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MARCHE

Giochi sportivi e salute: un approccio integrato al wellness

Ancona, 10 aprile 2017

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SCUOLA DELLO SPORT
MARCHE

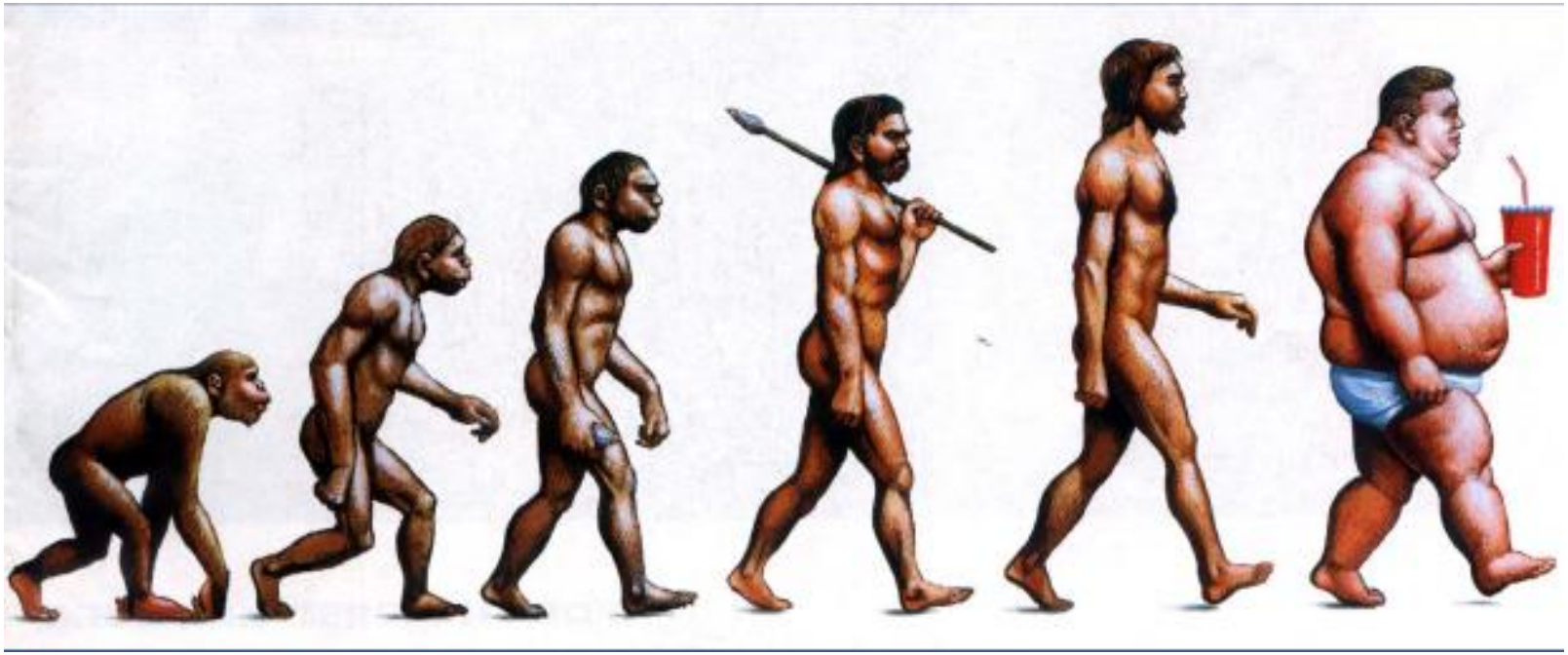
Giochi Sportivi e Salute: Un Approccio Integrato al Wellness

Carlo Castagna PhD
Università Roma Tor Vergata
Settore Tecnico FIGC, Coverciano

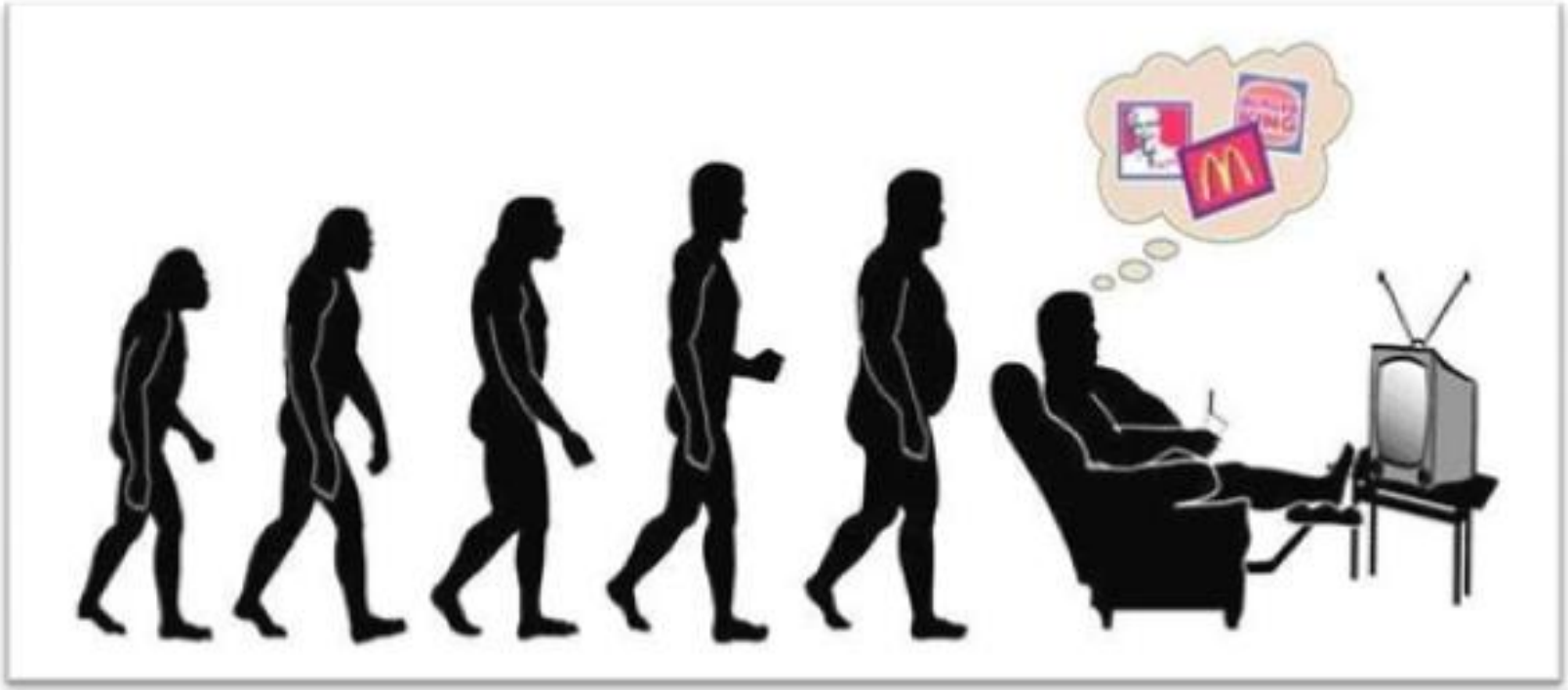
Sommario

- Esercizio Fisico e Salute
- Giochi Sportivi e Salute
- Conclusioni e Future Direzioni

Esercizio Fisico@ Salute

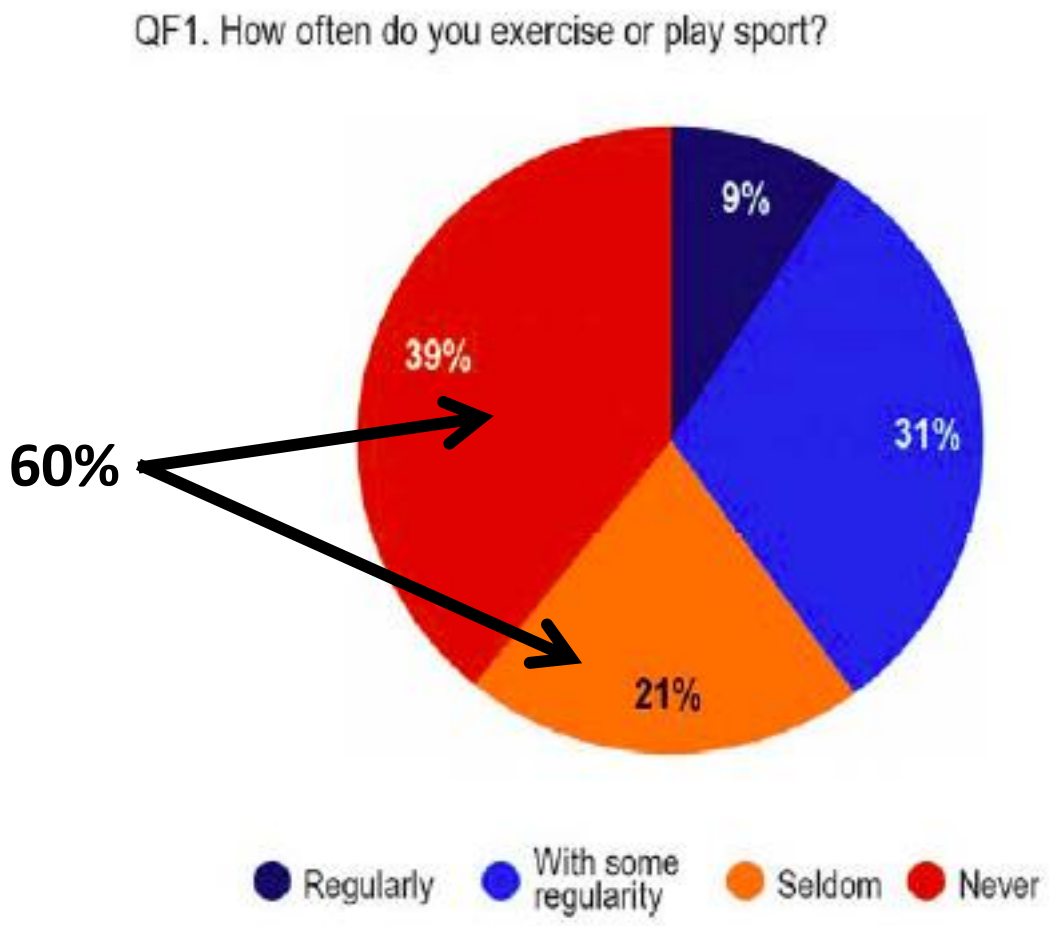


Esercizio Fisico@ Salute



Esercizio Fisico

Esercizio Fisico



Esercizio Fisico

- 33% Adulti non Raggiunge Raccomandazioni Giornaliere
- 8% Europei fa Esercizio Regolarmente
- 20% Europei non è motivato
- 5,3 milioni decessi per inattività fisica

