

# ¿SON LOS SMALL SIDED GAMES LA SOLUCIÓN PERFECTA PARA EL ENTRENAMIENTO EN LOS DEPORTES COLECTIVOS?

**Javier Yanci Irigoyen**

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## ¿SON LOS SMALL SIDED GAMES LA SOLUCIÓN PERFECTA PARA EL ENTRENAMIENTO EN LOS DEPORTES COLECTIVOS?

### Título de la ponencia **CUESTIONAR LOS SSG** **RESPONSABILIDAD**



## ¿SON LOS SMALL SIDED GAMES LA SOLUCIÓN PERFECTA PARA EL ENTRENAMIENTO EN LOS DEPORTES COLECTIVOS?

### RESTO DE PONENTES:

Trayectoria profesional

Número de publicaciones/experiencia en el ámbito de los SSG

....



## ¿SON LOS SMALL SIDED GAMES LA SOLUCIÓN PERFECTA PARA EL ENTRENAMIENTO EN LOS DEPORTES COLECTIVOS?



**¿SON LOS SMALL SIDED GAMES LA SOLUCIÓN PERFECTA PARA EL ENTRENAMIENTO EN LOS DEPORTES COLECTIVOS?**

**Mi objetivo.... APORTAR REFLEXIÓN**

**¿SSG BENEFICIOSOS COMO TAREA DE ENTRENAMIENTO?**



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- EFECTOS EN CAPACIDADES FÍSICAS/CONDICIONALES

- EFECTOS EN CAPACIDADES TÉCNICO/TÁCTICAS

- EFECTOS EN RENDIMIENTO COMPETICIÓN

### CONCLUSIONES

## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

¿QUIEN UTILIZA LOS SSG EN DEPORTES COLECTIVOS?



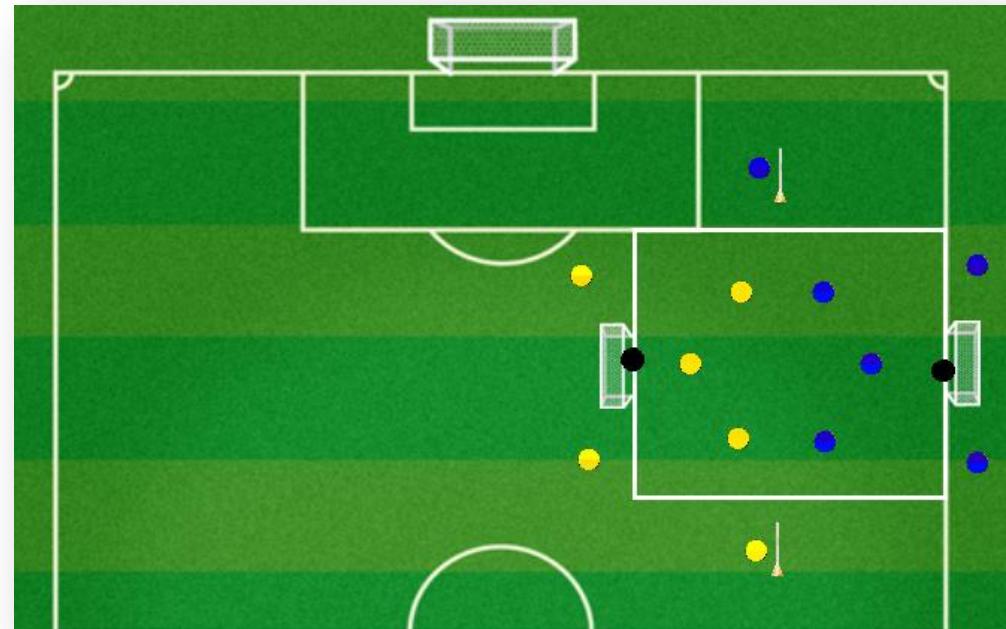
## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

### CURSO FEDERATIVO DE ENTRENADOR NACIONAL DE FÚTBOL



# LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

## CURSO FEDERATIVO DE ENTRENADOR NACIONAL DE FÚTBOL



## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

### CURSO FEDERATIVO DE ENTRENADOR NACIONAL DE FÚTBOL

Entonces les planteo otra tarea....

Para...



## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

### CURSO FEDERATIVO DE ENTRENADOR NACIONAL DE FÚTBOL



Entonces les planteo otra tarea....  
Para...



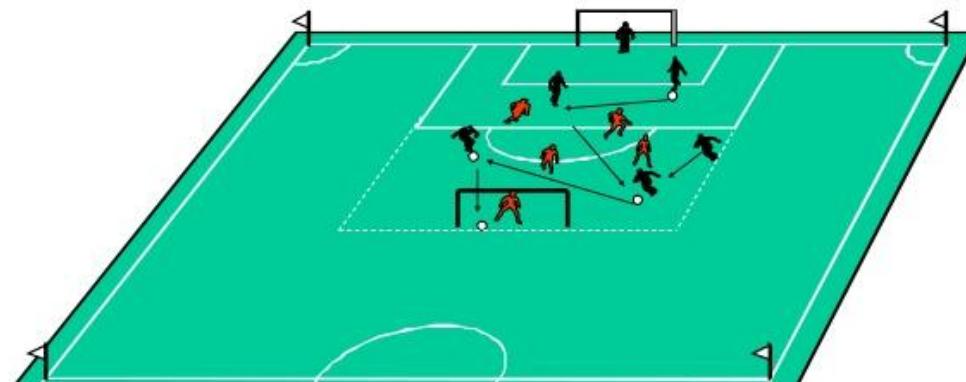
# LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

## CURSO FEDERATIVO DE ENTRENADOR NACIONAL DE FÚTBOL

No hay manera...



### FUTBOL REDUCIDO : 4x4, 5x5, 6x6



- Superficie : Doble área.
- Jugadores : 8,10,12.
- Organización: Los equipos defienden cada uno una portería normal.
- Toques : 1 , 2 ... 2 en un campo y libre en el contrario.
- Reglas : Cada vez que salga el balón fuera de banda saca el portero al que le pertenece la posesión.
- Hay fuera de juego.
- Todos los jugadores del equipo que hace gol tienen que estar en el campo contrario para que valga.
- Duración: 5, 10... minutos



# LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

## DESDE UN PUNTO DE VISTA MÁS CIENTÍFICO

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Tactical expertise assessment in youth football using representative tasks. 2. Serra-Olivares J, Clemente FM, González-Villora S. *Springerplus.* 2016 Aug 9;5(1):1301. doi: 10.1186/s40064-016-2955-1. eCollection 2016. Review. PMID: 27547675 Free PMC Article Similar articles

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Energy Expenditure By Elite Midget Male Ice Hockey Players In **Small-sided Games**. 3009 Board. 4. #72 June 3, 3: 30 PM - 5: 00 PM.

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Influence of a high-intensity interval **training** session on peripheral and central blood pressure at rest and during stress testing in healthy individuals. Kehelihut S, Milatz F, Heise W, Kehelihut RG. *Vasa.* 2016 Sep;45(5):373-7. doi: 10.1240/vsa.1526a000560. PMID: 27594395 Similar articles

Physiological Adaptations to Sprint Interval Training with Matched Exercise Volume. 2. Chia-Lun L, Wei-Chieh H, Ching-Feng C. *Med Sci Sports Exerc.* 2016 Aug 30. [Epub ahead of print] PMID: 27560145 Similar articles

High-intensity interval **training** reduces abdominal fat mass in postmenopausal women with type 2 diabetes. Mallard F, Roussel S, Pereira B, Traore A, de Pradel Del Amaze P, Boirie Y, Duclos M, Boisseau N. *Diabetes Metab.* 2016 Aug 23. pii: S1262-3639(16)30470-0. doi: 10.1016/j.diabet.2016.07.031. [Epub ahead of print] PMID: 27567125 Similar articles

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# LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

## DESDE UN PUNTO DE VISTA MÁS CIENTÍFICO

**Kinematic and heart rate demands in 4x4 vs 7x7 small sided games in professional soccer players**

B. Romero, V. Paredes, E. Morencos, A. B. Peinado, J. Butragueño, A. Castillo and F. J. Calderón.

Department of Health and Human Performance. School of Physical Activity and Sport Sciences. Technical University of Madrid, Spain.

Rayo Vallecano S.A.D.

**Introduction**

The small sided games (SSG) are one of the most common drills used by coaches for soccer training. In the past, SSG were mainly used for developing technical and tactical abilities. In recent years, there is a growing interest to investigate the effects of the SSG to improve the physical condition of the football player [1-5].

**Objectives**

The aim of this study was to compare the physiological load, indicated by the response of heart rate (HR) and kinematic variables during exercise SSG 4x4 and 7x7 in professional football players from the Spanish league.

**Materials & Methods**

During the season 2011/2012, twenty professional players performed two types of SSG, 4x4 and 7x7, both on the same dimensions (40x25 m.). The response of kinematic variables (speed and distance) and HR measured with global positioning system was analyzed using T test for two related samples.

**Results**

Players performed higher distances in the 4x4 vs 7x7 ( $p < 0.01$ ) but higher values of maximum speed in 7x7 vs 4x4 ( $p < 0.01$ ). On the other hand, the lower the number of players the higher the intensity when it is measured with HR. 7x7 SSG obtained heart rate values upper 85% of maximum HR ( $p < 0.01$ ), while performing 4x4 SSG the predominant intensity measured was 65 -85% of maximum HR ( $p < 0.01$ ).

**Discussion & Conclusions**

SSG has shown that the presence of the ball increases the motivation of the players, and allows technical and tactical work simultaneously [6]. Previous studies have shown that this type of training may have a physiological load equal or similar to traditional intervallic aerobic workouts [1, 7, 8].

In conclusion the kinematic variables and heart rate showed significant differences in the 4x4 vs 7x7 exercises designed SSG. This is an important issue to consider when planning in terms of training objectives to know training load.

**Table 1. Descriptive SSG 4x4 vs 7x7.**

	4x4	7x7			
	Mean	SD	n		
Distance covered (m)	246.3	8.1	20.7	0.81	
High speed (km/h)	21.8	3.9	24.2	3.1	0.05
Distance to most speed (m)	470.3	64.4	401.7	79.3	0.05
Distance mean sp (m)	228.7	34.8	204.7	36.1	0.05
Distance max sp (m)	477.7	102.1	321.7	82.1	0.05
Distance sprint (m)	2.7	5.9	5.2	8.6	0.27
Time Zone 0 (s)	6.6	1.2	5.7	2.1	0.05
Time Zone 1 (s)	56.5	1.2	20.2	1.1	0.05
Time Zone 2 (s)	33.3	2.3	34.8	2.8	0.05
Time Zone 3 (s)	53.3	3.1	16.5	2.4	0.05
Distance mod sp / distance to most speed					
Distance mod sp / distance to max speed					
Distance high sp / distance to max speed					

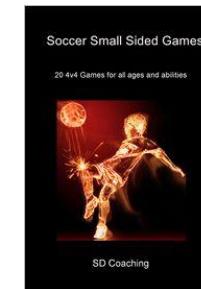
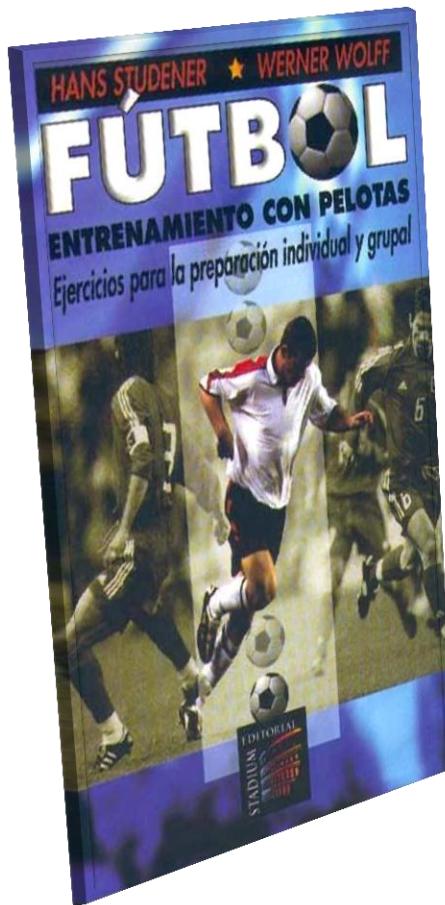
**References**

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3. Briones, M. A., & Martínez, J. (2002). *INFF. VIII Congreso NIF. 8º Congreso IFF*. (2002). *The Journal of Strength & Conditioning*, 14, 809-816.
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6. Briones, M. A., & Martínez, J. (2002). *INFF. VIII Congreso NIF. 8º Congreso IFF*. (2002). *The Journal of Strength & Conditioning*, 14, 809-816.
7. Briones, M. A., & Martínez, J. (2002). *INFF. VIII Congreso NIF. 8º Congreso IFF*. (2002). *The Journal of Strength & Conditioning*, 14, 809-816.
8. Briones, M. A., & Martínez, J. (2002). *INFF. VIII Congreso NIF. 8º Congreso IFF*. (2002). *The Journal of Strength & Conditioning*, 14, 809-816.

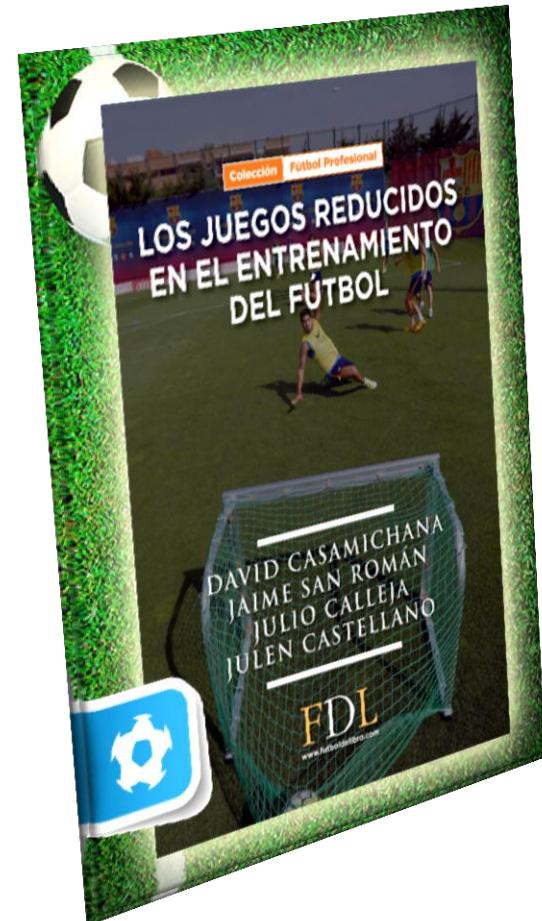
Blanca Romero Moraleda  
blanca.romero.moraleda@upm.es

## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

Desde el....



Hasta el....



## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

### OPINIÓN DE ENTRENADORES

#### Idea 1:

Los **entrenadores de elite** consideran **mas relevantes** los **SSG** mientras que **entrenadores principiantes** otras tareas.

#### Idea 2:

Entrenadores de **menor nivel** – Partido  
Entrenadores de **mayor nivel** – SSG



Journal of Human Kinetics volume 38/2013, 151-160 doi: 10.2478/hukin-2013-0055 151  
Section III – Sports Training

The Importance of Sports Performance Factors and Training  
Contents From the Perspective of Futsal Coaches

by

João Serrano<sup>1</sup>, Shakib Shahidian<sup>1</sup>, Jaime Sampaio<sup>2</sup>, Nuno Leite<sup>2</sup>



## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

Y vosotros...

¿POR QUÉ UTILIZAIS LOS SSG?



## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

### FACTORES DE RENDIMIENTO EN FÚTBOL

CAPACIDADES  
CONDICIONALES  
Fuerza, Velocidad  
Potencia, Rapidez

Harman et al., 1991, Konig et al., 2001,  
Vanderford et al., 2004

CAPACIDADES  
CONDICIONALES  
Capacidad  
Cardiovascular

Coyle et al., 1995, Konig et al., 2001,  
Schabot et al., 2000

TÉCNICA Y TÁCTICA  
Dominio de habilidades  
específicas

Philippaerts et al., 2001,  
Schabot et al., 2000

OTROS FACTORES

- Aspectos psicológicos
- Aspectos sociales
- ....

Boileau et al., 1977, Hickson et al., 1980,  
Koutedakis et al., 1995



## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

### FACTORES DE RENDIMIENTO EN FÚTBOL

CAPACIDADES  
CONDICIONALES  
Fuerza, Velocidad  
Potencia, Rapidez

Harman et al., 1991, Konig et al., 2001,  
Vanderford et al., 2004

CAPACIDADES  
CONDICIONALES  
Capacidad  
Cardiovascular

Coyle et al., 1995, Konig et al., 2001,  
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TÉCNICA Y TÁCTICA  
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Philippaerts et al., 2001,  
Schabot et al., 2000

OTROS FACTORES  
-Aspectos psicológicos  
-Aspectos sociales

- ....  
Boileau et al., 1977, Hickson et al., 1980,  
Koutedakis et al., 1995



REVIEW ARTICLE  
Sports Med 2001; 31: 189-209  
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Physiology of Small-Sided Games  
Training in Football  
A Systematic Review  
Stephen V. Hill-Haus,<sup>1</sup> Brian Dawson,<sup>1</sup> Franco M. Impellizzeri<sup>2,3</sup> and Aaron J. Coutts<sup>4</sup>

## **LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS**

*International Journal of Sports Physiology and Performance*, 2014, 9, 471-479  
<http://dx.doi.org/10.1123/IJSSPP.2013-0390>  
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ORIGINAL INVESTIGATION

Human Movement Science 48 (2016) 1–6

Silva et al. SpringerPlus (2016) 5:191  
DOI 10.1186/s40064-016-1813-5

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# Sports teams as complex adaptive systems: manipulating player numbers shapes behaviours during football small-sided games

Pedro Silva<sup>1,2\*</sup>, Luís Vilar<sup>3,4</sup>, Keith Davids<sup>5,6</sup>, Duarte Araújo<sup>4</sup> and Júlio Garganta<sup>2</sup>

# **COMPARING THE PHYSICAL DEMANDS OF FRIENDLY MATCHES AND SMALL-SIDED GAMES IN SEMPROFESSIONAL SOCCER PLAYERS**

DAVID CASAMICHANA,<sup>1</sup> JULEN CASTELLANO,<sup>1</sup> AND CARLO CASTAGNA<sup>2,3</sup>

<sup>1</sup>Department of Physical Education and Sport, Faculty of Physical Activity and Sport Sciences, University of the Basque Country (UPV-EHU), Vitoria-Gasteiz, Spain; <sup>2</sup>Biomechanics Laboratory, Italian Football Association (PIGC), Technical Department, Coverciano, Italy; and <sup>3</sup>Regional School of Sport of Marche, Italian Olympic Committee (CONI), Ancona, Italy

## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

LA FRASE...



*“Cuando creíamos que teníamos todas las respuestas, de pronto cambiaron todas las preguntas”*

(Mario Benedetti)

## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

Teniendo en cuenta que el **objetivo principal del entrenamiento es la mejora del rendimiento deportivo**:

**¿LOS PROGRAMAS DE ENTRENAMIENTO MEDIANTE SSG SON EFECTIVOS EN LA MEJORA DEL RENDIMIENTO A CORTO, MEDIO Y LARGO PLAZO?**

## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

De partida, me encuentro aquí, no se donde terminaré....



## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

¿Por qué?



## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

¿Por qué?

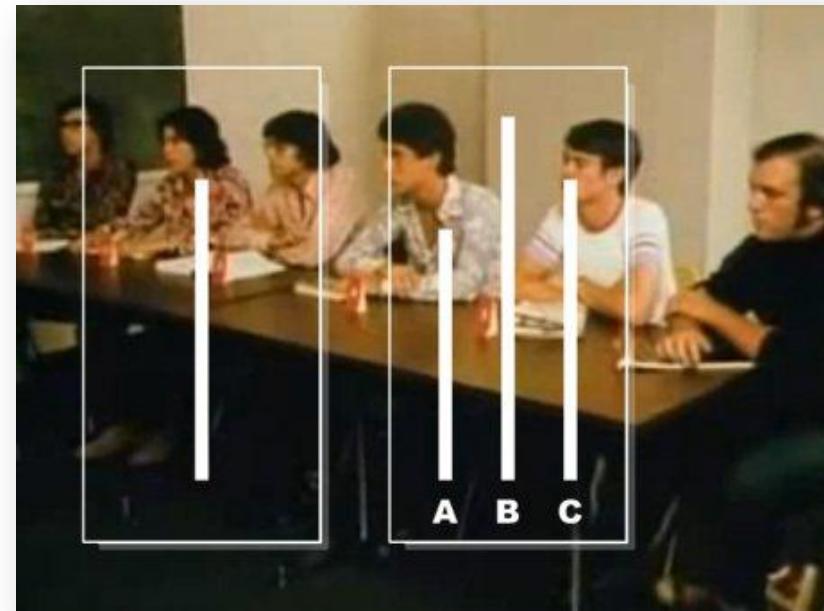


## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

Profundizo más en el tema – Psicología social



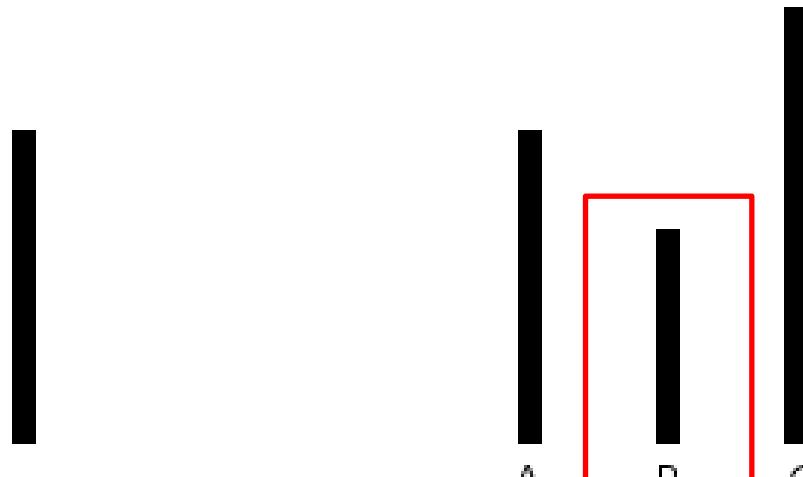
Solomon Asch. 1955. Opinions and social pressure. *Scientific American*, 193 (5): 31–35



## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

### Psicología social

Solomon Asch. 1955. Opinions and social pressure. *Scientific American*, 193 (5): 31–35



70-85%

## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

Un ejemplo



<https://www.youtube.com/watch?v=aaAqNXsW9A4>

## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

A esto se le llama en psicología social...

**Influencia del grupo en la conducta individual**

## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

A esto se le llama en psicología social...

**Influencia del grupo en la opinión individual**

**¿NOS ESTARÁ PASANDO ESTO CON LOS SSG?**



# EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN DEPORTES COLECTIVOS

Rápidamente para salir de dudas...

The screenshot shows a computer screen with a browser window open to the PubMed website ([www.ncbi.nlm.nih.gov/pubmed/?term=small+sided+games+training+effects](http://www.ncbi.nlm.nih.gov/pubmed/?term=small+sided+games+training+effects)). A red arrow points from the top left towards the search bar, which contains the query "small sided games training effects". Another red arrow points from the bottom left towards the "Publication dates" filter sidebar.

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- [Small-sided games versus interval training in amateur soccer players: effects on the aerobic capacity and the ability to perform intermittent exercises with changes of direction](#). Dellal A et al. J Strength Cond Res. (2012)
- [Effects of SAQ training and small-sided games on neuromuscular functioning in untrained subjects](#). Polman R et al. Int J Sports Physiol Perform. (2009)

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## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN DEPORTES COLECTIVOS

Rápidamente para salir de dudas...

### EFFECTS OF A PERIODIZED SMALL-SIDED GAME TRAINING INTERVENTION ON PHYSICAL PERFORMANCE IN ELITE PROFESSIONAL SOCCER

ADAM L. OWEN,<sup>1</sup> DEL P. WONG,<sup>2</sup> DARREN PAUL,<sup>3</sup> AND ALEXANDRE DELLA<sup>4</sup>

<sup>1</sup>Sports Science Department, Rangers Football Club, Glasgow, Scotland; <sup>2</sup>Department of Health and Physical Education, The Hong Kong Institute of Education, New Territories, Hong Kong; <sup>3</sup>Aspetar, Qatar Orthopaedic and Sports Medicine Hospital, Doha, Qatar; and <sup>4</sup>Olympic Lyon FC (Soccer), Lyon, France

Artículo más a mano, cumple criterios (SSG elite, deportes colectivos, programa de entrenamiento...)

Conclusión de los autores:

**MEJORAN EN RSA  
REDUCCIÓN DEL VO2 Y HR A VARIAS INTENSIDADES DE CARRERA**

## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN DEPORTES COLECTIVOS

Rápidamente para salir de dudas...

### EFFECTS OF A PERIODIZED SMALL-SIDED GAME TRAINING INTERVENTION ON PHYSICAL PERFORMANCE IN ELITE PROFESSIONAL SOCCER

ADAM L. OWEN,<sup>1</sup> DEL P. WONG,<sup>2</sup> DARREN PAUL,<sup>3</sup> AND ALEXANDRE DELLA<sup>4</sup>

<sup>1</sup>Sports Science Department, Rangers Football Club, Glasgow, Scotland; <sup>2</sup>Department of Health and Physical Education, The Hong Kong Institute of Education, New Territories, Hong Kong; <sup>3</sup>Aspetar, Qatar Orthopaedic and Sports Medicine Hospital, Doha, Qatar; and <sup>4</sup>Olympic Lyon FC (Soccer), Lyon, France

Artículo n... a de  
entto...)

Conclusió

**MEJORAM  
REDUCCIÓN**



## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN DEPORTES COLECTIVOS

### EFFECTS OF A PERIODIZED SMALL-SIDED GAME TRAINING INTERVENTION ON PHYSICAL PERFORMANCE IN ELITE PROFESSIONAL SOCCER

ADAM L. OWEN,<sup>1</sup> DEL P. WONG,<sup>2</sup> DARREN PAUL,<sup>3</sup> AND ALEXANDRE DELLA<sup>4</sup>

<sup>1</sup>Sports Science Department, Rangers Football Club, Glasgow, Scotland; <sup>2</sup>Department of Health and Physical Education, The Hong Kong Institute of Education, New Territories, Hong Kong; <sup>3</sup>Aspetar, Qatar Orthopaedic and Sports Medicine Hospital, Doha, Qatar; and <sup>4</sup>Olympic Lyon FC (Soccer), Lyon, France

## PROFUNDIZAR Y VISIÓN CRITICA...

Efectos en capacidades:

FÍSICAS  
TÉCNICAS  
TÁCTICAS



## ÍNDICE

### LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

### EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN DEPORTES COLECTIVOS

- EFECTOS EN CAPACIDADES FÍSICAS/CONDICIONALES

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- EFECTOS EN RENDIMIENTO COMPETICIÓN

### CONCLUSIONES

# EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

## Participantes

15 jugadores fútbol profesionales Premier escocesa

## Procedimiento

4 semanas intervención

7 sesiones SSG

## Mediciones

Test Antropometría

RSA, Economía, LA

## EFFECTS OF A PERIODIZED SMALL-SIDED GAME TRAINING INTERVENTION ON PHYSICAL PERFORMANCE IN ELITE PROFESSIONAL SOCCER

ADAM L. OWEN,<sup>1</sup> DEL P. WONG,<sup>2</sup> DARREN PAUL,<sup>3</sup> AND ALEXANDRE DELLA<sup>4</sup>

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TABLE 2. SSG training intervention.\*

Session progression	Progressive overload	Total SSG duration (min)
SSGs 1	5 × 3-min games	15
SSGs 2	6 × 3-min games	18
SSGs 3	7 × 3-min games	21
SSGs 4	8 × 3-min games	24
SSGs 5	9 × 3-min games	27
SSGs 6	10 × 3-min games	30
SSGs 7	11 × 3-min games	33

\*All SSGs were played in a 3 versus 3 format (3 outfield players + 1 goalkeeper on each side) for a 3-minute duration and a 2-minute passive recovery between bouts.

TABLE 1. Four-week periodized training intervention.\*

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 0				Pretest	Rest
Week 1	Tech + tact	SSGs 1 + IP	LITr	Tech + tact	SSGs 2 + IP
Week 2	Tech + tact	SSGs 3 + IP	LITr	Tech + tact	SSGs 4 + IP
Week 3	Tech + tact	SSGs 5 + IP	LITr	Tech + tact	SSGs 6 + IP
Week 4	SSGs 7 + IP	Tech + Tact	LITr	Posttest	Rest
					Posttest
					Day off

\*IP = injury prevention/activation (low-intensity work); LITr = low-intensity recovery session; SSGs = small-sided games; Tact = tactical session (low intensity); Tech = technical session (low intensity).

# EFEKTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

**Antropometría – No mejora**

RSA - Solo mejora evidente en %Decre medio

## EFFECTS OF A PERIODIZED SMALL-SIDED GAME TRAINING INTERVENTION ON PHYSICAL PERFORMANCE IN ELITE PROFESSIONAL SOCCER

ADAM L. OWEN,<sup>1</sup> DEL P. WONG,<sup>2</sup> DARREN PAUL,<sup>3</sup> AND ALEXANDRE DELLAJ<sup>4</sup>

<sup>1</sup>Sports Science Department, Rangers Football Club, Glasgow, Scotland; <sup>2</sup>Department of Health and Physical Education, The Hong Kong Institute of Education, New Territories, Hong Kong; <sup>3</sup>Aspetar, Qatar Orthopaedic and Sports Medicine Hospital, Doha, Qatar; and <sup>4</sup>Olympic Lyon FC (Soccer), Lyon, France

**TABLE 3.** Effects of SSG training on fitness parameters ( $n = 15$ ).†

	Pre	Post	95% CI	Effect size/magnitude
RSA, s				
10-m FST	1.77 ± 0.07	1.75 ± 0.05*	0.00–0.04	0.35/small
20-m FST	3.08 ± 0.11	3.06 ± 0.09	0.00–0.06	0.27/small
TST	18.96 ± 0.68	18.61 ± 0.56*	0.19–0.51	0.57/medium
%Decre	2.43 ± 1.42	1.48 ± 1.11*	0.12–1.79	0.75/medium
Skinfold thickness, mm	60.23 ± 16.21	59.23 ± 14.78*	0.97–4.83	0.06/trivial

†CI = confidence interval; FST = fastest sprint time; RSA = repeated-sprint ability;  
TST = total sprint time; %Decre = percentage decrement score.

\* $p < 0.05$ .

# EFEKTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

## EFFECTS OF A PERIODIZED SMALL-SIDED GAME TRAINING INTERVENTION ON PHYSICAL PERFORMANCE IN ELITE PROFESSIONAL SOCCER

ADAM L. OWEN,<sup>1</sup> DEL P. WONG,<sup>2</sup> DARREN PAUL,<sup>3</sup> AND ALEXANDRE DELLAI<sup>4</sup>

<sup>1</sup>Sports Science Department, Rangers Football Club, Glasgow, Scotland; <sup>2</sup>Department of Health and Physical Education, The Hong Kong Institute of Education, New Territories, Hong Kong; <sup>3</sup>Aspetar, Qatar Orthopaedic and Sports Medicine Hospital, Doha, Qatar; and <sup>4</sup>Olympic Lyon FC (Soccer), Lyon, France

Mejora evidente en algunos parámetros cardiovasculares (VO<sub>2</sub> y HR)  
Aumento trivial de LA

TABLE 4. Effects of SSG training on submaximal aerobic performance ( $n = 15$ ).†

	Pre	Post	95% CI	Effect size/magnitude
VO <sub>2</sub> , ml·min <sup>-1</sup> ·kg <sup>-1</sup>				
9 km·h <sup>-1</sup> , 3%	31.90 ± 1.74	30.23 ± 1.66*	0.37 to 2.98	0.98/large
11 km·h <sup>-1</sup> , 3%	43.96 ± 2.24	42.01 ± 2.37*	0.98 to 2.94	0.85/large
14 km·h <sup>-1</sup> , 3%	52.03 ± 3.88	49.81 ± 4.54*	0.65 to 3.79	0.53/medium
RER				
9 km·h <sup>-1</sup> , 3%	0.84 ± 0.05	0.85 ± 0.04	0.04 to 0.04	0.00/trivial
11 km·h <sup>-1</sup> , 3%	0.95 ± 0.04	0.95 ± 0.04	0.03 to 0.04	0.06/trivial
14 km·h <sup>-1</sup> , 3%	1.10 ± 0.04	1.06 ± 0.06	0.01 to 0.08	0.68/medium
RR				
9 km·h <sup>-1</sup> , 3%	34.54 ± 9.08	32.26 ± 10.34	-1.16 to 6.70	0.22/small
11 km·h <sup>-1</sup> , 3%	39.00 ± 8.14	35.93 ± 8.40*	1.67 to 6.02	0.37/small
14 km·h <sup>-1</sup> , 3%	48.38 ± 7.30	45.43 ± 9.72*	0.02 to 7.36	0.34/small
HR, b·min <sup>-1</sup>				
9 km·h <sup>-1</sup> , 3%	145.79 ± 13.93	126.79 ± 11.93*	14.64 to 23.36	1.46/large
11 km·h <sup>-1</sup> , 3%	170.07 ± 11.36	154.64 ± 11.03*	11.72 to 19.13	1.38/large
14 km·h <sup>-1</sup> , 3%	184.43 ± 9.46	173.36 ± 11.38*	4.95 to 17.19	1.06/large
Blood lactate, mmol·L <sup>-1</sup>	4.72 ± 1.23	4.80 ± 1.39	-0.89 to 0.74	0.06/trivial

†CI = confidence interval; HR = heart rate; RER = respiratory exchange ratio; RR = respiratory rate; VO<sub>2</sub> = oxygen uptake.

\* $p < 0.05$ .

## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### EFFECTS OF A PERIODIZED SMALL-SIDED GAME TRAINING INTERVENTION ON PHYSICAL PERFORMANCE IN ELITE PROFESSIONAL SOCCER

ADAM L. OWEN,<sup>1</sup> DEL P. WONG,<sup>2</sup> DARREN PAUL,<sup>3</sup> AND ALEXANDRE DELLA<sup>4</sup>

<sup>1</sup>Sports Science Department, Rangers Football Club, Glasgow, Scotland; <sup>2</sup>Department of Health and Physical Education, The Hong Kong Institute of Education, New Territories, Hong Kong; <sup>3</sup>Aspetar, Qatar Orthopaedic and Sports Medicine Hospital, Doha, Qatar; and <sup>4</sup>Olympic Lyon FC (Soccer), Lyon, France

### Conclusión de los autores:

Mejoran en RSA

Reducción del VO2 y HR a varias intensidades de carrera

## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### Conclusión de los autores:

Mejoran en RSA

Reducción del VO<sub>2</sub> y HR a varias intensidades de carrera

### EFFECTS OF A PERIODIZED SMALL-SIDED GAME TRAINING INTERVENTION ON PHYSICAL PERFORMANCE IN ELITE PROFESSIONAL SOCCER

ADAM L. OWEN,<sup>1</sup> DEL P. WONG,<sup>2</sup> DARREN PAUL,<sup>3</sup> AND ALEXANDRE DELLA,<sup>4</sup>

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### Visión crítica:

Test analíticos

Solo analiza uno de los factores de rendimiento (capacidades físicas)

No hay CG

7 sesiones SSG vs. 11 sesiones baja intensidad

7 sesiones SSG vs. 26 posibles sesiones

¿INFLUENCIA DEL RESTO DE CONTENIDOS?

## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### Participantes

10 jugadores de una academia de rugby

Seitz, LB, Rivière, M, de Villarreal, ES, and Haff, GG. The athletic performance of elite rugby league players is improved after an 8-week small-sided game training intervention. *J Strength Cond Res* 28(4): 971–975, 2014.

### Procedimiento

Entrenamiento SSG: 8 semanas, 2 sesiones/semana

Pretest y postest: antropometría, sprint, RSA y 30-15 intermitent fitness test

### Semana tipo

5 h entrenamiento técnico/táctico

2 h SSG

2 h entrenamiento de fuerza

1 h prevención lesiones

No entrenamiento RSA ni HIIT



## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

Mejora en todas las variables

Seitz, LB, Rivière, M, de Villarreal, ES, and Haff, GG. The athletic performance of elite rugby league players is improved after an 8-week small-sided game training intervention. *J Strength Cond Res* 28(4): 971–975, 2014.

**TABLE 2.** Mean, SD, and ES for 30-15 Intermittent Fitness Test, speed, and RSA tests pre- and posttraining intervention ( $n = 10$ ).\*†

Variable‡	Pretraining Mean $\pm$ SD	Posttraining Mean $\pm$ SD	<i>p</i>	ES
$V_{IFT}$ (km·h $^{-1}$ )	19.35 $\pm$ 1.00	19.60 $\pm$ 0.77	0.05	1.29
10 m (s)	1.95 $\pm$ 0.07	1.89 $\pm$ 0.06	0.003	12.99
20 m (s)	3.28 $\pm$ 0.10	3.24 $\pm$ 0.08	0.002	10.88
40 m (s)	5.34 $\pm$ 0.16	5.28 $\pm$ 0.13	0.001	6.33
MST (s)	3.51 $\pm$ 0.15	3.43 $\pm$ 0.13	0.001	6.48
TST (s)	28.06 $\pm$ 1.21	27.47 $\pm$ 1.06	0.001	0.81
% Decrement	7.10 $\pm$ 3.14	5.93 $\pm$ 3.03	0.05	0.27

\*ES = effect size; MST = mean sprint time; TST = total sprint time.

†Values are reported as means (95% confidence interval) for velocity reached at the end of the 30-15 IFT test ( $V_{IFT}$ ), MST, TST and % of sprint decrement during the RSA test and 10-, 20-, and 40-m sprint times.

‡Different between pre- and postintervention ( $p < 0.05$ ).

## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS



Seitz, LB, Rivière, M, de Villarreal, ES, and Haff, GG. The athletic performance of elite rugby league players is improved after an 8-week small-sided game training intervention. *J Strength Cond Res* 28(4): 971–975, 2014.

**TABLE 2.** Mean, SD, and ES for 30-15 Intermittent Fitness Test, speed, and RSA

### - Visión crítica:

- Resulta curioso mejoras en 40 m por
- SSG si no se alcanzan velocidades altas.

	$V_{IFT}$ (m·s⁻¹)	$V_{RSA}$ (m·s⁻¹)
10 m (s)	$1.95 \pm 0.07$	$1.89 \pm 0.06$
20 m (s)	$3.28 \pm 0.10$	$3.24 \pm 0.08$
40 m (s)	$5.34 \pm 0.16$	$5.28 \pm 0.13$
MST (s)	$3.51 \pm 0.15$	$3.43 \pm 0.13$
TST (s)	$28.06 \pm 1.21$	$27.47 \pm 1.06$
% Decrement	$7.10 \pm 3.14$	$5.93 \pm 3.03$

	<i>p</i>	ES
	0.05	1.29
	0.003	12.99
	0.002	10.88
	0.001	6.33
	0.001	6.48
	0.001	0.81
	0.05	0.27

\*ES = effect size; MST = mean sprint time; TST = total sprint time.

†Values are reported as means (95% confidence interval) for velocity reached at the end of the 30-15 IFT test ( $V_{IFT}$ ), MST, TST and % of sprint decrement during the RSA test and 10-, 20-, and 40-m sprint times.

‡Different between pre- and postintervention ( $p < 0.05$ ).

## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS



Seitz, LB, Rivière, M, de Villarreal, ES, and Haff, GG. The athletic performance of elite rugby league players is improved after an 8-week small-sided game training intervention. *J Strength Cond Res* 28(4): 971–975, 2014.

**TABLE 2.** Mean, SD, and ES for 30-15 Intermittent Fitness Test, speed, and RSA

### - Visión crítica:

- Resulta curioso mejoras en 40 m por SSG si no se alcanzan velocidades altas.

	Pre	Post
IFT (W)	6.00 ± 1.00	6.00 ± 0.77
10 m (s)	1.95 ± 0.07	1.95 ± 0.07
20 m (s)	3.28 ± 0.10	3.28 ± 0.10
40 m (s)	5.34 ± 0.16	5.34 ± 0.16
MST (s)	2.51 ± 0.15	2.51 ± 0.15

p	ES
0.05	1.29

Semana tipo

Deportistas jóvenes??

Grupo control??

Influencia de otros contenidos??

5 h entrenamiento técnico/táctico  
2 h SSG  
2 h entrenamiento de fuerza  
1 h prevención lesiones

20°, and 40°m sprint times.

†Different between pre- and postintervention.

# EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

## Participantes

55 adolescentes con sobrepeso

## Procedimiento

GE – SSG 11 semanas, 2 ses/sem, (no especifica tipo SSG)

GC – no SSG y hábitos habituales

## Medidas

Antropometría

Capacidad aeróbica

Rev Med Chile 2015; 143: 744-750

Efecto de los juegos reducidos en la composición corporal y la condición física aeróbica en un grupo de adolescentes escolares

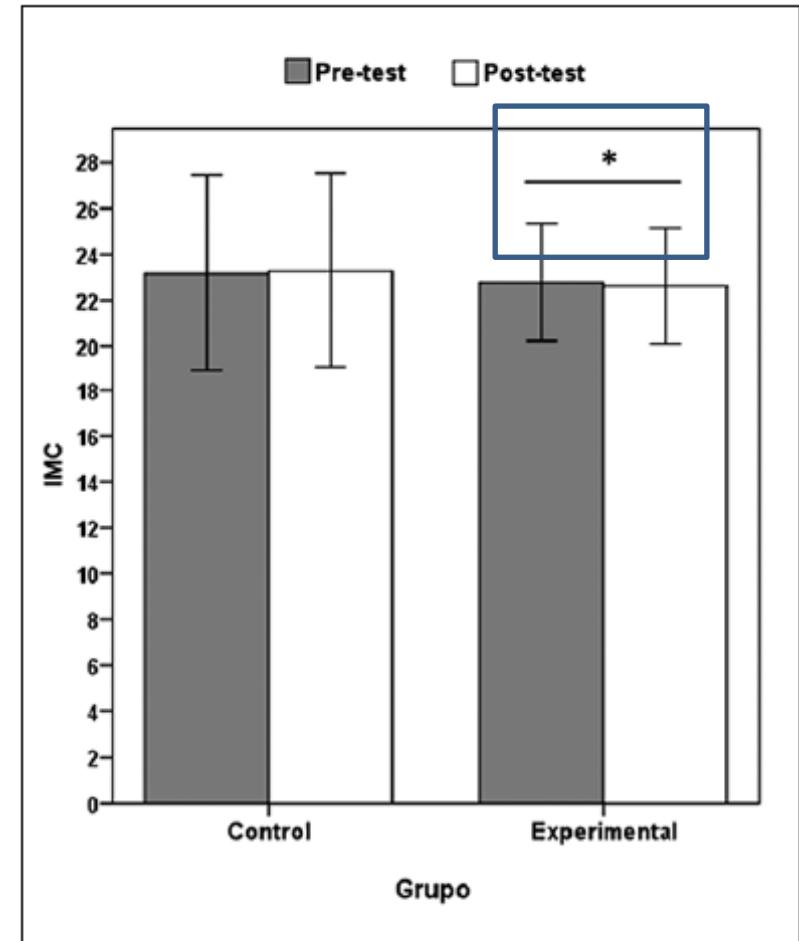
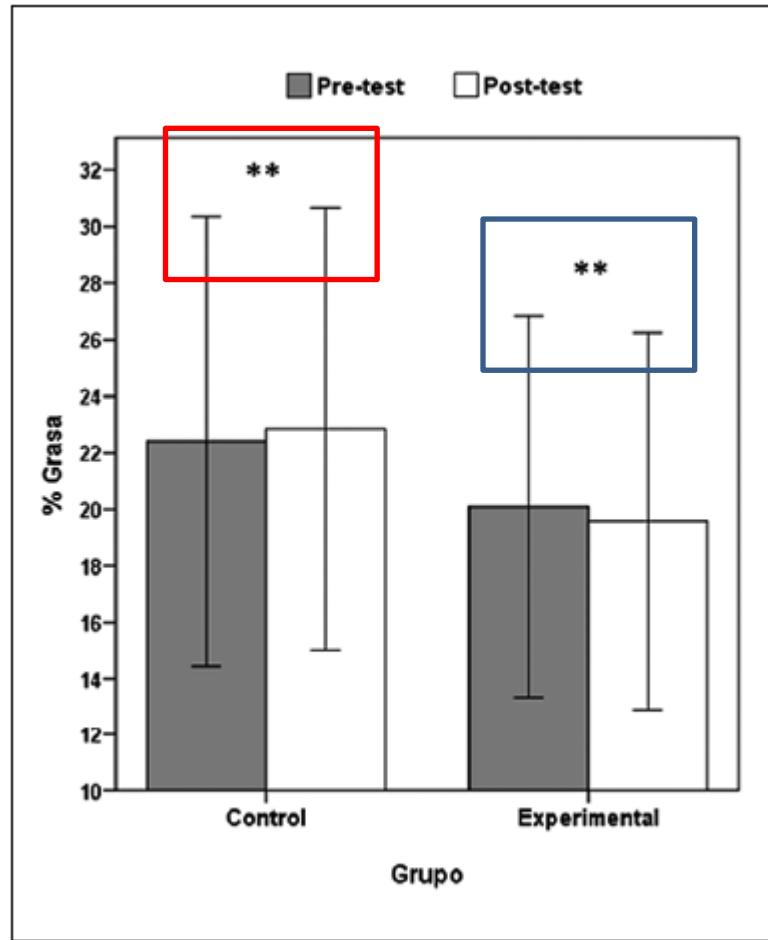
HERNALDO CARRASCO BELTRÁN<sup>1,2\*</sup>, RAFAEL E. REIGAL GARRIDO<sup>2,3</sup>,  
DAVID ULLOA DÍAZ<sup>4</sup>, IGNACIO JESÚS CHIROSA RÍOS<sup>2,3,b</sup>,  
LUIS JAVIER CHIROSA RÍOS<sup>2,3,b</sup>

Effects of small-sided exercises on body composition and maximal oxygen uptake in adolescents



