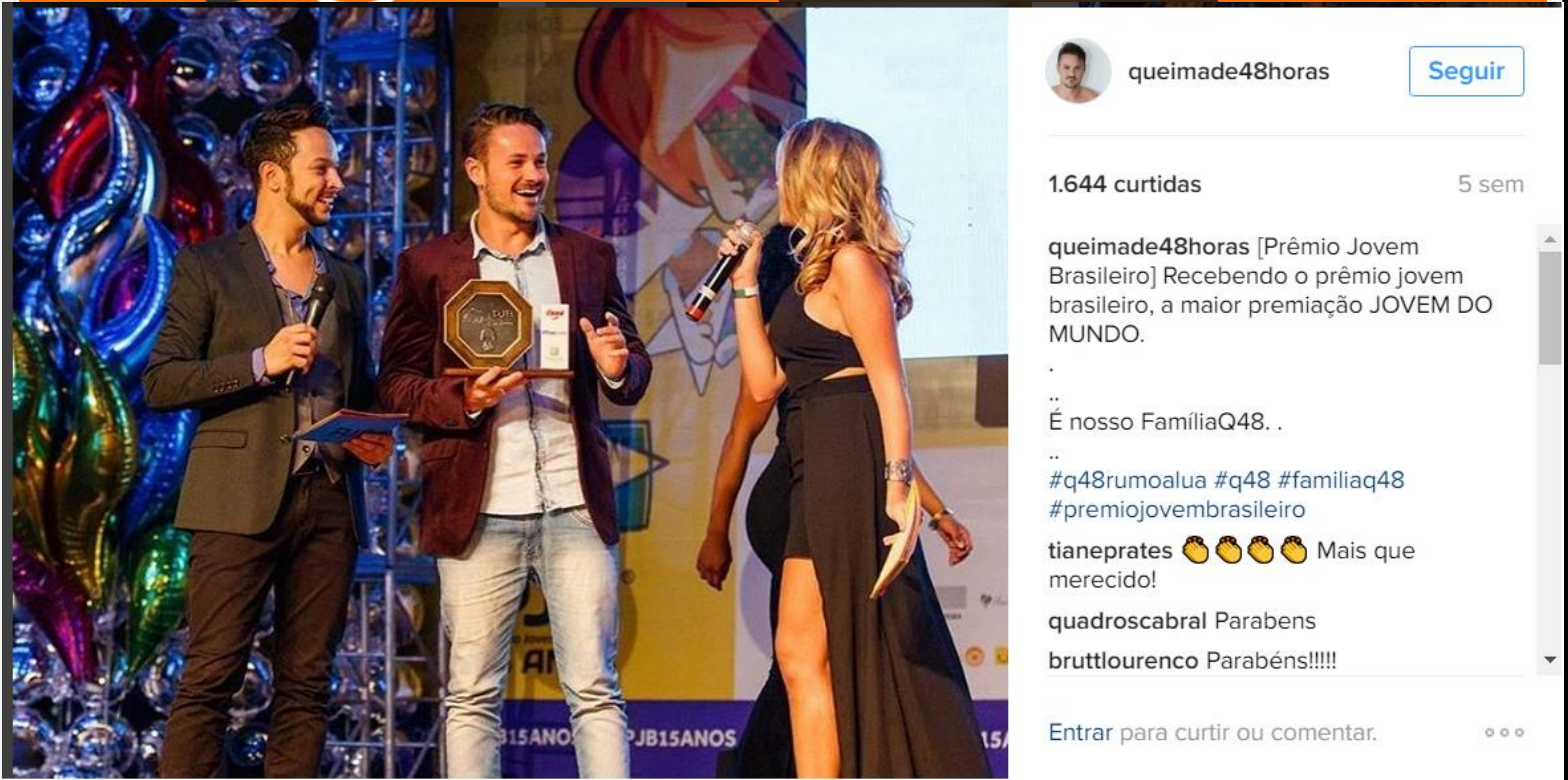
Exercícios Inteligentes: Menos Tempo - MAIS RESULTADOS

Vinícius Possebon
Certificado Q48
Preparador Físico
Coach

- [A FRUSTRAÇÃO] Gasto Calórico para emagrecer? NÃO É BEM ASSIM
- [A DESCOBERTA] Metade do TEMPO e o TRIPLO DE RESULTADOS
- [CARA A TAPA] Sem equipamentos e sem academia!
- [A PROVA CABAL] 90% a menos de tempo e o MESMO RESULTADO
- [1 MINUTO?] Obrigado mais uma vez Gibala



queimade48horas

1.644 curtidas 5 sem

queimade48horas [Prêmio Jovem Brasileiro] Recebendo o prêmio jovem brasileiro, a maior premiação JOVEM DO MUNDO.

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É nosso FamíliaQ48. .

..

#q48rumoalua #q48 #familiaq48 #premiojovembrasileiro

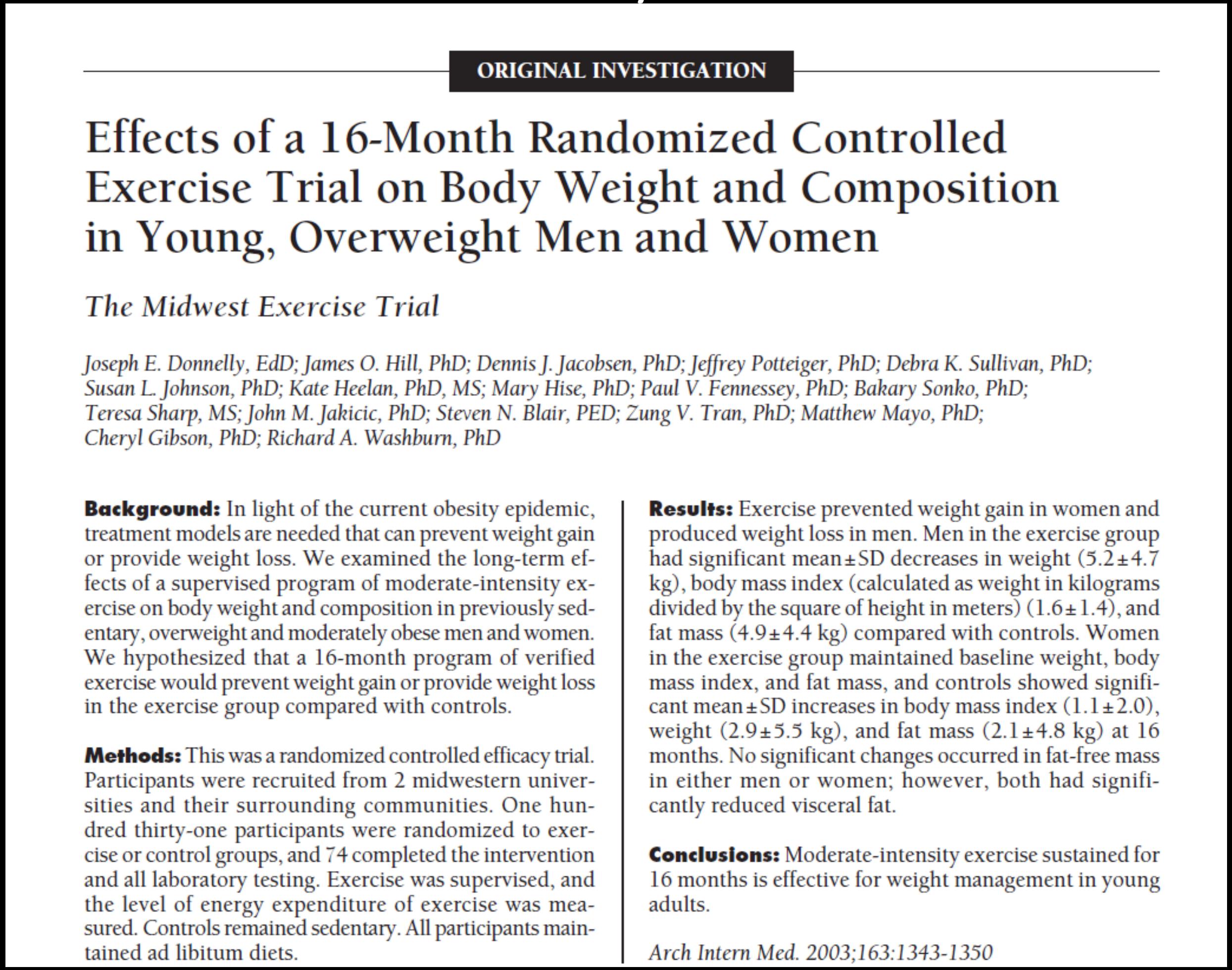
tianeprates 👏👏👏👏 Mais que merecido!

quadroscabral Parabens

bruttlourenco Parabéns!!!!!

