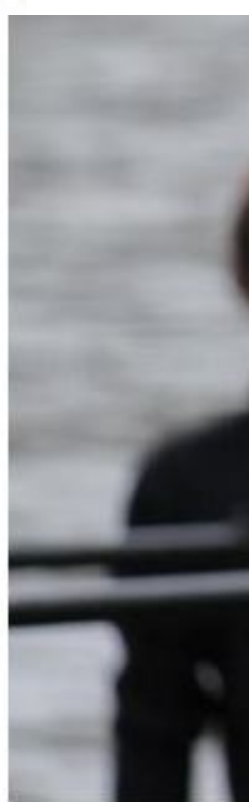
Laurie H Mallery*¹, Elizabeth A MacDonald², Cheryl L Hubley-Kozey³, Marie E Earl³, Kenneth Rockwood¹ and Chris MacKnight¹

- Average age in people in this study:

87 years old

- They did a strength training programme 10 weeks
- Strength increased 113%





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What do you

Variety is key.

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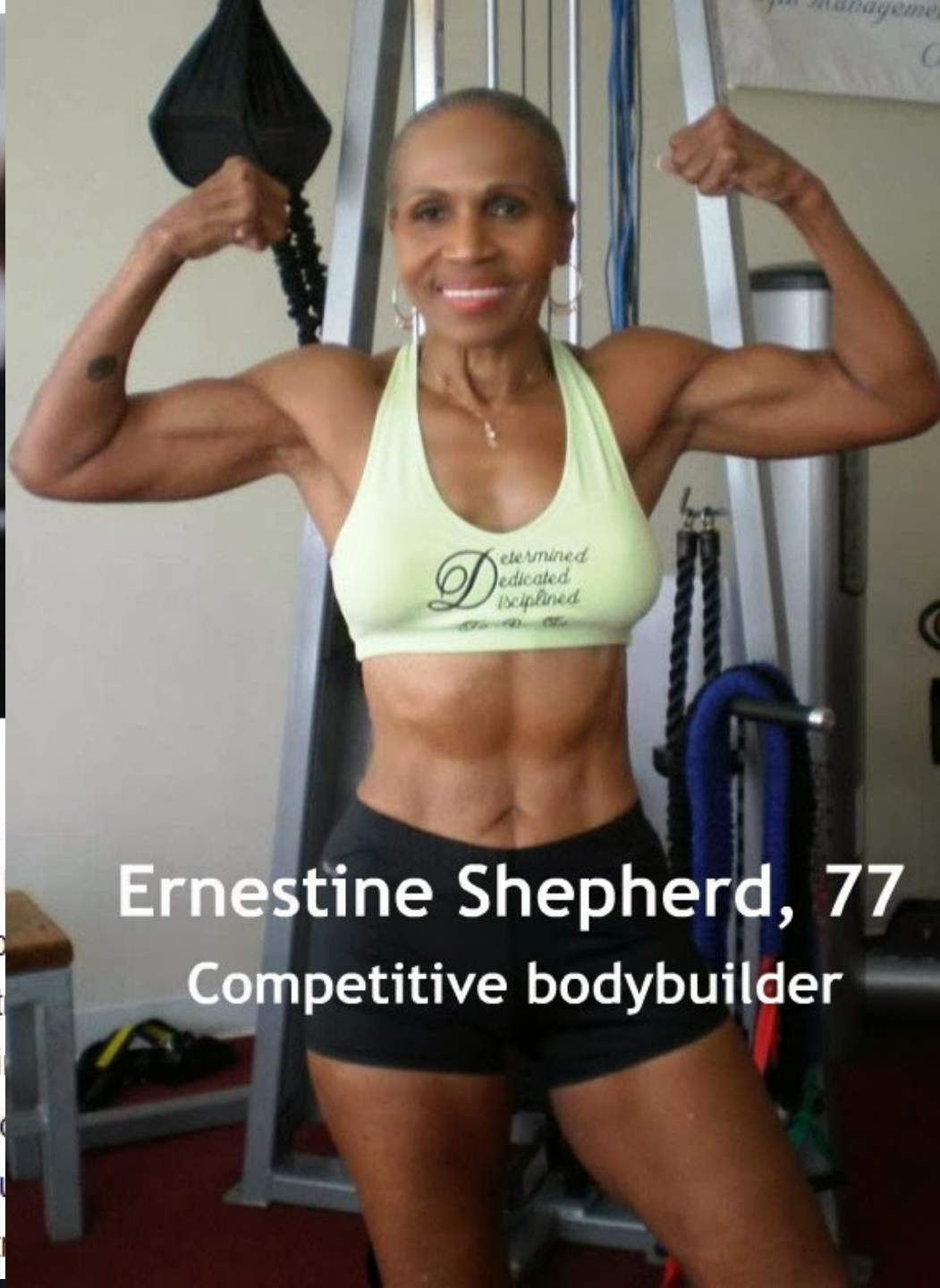
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We have to be the "owners" of our lives and the "architects" of our next version

I



Miracle solutions (crazy diets, magic substances, doping,...)

- Looking for shortcuts
- Crossing legalðical limits
- Based on “magic”/non scientific concepts trying to play with people psychology.
- Sometimes they show some results but fail in the medium/long term

The miracle of right nutrition plus well controlled training

- o Change habits/lifestyle to healthy ones
- o Based on nutrition knowledge and exercise science
- o Empowering people with “easy” knowledge and “easy” and affordable plans. Helping them to go from “I know” to “I do”,
- o Including strength training in these plans.
- o Providing the right nutrition to assimilate this training (with special attention to get the right protein at the right time)

Thank you for your attention