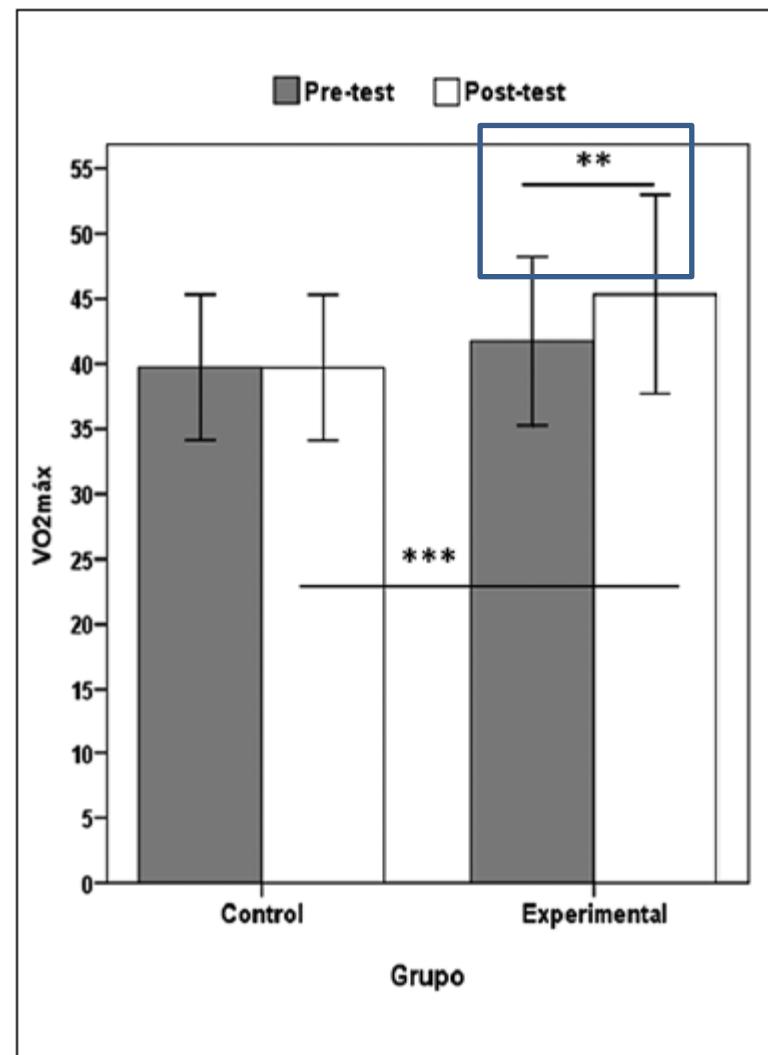
## EFEKTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### Mejora % grasa e IMC



## EFEKTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

VO<sub>2maxE</sub>



**Figura 2.** VO<sub>2max</sub> = consumo máximo de oxígeno. \*\*Indica p < 0,01. \*\*\* Indica p < 0,01.

## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### Conclusión

SSG efectivo antropometría y capacidad aeróbica

Rev Med Chile 2015; 143: 744-750

Efecto de los juegos reducidos en la composición corporal y la condición física aeróbica en un grupo de adolescentes escolares

HERNALDO CARRASCO BELTRÁN<sup>1,3,a</sup>, RAFAEL E. REIGAL GARRIDO<sup>2,3</sup>,  
DAVID ULLOA DÍAZ<sup>4,b</sup>, IGNACIO JESÚS CHIROSA RÍOS<sup>2,3,b</sup>,  
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Effects of small-sided exercises on body composition and maximal oxygen uptake in adolescents

## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### Conclusión

SSG efectivo antropometría y capacidad aeróbica



Efecto de los juegos reducidos en la composición corporal y la condición física aeróbica en un grupo de adolescentes escolares

HERNALDO CARRASCO BELTRÁN<sup>1,3,a</sup>, RAFAEL E. REIGAL GARRIDO<sup>2,3</sup>,  
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LUIS JAVIER CHIROSA RÍOS<sup>2,3,b</sup>

Effects of small-sided exercises on body composition and maximal oxygen uptake in adolescents

### Visión crítica:

Población, adolescentes con sobrepeso  
No datos de tipo SSG.

## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### COMPARACIÓN ENTRE PROGRAMAS

¿ SSG vs. OTRAS TAREAS?



## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### COMPARACIÓN ENTRE PROGRAMAS

#### Participantes

Jugadores jóvenes de fútbol

Academia de un club Premier League

Reilly T, White C. Small-sided games as an alternative to interval-training for soccer players [abstract]. J Sports Sci 2004; 22 (6): 559

#### Procedimiento

Grupo SSG – 5 vs. 5, 6 x min, rec 3 min

Grupo Entrenamiento Interválico aeróbico (ITG)

6 semanas

#### Mediciones

CMJ

Sprint

6 x 30 m shuttle run

T-test CODA

MSFT



## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### COMPARACIÓN ENTRE PROGRAMAS

Reilly T, White C. Small-sided games as an alternative to interval-training for soccer players [abstract]. J Sports Sci 2004; 22 (6): 559

### Conclusión

Tanto SSG como ITG no se obtienen mejoras (mantienen) en rendimiento de los jugadores en las variables analizadas



## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### COMPARACIÓN ENTRE PROGRAMAS

#### Participantes

Jugadores italianos Campionato Berretti

15-20 años

#### Procedimiento

SSG - 3 vs 3, 4 vs 4, 5 vs 5

ITG

Programa - 4 y 8 semanas

F. M. Impellizzeri<sup>1</sup>  
S. M. Marcora<sup>2</sup>  
C. Castagna<sup>3</sup>  
T. Reilly<sup>4</sup>  
A. Sassi<sup>1</sup>  
F. M. Iaia<sup>1</sup>  
E. Rampinini<sup>1</sup>

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

- 3 vs. 3, with goalkeeper, 2 – 3 ball-touches, 25 × 35 m field dimension;
- 4 vs. 4, with goalkeeper, 2 ball-touches, 40 × 50 m field dimension;
- 4 vs. 4 and 5 vs. 5 according to Bangsbo (p. 166 and 176 of reference [9]);
- 4 vs. 4 and 5 vs. 5 according to Bangsbo (p. 52 of reference [12]);
- 4 vs. 4 and 5 vs. 5 according to Balsom (p. 45 of reference [4]).

#### Mediciones

Test Laboratorio (VO2max, RE, economía, LA...)

Test específico de resistencia futbol (Ekblom Test)

# EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

## COMPARACIÓN ENTRE PROGRAMAS

**Mejora trivial con ambos programas**

**0.2 – 0.7%**

**No diferencias entre SSG - ITG**

F. M. Impellizzeri<sup>1</sup>  
S. M. Marcora<sup>2</sup>  
C. Castagna<sup>3</sup>  
T. Reilly<sup>4</sup>  
A. Sassi<sup>1</sup>  
F. M. Iaia<sup>1</sup>  
E. Rampinini<sup>1</sup>

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

Table 1 Effects after 4 weeks (Mid) and a further 8 weeks (Post) of generic vs. specific aerobic interval training on soccer players' aerobic fitness and soccer-specific endurance (Ekblom's test)

	Pre	Mid	Post	Interaction <sup>a</sup>
<b>Maximal values</b>				
<b>GTG (n = 15)</b>				
- $\dot{V}O_{2\max}$ ( $l \cdot min^{-1}$ )	3.883 ± 0.306	4.143 ± 0.378	4.163 ± 0.387	p = 0.80
- $\dot{V}O_{2\max}$ ( $ml \cdot kg^{-1} \cdot min^{-1}$ )	55.6 ± 3.4	59.7 ± 4.1	60.2 ± 3.9	p = 0.81
- $HR_{\max}$ ( $b \cdot min^{-1}$ )	197.7 ± 9.5	196.2 ± 10.0	194.1 ± 7.2	p = 0.99
<b>STG (n = 14)</b>				
- $\dot{V}O_{2\max}$ ( $l \cdot min^{-1}$ )	3.960 ± 0.383	4.200 ± 0.417	4.203 ± 0.437	
- $\dot{V}O_{2\max}$ ( $ml \cdot kg^{-1} \cdot min^{-1}$ )	57.7 ± 4.2	61.4 ± 4.6	61.8 ± 4.5	
- $HR_{\max}$ ( $b \cdot min^{-1}$ )	194.5 ± 7.1	192.9 ± 8.2	192.7 ± 8.9	
<b>Lactate threshold</b>				
<b>GTG (n = 15)</b>				
- $\dot{V}O_2$ at Tlac ( $l \cdot min^{-1}$ )	3.150 ± 0.348	3.386 ± 0.338	3.515 ± 0.270	p = 0.98
- $\dot{V}O_2$ at Tlac ( $ml \cdot kg^{-1} \cdot min^{-1}$ )	45.1 ± 3.8	48.7 ± 3.3	50.9 ± 2.9	p = 0.94
- % $\dot{V}O_{2\max}$	81.0 ± 4.3	81.7 ± 3.1	84.6 ± 3.4	p = 0.94
- Vel at Tlac ( $km \cdot h^{-1}$ )	11.2 ± 0.6	11.6 ± 0.5	12.2 ± 0.4	p = 0.42
- RE at Tlac ( $ml \cdot kg^{-0.75} \cdot m^{-1}$ )	0.72 ± 0.03	0.71 ± 0.04	0.70 ± 0.04	p = 0.53
<b>STG (n = 14)</b>				
- $\dot{V}O_2$ at Tlac ( $l \cdot min^{-1}$ )	3.242 ± 0.407	3.465 ± 0.247	3.592 ± 0.281	
- $\dot{V}O_2$ at Tlac ( $ml \cdot kg^{-1} \cdot min^{-1}$ )	47.3 ± 4.9	50.7 ± 3.2	52.4 ± 2.8	
- % $\dot{V}O_{2\max}$	81.5 ± 4.3	82.2 ± 3.6	84.7 ± 5.1	
- Vel at Tlac ( $km \cdot h^{-1}$ )	11.3 ± 0.7	11.9 ± 0.7	12.4 ± 0.5†	
- RE at Tlac ( $ml \cdot kg^{-0.75} \cdot m^{-1}$ )	0.73 ± 0.03	0.72 ± 0.02	0.71 ± 0.03	
<b>Ekblom's test</b>				
<b>GTG (n = 15)</b>				
- time (s)	704 ± 42	618 ± 49	603 ± 17	p = 0.57
<b>STG (n = 14)</b>				
- time (s)	723 ± 47	629 ± 36	609 ± 33	

GTG, generic training group; STG, soccer-specific training group; RE, running economy; Tlac, lactate threshold;  $\dot{V}O_{2\max}$ , maximum oxygen uptake; †, group × time interaction of a  $2 \times (3)$  ANOVA

## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### COMPARACIÓN ENTRE PROGRAMAS

Mejoras similares con ambos programas

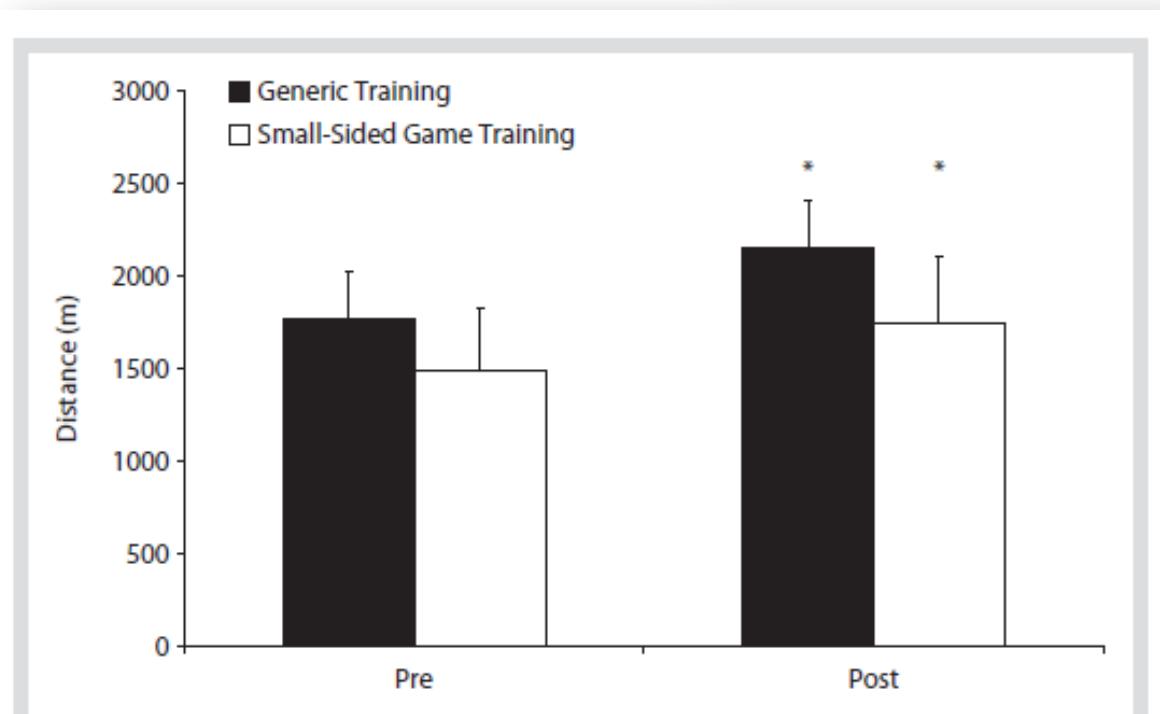
YYIR1

636 Training & Testing

### Generic Versus Small-sided Game Training in Soccer

Authors

S. V. Hill-Haas<sup>1,2</sup>, A. J. Coutts<sup>2</sup>, G. J. Rowsell<sup>2</sup>, B. T. Dawson<sup>1</sup>



**Fig. 3** SSG and GTG performance changes in the YYIRTL1 over 7 weeks of pre-season training. \*Significant difference between pre and post.

# EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

## COMPARACIÓN ENTRE PROGRAMAS

Resultados similares con ambos programas

636 Training & Testing

### Generic Versus Small-sided Game Training in Soccer

Authors

S. V. Hill-Haas<sup>1,2</sup>, A. J. Coutts<sup>2</sup>, G. J. Rowsell<sup>2</sup>, B. T. Dawson<sup>1</sup>

**Table 2** Comparison of physiological performance tests and anthropometric data over 7 weeks of pre-season training (mean±SD).

Variable	Group	Pre	Post	Interaction		Time	
				P	ES	P	ES
$\dot{V}O_{2\text{max}}$ ( $\text{mL}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$ )	ITG	$60.2\pm4.6$	$61.4\pm3.5$	0.619	0.007	0.778	0.002
	SSG	$59.3\pm4.5$	$58.9\pm5.5$				
$\dot{V}O_{2\text{max}}$ ( $\text{mL}\cdot\text{kg}^{-0.75}\cdot\text{min}^{-1}$ )	ITG	$169\pm14$	$173\pm10$	0.626	0.007	0.648	0.006
	SSG	$167\pm9$	$166\pm11$				
treadmill time to exhaustion (s)	ITG	$589\pm34$	$604\pm43$	0.340	0.027	0.943	0.000
	SSG	$594\pm50$	$581\pm49$				
MSFT (m)	ITG	$2258\pm131$	$2327\pm174$	0.514	0.013	0.684	0.005
	SSG	$2222\pm240$	$2206\pm221$				
YYIRTL1 (m)	ITG	$1764\pm256^b$	$2151\pm261^b$	0.522	0.013	0.004 <sup>a</sup>	0.229
	SSG	$1488\pm345$	$1742\pm362$				
RSA <sub>total</sub> (s)	ITG	$42.2\pm1.8$	$42.3\pm1.5$	0.800	0.002	0.977	0.000
	SSG	$42.1\pm1.1$	$42.0\pm1.4$				
5 m sprint (s)	ITG	$1.16\pm0.02$	$1.15\pm0.05$	0.429	0.019	0.809	0.002
	SSG	$1.15\pm0.05$	$1.16\pm0.07$				
20 m sprint (s)	ITG	$3.27\pm0.06$	$3.22\pm0.10$	0.610	0.008	0.366	0.025
	SSG	$3.26\pm0.12$	$3.24\pm0.17$				

<sup>a</sup>significant difference between pre and post training

<sup>b</sup>significant difference to SSG

# EFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

## COMPARACIÓN ENTRE PROGRAMAS

### Participantes

Jugadores de fútbol de amateur

Quinta división francesa

SSG  
HIT  
GC

Dellal, A, Varlette, C, Owen, A, Chirico, EN, and Pialoux, V. Small-sided games versus interval training in amateur soccer players: Effects on the aerobic capacity and the ability to perform intermittent exercises with changes of direction. *J Strength Cond Res* 26(10): 2712–2720, 2012

**TABLE 2.** Characteristics of the small-sided games (SSGs) training.

SSG	Field area (m × m)	Bout duration	No. of bouts	Duration of recovery interbouts (min)	Effective duration of play (min)	Total duration (min)
2 vs. 2	20 × 20	100	2 min 30 s	5	2	12.5
1 vs. 1	15 × 10	150	1 min 30 s	5	1.5	7.5

**TABLE 3.** Characteristics of the high-intensity intermittent training (HIT) sessions.\*

Type of HIT	Intensity (%V30-15 <sub>IFT</sub> )	No. of blocks	No. of work periods	Interseries recovery (min)	No. of recovery periods	Nature of the between-runs recovery
30s-30s	95	2	2 × 10	6	2 × 9	Passive
15s-15s	100	2	2 × 8	5	2 × 7	Passive
10s-10s	95	2	2 × 7	5	7 × 6	Passive

\*V30-15<sub>IFT</sub> = maximal speed reached at the end of the 30-15 intermittent fitness test.