[A FRUSTRAÇÃO] Gasto Calórico para emagrecer? NÃO É BEM ASSIM

Donelly 2003



ORIGINAL INVESTIGATION

Effects of a 16-Month Randomized Controlled Exercise Trial on Body Weight and Composition in Young, Overweight Men and Women

The Midwest Exercise Trial

Joseph E. Donnelly, EdD; James O. Hill, PhD; Dennis J. Jacobsen, PhD; Jeffrey Potteiger, PhD; Debra K. Sullivan, PhD; Susan L. Johnson, PhD; Kate Heelan, PhD, MS; Mary Hise, PhD; Paul V. Fennessey, PhD; Bakary Sonko, PhD; Teresa Sharp, MS; John M. Jakicic, PhD; Steven N. Blair, PED; Zung V. Tran, PhD; Matthew Mayo, PhD; Cheryl Gibson, PhD; Richard A. Washburn, PhD

Background: In light of the current obesity epidemic, treatment models are needed that can prevent weight gain or provide weight loss. We examined the long-term effects of a supervised program of moderate-intensity exercise on body weight and composition in previously sedentary, overweight and moderately obese men and women. We hypothesized that a 16-month program of verified exercise would prevent weight gain or provide weight loss in the exercise group compared with controls.

Methods: This was a randomized controlled efficacy trial. Participants were recruited from 2 midwestern universities and their surrounding communities. One hundred thirty-one participants were randomized to exercise or control groups, and 74 completed the intervention and all laboratory testing. Exercise was supervised, and the level of energy expenditure of exercise was measured. Controls remained sedentary. All participants maintained ad libitum diets.

Results: Exercise prevented weight gain in women and produced weight loss in men. Men in the exercise group had significant mean±SD decreases in weight (5.2±4.7 kg), body mass index (calculated as weight in kilograms divided by the square of height in meters) (1.6±1.4), and fat mass (4.9±4.4 kg) compared with controls. Women in the exercise group maintained baseline weight, body mass index, and fat mass, and controls showed significant mean±SD increases in body mass index (1.1±2.0), weight (2.9±5.5 kg), and fat mass (2.1±4.8 kg) at 16 months. No significant changes occurred in fat-free mass in either men or women; however, both had significantly reduced visceral fat.

Conclusions: Moderate-intensity exercise sustained for 16 months is effective for weight management in young adults.

Arch Intern Med. 2003;163:1343-1350

1kg de Gordura = 7700 calorias queimadas

HOMENS

- Homens estavam em déficit calórico de 350kcal/dia
- 350 X 480dias = 168.000 calorias de déficit

168.000/7700 = 21.8kg

ISTO É, OS HOMENS DEVERIAM PERDER 21.8 KG EM 16 MESES

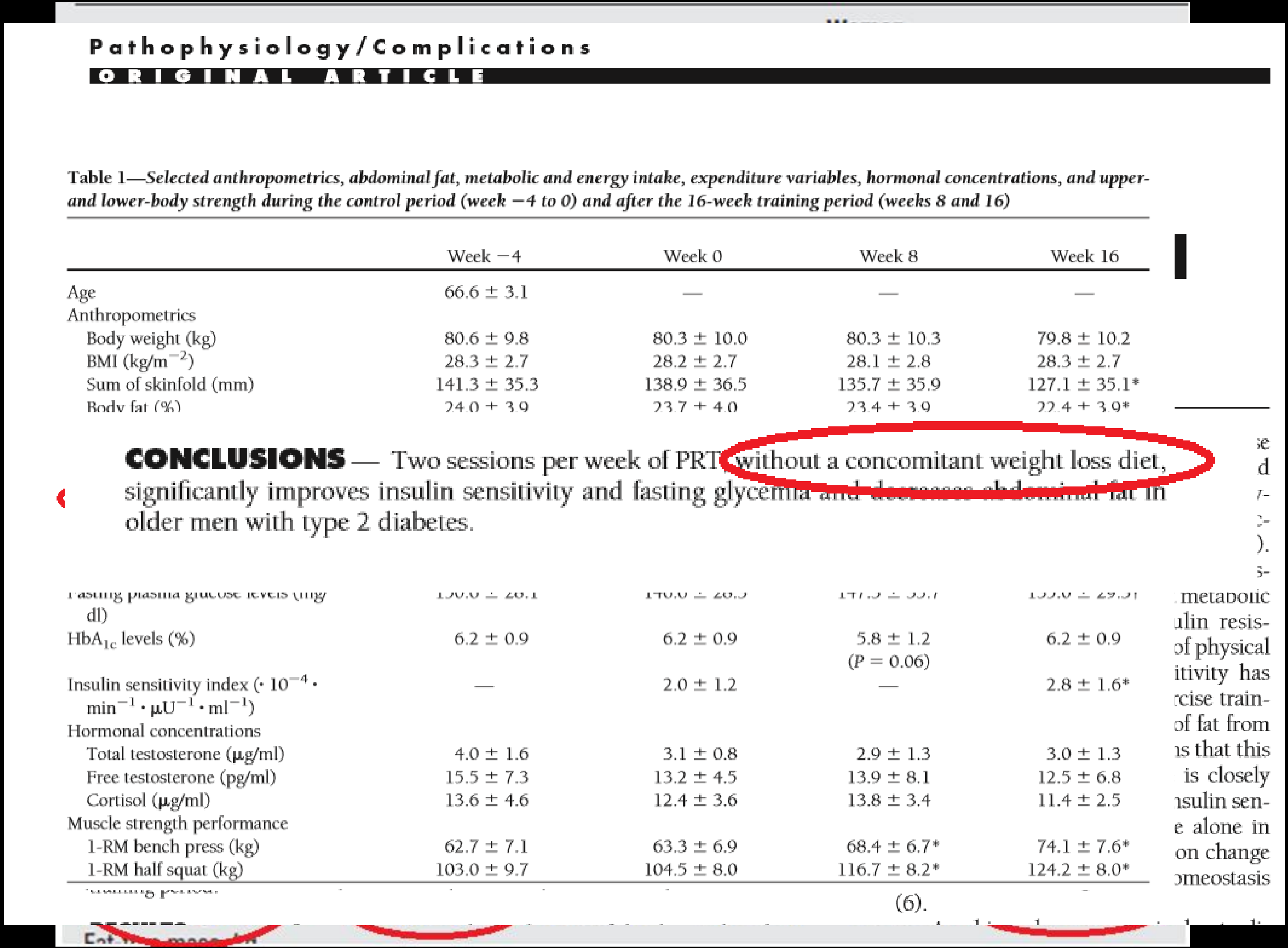
1kg de Gordura = 7700 calorias queimadas

MULHERES

- Mulheres estavam em déficit calórico de 220kcal/dia
- 220 X 480 dias = 105.600 calorias de déficit

105.600/7700 = 13.7kg

ISTO É, AS MULHERES DEVERIAM PERDER 13.7KG EM 16 MESES



Pathophysiology/Complications

ORIGINAL ARTICLE

Table 1—*Selected anthropometrics, abdominal fat, metabolic and energy intake, expenditure variables, hormonal concentrations, and upper- and lower-body strength during the control period (week −4 to 0) and after the 16-week training period (weeks 8 and 16)*