Póvoas et al 2017

Esercizio Fisico

Global Recommendations on Physical Activity for Health

18–64 years old

These guidelines are relevant to all healthy adults aged 18–64 years, unless specific medical conditions indicate to the contrary, irrespective of gender, race, ethnicity or income level. They also apply to individuals in this age range with chronic noncommunicable conditions not related to mobility such as hypertension or diabetes. These recommendations can be applied to adults with disabilities. However they may need to be adjusted for each individual based on their exercise capacity and specific health needs. Pregnant, postpartum women and persons with cardiac events may need to take extra precautions and seek medical advice before striving to achieve the recommended levels of physical activity for this age group.

Strong evidence demonstrates that compared to less active adult men and women, individuals who are more active:

- have lower rates of all-cause mortality, coronary heart disease, high blood pressure, stroke, type 2 diabetes, metabolic syndrome, colon and breast cancer, and depression;
- are likely to have less risk of a hip or vertebral fracture;
- exhibit a higher level of cardiorespiratory and muscular fitness; and
- are more likely to achieve weight maintenance, have a healthier body mass and composition.

Recommendations:
In adults aged 18–64, physical activity includes leisure time physical activity, transportation (e.g. walking or cycling), occupational (i.e. work), household chores, play, games, sports or planned exercise, in the context of daily, family, and community activities.
The recommendations in order to improve cardiorespiratory and muscular fitness, bone health, reduce the risk of NCDs and depression are:

1. Adults aged 18–64 should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week *or* do at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week *or* an equivalent combination of moderate - and vigorous-intensity activity.

2. Aerobic activity should be performed in bouts of at least 10 minutes duration.

3. For additional health benefits, adults should increase their moderate-intensity aerobic physical activity to 300 minutes per week, *or* engage in 150 minutes of vigorous-intensity aerobic physical activity per week, *or* an equivalent combination of moderate - and vigorous-intensity activity.

4. Muscle-strengthening activities should be done involving major muscle groups on 2 or more days a week.

Inactive people should start with small amounts of physical activity and gradually increase duration, frequency and intensity over time. Inactive adults and those with disease limitations will have added health benefits when they become more active.

For further information see: http://www.who.int/dietphysicalactivity/pa/en/index.html
or contact WHO on dietandhealth@who.int

World Health Organization

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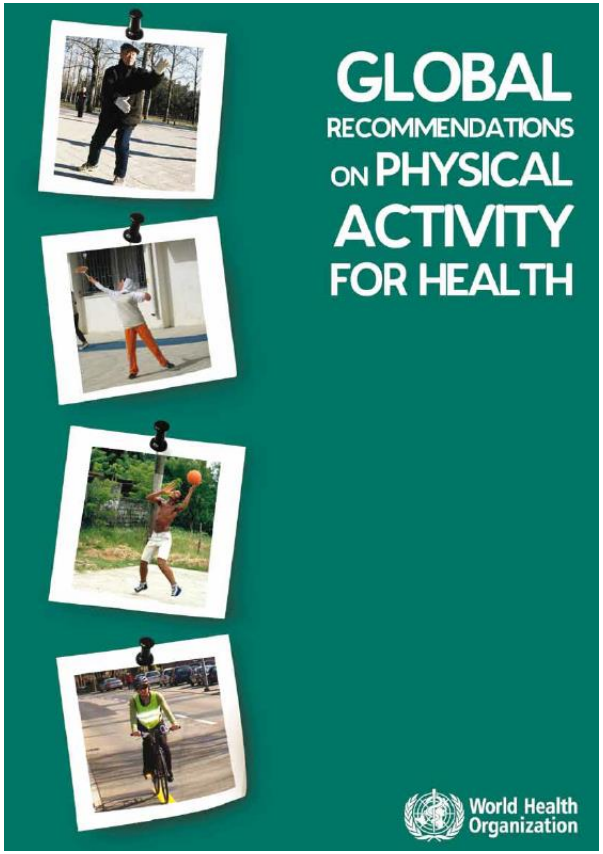

Esercizio Fisico @ Salute

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Esercizio Fisico @ Salute

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Esercizio Fisico @ Salute

SPECIAL COMMUNICATIONS

Quantity and Quality of Exercise for Developing and Maintaining Cardiorespiratory, Musculoskeletal, and Neuromotor Fitness in Apparently Healthy Adults: Guidance for Prescribing Exercise

AMERICAN COLLEGE of SPORTS MEDICINE

POSITION STAND

This pronouncement was written for the American College of Sports Medicine by Carol Ewing Garber, Ph.D., FACSM, (Chair); Bryan Blissmer, Ph.D.; Michael R. Deschenes, Ph.D., FACSM; Barry A. Franklin, Ph.D., FACSM; Michael J. Lamonte, Ph.D., FACSM; I-Min Lee, M.D., Sc.D., FACSM; David C. Nieman, Ph.D., FACSM; and David P. Swain, Ph.D., FACSM.

Esercizio Fisico @ Salute

sential for most adults. The ACSM recommends that most adults engage in moderate-intensity cardiorespiratory exercise training for ≥30 min·d^{-1} on ≥5 d·wk^{-1} for a total of ≥150 min·wk^{-1}, vigorous-intensity cardiorespiratory exercise training for ≥20 min·d^{-1} on ≥3 d·wk^{-1} (≥75 min·wk^{-1}), or a combination of moderate- and vigorous-intensity exercise to achieve a total energy expenditure of ≥500–1000 MET·min·wk^{-1}. On 2–3 d·wk^{-1}, adults should also perform resistance exercises for each of the major muscle groups, and neuromotor exercise involving balance, agility, and coordination. Crucial to maintaining joint range of movement, completing a series of flexibility exercises for each the major muscle–tendon groups (a total of 60 s per exercise) on ≥2 d·wk^{-1} is recommended. The exercise program

Esercizio Fisico @ Fitness

Dose-Risposta

50% Efficace

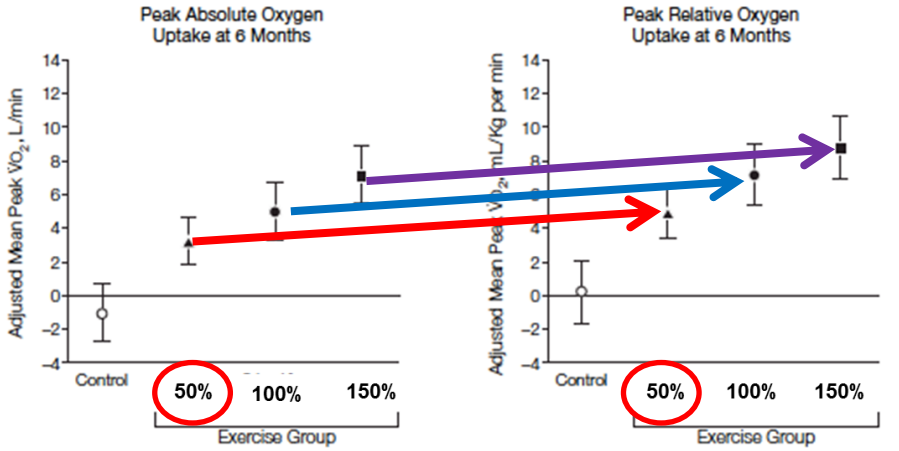
Effects of Different Doses of Physical Activity on Cardiorespiratory Fitness Among Sedentary, Overweight or Obese Postmenopausal Women With Elevated Blood Pressure

A Randomized Controlled Trial

Church et al., JAMA, 2007

Objective To examine the effect of 50%, 100%, and 150% of the NIH Consensus Development Panel recommended physical activity dose on fitness in women.

Figure 3. Percent Change in Fitness Data for Each Study Group



50% of currently recommended volume of physical activity was sufficient to significantly improve cardiorespiratory fitness.