## Pretest-Postest

Test continuo aeróbico (Vameval test)

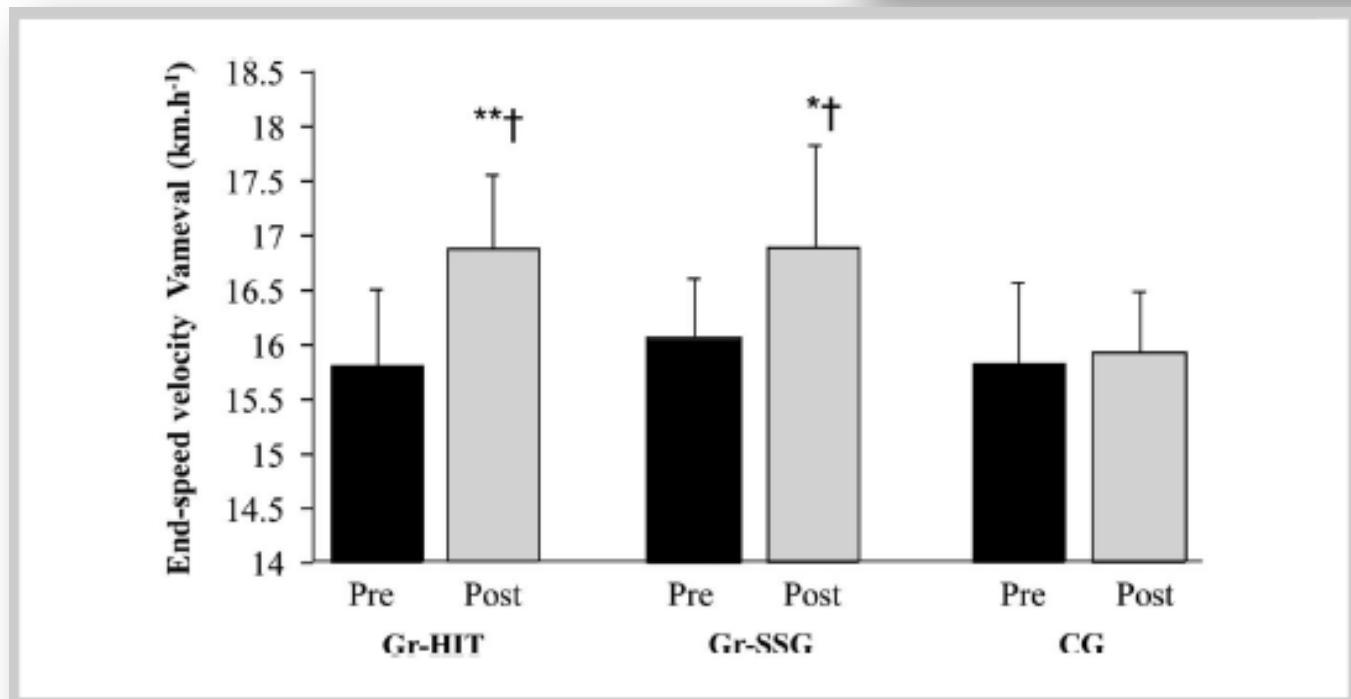
Test intermitente (30-15IFT)

## EFEKTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### COMPARACIÓN ENTRE PROGRAMAS

Ambos grupos mejoran Test continuo aeróbico

Dellal, A, Varlette, C, Owen, A, Chirico, EN, and Pialoux, V. Small-sided games versus interval training in amateur soccer players: Effects on the aerobic capacity and the ability to perform intermittent exercises with changes of direction. *J Strength Cond Res* 26(10): 2712–2720, 2012



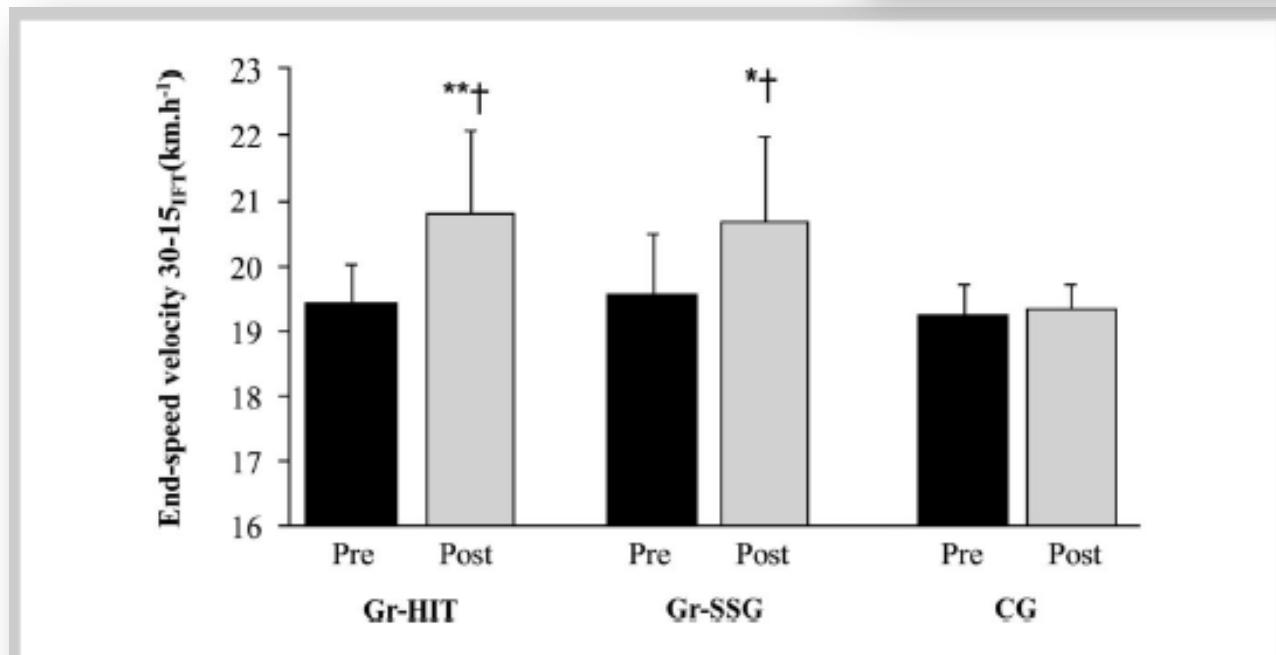
**Figure 2.** Effect of small-sided games and high-intensity intermittent training on Vameval test performance. CG = control group; Gr-SSG = small-sided games group; Gr-HIT = high-intensity intermittent training group. \* $p < 0.05$  and \*\* $p < 0.01$  compared with pretraining; † $p < 0.05$  compared with CG.

## EFEKTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### COMPARACIÓN ENTRE PROGRAMAS

Ambos grupos mejoran Test intermitente

Dellal, A, Varlette, C, Owen, A, Chirico, EN, and Pialoux, V. Small-sided games versus interval training in amateur soccer players: Effects on the aerobic capacity and the ability to perform intermittent exercises with changes of direction. *J Strength Cond Res* 26(10): 2712–2720, 2012



**Figure 3.** Effect of small-sided games and high-intensity intermittent training on maximal speed reached at the end of the 30-15 intermittent fitness test ( $30\text{-}15_{IFT}$ ). CG = control group; Gr-SSG = small-sided games group; Gr-HIT = high-intensity intermittent training group. \* $p < 0.05$  and \*\* $p < 0.01$  compared with pretraining; † $p < 0.05$  compared with CG.

# EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

## COMPARACIÓN ENTRE PROGRAMAS

### Participantes

Adultos desentrenados

Grupo SO – fútbol SSG

Grupo RU - carrera

Eur J Appl Physiol (2010) 108:1247–1258  
DOI 10.1007/s00421-009-1319-8

ORIGINAL ARTICLE

### Muscle adaptations and performance enhancements of soccer training for untrained men

Peter Krustrup · Jesper F. Christensen · Morten B. Randers · Henrik Pedersen ·  
Emil Sundstrup · Markus D. Jakobsen · Birgitte R. Krustrup · Jens J. Nielsen ·  
Charlotte Suetta · Lars Nybo · Jens Bangsbo



# EFEKTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

**Table 2** Muscular metabolites, enzyme activity, fibre type distribution and fibre sizes after 0, 4 and 12 weeks of soccer practice (SO,  $n = 12$ ) and running (RU,  $n = 10$ ) for untrained men, as well as after 0 and 12 weeks for an inactive control group (CO,  $n = 10$ )

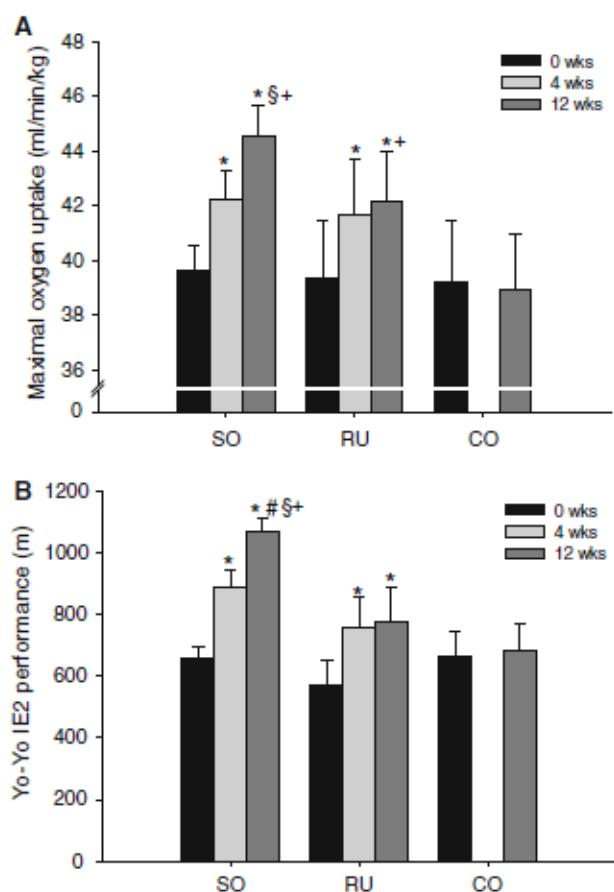
	SO			RU			CO 0 weeks 4 weeks 12 weeks	
	0 weeks	4 weeks	12 weeks	0 weeks	4 weeks	12 weeks		
Glycogen content (mmol/kg d.w.)	464 ± 37	422 ± 28	470 ± 31	412 ± 29	402 ± 19	418 ± 26	412 ± 29	
CP content (mmol/kg d.w.)	89.2 ± 6.8	80.5 ± 8.0	85.9 ± 10.5	82.7 ± 9.4	85.2 ± 7.9	83.5 ± 8.5	82.7 ± 9.4	
CS activity (μmol/g d.w./min)	35.6 ± 2.2	39.3 ± 2.0*	40.7 ± 2.3*	33.0 ± 2.8	35.6 ± 2.2	36.5 ± 2.5	33.0 ± 2.8	
HAD activity (μmol/g d.w./min)	25.4 ± 2.3	27.2 ± 1.8	26.6 ± 1.5	28.1 ± 1.9	29.2 ± 2.3	29.5 ± 2.0	28.1 ± 1.9	
Capillaries (cap/fibre)	1.76 ± 0.11	2.01 ± 0.12	2.15 ± 0.12*	1.83 ± 0.10	2.02 ± 0.12	2.09 ± 0.12*	2.18 ± 0.08	2.29 ± 0.05
Capillaries (cap/mm <sup>2</sup> )	354 ± 25	386 ± 28	395 ± 18	367 ± 19	371 ± 15	404 ± 30	430 ± 24	454 ± 32
ST fibre size (μm <sup>2</sup> )	4,711 ± 304	5,417 ± 447	5,683 ± 463	5,229 ± 309	5,490 ± 371	5,436 ± 501	5,056 ± 315	4,733 ± 339
FTa fibre size (μm <sup>2</sup> )	5,172 ± 271	5,911 ± 420	5,604 ± 207	5,169 ± 230	5,858 ± 303	5,695 ± 385	4,992 ± 263	4,728 ± 358
FTx fibre size (μm <sup>2</sup> )	4,509 ± 336	4,777 ± 419	5,121 ± 317	4,721 ± 285	4,915 ± 465	5,111 ± 502	3,456 ± 1,020	4,484 ± 213
Mean fibre size (μm <sup>2</sup> )	4,828 ± 233	5,513 ± 373	5,546 ± 240*	5,075 ± 239	5,507 ± 287	5,367 ± 473	5,065 ± 271	4,767 ± 233
Fibre type distribution (% ST fibres)	43.0 ± 3.8	45.3 ± 6.0	47.4 ± 4.7	44.6 ± 3.8	48.4 ± 3.7	47.6 ± 5.9	43.9 ± 5.3	49.0 ± 5.0
Fibre type distribution (% FTa fibres)	39.1 ± 2.7	38.1 ± 3.5	41.9 ± 3.9	38.7 ± 2.7	37.5 ± 4.6	40.1 ± 4.3	44.6 ± 3.9	39.9 ± 3.6
Fibre type distribution (% FTx fibres)	17.9 ± 3.2	16.5 ± 3.9	10.7 ± 1.8*	16.7 ± 3.9	14.1 ± 3.6	12.2 ± 4.6	11.5 ± 3.0	10.7 ± 1.8

Mean ± SEM are presented

\* Significant difference from 0 weeks

Ambos grupos  
Aumento de capilares/fibra  
  
Grupo Futbol (SO)  
Descenso de % Fibras rápidas

# EFEKTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS



**Fig. 4** Maximal oxygen uptake (a) and Yo-Yo Intermittent Endurance level 2 test performance (b; Yo-Yo IE2) before as well as after 4 and 12 weeks of soccer practice (SO,  $n = 12$ ) and running (RU,  $n = 10$ ) for untrained men, or continuation of an inactive life-style (CO = 10). Mean  $\pm$  SEM are presented. \* Significant difference from 0 weeks.  $\ddagger$  Significant difference from 4 weeks.  $^*$ Significant difference from RU.  $^{+}$ Significant difference from CO

Eur J Appl Physiol (2010) 108:1247–1258  
DOI 10.1007/s00421-009-1319-8

ORIGINAL ARTICLE

## Muscle adaptations and performance enhancements of soccer training for untrained men

Peter Krstrup · Jesper F. Christensen · Morten B. Randers · Henrik Pedersen ·  
Emil Sundstrup · Markus D. Jakobsen · Birgitte R. Krstrup · Jens J. Nielsen ·  
Charlotte Suetta · Lars Nybo · Jens Bangsbo

**Ambos grupos mejoran**

VO<sub>2</sub>max  
Rendimiento YYIE2

## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### COMPARACIÓN ENTRE PROGRAMAS

#### Participantes

Jugadores jóvenes de fútbol

#### Procedimiento

6 semanas de intervención

Grupo entrenamiento interválico

Grupo SSG

#### Mediciones

Analizan VAM en prueba continua y el CMJ



RESEARCH ARTICLE

Effects of Small-Sided Games vs. Interval Training in Aerobic Fitness and Physical Enjoyment in Young Elite Soccer Players

Asier Los Arcos<sup>1\*</sup>, Juan Sebastián Vázquez<sup>2\*</sup>, Juan Martín<sup>3</sup>, Javier Lerga<sup>3</sup>, Felipe Sánchez<sup>3</sup>, Federico Villagra<sup>4,5†</sup>, Javier J. Zulueta<sup>4,5‡</sup>



## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

### COMPARACIÓN ENTRE PROGRAMAS



RESEARCH ARTICLE

Effects of Small-Sided Games vs. Interval Training in Aerobic Fitness and Physical Enjoyment in Young Elite Soccer Players

Asier Los Arcos<sup>1\*</sup>, Juan Sebastián Vázquez<sup>2\*</sup>, Juan Martín<sup>3</sup>, Javier Lerga<sup>3</sup>, Felipe Sánchez<sup>3</sup>, Federico Villagra<sup>4,5†</sup>, Javier J. Zulueta<sup>4,5‡</sup>

No mejoras en VAM con ningún programa

No diferencias entre grupos en los efectos de los programas

Table 3. Results, change in mean (%) and effect size (ES) of MAS ( $\text{km} \cdot \text{h}^{-1}$ ) from Test 1 (T1) to Test 2 (T2).