	Week −4	Week 0	Week 8	Week 16
Age	66.6 ± 3.1	—	—	—
Anthropometrics				
Body weight (kg)	80.6 ± 9.8	80.3 ± 10.0	80.3 ± 10.3	79.8 ± 10.2
BMI (kg/m^{-2})	28.3 ± 2.7	28.2 ± 2.7	28.1 ± 2.8	28.3 ± 2.7
Sum of skinfold (mm)	141.3 ± 35.3	138.9 ± 36.5	135.7 ± 35.9	127.1 ± 35.1*
Body fat (%)	24.0 ± 3.9	23.7 ± 4.0	23.4 ± 3.9	22.4 ± 3.9*
Fasting plasma glucose levels (mg/dl)	150.0 ± 28.1	140.0 ± 28.5	147.5 ± 33.7	135.0 ± 29.5†
HbA$_{1c}$ levels (%)	6.2 ± 0.9	6.2 ± 0.9	5.8 ± 1.2 (P = 0.06)	6.2 ± 0.9
Insulin sensitivity index (· 10^{-4} · min^{-1} · μU^{-1} · ml^{-1})	—	2.0 ± 1.2	—	2.8 ± 1.6*
Hormonal concentrations				
Total testosterone (μg/ml)	4.0 ± 1.6	3.1 ± 0.8	2.9 ± 1.3	3.0 ± 1.3
Free testosterone (pg/ml)	15.5 ± 7.3	13.2 ± 4.5	13.9 ± 8.1	12.5 ± 6.8
Cortisol (μg/ml)	13.6 ± 4.6	12.4 ± 3.6	13.8 ± 3.4	11.4 ± 2.5
Muscle strength performance				
1-RM bench press (kg)	62.7 ± 7.1	63.3 ± 6.9	68.4 ± 6.7*	74.1 ± 7.6*
1-RM half squat (kg)	103.0 ± 9.7	104.5 ± 8.0	116.7 ± 8.2*	124.2 ± 8.0*

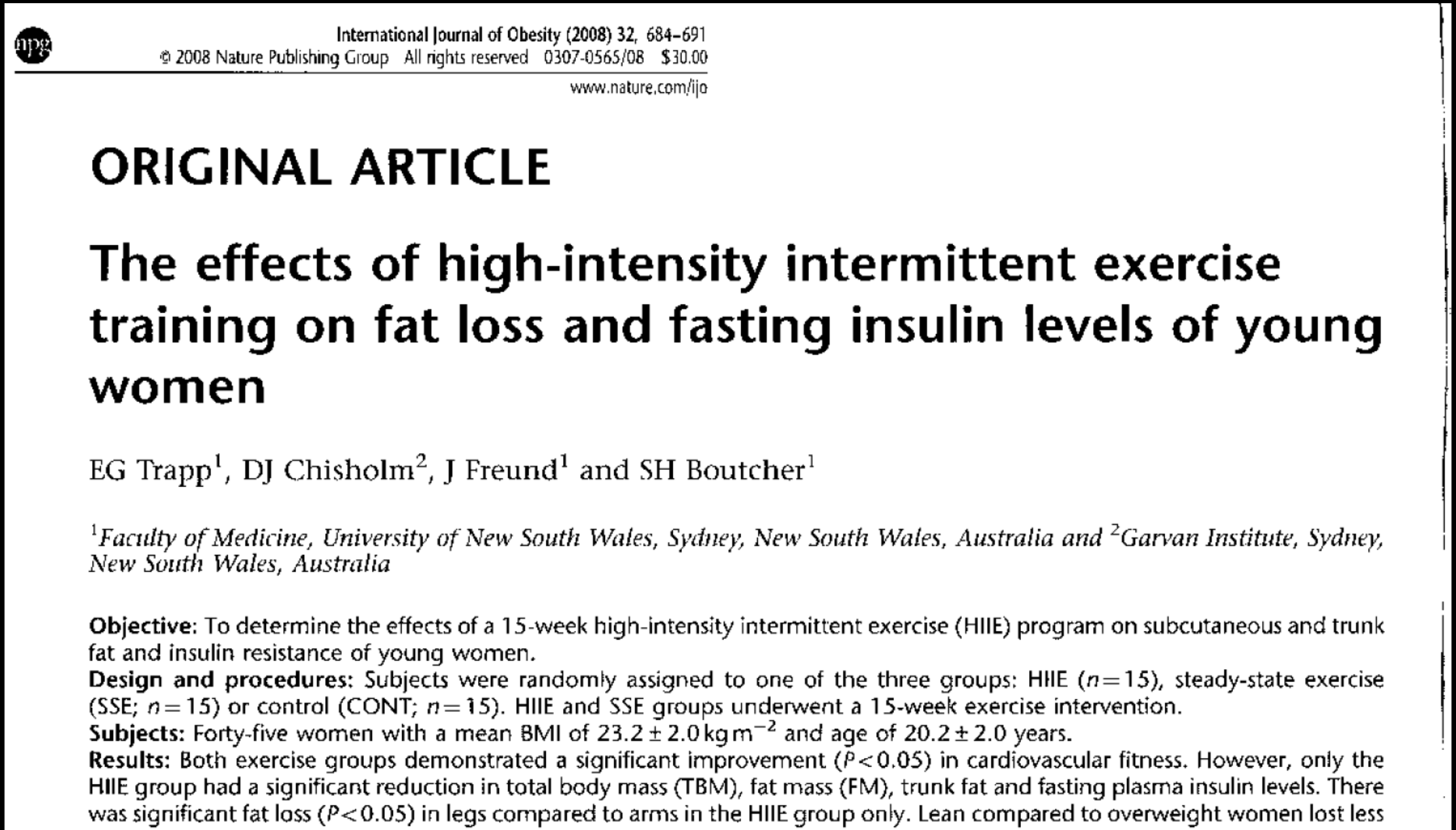
CONCLUSIONS — Two sessions per week of PRT without a concomitant weight loss diet, significantly improves insulin sensitivity and fasting glycemia and decreases abdominal fat in older men with type 2 diabetes.

metabolic ulin resis- of physical itivity has rcise train- of fat from ns that this is closely nsulin sen- e alone in on change omeostasis

(6).

[A DESCOBERTA] Metade do TEMPO e o TRIPLO DE RESULTADOS

Trapp 2008



International Journal of Obesity (2008) 32, 684–691
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www.nature.com/ijo

ORIGINAL ARTICLE

The effects of high-intensity intermittent exercise training on fat loss and fasting insulin levels of young women

EG Trapp[1], DJ Chisholm[2], J Freund[1] and SH Boutcher[1]

[1]*Faculty of Medicine, University of New South Wales, Sydney, New South Wales, Australia and* [2]*Garvan Institute, Sydney, New South Wales, Australia*

Objective: To determine the effects of a 15-week high-intensity intermittent exercise (HIIE) program on subcutaneous and trunk fat and insulin resistance of young women.
Design and procedures: Subjects were randomly assigned to one of the three groups: HIIE ($n = 15$), steady-state exercise (SSE; $n = 15$) or control (CONT; $n = 15$). HIIE and SSE groups underwent a 15-week exercise intervention.
Subjects: Forty-five women with a mean BMI of $23.2 \pm 2.0\,\mathrm{kg\,m^{-2}}$ and age of 20.2 ± 2.0 years.
Results: Both exercise groups demonstrated a significant improvement ($P < 0.05$) in cardiovascular fitness. However, only the HIIE group had a significant reduction in total body mass (TBM), fat mass (FM), trunk fat and fasting plasma insulin levels. There was significant fat loss ($P < 0.05$) in legs compared to arms in the HIIE group only. Lean compared to overweight women lost less