Esercizio Fisico @ Fitness

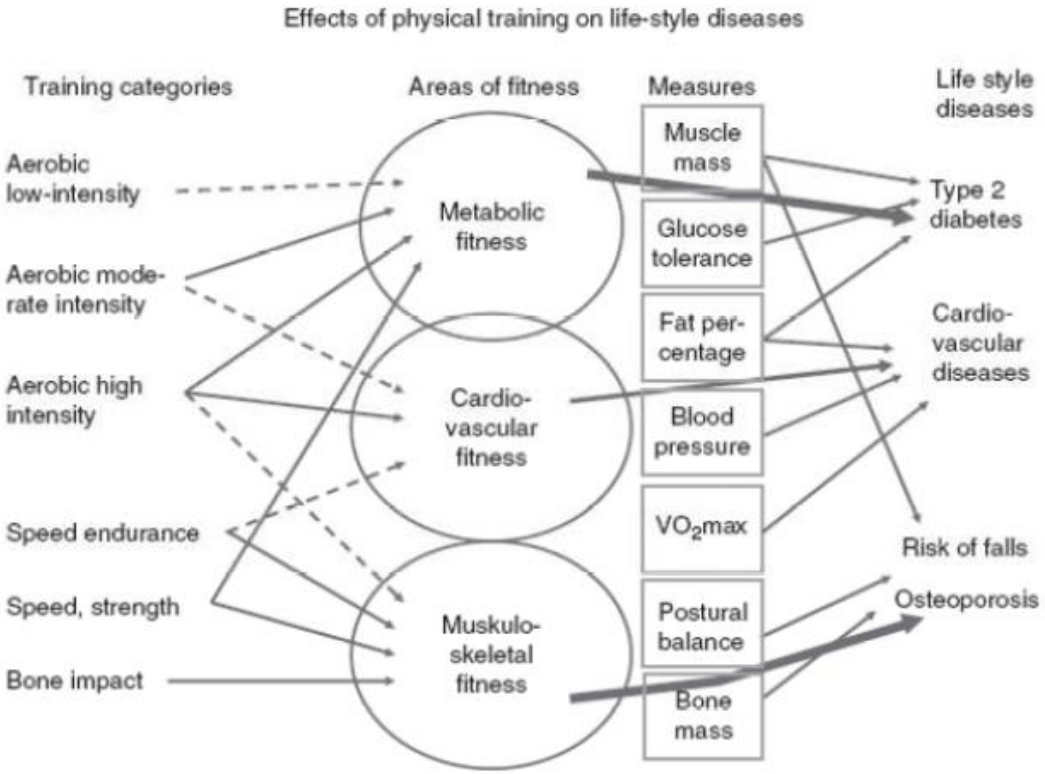
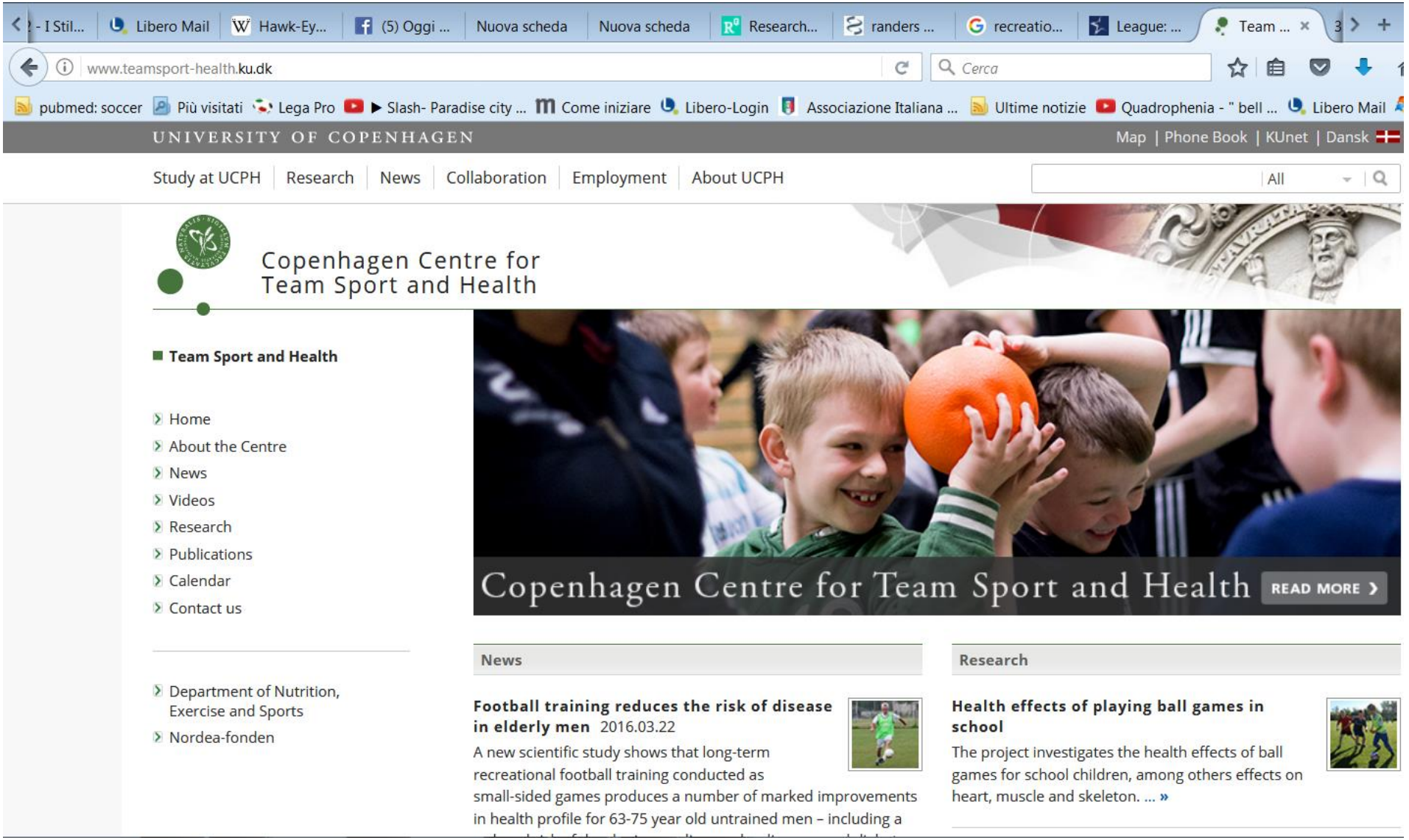


Fig. 1. Overview of the impact of different types of training on various fitness capacities and their relationship to the risk of certain life-style diseases. Full lines denote comprehensive effects and/or well-known relationships. Dotted lines denote sub-optimal yet positive effects.

Krustrup 2007, Krustrup et al. 2010, SJMSS



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The Research Advisory Panel

The activities of the Centre cross multiple disciplines, involve several research partners and are characterized by a high degree of internal interaction. The research advisory panel helps lead the many interdisciplinary processes. The panel consists of the Head of the Centre and experts in the various disciplines the Centre covers.

The panel is invited to a meeting with the Steering Committee once a year in relation to the annual symposium of the Centre. In addition, members of the Centre's research committee will use the panel as a sounding board as research progresses.

The members of the Research Advisory Panel:

Head of Centre
Professor Jens Bangsbo
Education: Dr.sci. og Phd
Title: Deputy head of research, NEXS, UCPH
Phone: +45 35 32 16 23
Mobile: +45 28 75 16 23
jbangsbo@nexs.ku.dk

Professor Carlo Castagna
Education: Doctor in Sport Science
Title: Head of the Football Training and Biomechanics Laboratory, Technical Department of the Italian Football Association (FIGC), Italy. Head Sport Scientist of Italian Football Referees Association, Italy.
castagnac@libero.it

Professor Tim Meyer
Education: Physician/medical doctor, sport scientist (MA sport science), professor for sports and preventive medicine.
Title: MD, PhD, University of Saarland, Germany
tim.meyer@mx.uni-saarland.de

Professor Natalia Stambulova
Education: PhD Degree in developmental psychology; PhD (Russian DSc) Degree in sport psychology.
Title: Professor in Sport & Exercise Psychology, Halmstad University, Sweden.
natalia.stambulova@hh.se

Professor Kari Fasting
Education: M.A. in pedagogy with sport and psychology as minors.
Title: Professor at The department of social and cultural studies, Norwegian School of Sport Sciences.
kari.fasting@nih.no

News

Football training reduces the risk of disease in elderly men 2016.03.22

A new scientific study shows that long-term recreational football training conducted as small-sided games produces a number of marked improvements in health profile for 63-75 year old untrained men – including a reduced risk of developing cardiovascular diseases and diabetes. ... »

Football strengthens the bones of men with prostate cancer 2015.11.23

Men with prostate cancer run the risk of brittle bones as a side-effect of their treatment. But one hour's football training a few times a week counters many of the negative effects of the treatment, according to University of Copenhagen scientists. ... »

Read all

Sport di Squadra @ Fitness

- Calcio
- Basket
- Floorball
- Pallamano

Team Sports and Health

Journal of Science and Medicine in Sport (2007) 10, 89–95

ELSEVIER

Journal of Science and Medicine in Sport

www.elsevier.com/locate/jsams

ORIGINAL PAPER

Cardiovascular responses during recreational 5-a-side indoor-soccer

Carlo Castagna[a,*], Romualdo Belardinelli[b], Franco M. Impellizzeri[c], Grant A. Abt[d], Aaron J. Coutts[e], Stefano D'Ottavio[a]

[a] *School of Sport and Exercise Sciences, Faculty of Medicine and Surgery, University of Rome Tor Vergata, Rome, Italy*
[b] *Department of Cardiovascular Rehabilitation and Prevention, ''G.M. Lancisi'' Hospital, Ancona, Italy*
[c] *Human Performance Laboratory, S.S. MAPEI srl, Via Don Minzoni 34, Castellanza, Varese, Italy*
[d] *St. Martin's College, Lancaster, United Kingdom*
[e] *School of Leisure, Sport and Tourism, University of Technology, Sydney, Australia*

Received 25 October 2005; received in revised form 9 May 2006; accepted 10 May 2006

Team Sports and Health

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Research Questions

- Does Rfutsal match ACSM recommendations?
- HRs useful for Rfutsal prescription?