Group	n	T1	T2	Change (%)	p	ES	Rating	
IT	8	$16.8 \pm 0.9$	$17.1 \pm 1.0$	$1.7 \pm 1.5$	0.08	$0.27 \pm 0.25$	Possibly	69/30/0
SSG	7	$17.0 \pm 0.8$	$16.9 \pm 0.8$	$-0.4 \pm 1.9$	0.72	$-0.07 \pm 0.34$	Possibly	9/68/23

IT = Interval Training; SSG = Small-sided Game.

SSG “possibly small” descenso en CMJ

# EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

## COMPARACIÓN ENTRE PROGRAMAS

### Aspecto novedoso - Satisfacción por la tarea



RESEARCH ARTICLE

Effects of Small-Sided Games vs. Interval Training in Aerobic Fitness and Physical Enjoyment in Young Elite Soccer Players

Asier Los Arcos<sup>1\*</sup>, Juan Sebastián Vázquez<sup>2\*</sup>, Juan Martín<sup>3</sup>, Javier Lerga<sup>3</sup>, Felipe Sánchez<sup>3</sup>, Federico Villagra<sup>4,5†</sup>, Javier J. Zulueta<sup>4,5‡</sup>

SSG mayor satisfacción

Table 4. Results of Physical Activity Enjoyment Scale (PACES) (arbitrary units).

	ITG	SSGG	p	ES	Rating	
PACES Scores	15.63 ± 6.1	28.43 ± 9.1	0.006	1.86 ± 1.07	Very Likely	99/10

ITG = Interval Training Group; SSGG = Small-sided Game group; ES = Effect Size.

# EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

## COMPARACIÓN ENTRE PROGRAMAS

### Participantes

Jugadores balonmano de elite

**Table 1.** Description of the testing schedule and details of the training protocol over the 8-week training period in small-sided games (SSG) and repeated shuffle sprints (RSS).

		SSG	RSS
Pre-test	Week-1	RSA, anthropometry, CMJ test, sprint test (20 m), throwing tests (standing throw and jump shot).	
Training Period	Week-2	2×[5×2'25"-1'P]	2×[2×14-20"p-4'P]
	Week-3	2×[5×2'35"-1'P]	2×[2×15-20"p-4'P]
	Week-4	2×[5×2'55"-1'P]	2×[2×16-20"p-4'P]
	Week-5	2×[5×3"-1'P]	2×[2×16-20"p-4'P]
	Week-6	2×[5×3"-1'P]	2×[2×16-20"p-4'P]
	Week-7	2×[5×3'10"-1'P]	2×[2×17-20"p-4'P]
	Week-8	2×[5×3'10"-1'P]	2×[2×17-20"p-4'P]
	Week-9	2×[5×2'25"-1'P]	2×[2×14-20"p-4'P]
Post-test	Week-10	RSA, anthropometry, CMJ test, sprint test (20 m), throwing tests (standing throw and jump shot).	

As in the SSG protocol, 2×[5×2'25"-1'P] in week 2 means: 2 sessions *per week* consisting of 5 bouts of 2'25" of continuous handball small sided games with 1' (1'P) of passive recovery between bouts. As for RSS protocol, 2×[2×14-20"p-4'P] in week-2 means: 2 sessions *per week* consisting of 2 sets of 14 sprints (10+10 m) followed by a jump shot with 20" (20"p) of active recovery between repetitions and 4' (4'P) of passive recovery between sets.

Journal of Strength and Conditioning Research Publish Ahead of Print  
DOI: 10.1519/DC.0000000000001139

Effect of small-sided games and repeated shuffle sprint training on physical performance in elite handball players

Running head: Selective effectiveness of different training protocols

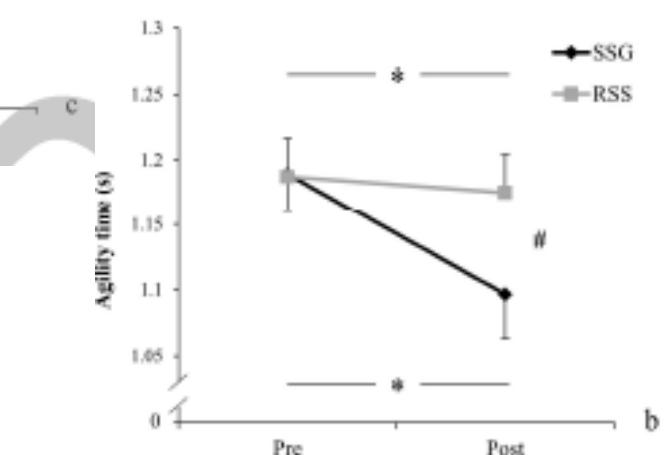
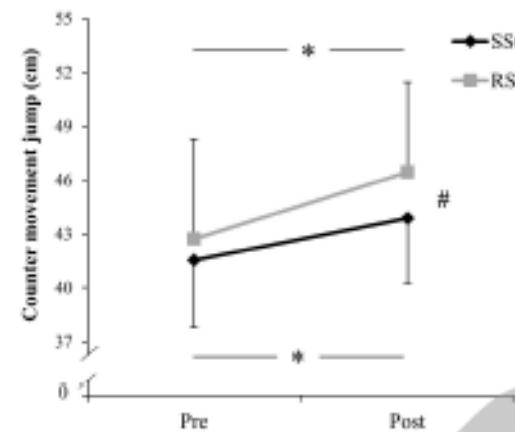
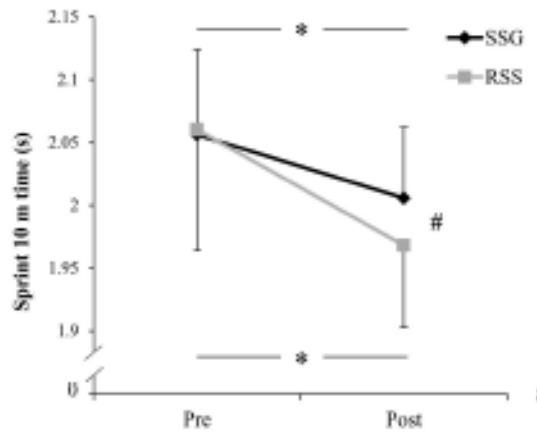
Science Life, Orde Wingate Institute for Physical Education and Sports, Netanya, Israel

Dello Iacono Antonio<sup>1</sup>, Ardigo Luca P<sup>1\*</sup>, Mikel Yuso<sup>1</sup>, Padilo Johnny<sup>1,2</sup>



# EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

## COMPARACIÓN ENTRE PROGRAMAS



Journal of Strength and Conditioning Research Published Ahead of Print  
DOI: 10.1519/JSR.0000000000001124

Effect of small-sided games and repeated shuttle sprint training on physical performance in elite handball players

Running head: Selective effectiveness of different training protocols

Science Life, Orde Wingate Institute for Physical Education and Sports, Netanya, Israel

Dello Iacono Antonio<sup>1</sup>, Ardigo Luca P<sup>2,\*</sup>, Meekel Yesuf<sup>1</sup>, Padulo Johnny<sup>1,2</sup>

Los dos grupos mejoran en todas las variables

No diferencias entre los dos programas en RSA

Mayores mejoras RSS en aceleración, salto y velocidad de tiro tras salto

Mayores mejoras grupo SSG en agilidad y velocidad tiro desde parado

# EFEKTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

## COMPARACIÓN ENTRE PROGRAMAS

### Participantes

Jugadores de balonmano elite Israel



### IMPROVING FITNESS OF ELITE HANDBALL PLAYERS: SMALL-SIDED GAMES VS. HIGH-INTENSITY INTERMITTENT TRAINING

ANTONIO DELLO IACONO,<sup>1</sup> ALON ELIAKIM,<sup>1,2</sup> AND YOAV MECKEL<sup>1</sup>

*J Strength Cond Res* 29(3): 835–843,

**TABLE 1.** Description of the training schedule and details of training protocol over the 8-week training period in high intensity intermittent training and small-sided games.\*

	HIIT	SSG
Testing		
Wk 1	Sprint tests (10, 20 m), agility test (HAST), maximal strength and lower limb explosive power, YYIRT1	
Training period		
Wk 2	2 × (2 × 6':15" [90%]–15"p)	2 × (5 × 2'25"–1'p)
Wk 3	2 × (2 × 6'30":15" [90%]–15"p)	2 × (5 × 2'35"–1'p)
Wk 4	2 × (2 × 7':15" [92%]–15"p)	2 × (5 × 2'55"–1'p)
Wk 5	2 × (2 × 7'30":15" [92%]–15"p)	2 × (5 × 3'–1'p)
Wk 6	2 × (2 × 7'30":15" [92%]–15"p)	2 × (5 × 3'–1'p)
Wk 7	2 × (2 × 8':15" [92%]–15"p)	2 × (5 × 3'10"–1'p)
Wk 8	2 × (2 × 7'30":15" [95%]–15"p)	2 × (5 × 3'–1'p)
Wk 9	2 × (2 × 7':15" [95%]–15"p)	2 × (5 × 2'55"–1'p)
Testing		
Wk 10	Sprint tests (10, 20 m), agility test (HAST), maximal strength and lower limb explosive power, YYIRT1	

\*HIIT = intensity intermittent training; SSG = small-sided games; HAST = handball agility specific test.

As for HIIT protocol, 2 × (2 × 6':15" [90%]–15"p) in week 2 means: 2 sessions per week consisting of 15-second runs at 90% of YYIRT1 final speed interspersed with 15-second passive recovery (15"p) by walking for a total time of 6'15". As for SSG protocol, 2 × [5 × 2'25"–1'p] in week 2 means: 2 sessions per week consisting of 5 bouts of 2'25" of continuous handball small-sided games with 1-second passive recovery (1'p) between bouts.

# EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

## COMPARACIÓN ENTRE PROGRAMAS

### IMPROVING FITNESS OF ELITE HANDBALL PLAYERS: SMALL-SIDED GAMES VS. HIGH-INTENSITY INTERMITTENT TRAINING

ANTONIO DELLO IACONO,<sup>1</sup> ALON ELIAKIM,<sup>1,2</sup> AND YOAV MECKEL<sup>1</sup>

*J Strength Cond Res* 29(3): 835–843,

Ambos grupos mejoran en la mayoría de las capacidades físicas analizadas

**TABLE 2.** Effect of both training methods on anthropometric and fitness characteristics of the participants (mean  $\pm$  SD).\*

	High-intensity training ( <i>n</i> = 9)		Small-sided games ( <i>n</i> = 9)	
	Pre	Post	Pre	Post
Weight (kg)	91.0 $\pm$ 8.5	91.1 $\pm$ 7.5	90.1 $\pm$ 10.1	90.7 $\pm$ 9.8
Height (cm)	185.9 $\pm$ 5.0	185.9 $\pm$ 5.0	188.8 $\pm$ 5.7	188.8 $\pm$ 5.7
Body fat (%)	13.3 $\pm$ 3.7	12.8 $\pm$ 2.8†	12.0 $\pm$ 2.6	11.3 $\pm$ 2.1†
YYIRTL1 (m)	1297.8 $\pm$ 300	1601.1 $\pm$ 192†	1364.4 $\pm$ 397	1723.3 $\pm$ 327†
10-m sprint (s)	1.55 $\pm$ 0.08	1.52 $\pm$ 0.07††	1.54 $\pm$ 0.12	1.48 $\pm$ 0.12†
20-m sprint (s)	2.80 $\pm$ 0.10	2.75 $\pm$ 0.12††	2.81 $\pm$ 0.12	2.70 $\pm$ 0.10†
Agility test (s)	6.72 $\pm$ 0.22	6.65 $\pm$ 0.24††	6.68 $\pm$ 0.25	6.54 $\pm$ 0.21†
Bench press (kg)	99.4 $\pm$ 10.1	106.2 $\pm$ 10.7††	105.0 $\pm$ 22.6	118.2 $\pm$ 21.0†
CMJ (cm)	34.3 $\pm$ 5.0	36.9 $\pm$ 4.5††	36.5 $\pm$ 4.5	40.5 $\pm$ 4.5†
CMJ <sub>am</sub> (cm)	40.2 $\pm$ 5.9	42.8 $\pm$ 5.3††	42.6 $\pm$ 5.8	46.4 $\pm$ 5.2†

# EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

## COMPARACIÓN ENTRE PROGRAMAS

**Las mejoras son mayores en SSG**

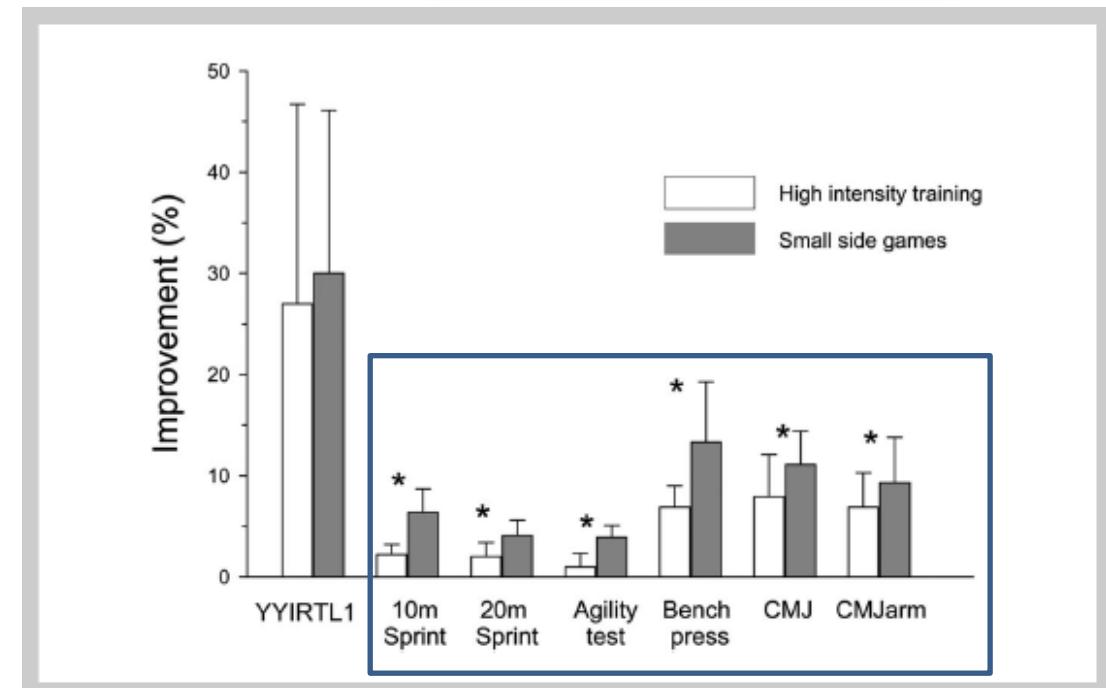
## Conclusión

SSG preferible para balonmano

## IMPROVING FITNESS OF ELITE HANDBALL PLAYERS: SMALL-SIDED GAMES VS. HIGH-INTENSITY INTERMITTENT TRAINING

ANTONIO DELLO IACONO,<sup>1</sup> ALON ELIAKIM,<sup>1,2</sup> AND YOAV MECKEL<sup>1</sup>

*J Strength Cond Res* 29(3): 835–843,



**Figure 3.** Improvement in fitness characteristics following the different training protocols (\* $p \leq 0.05$  for between-group differences). CMJ = countermovement jump without arm movement; CMJarm = countermovement jump tests with arm movement.

## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

Otras cuestiones importantes

Si, salvo en balonmano, los SSG NO son mas efectivos que otros programas en el rendimiento físico



## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

Otras cuestiones importantes

Si, salvo en balonmano, los SSG NO son mas efectivos que otros programas en el rendimiento físico

Mayor dificultad de cuantificar la carga de entrenamiento.



REVIEW ARTICLE

Sports Med 2011;41(3):199-220  
0112-1642(11)0003-0199(949)95;0

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### Physiology of Small-Sided Games Training in Football A Systematic Review

Stephen V. Hill-Haas,<sup>1</sup> Brian Dawson,<sup>1</sup> Franco M. Impellizzeri<sup>2,3</sup> and Aaron J. Coutts<sup>4</sup>

## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

Otras cuestiones importantes

Si, salvo en balonmano, los SSG NO son mas efectivos que otros programas en el rendimiento físico

Mayor dificultad de cuantificar la carga de entrenamiento.

Múltiples variables que influyen en la carga de los SSG



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## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

Otras cuestiones importantes

Si, salvo en balonmano, los SSG NO son mas efectivos que otros programas en el rendimiento físico

Mayor dificultad de cuantificar la carga de entrenamiento.

Múltiples variables que influyen en la carga de los SSG

Es necesario un alto nivel técnico/táctico para alcanzar intensidades altas



REVIEW ARTICLE

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## EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN CAPACIDADES FÍSICAS

Otras cuestiones importantes

Si, salvo en balonmano, los SSG NO son mas efectivos que otros programas en el rendimiento físico

**Mayor dificultad de cuantificar la carga de entrenamiento.**

**Múltiples variables que influyen en la carga de los SSG**

Es necesario un **alto nivel técnico/táctico** para alcanzar intensidades altas

**Mayor riesgo de lesión** que otras tareas



REVIEW ARTICLE

Sports Med 2011;41(3):199-220  
0112-1642(11)0003-0199(949)95;0

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### Physiology of Small-Sided Games Training in Football A Systematic Review

Stephen V. Hill-Haas,<sup>1</sup> Brian Dawson,<sup>1</sup> Franco M. Impellizzeri<sup>2,3</sup> and Aaron J. Coutts<sup>4</sup>

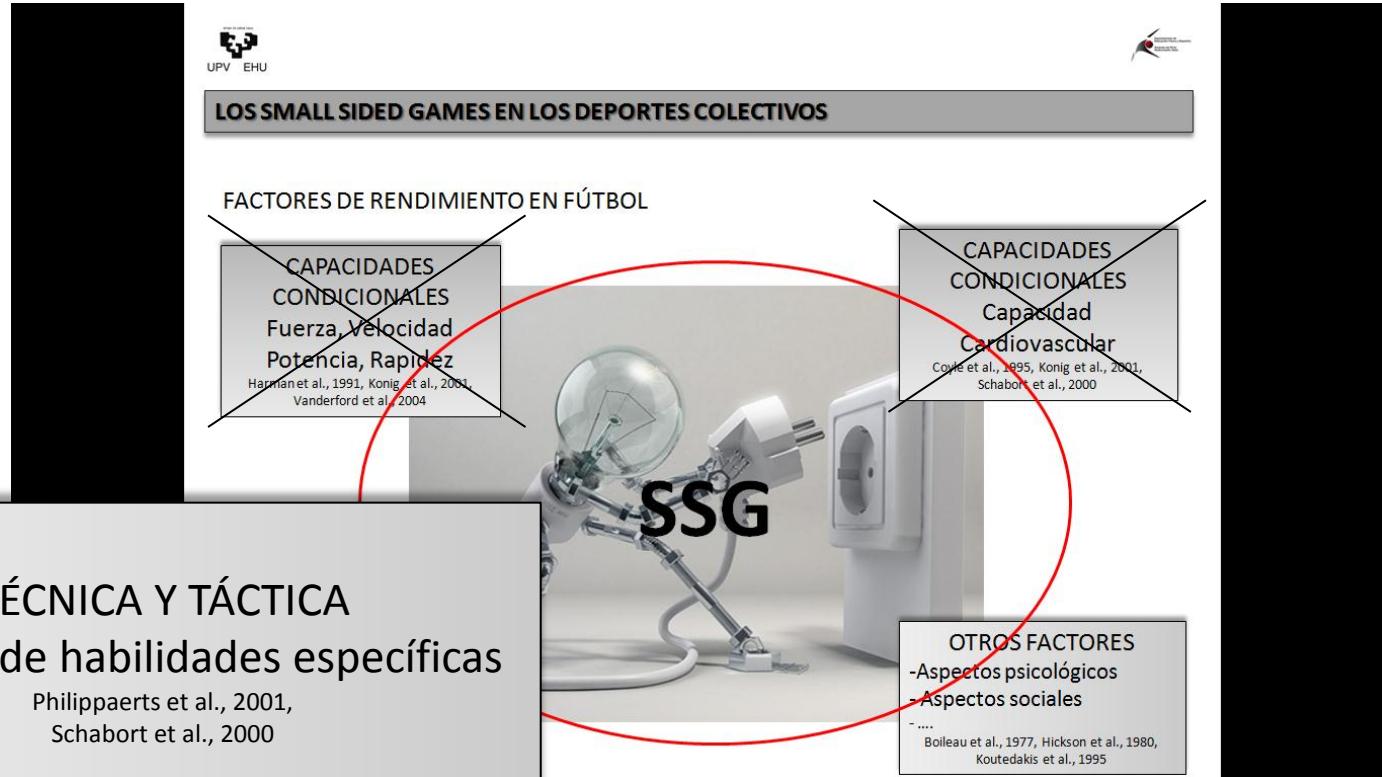
## LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

### ¿POR QUÉ UTILIZAR LOS SSG EN DEPORTES COLECTIVOS?



# LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

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### LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

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- EFECTOS EN CAPACIDADES TÉCNICO/TÁCTICAS

- EFECTOS EN RENDIMIENTO COMPETICIÓN

### CONCLUSIONES

# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

## Participantes

Jugadores de fútbol jóvenes (14 años)

Grupo SSG

Grupo COD

G control

Table 1.

Week	1vs1 (30s)	2vs2 (1 min)	3vs3 (2 min)
1	S x R <i>W:R</i> 2 x 2 1:4	2 x 2 1:2	2 x 2 1:1
2	S x R <i>W:R</i> 2 x 2 1:4	2 x 2 1:1	2 x 2 1:1
3	S x R <i>W:R</i> 2 x 3 1:4	2x3 1:1	2 x 2 1:1
4	S x R <i>W:R</i> 2 x 3 1:4	2 x 3 1:1	2 x 2 1:1
5	S x R <i>W:R</i> 2 x 4 1:4	2 x 4 1:1	1 x 2 1:1
6	S x R <i>W:R</i> 2 x 4 1:4	2 x 3 1:2	1 x 2 1:1

S = Series; R = Repetition ; W:R= Work-to-Rest ratio time.

Multidirectional Sprints and Small-Sided Games Training Effect on Agility and Change of Direction Abilities in Youth Soccer

Article in The Journal of Strength and Conditioning Research - August 2014  
DOI: 10.1519/JSC.0000000000000095 - Source: PubMed

Anis Chaouachi<sup>1</sup>, Moktar Chtara<sup>1,2</sup>, Raouf Hammami<sup>1</sup>, Hichem Chtara<sup>1</sup>, Olfa Turki<sup>1,2</sup>, Carlo Castagna<sup>3</sup>

Table 2.

Weeks	Skipping 10m	COD 5-0-5m	Half-T-test 20m	Shuttle 4 x 10m	Total distance (m)	Session COD Number
1	S x R <i>r</i> (min) 2 x 2 1	2 x 2 1	2 x 2 1	2 x 2 2	360	48
2	S x R <i>r</i> (min) 2x3 1		2 x 3 1	2 x 3 2	420	66
3	S x R <i>r</i> (min) 2 x 3 1	2 x 3 1	2 x 3 1	2 x 3 2	480	72
4	S x R <i>r</i> (min) 2 x 3 1	2x3 1	2 x 3 1	2 x 3 2	540	72
5	S x R <i>r</i> (min) 2 x 4 1		2 x 4 1	2 x 4 2	560	88
6	S x R <i>r</i> (min) 2 x 2 1	2 x 2 1	2 x 4 2	2 x 3 2	520	78

S = Series; R = Repetition ; *r* = recovery time ; COD = Change of Direction

## EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

### Resultados

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**Ambos grupos mejoran en todas las variables analizadas**

**GC** también salvo S10m y en ACMJ

**GCOD mayores mejoras en:**

Aceleración 15, 20 y 20 m

Test de COD (varios test)

ACMJ y en 5JT

Mejora similar en RAT

**GSSG: mayor mejora en “componente técnico”:**

Test con Balón (Ball-15, RAT-B)

## EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

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Esto nos lleva a pensar que...

**SSG**, por mayor interacción con balón **mejoras en acciones específicas**

Para mejorar en **condición física (componente anaeróbico)**, COD

## EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

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Esto nos lleva a pensar que...

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Para mejorar en **condición física (componente anaeróbico)**, COD



### Visión crítica:

Jóvenes futbolistas- efecto maduración

Aportan diferencias en % y ANCOVA pero no ES.

Continuidad al trabajo comparando también con grupo de entrenamiento COD con balón.

# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

American Journal of Sports Science and Medicine, 2015, Vol. 3, No. 2, 28-34  
Available online at <http://pubs.sciepub.com/ajssm/3/2/1>  
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DOI:10.12691/ajssm-3-2-1



## VO<sub>2</sub>max Changes in English Futsal Players after a 6-Week Period of Specific Small-Sided Games Training

D. Berdejo-del-Fresno<sup>1,\*</sup>, R. Moore<sup>2</sup>, M. W. Laupheimer<sup>1,3</sup>

<sup>1</sup>England Futsal National Squad, The Football Association and The International Futsal Academy (United Kingdom)

<sup>2</sup>Research Fellow, Sport Industry Research Centre, Sheffield Hallam University (United Kingdom)

<sup>3</sup>Senior Clinical Lecturer in Sports and Exercise Medicine, Queen Mary University of London (United Kingdom)

\*Corresponding author: danielberdejo@gmail.com

## Participantes

2 equipos de fútbol sala categoría nacional (2<sup>a</sup>)

Grupo experimental

G control

## Procedimiento

6 semanas SSG, 1 sesión/semana – 6 sesiones SSG



Periodización cada semana aumento 1 min de SSG y descenso de 1 min rec.

# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

## Resultados

**Ningún grupo mejora en:**

**Cambio de dirección 4 x 10 m**

**Agilidad con balón (elemento técnico)**

*American Journal of Sports Science and Medicine*, 2015, Vol. 3, No. 2, 28-34  
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G SSG: mejora Multi Stage Fitness test

# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

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**Ningún grupo mejora en:**

Agilidad 4 x 10 m cambio de dirección

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## Conclusiones

Necesidad de implementar otros ejercicios para mejora aspectos técnicos

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## Conclusiones

Necesidad de implementar otros ejercicios para mejora aspectos técnicos



## Visión crítica:

No aporta datos estadísticos sin porteros.  
No calcula el ES

## EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

### Participantes

Jugadores de WB (1 división)

*Title of the Article*

Small sided game training effects in straight sprint and change of direction ability in wheelchair basketball

*Full Names of the Authors:*

Yanci, J.<sup>1</sup> Iturricastillo, A.<sup>1</sup> Granados, C.<sup>1</sup>

SSG – 5 semanas



# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

Mejora SP5 m

*Title of the Article*

Small sided game training effects in straight sprint and change of direction ability in wheelchair basketball

*Full Names of the Authors:*

Yanci, J.<sup>1</sup> Iturricastillo, A.<sup>1</sup> Granados, C.<sup>1</sup>

**Table 2** PreTest and PostTest results in straight sprint with and without ball and change of direction ability.

	PreTest	PostTest	Mean dif. (%)	Cohens' d
Straight sprint without ball (s)				
SP5 m	1.74 ± .16	1.66 ± .16**	-4.32	-.46
SP20 m	5.36 ± .64	5.32 ± .62	-.75	-.06
Straight sprint with ball (s)				
SPB5 m	1.90 ± .28	2.00 ± .25*	5.26	.36
SPB20 m	5.90 ± .86	6.77 ± 1.08**	14.60	1.00
Change of direction ability (s)				
T-test	14.62 ± 1.83	14.66 ± 1.90	.23	.02

SP5 = 5 m straight sprint, SP20 = 20 m straight sprint, SPB5 = 5 m straight sprint with ball, SPB20 = 20 m straight sprint with ball. PreTest to PostTest significant differences (\* p < .05, \*\* p < .01).

# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

Mejora SP5

Empeora test “técnicos” (SPB5m, SPB20m)

*Title of the Article*

Small sided game training effects in straight sprint and change of direction ability in wheelchair basketball

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### Visión crítica:

Baja muestra

Características especiales: propulsión con extremidades superiores

No grupo control

Test analíticos

Periodo corto de intervención



## EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

### Artículos más completos por número/características de test técnicos

#### Small-Sided Game Training Improves Aerobic Capacity and Technical Skills in Basketball Players

A. Deleixrat<sup>1</sup>, A. Martinez<sup>2</sup>

<sup>1</sup> Sport and Health Sciences Department, Oxford Brookes University, Oxford, United Kingdom

<sup>2</sup> ASPTT Toulon Basketball Club, Toulon, France



Journal of Science and Medicine in Sport (2007) 10, 79–88



ORIGINAL PAPER

**Effects of two different short-term training programs on the physical and technical abilities of adolescent basketball players**

Gregory C. Bogdanis<sup>b,\*</sup>, Vagelis Zagos<sup>a</sup>,  
Michalis Anastasiadis<sup>a</sup>, Maria Maridaki<sup>b</sup>

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Journal of  
Science and  
Medicine in  
Sport

[www.elsevier.com/locate/jsams](http://www.elsevier.com/locate/jsams)

# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

## Participantes

Jugadores de baloncesto U17

## Procedimiento

Grupo HIT

Grupo SSG

## Small-Sided Game Training Improves Aerobic Capacity and Technical Skills in Basketball Players

A. Deleixrat<sup>1</sup>, A. Martinez<sup>2</sup>

<sup>1</sup> Sport and Health Sciences Department, Oxford Brookes University, Oxford, United Kingdom

<sup>2</sup> ASPTT Toulon Basketball Club, Toulon, France

**Table 1** Description of the 6-weeks training programmes for the small-sided game (SSG) group and the high-intensity intermittent running group (HIT).