15 Semanas

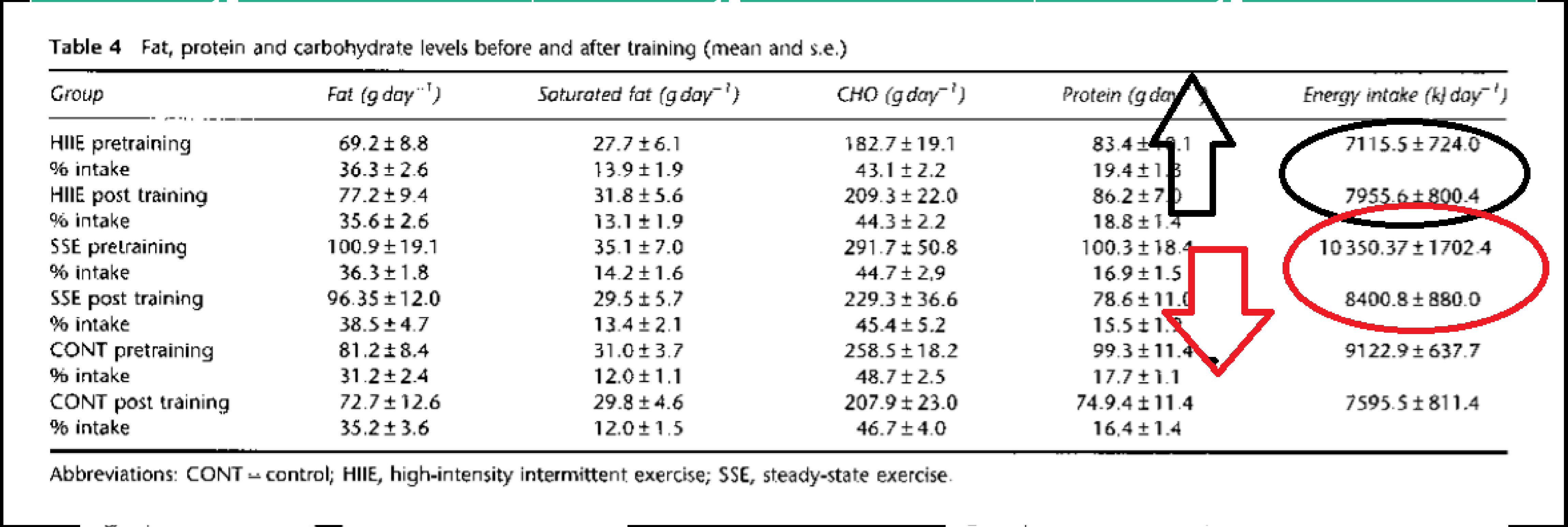


Table 4 Fat, protein and carbohydrate levels before and after training (mean and s.e.)

Group	*Fat (g day^{-1})*	*Saturated fat (g day^{-1})*	*CHO (g day^{-1})*	*Protein (g da[illegible])*	*Energy intake (kJ day^{-1})*
HIIE pretraining	69.2 ± 8.8	27.7 ± 6.1	182.7 ± 19.1	83.4 ± [illegible].1	7115.5 ± 724.0
% intake	36.3 ± 2.6	13.9 ± 1.9	43.1 ± 2.2	19.4 ± 1.3	
HIIE post training	77.2 ± 9.4	31.8 ± 5.6	209.3 ± 22.0	86.2 ± 7.0	7955.6 ± 800.4
% intake	35.6 ± 2.6	13.1 ± 1.9	44.3 ± 2.2	18.8 ± 1.4	
SSE pretraining	100.9 ± 19.1	35.1 ± 7.0	291.7 ± 50.8	100.3 ± 18.4	10 350.37 ± 1702.4
% intake	36.3 ± 1.8	14.2 ± 1.6	44.7 ± 2.9	16.9 ± 1.5	
SSE post training	96.35 ± 12.0	29.5 ± 5.7	229.3 ± 36.6	78.6 ± 11.0	8400.8 ± 880.0
% intake	38.5 ± 4.7	13.4 ± 2.1	45.4 ± 5.2	15.5 ± 1.[illegible]	
CONT pretraining	81.2 ± 8.4	31.0 ± 3.7	258.5 ± 18.2	99.3 ± 11.4	9122.9 ± 637.7
% intake	31.2 ± 2.4	12.0 ± 1.1	48.7 ± 2.5	17.7 ± 1.1	
CONT post training	72.7 ± 12.6	29.8 ± 4.6	207.9 ± 23.0	74.9.4 ± 11.4	7595.5 ± 811.4
% intake	35.2 ± 3.6	12.0 ± 1.5	46.7 ± 4.0	16.4 ± 1.4	

Abbreviations: CONT = control; HIIE, high-intensity intermittent exercise; SSE, steady-state exercise.

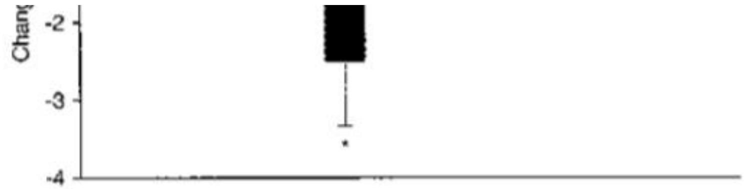


Figure 1 Total fat change for the high-intensity intermittent exercise (HIIE), steady-state exercise (SEE) and no exercise control groups. *Significantly different from control and SSE groups ($P < 0.05$).

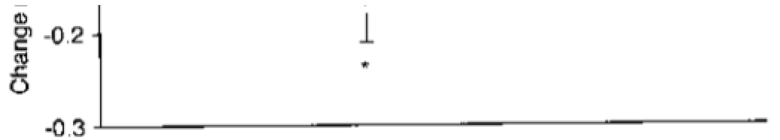
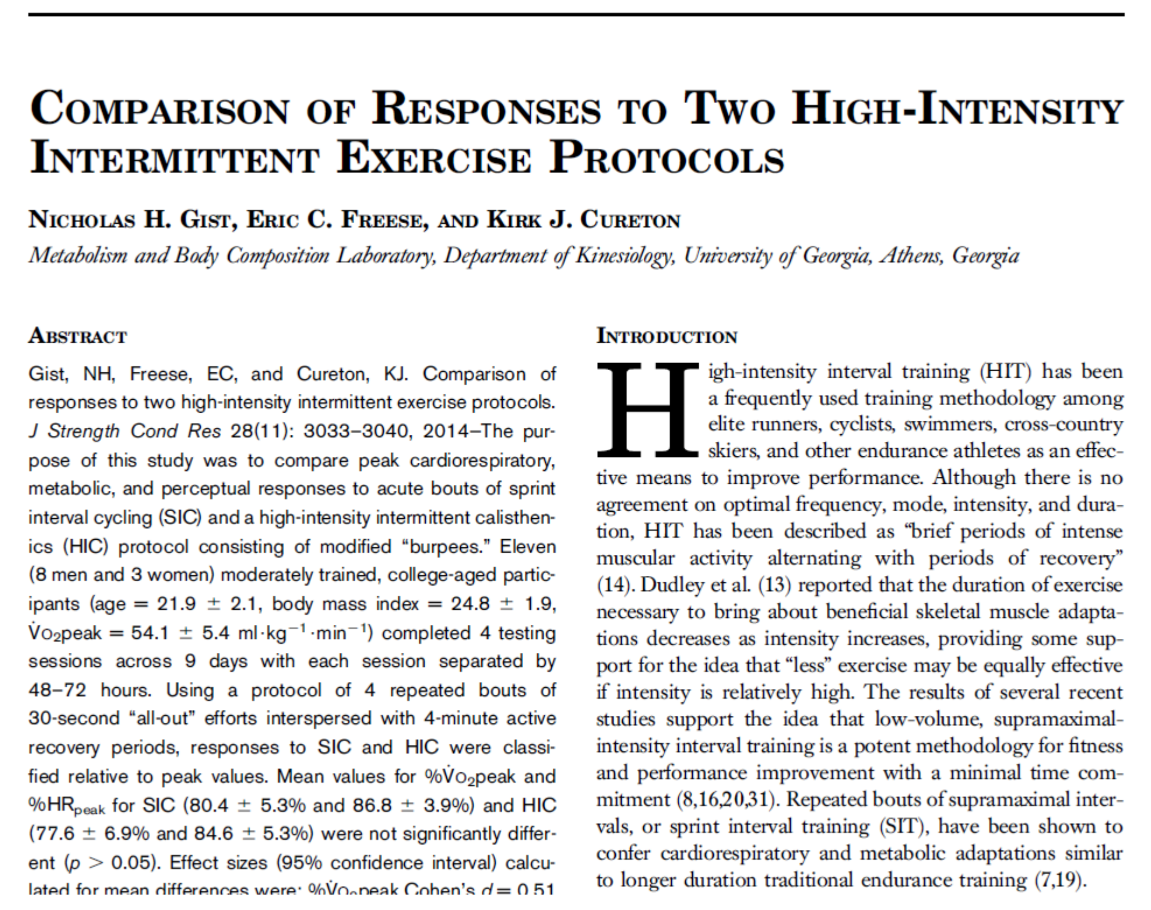


Figure 2 Central abdominal fat change for the high-intensity intermittent exercise (HIIE), steady-state exercise (SEE) and no exercise control groups. *Significantly different from control and SSE groups ($P < 0.05$).