Aims

- Examine CV response in Recreational Futsal
- Test match HR-VO_2 relationship

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Methods

- 5v5 including a goalkeeper
- 30m x 15 m surface
- 30 and 12 min for 5v5S and VS
- K4b^2 for VO_2 in VS
- RPE with CR 10 Börg Scale
- HR with Short-range telemetry

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Results

Mean match HR during the 5v5S was 166 ± 13 beats min^{-1} corresponding to $83.5 \pm 5.4\%$ of the individual HR_{peak}. Using the HR—VO_2 relationship 5v5S participants were estimated to play at $75.3 \pm 11.2\%$ (40.8 ± 6.5 ml kg^{-1} min^{-1}) of their VO_{2peak} which corresponded to 76.6 ± 6.7 and $74.2 \pm 10.8\%$ of their HR_{peakR} and VO_{2peakR}, respectively.

Team Sports and Health

Discussion

The results of the present study show that recreational 5v5 may be an appropriate method for enhancing cardiovascular fitness in high school students. In this study, the 5v5 players exercised at approximately 84% of their individual HR_{peak}. This HR intensity is higher than the minimum suggested for cardiovascular fitness by the ACSM (55–65% of HR_{max}).[1] Additionally, the recreational-match 5v5 players only spent ~9% of the total playing time at intensities lower than 70% of HR_{peak}.

The present results also demonstrated that HR is an appropriate measure for prescribing and monitoring aerobic training during intermittent work such as soccer.

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Practical implications

- Recreational 5-a-side soccer elicits cardiovascular responses useful for aerobic fitness development in healthy young individuals.
- During game activities heart rate has a lower predictive ability of the actual aerobic involvement when compared to continuous exercise.
- Individual levels of aerobic fitness are unrelated to 5-a-side cardiovascular responses.

Team Sports and Health

REVIEW ARTICLE

Sports Med 2009; 39 (8): 615-642
0112-1642/09/0008-0615/$49.95/0

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Aerobic Conditioning for Team Sport Athletes

Nicholas M. Stone and *Andrew E. Kilding*

School of Sport and Recreation, AUT University, Auckland, New Zealand

Contents

Team Sports and Health

F. M. Impellizzeri[1]
S. M. Marcora[2]
C. Castagna[3]
T. Reilly[4]
A. Sassi[1]
F. M. Iaia[1]
E. Rampinini[1]

Physiological and Performance Effects of Generic versus Specific Aerobic Training in Soccer Players

: effects of specific
robic interval train-
es of match perfor-
ndomly assigned to
terval training con-
aximum heart rate
ice a week. The fol-
(Pre), after 4 weeks
er 8 weeks of train-
um oxygen uptake,
at Tlac, a soccer-
d indices of physical
distance and time
h-intensity running

speed). Training load, as quantified by heart rate and rating of perceived exertion, was recorded during all training sessions and was similar between groups. There were significant improvements in aerobic fitness and match performance in both groups of soccer players, especially in response to the first 4 weeks of pre-season training. However, no significant differences between specific and generic aerobic interval training were found in any of the measured variables including soccer specific tests. The results of this study showed that both small-sided games and running are equally effective modes of aerobic interval training in junior soccer players.

Key words
Small-sided games · aerobic fitness · match analysis · football · interval training

Aerobic endurance training improves soccer performance

JAN HELGERUD, LARS CHRISTIAN ENGEN, ULRIK WISLØFF, and JAN HOFF
Norwegian University of Science and Technology, Department of Sport Sciences, N-7491 Trondheim, NORWAY

ABSTRACT

HELGERUD, J., L. C. ENGEN, U. WISLØFF, and J. HOFF. Aerobic endurance training improves soccer performance. *Med. Sci. Sports Exerc.*, Vol. 33, No. 11, 2001, pp. 1925–1931. **Purpose:** The aim of the present study was to study the effects of aerobic training on performance during soccer match and soccer specific tests. **Methods:** Nineteen male elite junior soccer players, age 18.1 ± 0.8 yr, randomly assigned to the training group ($N = 9$) and the control group ($N = 10$) participated in the study. The specific aerobic training consisted of interval training, four times 4 min at 90–95% of maximal heart rate, with a 3-min jog in between, twice per week for 8 wk. Players were monitored by video during two matches, one before and one after training. **Results:** In the training group: a) maximal oxygen uptake ($\dot{V}O_{2max}$) increased from 58.1 ± 4.5 mL·kg^{-1}·min^{-1} to 64.3 ± 3.9 mL·kg^{-1}·min^{-1} ($P < 0.01$); b) lactate threshold improved from 47.8 ± 5.3 mL·kg^{-1}·min^{-1} to 55.4 ± 4.1 mL·kg^{-1}·min^{-1} ($P < 0.01$); c) running economy was also improved by 6.7% ($P < 0.05$); d) distance covered during a match increased by 20% in the training group ($P < 0.01$); e) number of sprints increased by 100% ($P < 0.01$); f) number of involvements with the ball increased by 24% ($P < 0.05$); g) the average work intensity during a soccer match, measured as percent of maximal heart rate, was enhanced from 82.7 ± 3.4% to 85.6 ± 3.1% ($P < 0.05$); and h) no changes were found in maximal vertical jumping height, strength, speed, kicking velocity, kicking precision, or quality of passes after the training period. The control group showed no changes in any of the tested parameters. **Conclusion:** Enhanced aerobic endurance in soccer players improved soccer performance by increasing the distance covered, enhancing work intensity, and increasing the number of sprints and involvements with the ball during a match. **Key Words:** $\dot{V}O_{2max}$, LACTATE THRESHOLD, RUNNING ECONOMY, SKILL

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Interval-Training:

- 4x4min 90-95% FCmax
- Rec. 3min 60-70% FCmax
- 2 x week x 4-8 weeks

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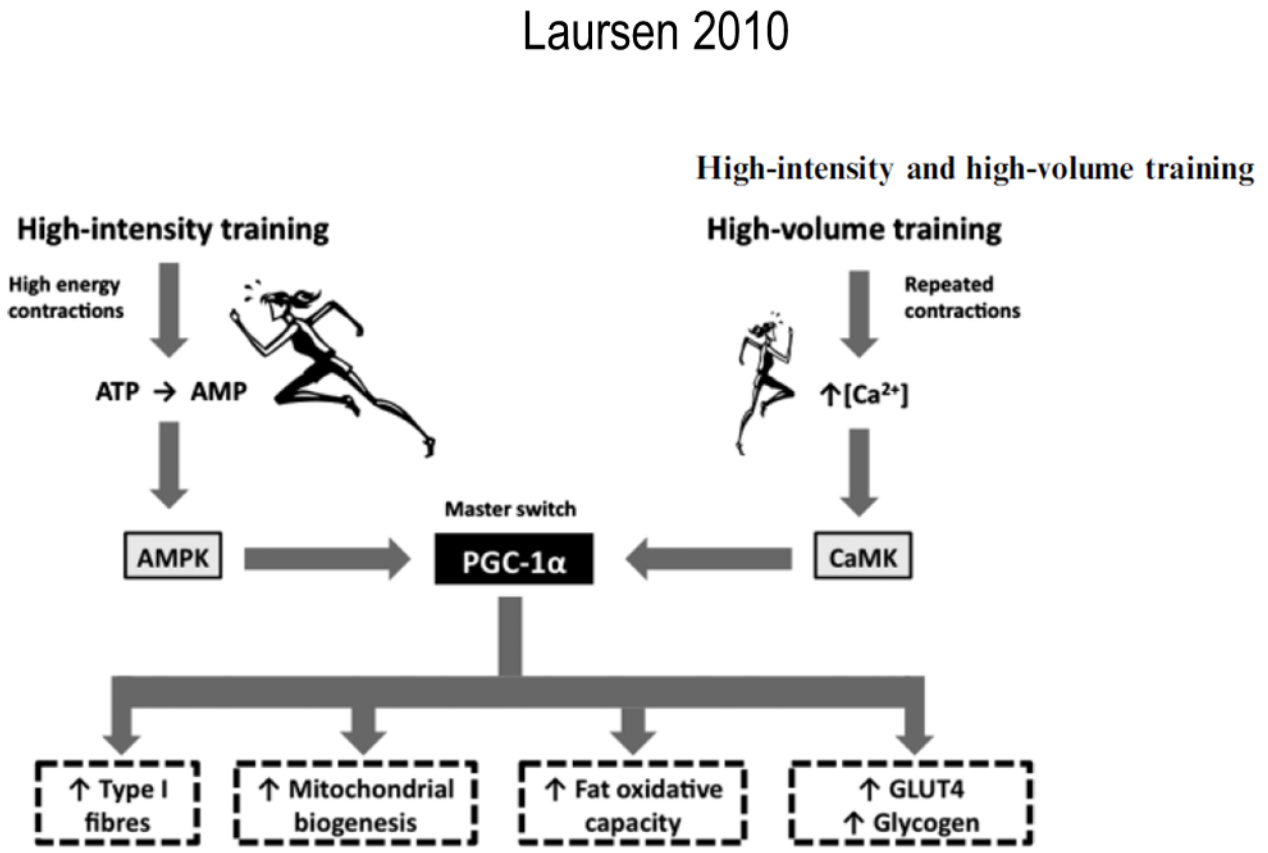

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UK TEAM SPORT > News > Free access

05 January 2015

Free access to scientific articles on football and health

OPEN ACCESS You can now get a free special edition of the Scandinavian Journal of Medicine & Science in Sports containing 16 scientific articles on football for the prevention and treatment of lifestyle diseases.

Click on the image to access PDF versions of the articles.

Thanks to the support of FIFA, the international governing body of football, the Copenhagen Centre for Team Sport and Health is now able to offer everyone access to a special edition of the *Scandinavian Journal of Medicine & Science in Sports*, vol. 24, entitled "Football for Health - Prevention and Treatment of Non-Communicable Diseases across the Lifespan through Football".