[CARA A TAPA] Sem equipamentos e sem academia!

Gist 2014



COMPARISON OF RESPONSES TO TWO HIGH-INTENSITY INTERMITTENT EXERCISE PROTOCOLS

NICHOLAS H. GIST, ERIC C. FREESE, AND KIRK J. CURETON
Metabolism and Body Composition Laboratory, Department of Kinesiology, University of Georgia, Athens, Georgia

ABSTRACT

Gist, NH, Freese, EC, and Cureton, KJ. Comparison of responses to two high-intensity intermittent exercise protocols. *J Strength Cond Res* 28(11): 3033–3040, 2014—The purpose of this study was to compare peak cardiorespiratory, metabolic, and perceptual responses to acute bouts of sprint interval cycling (SIC) and a high-intensity intermittent calisthenics (HIC) protocol consisting of modified "burpees." Eleven (8 men and 3 women) moderately trained, college-aged participants (age = 21.9 ± 2.1, body mass index = 24.8 ± 1.9, $\dot{V}O_2$peak = 54.1 ± 5.4 $ml \cdot kg^{-1} \cdot min^{-1}$) completed 4 testing sessions across 9 days with each session separated by 48–72 hours. Using a protocol of 4 repeated bouts of 30-second "all-out" efforts interspersed with 4-minute active recovery periods, responses to SIC and HIC were classified relative to peak values. Mean values for %$\dot{V}O_2$peak and %HR_{peak} for SIC (80.4 ± 5.3% and 86.8 ± 3.9%) and HIC (77.6 ± 6.9% and 84.6 ± 5.3%) were not significantly different ($p > 0.05$). Effect sizes (95% confidence interval) calculated for mean differences were: %$\dot{V}O_2$peak Cohen's d = 0.51

INTRODUCTION

High-intensity interval training (HIT) has been a frequently used training methodology among elite runners, cyclists, swimmers, cross-country skiers, and other endurance athletes as an effective means to improve performance. Although there is no agreement on optimal frequency, mode, intensity, and duration, HIT has been described as "brief periods of intense muscular activity alternating with periods of recovery" (14). Dudley et al. (13) reported that the duration of exercise necessary to bring about beneficial skeletal muscle adaptations decreases as intensity increases, providing some support for the idea that "less" exercise may be equally effective if intensity is relatively high. The results of several recent studies support the idea that low-volume, supramaximal-intensity interval training is a potent methodology for fitness and performance improvement with a minimal time commitment (8,16,20,31). Repeated bouts of supramaximal intervals, or sprint interval training (SIT), have been shown to confer cardiorespiratory and metabolic adaptations similar to longer duration traditional endurance training (7,19).

11 pessoas / 4 sessões em 9 dias

- Treino Bike: 4 sp de intervalo
- Treino Calistênic com 4 minutos de intervalo

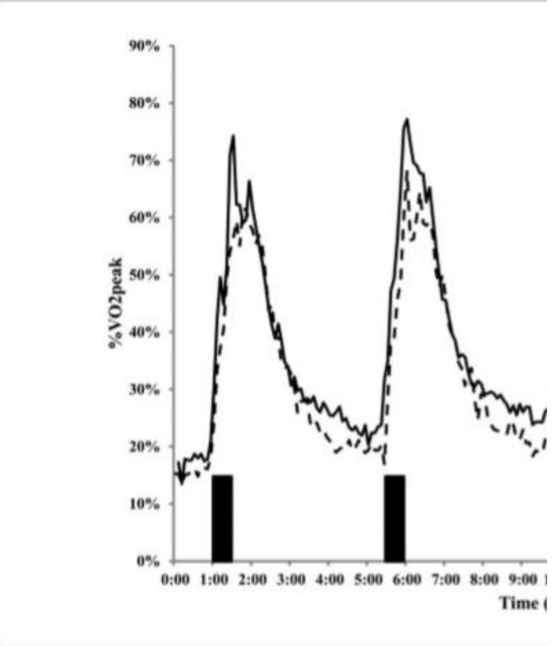
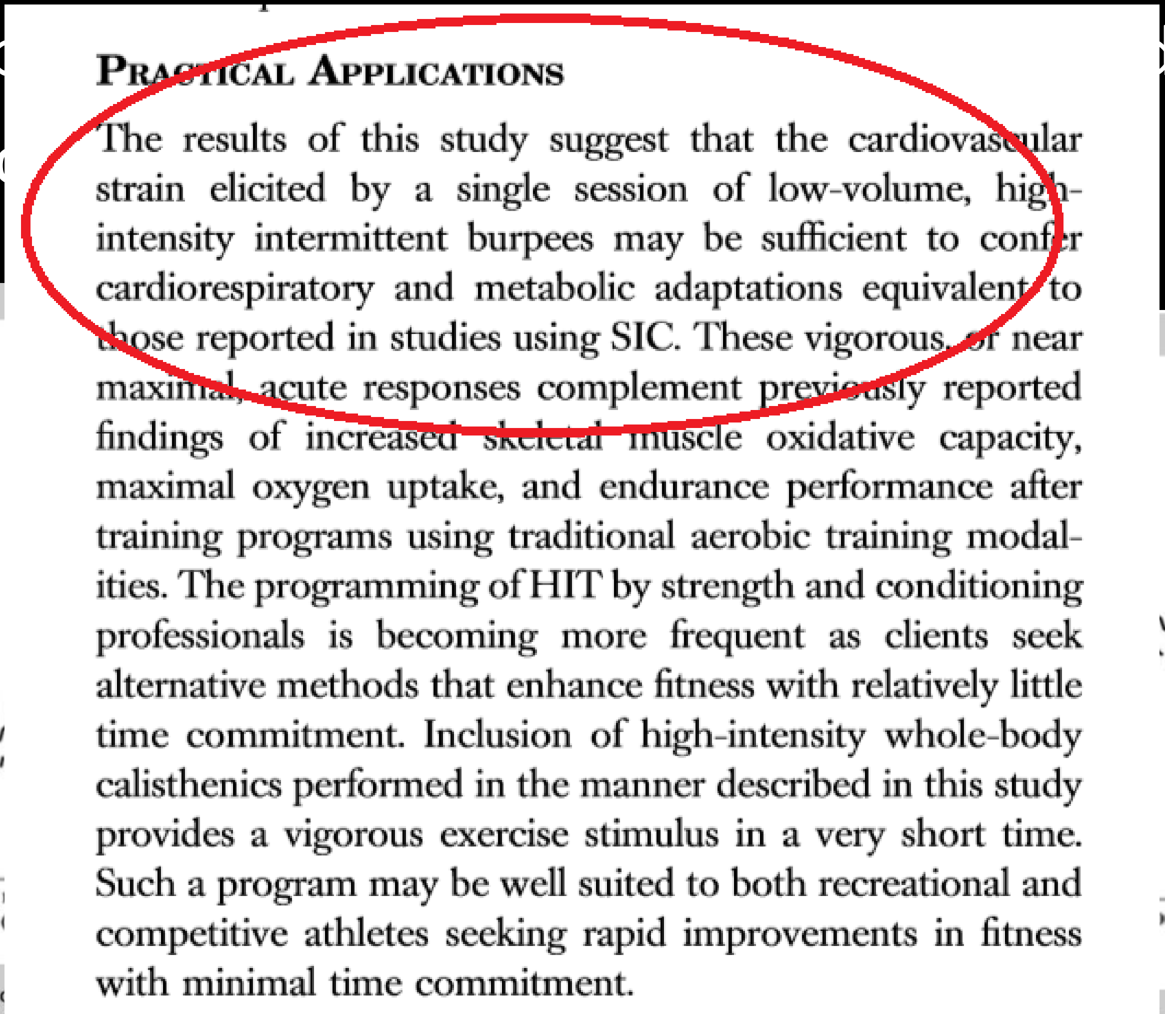


Figure 2. Oxygen uptake (%$\dot{V}O_2$peak) during 4 × 30-seco calisthenics (dotted line) separated by 4-minute active recovery periods. The solid bars represent the 30-second work period.



PRACTICAL APPLICATIONS

The results of this study suggest that the cardiovascular strain elicited by a single session of low-volume, high-intensity intermittent burpees may be sufficient to confer cardiorespiratory and metabolic adaptations equivalent to those reported in studies using SIC. These vigorous, or near maximal, acute responses complement previously reported findings of increased skeletal muscle oxidative capacity, maximal oxygen uptake, and endurance performance after training programs using traditional aerobic training modalities. The programming of HIT by strength and conditioning professionals is becoming more frequent as clients seek alternative methods that enhance fitness with relatively little time commitment. Inclusion of high-intensity whole-body calisthenics performed in the manner described in this study provides a vigorous exercise stimulus in a very short time. Such a program may be well suited to both recreational and competitive athletes seeking rapid improvements in fitness with minimal time commitment.

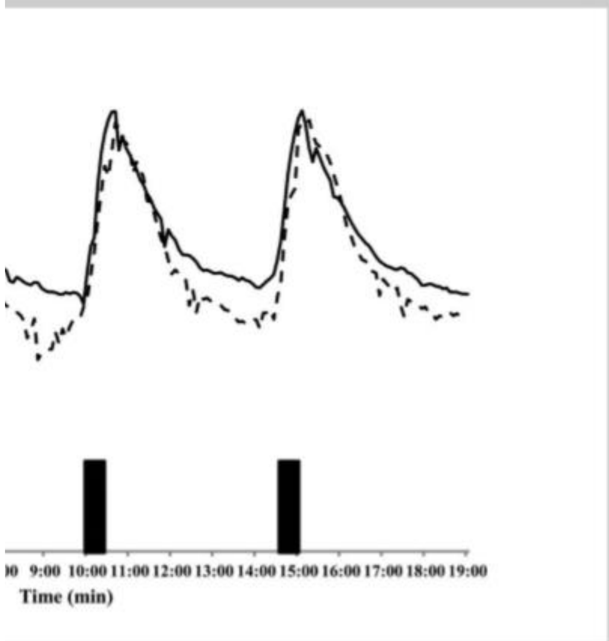
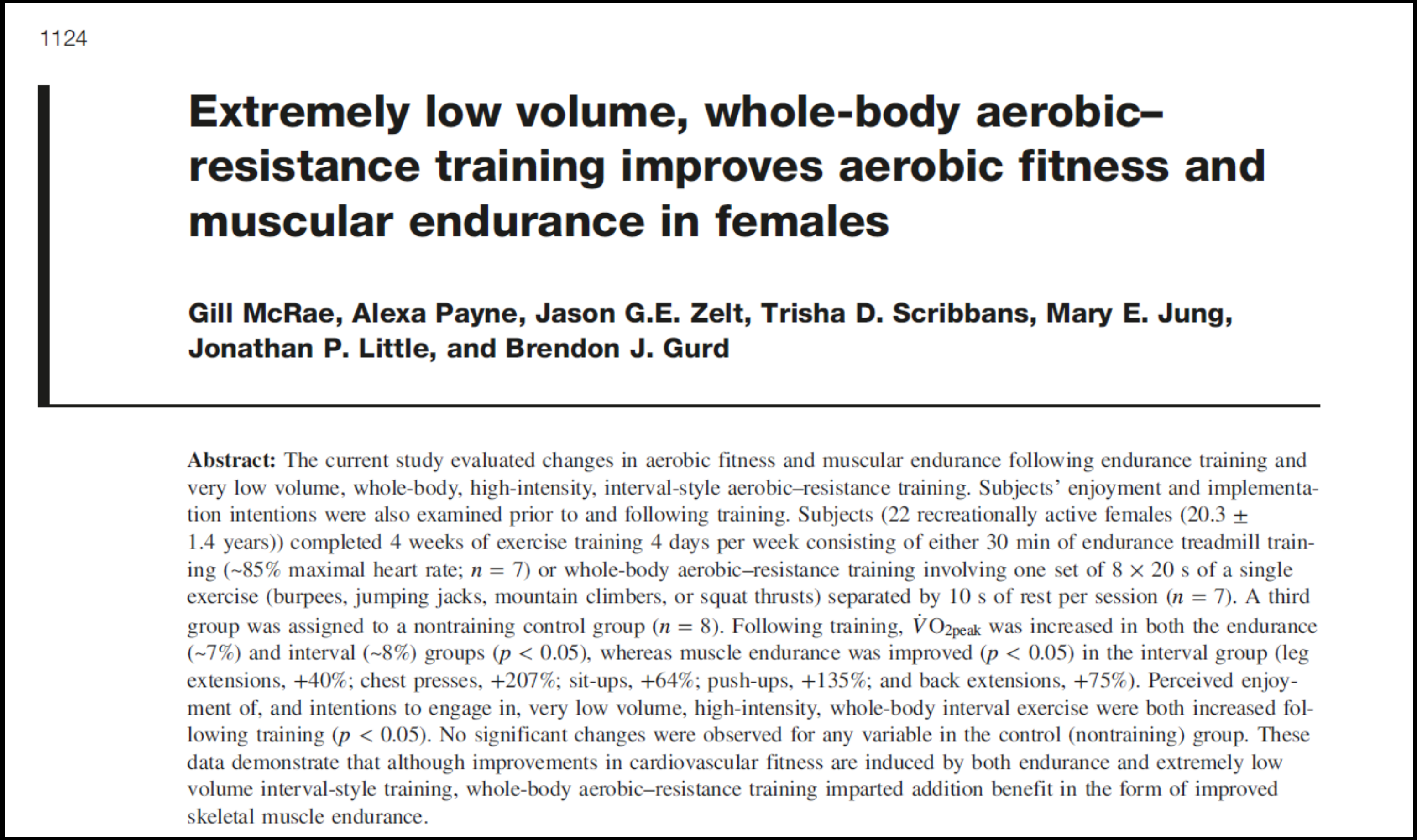


Figure 3. Heart rate (%HR_{peak}) during 4 × 30-second bouts of “all-out” cycling (solid line) and calisthenics (dotted line) separated by 4-minute active recovery periods. The solid bars represent the 30-second work period.

[A PROVA CABAL] 90% a menos de tempo e o MESMO RESULTADO

McRae 2012



Extremely low volume, whole-body aerobic–resistance training improves aerobic fitness and muscular endurance in females

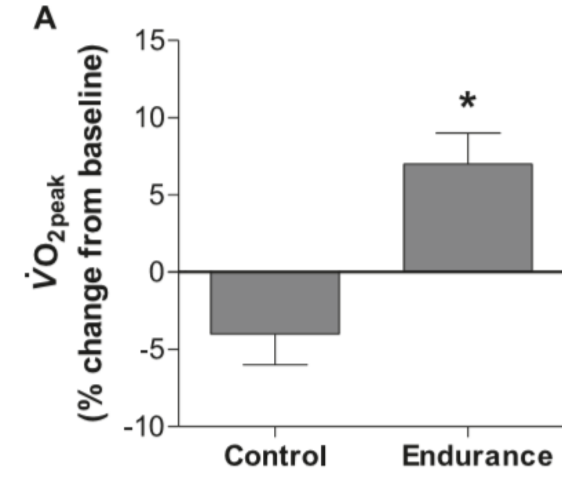
Gill McRae, Alexa Payne, Jason G.E. Zelt, Trisha D. Scribbans, Mary E. Jung, Jonathan P. Little, and Brendon J. Gurd