"Normally, you have to pay – e.g. through a subscription – to get access to scientific publications, so we're delighted that FIFA has made it possible for us to extend our research articles to anyone who is interested in the subject of football and health," said associate professor Laila Ottesen, co-author of one of the articles and a member of the Copenhagen Centre for Team Sport and Health's communication committee.

The articles, based on the research of the Copenhagen Centre for Team Sport

Calcio Ricreativo & Salute

- Esercizio Fisico → Salute
- ~ 500 milioni Praticanti
- Salute Pubblica
- Prevenzione ↔ Cura Malattie non Trasmissibili
- Evidenze?

Team Sports and Health

Scand J Med Sci Sports 2014: 24 (Suppl. 1): 4–9
doi: 10.1111/sms.12277

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SCANDINAVIAN JOURNAL OF MEDICINE & SCIENCE IN SPORTS

Structural and functional cardiac adaptations to a 10-week school-based football intervention for 9–10-year-old children

P. Krustrup[1,2], P. R. Hansen[3], C. M. Nielsen[1,4], M. N. Larsen[1], M. B. Randers[1], V. Manniche[4], L. Hansen[5], J. Dvorak[6], J. Bangsbo[1]

[1]Copenhagen Centre for Team Sport and Health, Department of Nutrition, Exercise and Sports, University of Copenhagen, Denmark, [2]Sport and Health Sciences, College of Life and Environmental Sciences, St. Luke's Campus, University of Exeter, Exeter, UK, [3]Department of Cardiology, Gentofte University Hospital, Denmark, [4]Frederikssund Municipality, Frederikssund, Denmark, [5]Anti Doping Danmark, Brøndby, Denmark, [6]FIFA Medical Assessment and Research Centre (F-MARC) and Schulthess Klinik, Zurich, Switzerland

Corresponding author: Peter Krustrup, Copenhagen Centre for Team Sport and Health, Department of Nutrition, Exercise and Sports, University of Copenhagen, DK-2100 Copenhagen Ø, Denmark. Tel: +45 2116 1530, Fax: +45 3532 1600, E-mail: pkrustrup@nexs.ku.dk

Accepted for publication 23 May 2014

The present study investigated the cardiac effects of a 10-week football training intervention for school children aged 9–10 years using comprehensive transthoracic echocardiography as a part of a larger ongoing study. A total of 97 pupils from four school classes were cluster-randomized into a control group that maintained their usual activities (CON; two classes, $n = 51$, 21 boys and 30 girls) and a football training group that performed an additional 3×40 min of small-sided football training per week (FT; two classes, $n = 46$, 23 boys and 23 girls). No baseline differences were observed in age, body composition, or echocardiographic variables between FT and CON. After the 10-week intervention, left ventricular posterior wall diameter was increased in FT compared with CON [0.4 ± 0.7 vs -0.1 ± 0.6 ($\pm$ SD) mm; $P < 0.01$] as was the interventricular septum thickness (0.2 ± 0.7 vs -0.2 ± 0.8 mm; $P < 0.001$). Global isovolumetric relaxation time increased more in FT than in CON (3.8 ± 10.4 vs -0.9 ± 6.6 ms, $P < 0.05$) while the change in ventricular systolic ejection fraction tended to be higher (1.4 ± 8.0 vs $-1.1 \pm 5.5\%$; $P = 0.08$). No changes were observed in resting heart rate or blood pressure. In conclusion, a short-term, school-based intervention comprising small-sided football sessions resulted in significant structural and functional cardiac adaptations in pre-adolescent children.

Team Sports and Health

Scand J Med Sci Sports 2014: 24 (Suppl. 1): 147–150
doi: 10.1111/sms.12271

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SCANDINAVIAN JOURNAL OF MEDICINE & SCIENCE IN SPORTS

Executive summary: Football for health – prevention and treatment of non-communicable diseases across the lifespan through football

J. Bangsbo[1], A. Junge[2], J. Dvorak[2], P. Krustrup[1,3]

[1]Copenhagen Centre for Team Sport and Health, Department of Nutrition, Exercise and Sports, University of Copenhagen, Copenhagen, Denmark, [2]FIFA Medical Assessment and Research Centre (F-MARC) and Schulthess Klinik, Zürich, Switzerland, [3]Sport and Health Sciences, College of Life and Environmental Sciences, University of Exeter, Exeter, UK
Corresponding author: Peter Krustrup PhD, Copenhagen Centre for Team Sport and Health, Department of Nutrition, Exercise and Sports, University of Copenhagen, Copenhagen, Denmark. Tel: +45 21161530, Fax: +45 35321600, E-mail: pkrustrup@nexs.ku.dk

Accepted for publication 19 May 2014

This supplement contains 16 original articles describing how football conducted as small sided games affects fitness and health of untrained individuals across the lifespan. The intermittent nature of football and high exercise intensity result in a broad range of effects. The heart changes its structure and improves its function. Blood pressure is markedly reduced with the mean arterial blood pressure being lowered by ~10 mmHg for hypertensive men and women training 2–3 times/week for 12–26 weeks. Triglycerides and cholesterol are lowered and body fat declines, especially in middle-aged men and women with type 2 diabetes. Furthermore, muscle mass and bone mineral density increases in a number of participant groups, including 65–75-year-old men. The functional capacity is elevated with increases in VO_2max of 10–15%, and 50–100% improvements in the capacity to perform intermittent work within 16 weeks. These effects apply irrespective of whether the participants are young, overweight, elderly or suffering from a disease. The studies clearly show that the participants enjoy playing football and form special relationships with their team mates. Thus, football is a healthy activity, providing a unique opportunity to increase recruitment and adherence to physical activity in a hitherto underserved population, and to treat and rehabilitate patients with hypertension, type 2 diabetes and prostate cancer.

Calcio Ricreativo & Salute

Effetti Aerobici Acuti

- Calcio Ricreativo <11v11
- FC media 82-85% Massima Individuale
- ~20% ≥ 90% FC Massima Individuale
- Effetti Funzionalità Aerobica?

Bangsbo e coll. 2014-2015

Calcio Ricreativo

Miglioramento

- Fitness Aerobica
- Fitness Anaerobica
- 9-70anni

Calcio Ricreativo

Carico di lavoro

- **FC 82-85% massima**
- **20%≥ 90% FCmax**
- **Corsa 1%**

Krustrup et al., 2010

Calcio Ricreativo

Miglioramenti

- **Funzionalità Cardiaca**
- **3-6 mesi**
- **Ipertesi**
- **65-75 anni**

Bangsbo et al., 2014

Calcio Ricreativo

Miglioramenti

- **Funzionalità Cardiaca**
- **Scolari 9-10 anni**
- **3v3 3x40’/settimana**
- **10 settimane**

Bangsbo et al., 2014

Calcio Ricreativo

Miglioramenti

- **Densità Ossea**
- **Pressione Arteriosa**
- **Composizione Corporea**
- **Equilibrio**

Bangsbo et al., 2014

Calcio Ricreativo

Miglioramenti:

- Direttamente proporzionali età dei praticanti
- Inversamente proporzionali fitness praticanti

Krustrup et al., 2010b; Bangsbo et al., 2014

Calcio Ricreativo

Miglioramenti VO_2max:

- 10-11% Diabetici (48-68 anni)
- 2x1h per settimana e per 15-24 settimane

  Andersen et al., 2014b; de Sousa et al., 2014
- 16-18% Maschi Sani (65-75 anni)

  Schmidt et al., 2014

Calcio Ricreativo

Miglioramenti Forza:

- +15% in Pazienti Tumore Prostata (43-74 anni)
- Sottoposti a terapia anti-androgenica

Uth et al., 2014

Miglioramenti Flessibilità:

- +8-29% sit-and-reach

Uth et al., 2014

Calcio Ricreativo

Miglioramenti Socializzazione:

- Attività di Gruppo
- Buon Umore
- Propensione all'esercizio fisico
- Stile di Vita Sano

Bangsbo 2014

Calcio Ricreativo

Principi:

- Attività Spontanea «Just Play»
- 3v3, 5v5 e 7v7
- 80 m^2 per giocatore
- RPE 4.6 e le 4.9 unità arbitrarie
- Lattato 5.5 e le 5.9 $mmol \cdot l^{-1}$
- FC 83-85% (picco 96%)
- 3600m (4x12')

Randers e coll. 2010

Calcio Ricreativo

Principi:

- «3v3» 80m^2
- Maggiori Accelerazioni alta intensità
- Cautela nella proposta

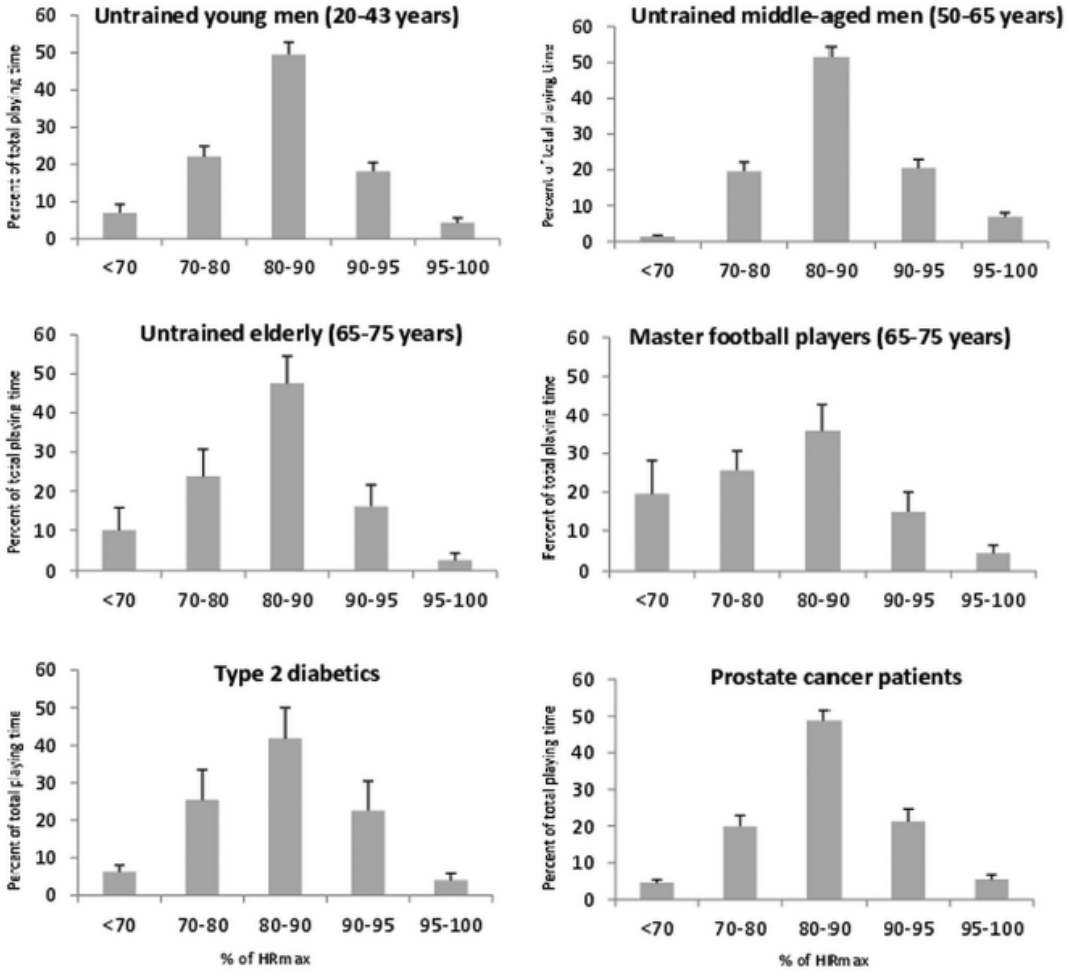
Randers e coll. 2010

Calcio Ricreativo

Conclusioni:

- La pratica del calcio ricreativo costituisce un enorme capitale sociale per la salute dei cittadini di ogni età e sesso
- E’ ipotizzabile l’ottenimento di simili risultati sulla salute con altri sport di squadra

Calcio Ricreativo & Salute



Bangsbo et al 2015

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Calcio Ricreativo & Salute

Effetti struttura e funzione del muscolo cardiaco

- **Soggetti Ipertesi 40-50 anni (3-6 mesi)**
- **Soggetti Sedentari 65-75 anni (4-12 mesi)**
- **Studenti 9-10 anni (10 settimane)**

Bangsbo e coll. 2014-2015

Calcio Ricreativo & Salute

Effetti struttura e funzione del muscolo cardiaco

- **Studenti 9-10 anni (10 settimane)**
- **3x40’ /settimana → 3v3**
- **Lezioni di Educazione Fisica**

Bangsbo e coll. 2014-2015

Calcio Ricreativo & Salute

Effetti VO_2max

- **Revisione Sistematica 18 Training Studies**
- **Incremento medio → +10.7%**
- + 3.61 $ml \cdot kg^{-1} \cdot min^{-1}$ di VO_2 vs Training Classico
- CR effetti Simili o Superiori a HIT

Calcio Ricreativo & Salute

Effetti VO_2max

- **Revisione Sistematica 18 Training Studies**
- **Incremento medio → +10.7%**
- + 3.61 $ml \cdot kg^{-1} \cdot min^{-1}$ di VO_2 vs Training Classico
- CR effetti Simili o Superiori a HIT

Controllo (Passivo)
Controllo (Attivo)

Calcio Ricreativo & Salute

Effetti VO_2max

- Soggetti Diabetici tipo 2 (48-68 anni)
- 2 volte settimana x 15-24 settimane
- +10-11%

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Calcio Ricreativo & Salute

Effetti VO_2max

- Soggetti Sani (65-75 anni)
- 2 volte settimana
- Dopo 4 mesi → +16%
- Dopo 12 mesi → +18%

Bangsbo e coll. 2014-2015

Calcio Ricreativo & Salute

Effetti Fitness Aerobica

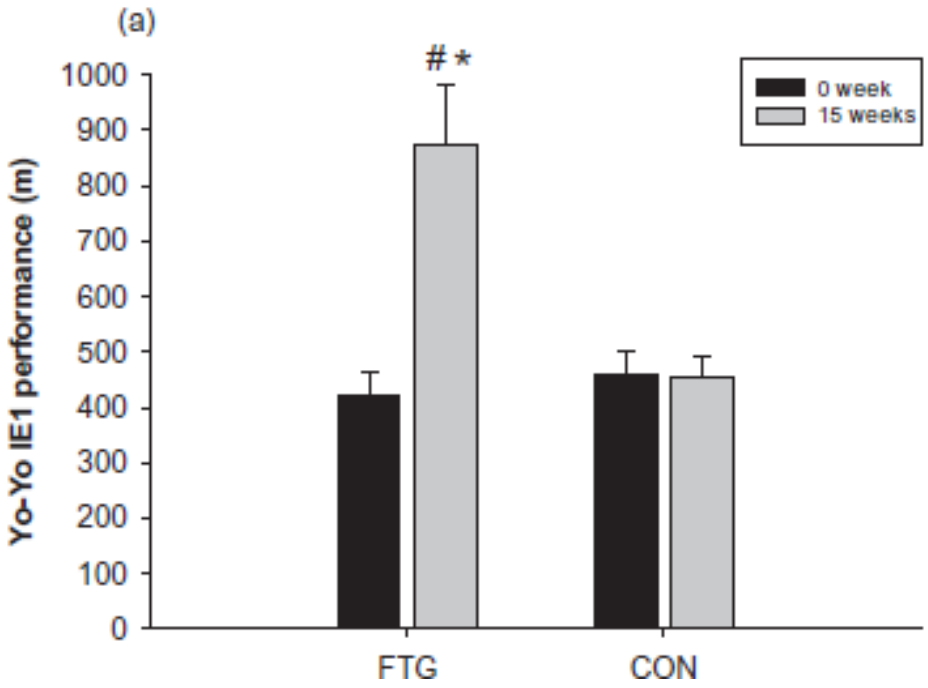
- **Test da campo → Yo-Yo IE1-2**
- **+40-110%**
- **Fattori: Genere, età e volume allenamento**

Bangsbo e coll. 2014-2015

Calcio Ricreativo & Salute

Effetti Fitness Aerobica

Donne Ipertese

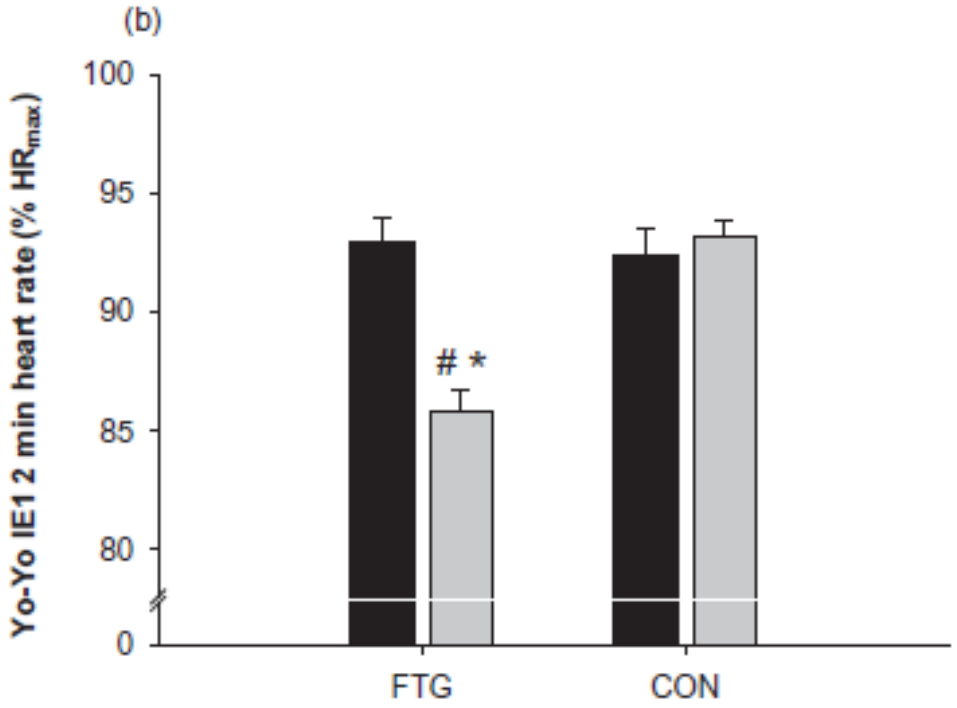


Mohr et al 2014

Calcio Ricreativo & Salute

Effetti Fitness Aerobica

Donne Ipertese



Mohr et al 2014

Calcio Ricreativo & Salute

Effetti Fitness Aerobica

La pratica del calcio ricreativo risulta, alla luce dei risultati ottenuti, efficace nel promuovere un miglioramento importante della funzionalità aerobica mediante un esercizio fisico che a parità di intensità determina una ridotta percezione dello sforzo nei suoi praticanti.

Calcio Ricreativo & Salute

Effetti Funzionalità Aerobica

- Importanti Effetti
- Con attività ludica
- Ridotta Percezione dello Sforzo

Calcio Ricreativo & Salute

Effetti sulle malattie non trasmissibili

- Ipertensione
- Diabete
- Tumore Prostata
- Sindrome Metabolica
- Malattie Cardiovascolari

Calcio Ricreativo & Salute

IPERTENSIONE

Soggetti maschi ipertesi

- **2h x settimana in 26 settimane**
- **Riduzione 8 e 13 mmHg P. diastolica e sistolica**

Soggetti maschi diabetici ipertesi

- **2h x settimana in 12 settimane**
- **Riduzione 9 e 11 mmHg P. diastolica e sistolica**

Calcio Ricreativo & Salute

Scand J Med Sci Sports 2014: 24 (Suppl. 1): 36–42
doi: 10.1111/sms.12278

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SCANDINAVIAN JOURNAL OF MEDICINE & SCIENCE IN SPORTS

Football training improves cardiovascular health profile in sedentary, premenopausal hypertensive women

M. Mohr[1,2,3], A. Lindenskov[4], P. M. Holm[5], H. P. Nielsen[6], J. Mortensen[7,8], P. Weihe[9], P. Krustrup[1,10]

[1]Sport and Health Sciences, College of Life and Environmental Sciences, St. Luke's Campus, University of Exeter, Exeter, UK, [2]Department of Food and Nutrition, and Sport Sciences, University of Gothenburg, Gothenburg, Sweden, [3]Faculty of Natural and Health Sciences, University of the Faroe Islands, [4]The Faroese Confederation of Sports and Olympic Committee, Torshavn, Faroe Islands, [5]Institute of Sport Science and Clinical Biomechanics, University of Southern Denmark, Odense, Denmark, [6]Southern Hospital, The Faroese Hospital System, Torshavn, Faroe Islands, [7]Department of Medicine, The Faroese National Hospital, Torshavn, Faroe Islands, [8]Department of Clinical Physiology, Nuclear Medicine and PET, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, [9]Department of Occupational Medicine and Public Health, The Faroese Hospital System, Torshavn, Faroe Islands, [10]Department of Nutrition, Exercise and Sports, Copenhagen Centre for Team Sport and Health, University of Copenhagen, Copenhagen, Denmark

Corresponding author: Magni Mohr, College of Life and Environmental Sciences, St. Luke's Campus, Heavitree Road, Exeter EX1 2LU, UK. Tel: +44 1392724759, Fax: +44 1392 264726, E-mail: m.mohr@exeter.ac.uk

Accepted for publication 23 May 2014

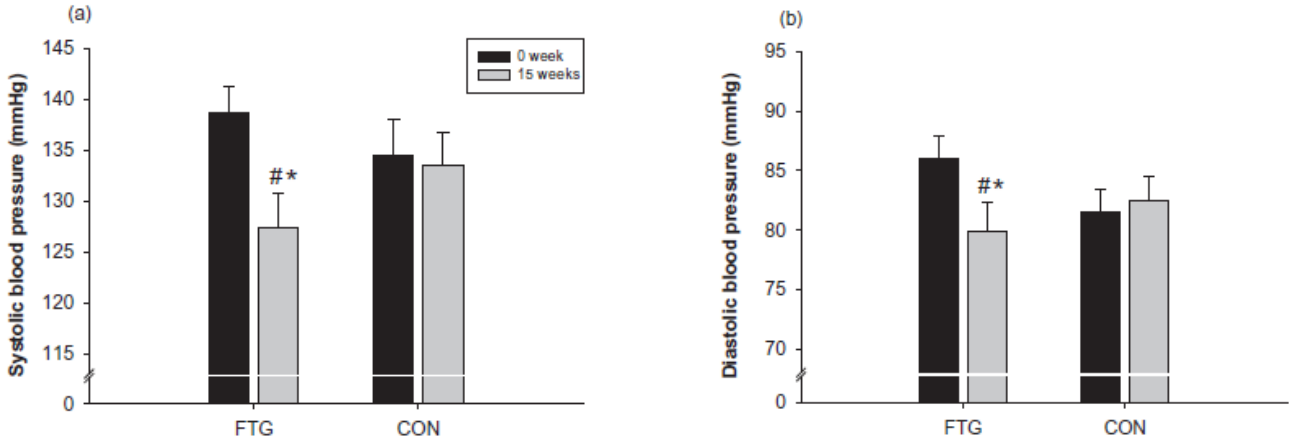
The present study examined the effects of short-term recreational football training on blood pressure (BP), fat mass, and fitness in sedentary, 35–50-year-old premenopausal women with mild hypertension. Forty-one untrained, hypertensive women were randomized into a football training group ($n = 21$; FTG) and a control group ($n = 20$; CON). FTG performed 45 ± 1 1-h small-sided football training sessions during the 15-week intervention period. BP, body composition (dual-energy x-ray absorptiometry), blood lipid profile, and fitness level were determined pre- and post-intervention. After 15 weeks, systolic and diastolic BP, respectively, were lowered more ($P < 0.05$) in FTG (–12 ± 3 and –6 ± 2 mmHg) than in CON (–1 ± 1 and 1 ± 2 mmHg). Total body fat mass decreased more ($P < 0.05$) in FTG than in CON during the 15-week intervention period (–2.3 ± 0.5 kg vs 0.4 ± 0.3 kg). After 15 weeks, both total cholesterol (–0.4 ± 0.1 mmol/L vs 0.1 ± 0.2 mmol/L) and triglyceride (–0.2 ± 0.1 mmol/L vs 0.3 ± 0.2 mmol/L) were lowered more ($P < 0.05$) in FTG than in CON. Yo-Yo intermittent endurance level 1 test performance increased more ($P < 0.05$) in FTG than in CON (111 ± 18% vs 1 ± 3%) during the 15-week intervention period. In conclusion, short-term football training resulted in a marked reduction in BP and induced multiple improvements in fitness and cardiovascular health profile of untrained, premenopausal women with mild hypertension.

Calcio Ricreativo & Salute

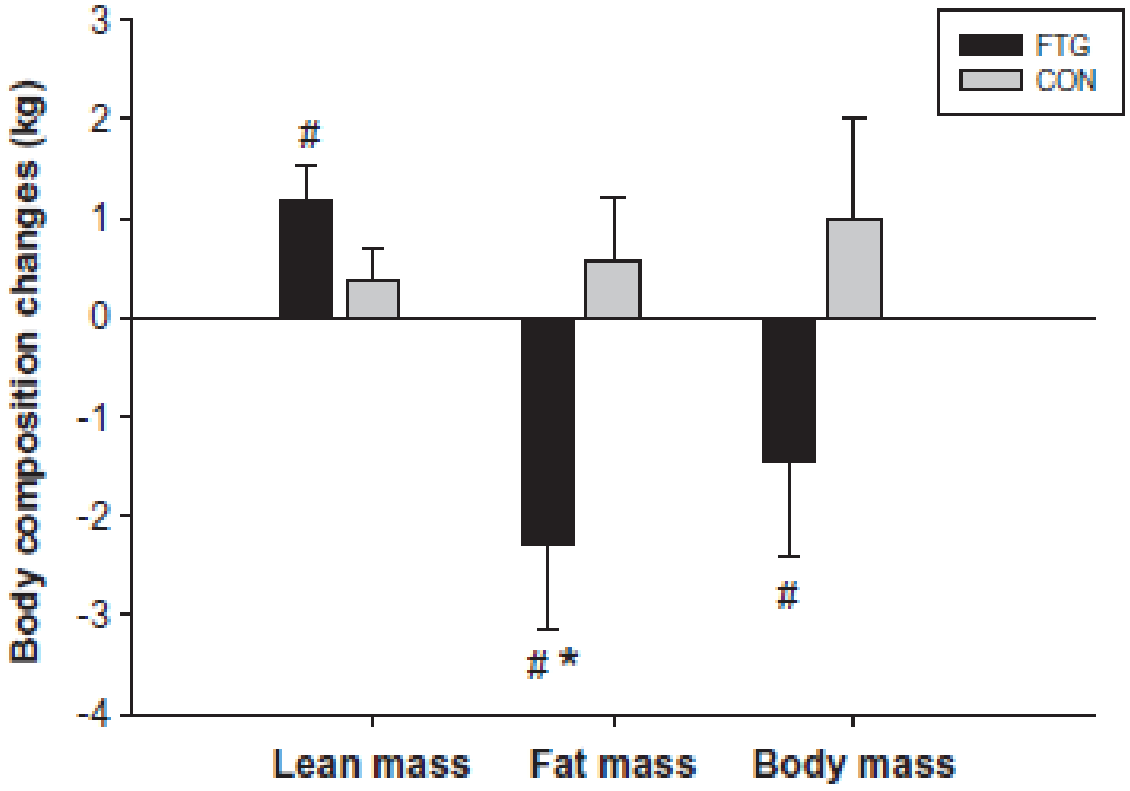
IPERTENSIONE

Soggetti femmine ipertese

- **3h x settimana in 15 settimane**
- **Riduzione 6 e 12 mmHg P. diastolica e sistolica**



Calcio Ricreativo & Salute



Mohr et al 2014

Calcio Ricreativo & Salute

- Recreational football training conducted as small-sided games has marked effects on the cardiovascular system with average heart rates being around 80% of maximal heart rate (HRmax) and substantial time is spent above 90%HRmax even for elderly and patient groups.
- Recreational football training has broad-ranging physiological effects. It lowers systolic and diastolic blood pressure by typically 7–8 and 5–7 mm Hg, respectively, and even more in hypertensive and patients with type II diabetes.
- Recreational football improves left and right ventricular function and increases VO_2max by 7–15% and even more in 65–75-year-old men.
- Recreational football also lowers body fat, total cholesterol and low-density lipoprotein cholesterol, and increases leg muscle mass and bone mineral content, as well as muscle oxidative enzymes and functional capacity.
- Recreational football training produces more pronounced broad-spectrum adaptations than training programmes solely focusing on continuous jogging, interval running or strength training.