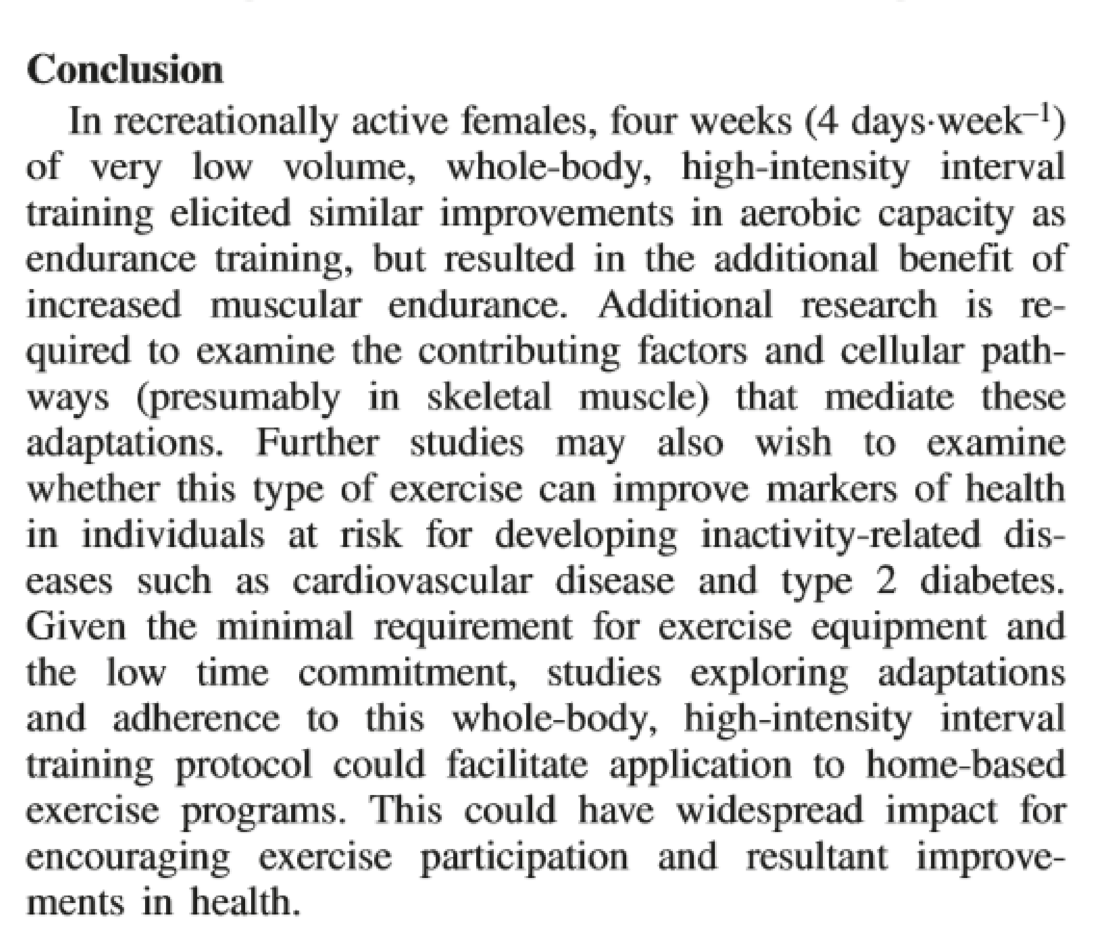
Abstract: The current study evaluated changes in aerobic fitness and muscular endurance following endurance training and very low volume, whole-body, high-intensity, interval-style aerobic–resistance training. Subjects' enjoyment and implementation intentions were also examined prior to and following training. Subjects (22 recreationally active females (20.3 ± 1.4 years)) completed 4 weeks of exercise training 4 days per week consisting of either 30 min of endurance treadmill training (~85% maximal heart rate; $n = 7$) or whole-body aerobic–resistance training involving one set of 8 × 20 s of a single exercise (burpees, jumping jacks, mountain climbers, or squat thrusts) separated by 10 s of rest per session ($n = 7$). A third group was assigned to a nontraining control group ($n = 8$). Following training, $\dot{V}O_{2peak}$ was increased in both the endurance (~7%) and interval (~8%) groups ($p < 0.05$), whereas muscle endurance was improved ($p < 0.05$) in the interval group (leg extensions, +40%; chest presses, +207%; sit-ups, +64%; push-ups, +135%; and back extensions, +75%). Perceived enjoyment of, and intentions to engage in, very low volume, high-intensity, whole-body interval exercise were both increased following training ($p < 0.05$). No significant changes were observed for any variable in the control (nontraining) group. These data demonstrate that although improvements in cardiovascular fitness are induced by both endurance and extremely low volume interval-style training, whole-body aerobic–resistance training imparted addition benefit in the form of improved skeletal muscle endurance.