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Team Sports and Health

Conclusions - 3

1) The type of physical training is important for the fitness and health outcomes

2) Intense interval training is a time-efficient way of improving fitness and health status of elite team sport athletes as well as the general population

3) Recreational football has broad spectrum cardiovacular and and musculoskeletal fitness and health effects

4) Recreational football is easy to organise as effective health promoting training for children, adults and elderly independently of skills, gender and socio-economic status

Krustrup 2011

Team Sports and Health: Pallamano

Hindawi
BioMed Research International
Article ID 6204603

Research Article

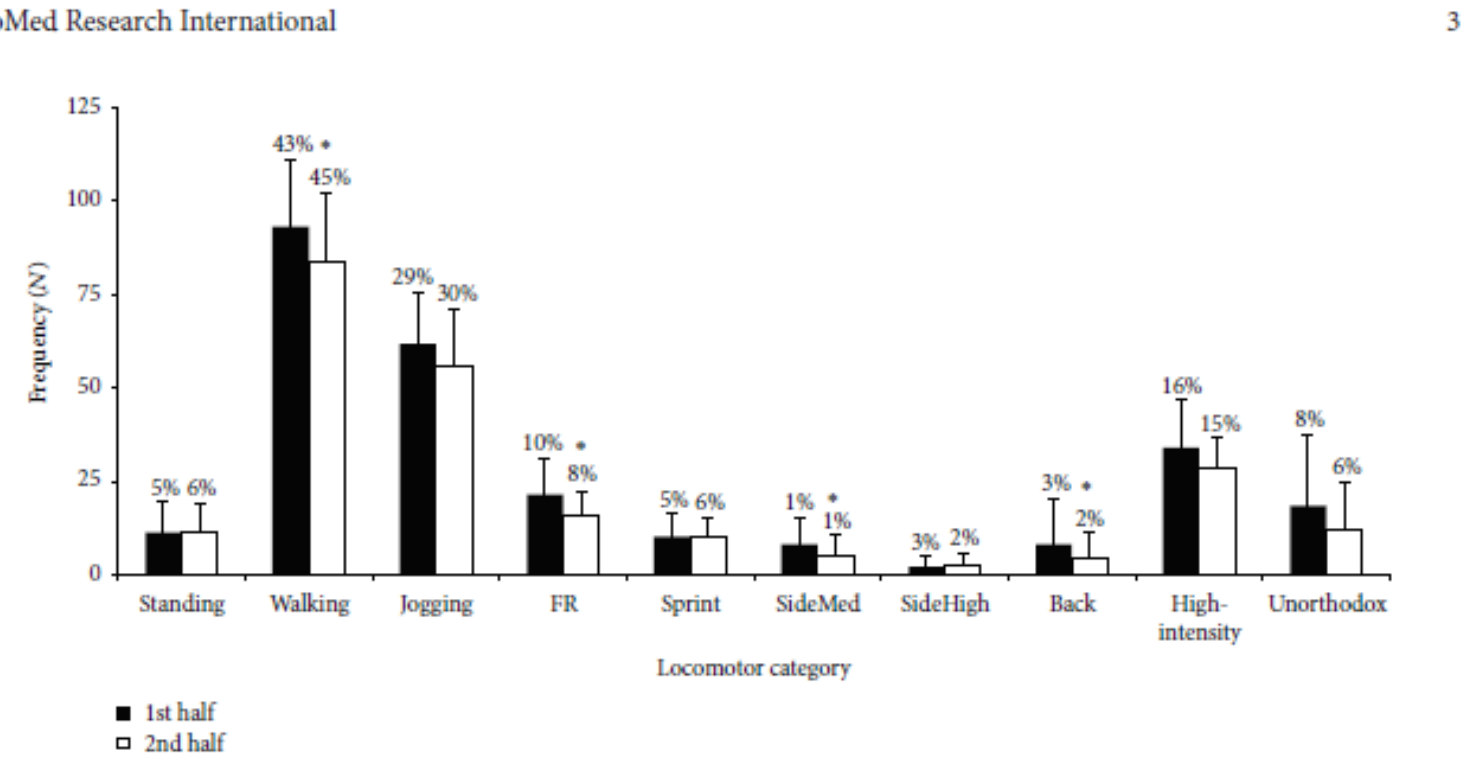
Physical and Physiological Demands of Recreational Team Handball for Adult Untrained Men

Susana C. A. Póvoas,[1] Carlo Castagna,[2,3] Carlos Resende,[4,5] Eduardo Filipe Coelho,[6] Pedro Silva,[4,7] Rute Santos,[4,7,8] André Seabra,[7] Juan Tamames,[9] Mariana Lopes,[4,7] Morten Bredsgaard Randers,[10] and Peter Krustrup[10,11]

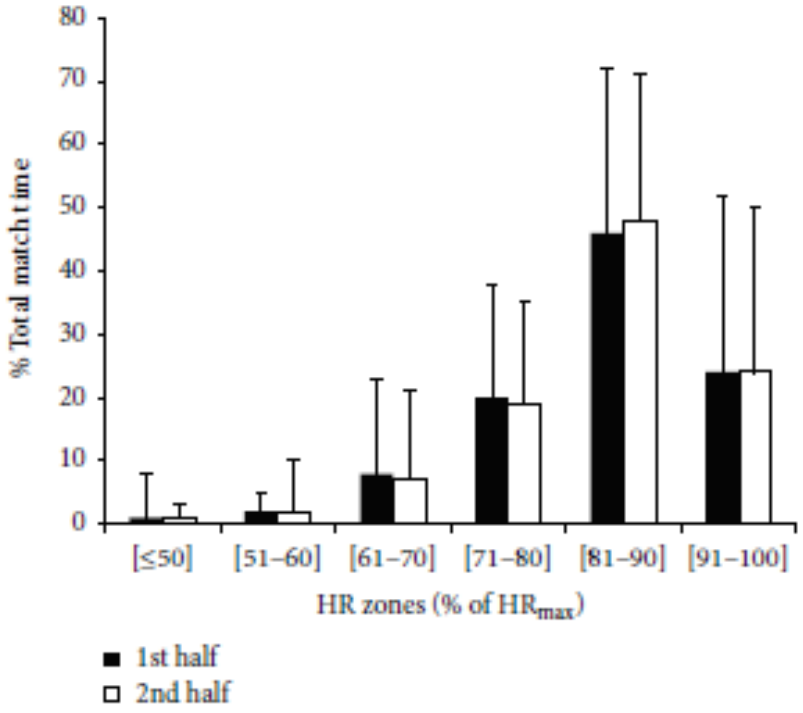
[1] *Research Center in Sports Sciences, Health Sciences and Human Development, CIDESD, University Institute of Maia, ISMAI, Maia, Portugal*
[2] *Fitness Training and Biomechanics Laboratory, Italian Football Federation, Technical Department, Coverciano, Florence, Italy*
[3] *School of Sport and Exercise Sciences, University of Rome Tor Vergata, Rome, Italy*
[4] *University Institute of Maia, ISMAI, Maia, Portugal*
[5] *Center of Research, Education, Innovation and Intervention in Sport, Faculty of Sport, University of Porto, Porto, Portugal*
[6] *Portuguese Handball Federation, Lisbon, Portugal*
[7] *Research Center in Physical Activity, Health and Leisure, Faculty of Sport, University of Porto, Porto, Portugal*
[8] *Early Start Research Institute, School of Education, Faculty of Social Sciences, University of Wollongong, Wollongong, NSW, Australia*
[9] *Department of Chemistry and Biochemistry, Faculty of Sciences, University of Porto, Porto, Portugal*
[10] *Department of Sports Science and Clinical Biomechanics, SDU Sport and Health Sciences Cluster (SHSC), University of Southern Denmark, Odense, Denmark*
[11] *Sport and Health Sciences, College of Life and Environmental Sciences, University of Exeter, Exeter, UK*

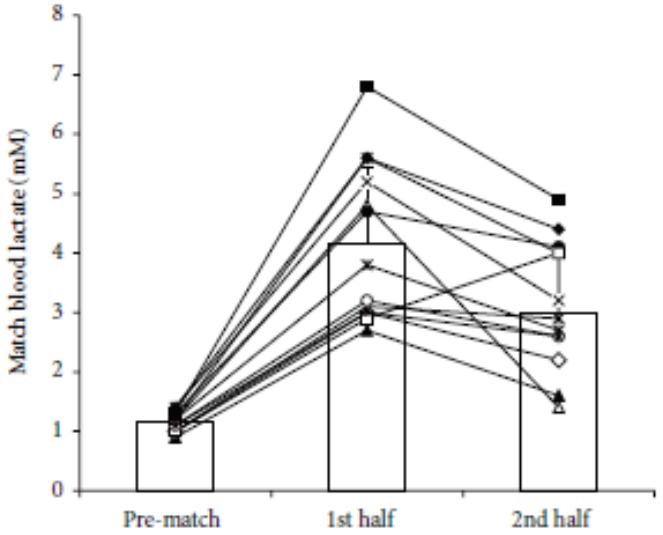
Correspondence should be addressed to Susana C. A. Póvoas; spovoas@ismai.pt

Team Sports and Health: Pallamano



Team Sports and Health: Pallamano





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Giochi Sportivi e Salute: Un Approccio Integrato al Wellness

Carlo Castagna PhD
Università Roma Tor Vergata
Settore Tecnico FIGC, Coverciano