22 pessoas / 4 semanas / frequência 4X na semana

4 Minutos exercício

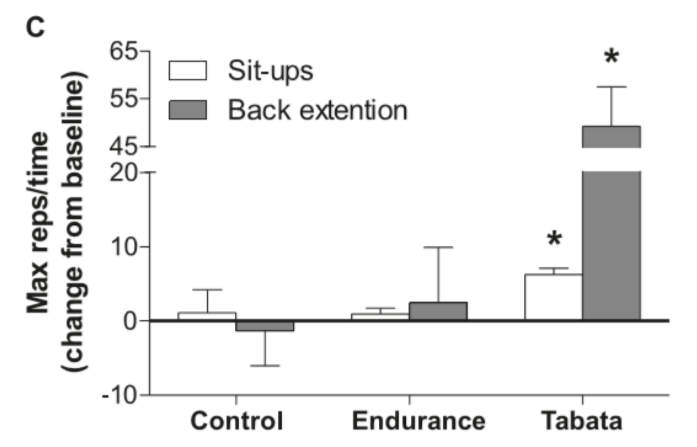
Grupo controle





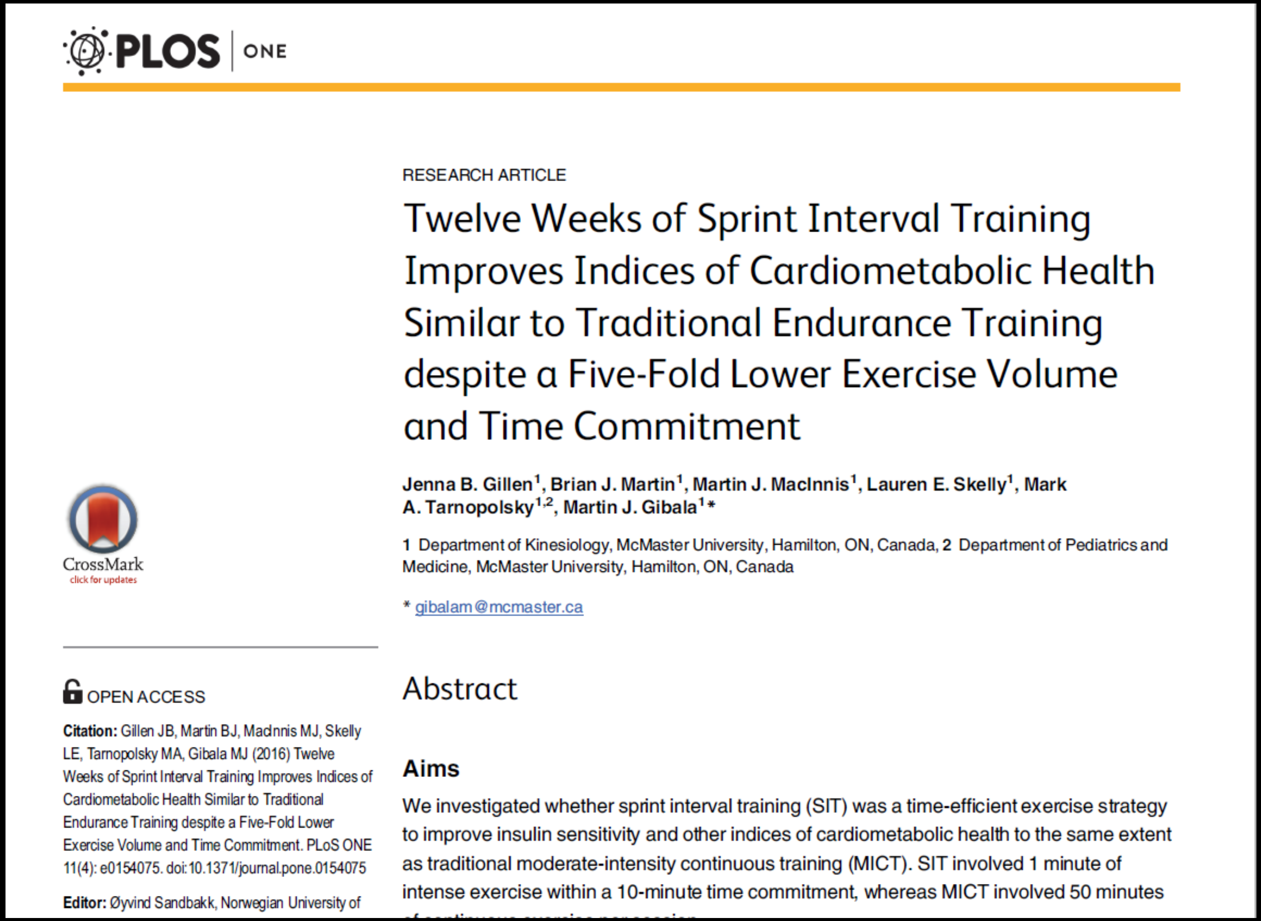
Conclusion

In recreationally active females, four weeks (4 days·week^{-1}) of very low volume, whole-body, high-intensity interval training elicited similar improvements in aerobic capacity as endurance training, but resulted in the additional benefit of increased muscular endurance. Additional research is required to examine the contributing factors and cellular pathways (presumably in skeletal muscle) that mediate these adaptations. Further studies may also wish to examine whether this type of exercise can improve markers of health in individuals at risk for developing inactivity-related diseases such as cardiovascular disease and type 2 diabetes. Given the minimal requirement for exercise equipment and the low time commitment, studies exploring adaptations and adherence to this whole-body, high-intensity interval training protocol could facilitate application to home-based exercise programs. This could have widespread impact for encouraging exercise participation and resultant improvements in health.



[1 MINUTO?] Obrigado mais uma vez Gibala

Gibala 2016



PLOS ONE

RESEARCH ARTICLE

Twelve Weeks of Sprint Interval Training Improves Indices of Cardiometabolic Health Similar to Traditional Endurance Training despite a Five-Fold Lower Exercise Volume and Time Commitment

Jenna B. Gillen[1], Brian J. Martin[1], Martin J. MacInnis[1], Lauren E. Skelly[1], Mark A. Tarnopolsky[1,2], Martin J. Gibala[1]*

1 Department of Kinesiology, McMaster University, Hamilton, ON, Canada, 2 Department of Pediatrics and Medicine, McMaster University, Hamilton, ON, Canada

* gibalam@mcmaster.ca

OPEN ACCESS

Citation: Gillen JB, Martin BJ, MacInnis MJ, Skelly LE, Tarnopolsky MA, Gibala MJ (2016) Twelve Weeks of Sprint Interval Training Improves Indices of Cardiometabolic Health Similar to Traditional Endurance Training despite a Five-Fold Lower Exercise Volume and Time Commitment. PLoS ONE 11(4): e0154075. doi:10.1371/journal.pone.0154075

Editor: Øyvind Sandbakk, Norwegian University of

Abstract

Aims

We investigated whether sprint interval training (SIT) was a time-efficient exercise strategy to improve insulin sensitivity and other indices of cardiometabolic health to the same extent as traditional moderate-intensity continuous training (MICT). SIT involved 1 minute of intense exercise within a 10-minute time commitment, whereas MICT involved 50 minutes

25 pessoas / 12 semanas / 3 x por semana

HIIT (n=9)	Treino Contínuo (n=10)	Grupo Controle (n=6)
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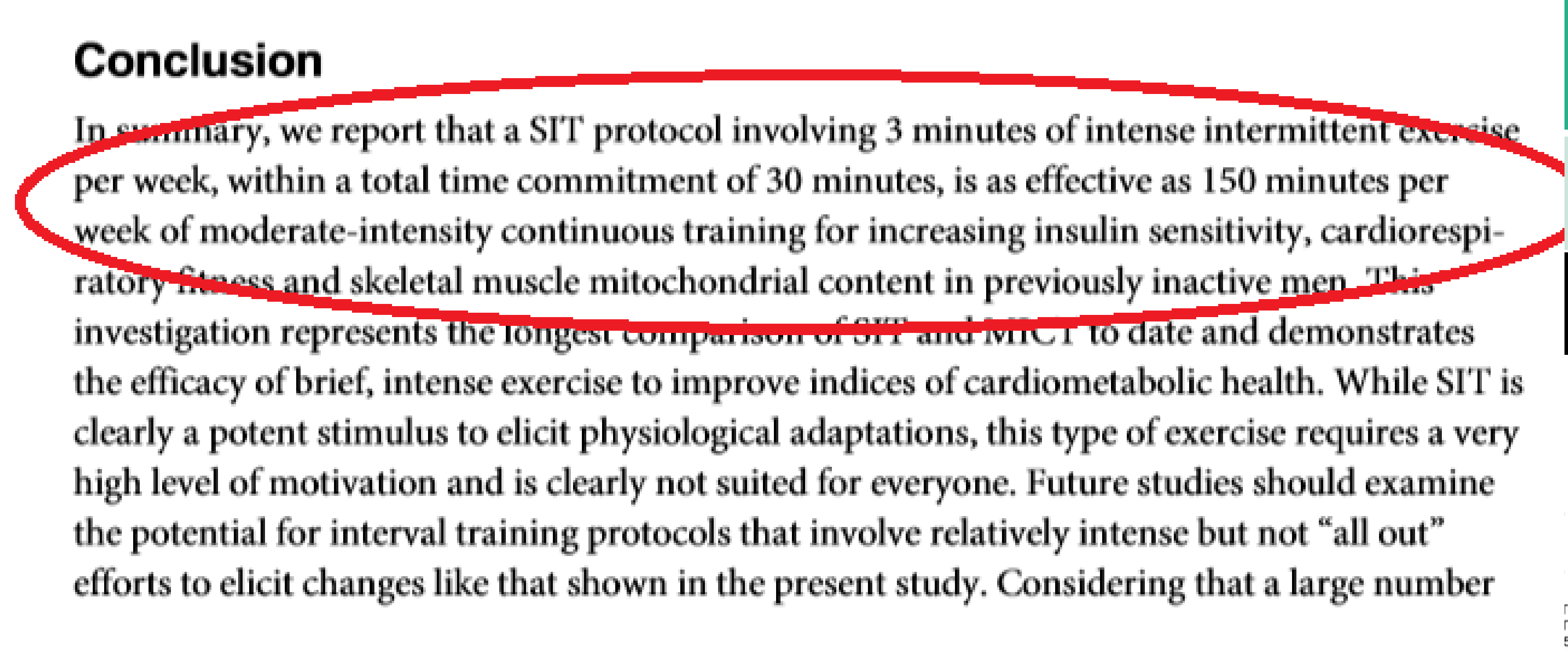
3 Minuto SEMANA		



Conclusion

In summary, we report that a SIT protocol involving 3 minutes of intense intermittent exercise per week, within a total time commitment of 30 minutes, is as effective as 150 minutes per week of moderate-intensity continuous training for increasing insulin sensitivity, cardiorespiratory fitness and skeletal muscle mitochondrial content in previously inactive men. This investigation represents the longest comparison of SIT and MICT to date and demonstrates the efficacy of brief, intense exercise to improve indices of cardiometabolic health. While SIT is clearly a potent stimulus to elicit physiological adaptations, this type of exercise requires a very high level of motivation and is clearly not suited for everyone. Future studies should examine the potential for interval training protocols that involve relatively intense but not "all out" efforts to elicit changes like that shown in the present study. Considering that a large number

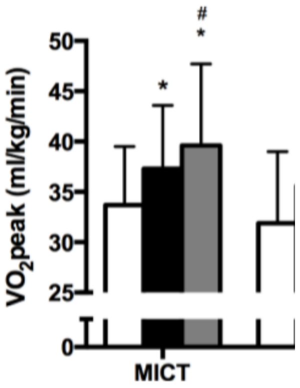


Fig 1. Effect of SIT and MICT on VO_2peak. Measured at baseline (PRE), 6 weeks (MID), and 12 weeks (POST) in MICT, SIT and CTL. Values are means ± S.D. * p<0.05, vs. same group at PRE; # p<0.05, vs. same group at MID.

he change in insulin sensitivity (CS_I) over the
T in MICT, SIT and CTL. Closed circles denote
5, PRE vs. POST.

doi:10.1371/journal.pone.0154075.g002

“Juntos por um Brasil mais MAGRO e SAUDÁVEL”

OBRIGADO