	HIT	SSG
subjects characteristics	N=9 (4 guards, 3 forwards, 2 centres) Age: $16.0 \pm 0.6$ years Height: $181 \pm 7$ cm Body mass: $73.5 \pm 6.9$ kg Basketball training experience: $6.8 \pm 3.1$ years	N=9 (4 guards, 3 forwards, 2 centres) Age: $16.3 \pm 0.8$ years Height: $182 \pm 9$ cm Body mass: $74.2 \pm 6.3$ kg Basketball training experience: $7.2 \pm 2.9$ years
week 1	2×(8 min of 15"-15" at 95% of V <sub>IFT</sub> )	2×(2×3 min45)
week 2	2×(9 min of 15"-15" at 95% of V <sub>IFT</sub> )	2×(2×4 min15)
week 3	2×(10 min of 15"-15" at 95% of V <sub>IFT</sub> )	2×(3×3 min)
week 4	2×(11 min 30s of 15"-15" at 95% of V <sub>IFT</sub> )	2×(3×3 min30)
week 5	2×(13 min of 15"-15" at 95% of V <sub>IFT</sub> )	2×(3×4 min)
week 6	2×(9 min of 15"-15" at 95% of V <sub>IFT</sub> )	2×(2×4 min15)

15"-15": 15s of high-intensity running at a speed corresponding to 95 % of the speed attained in the last stage fully completed during the 30-15 intermittent fitness test (V<sub>IFT</sub>)

# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

## Mediciones

### Variables físicas

Capacidad aeróbica (30-15 IT)

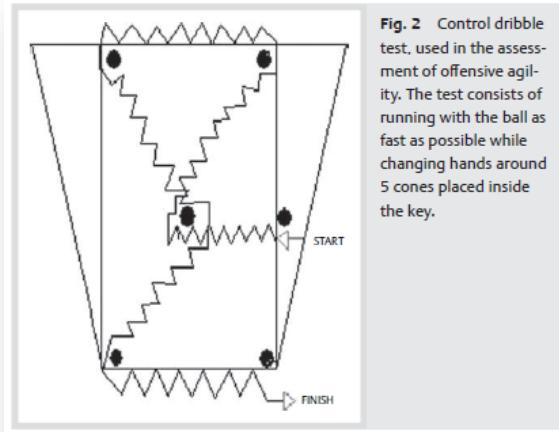
RSA

Potencia ext. Sup (Lanz Balón)

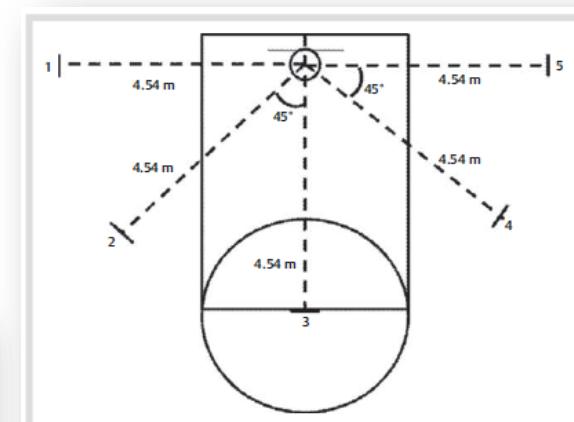
Potencia ext. Inf (5JT)

T-test (agilidad defensiva)

### Variables técnicas



**Fig. 2** Control dribble test, used in the assessment of offensive agility. The test consists of running with the ball as fast as possible while changing hands around 5 cones placed inside the key.



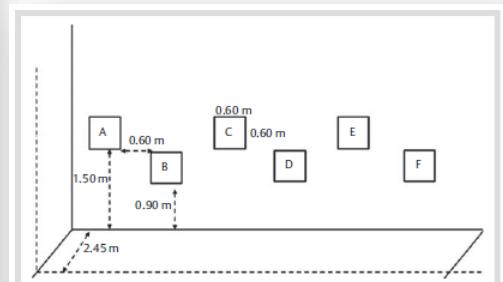
**Fig. 3** Shooting skills assessment. Guidelines: Starting from any of the 5 positions, players were instructed to shoot, get their rebound and dribble to another position. No specific rules were given regarding the order in which the positions were used, except that players should attempt at least 1 shot per position. Players were allowed to attempt a maximum of 4 lay-ups during the test, but these could not be performed in succession. They received 2 points for each successful shot and one point when the ball touched the rim. Points awarded during the 60 s were then added and used as a performance indicator.

### Small-Sided Game Training Improves Aerobic Capacity and Technical Skills in Basketball Players

A. Delexrat<sup>1</sup>, A. Martinez<sup>2</sup>

<sup>1</sup> Sport and Health Sciences Department, Oxford Brookes University, Oxford, United Kingdom

<sup>2</sup> ASPTT Toulon Basketball Club, Toulon, France



**Fig. 4** Assessment of passing skills. Guidelines: The starting position was facing the furthest left target behind a line placed 2.45 m from the wall, and players were requested to place their feet as close as possible but behind the line while performing shuttles (side-shuffling) between the first and sixth target. Targets must be attempted in a succeeding manner (i.e., following the sequence order: A-B-C-D-E-F-F-E-D-C-B-A-A-B-...). 2 points were awarded when the ball landed within the target or on its border, while passes touching the spaces between targets were awarded one point. Points accumulated for 30 s were used as a performance indicator.

# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

## Mediciones

### Variables físicas

Diferencias entre grupos

Potencia ext. Sup (Lanz Balón)

**Table 2** Effects of time (pre vs. post) and training intervention (high-intensity interval training, HIT vs. small-sided games, SSG) on physical and technical performances of male junior basketball players ( $V_{IFT}$ ; maximal aerobic performance; RSA: repeated sprint ability).

	Time	HIT	SSG	P values and Effect sizes (eta squared $\eta^2$ )	Confidence interval limit
$V_{IFT}$ (km.h <sup>-1</sup> )	PRE	17.4±0.7	17.2±1.7	Time: P=0.028, $\eta^2=0.395$ Group: P=0.814, $\eta^2=0.006$	HIT: 16.2–18.6 SSG: 16.0–18.4
	POST	18.0±1.0	17.9±1.5	Interaction: P=0.765, $\eta^2=0.006$	HIT: 16.9–19.1 SSG: 16.8–19.0
total time RSA (s)	PRE	27.1±1.9	27.9±2.4	Time: P=0.300, $\eta^2=0.070$ Group: P=0.230, $\eta^2=0.108$	HIT: 25.5–28.8 SSG: 26.2–29.7
	POST	27.0±1.8	28.7±1.9	Interaction: P=0.146, $\eta^2=0.144$	HIT: 25.6–28.4 SSG: 27.2–30.2
ideal time RSA (s)	PRE	26.1±1.8	26.3±1.9	Time: P=0.667, $\eta^2=0.013$ Group: P=0.490, $\eta^2=0.037$	HIT: 24.7–27.5 SSG: 24.8–27.8
	POST	25.8±1.7	26.9±1.9	Interaction: P=0.208, $\eta^2=0.117$	HIT: 24.4–27.1 SSG: 25.4–28.3
performance decrement RSA (%)	PRE	3.75±1.99	5.83±2.53	Time: P=0.399, $\eta^2=0.055$ Group: P=0.162, $\eta^2=0.145$	HIT: 2.03–5.48 SSG: 3.99–7.67
	POST	4.35±2.51	6.33±4.26	Interaction: P=0.938, $\eta^2=0.001$	HIT: 1.72–6.98 SSG: 3.52–9.14
defensive agility (s)	PRE	10.32±1.16	10.36±0.72	Time: P=0.558, $\eta^2=0.018$ Group: P=0.432, $\eta^2=0.045$	HIT: 9.6–11.0 SSG: 9.6–11.2
	POST	10.60±0.97	9.89±0.40	Interaction: P=0.037, $\eta^2=0.270$	HIT: 10.0–11.2 SSG: 9.3–10.5
offensive agility (s)	PRE	8.33±0.34	8.48±0.50	Time: P=0.001, $\eta^2=0.700$ Group: P=0.895, $\eta^2=0.001$	HIT: 8.03–8.63 SSG: 8.14–8.81
	POST	7.97±0.42	7.87±0.24	Interaction: P=0.131, $\eta^2=0.047$	HIT: 7.71–8.22 SSG: 7.58–8.16
shooting skills (points)	PRE	29.4±3.4	29.7±3.7	Time: P=0.151, $\eta^2=0.086$ Group: P=0.195, $\eta^2=0.117$	HIT: 27.7–31.2 SSG: 27.7–31.7
	POST	28.7±4.0	31.9±3.6	Interaction: P=0.006, $\eta^2=0.394$	HIT: 26.6–30.7 SSG: 29.6–34.2
passing skills (points)	PRE	97.7±9.0	95.7±4.2	Time: P=0.004, $\eta^2=0.452$ Group: P=0.541, $\eta^2=0.027$	HIT: 88.4–106.8 SSG: 85.4–106.1
	POST	107.3±6.9	102.3±5.4	Interaction: P=0.504, $\eta^2=0.018$	HIT: 99.4–115.2 SSG: 93.3–111.2
upper body power (m)	PRE	5.91±1.83	6.10±1.34	Time: P=0.223, $\eta^2=0.080$ Group: P=0.532, $\eta^2=0.029$	HIT: 4.74–7.08 SSG: 4.77–7.43
	POST	5.79±1.49	6.58±1.29	Interaction: P=0.048, $\eta^2=0.231$	HIT: 4.78–6.80 SSG: 5.43–7.71
lower body power (m)	PRE	10.7±1.3	10.7±1.0	Time: P=0.094, $\eta^2=0.179$ Group: P=0.734, $\eta^2=0.009$	HIT: 9.8–11.5 SSG: 10.2–11.5
	POST	10.9±1.0	11.2±0.8	Interaction: P=0.401, $\eta^2=0.042$	HIT: 9.7–11.6 SSG: 10.5–12.0

# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

## Mediciones

### Variables físicas

Diferencias entre grupos

Potencia ext. Sup (Lanz Balón)

### Variables técnicas

#### Diferencias SSG en:

- Agilidad defensiva (sin balón)
- Habilidad tiro (balón)

**Table 2** Effects of time (pre vs. post) and training intervention (high-intensity interval training, HIT vs. small-sided games, SSG) on physical and technical performances of male junior basketball players ( $V_{IFT}$ : maximal aerobic performance; RSA: repeated sprint ability).

	Time	HIT	SSG	P values and Effect sizes (eta squared $\eta^2$ )	Confidence interval limit
$V_{IFT}$ (km.h <sup>-1</sup> )	PRE	17.4±0.7	17.2±1.7	Time: P=0.028, $\eta^2=0.395$ Group: P=0.814, $\eta^2=0.006$	HIT: 16.2–18.6 SSG: 16.0–18.4
	POST	18.0±1.0	17.9±1.5	Interaction: P=0.765, $\eta^2=0.006$	HIT: 16.9–19.1 SSG: 16.8–19.0
total time RSA (s)	PRE	27.1±1.9	27.9±2.4	Time: P=0.300, $\eta^2=0.070$ Group: P=0.230, $\eta^2=0.108$	HIT: 25.5–28.8 SSG: 26.2–29.7
	POST	27.0±1.8	28.7±1.9	Interaction: P=0.146, $\eta^2=0.144$	HIT: 25.6–28.4 SSG: 27.2–30.2
ideal time RSA (s)	PRE	26.1±1.8	26.3±1.9	Time: P=0.667, $\eta^2=0.013$ Group: P=0.490, $\eta^2=0.037$	HIT: 24.7–27.5 SSG: 24.8–27.8
	POST	25.8±1.7	26.9±1.9	Interaction: P=0.208, $\eta^2=0.117$	HIT: 24.4–27.1 SSG: 25.4–28.3
performance decrement RSA (%)	PRE	3.75±1.99	5.83±2.53	Time: P=0.399, $\eta^2=0.055$ Group: P=0.162, $\eta^2=0.145$	HIT: 2.03–5.48 SSG: 3.99–7.67
	POST	4.35±2.51	6.33±4.26	Interaction: P=0.938, $\eta^2=0.001$	HIT: 1.72–6.98 SSG: 3.52–9.14
defensive agility (s)	PRE	10.32±1.16	10.36±0.72	Time: P=0.558, $\eta^2=0.018$ Group: P=0.432, $\eta^2=0.045$	HIT: 9.6–11.0 SSG: 9.6–11.2
	POST	10.60±0.97	9.89±0.40	Interaction: P=0.037, $\eta^2=0.270$	HIT: 10.0–11.2 SSG: 9.3–10.5
offensive agility (s)	PRE	8.33±0.34	8.48±0.50	Time: P=0.001, $\eta^2=0.700$ Group: P=0.895, $\eta^2=0.001$	HIT: 8.03–8.63 SSG: 8.14–8.81
	POST	7.97±0.42	7.87±0.24	Interaction: P=0.131, $\eta^2=0.047$	HIT: 7.71–8.22 SSG: 7.58–8.16
shooting skills (points)	PRE	29.4±3.4	29.7±3.7	Time: P=0.151, $\eta^2=0.086$ Group: P=0.195, $\eta^2=0.117$	HIT: 27.7–31.2 SSG: 27.7–31.7
	POST	28.7±4.0	31.9±3.6	Interaction: P=0.006, $\eta^2=0.394$	HIT: 26.6–30.7 SSG: 29.6–34.2
passing skills (points)	PRE	97.7±9.0	95.7±4.2	Time: P=0.004, $\eta^2=0.452$ Group: P=0.541, $\eta^2=0.027$	HIT: 88.4–106.8 SSG: 85.4–106.1
	POST	107.3±6.9	102.3±5.4	Interaction: P=0.504, $\eta^2=0.018$	HIT: 99.4–115.2 SSG: 93.3–111.2
upper body power (m)	PRE	5.91±1.83	6.10±1.34	Time: P=0.223, $\eta^2=0.080$ Group: P=0.532, $\eta^2=0.029$	HIT: 4.74–7.08 SSG: 4.77–7.43
	POST	5.79±1.49	6.58±1.29	Interaction: P=0.048, $\eta^2=0.231$	HIT: 4.78–6.80 SSG: 5.43–7.71
lower body power (m)	PRE	10.7±1.3	10.7±1.0	Time: P=0.094, $\eta^2=0.179$ Group: P=0.734, $\eta^2=0.009$	HIT: 9.8–11.5 SSG: 10.2–11.5
	POST	10.9±1.0	11.2±0.8	Interaction: P=0.401, $\eta^2=0.042$	HIT: 9.7–11.6 SSG: 10.5–12.0

# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

## Mediciones

### Variables físicas

Diferencias entre grupos

Potencia ext. Sup (Lanz Balón)

### Variables técnicas

#### Diferencias SSG en:

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- Habilidad tiro (balón)

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- Habilidad pase (balón)

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# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

Journal of Science and Medicine in Sport (2007) 10, 79–88

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ORIGINAL PAPERJournal of  
Science and  
Medicine in  
Sport[www.elsevier.com/locate/jams](http://www.elsevier.com/locate/jams)

## Participantes

Jugadores baloncesto U16 (cadetes)

**Effects of two different short-term training programs on the physical and technical abilities of adolescent basketball players**

Gregory C. Bogdanis<sup>b,\*</sup>, Vagelis Ziahos<sup>a</sup>,  
Michalis Anastasiadis<sup>a</sup>, Maria Maridaki<sup>b</sup>

## Procedimiento

Grupo SP (SSG + entrenamiento técnico)

Grupo MX (- SSG y entro técnico + entro circuito)

Grupo control

Table 1 The mean percentage contribution (per week) of the components of each session to the total session duration

	Week 1		Week 2		Week 3		Week 4		Mean	
	SP	MX	SP	MX	SP	MX	SP	MX	SP	MX
Warm-up	18	21.1	18.2	15.4	17.6	16.2	17	17.5	17.7±0.3	17.6±1.3
Fundamentals	70	43.9	37.4	29.4	21.2	15.7	18.1	12.8	36.7±11.9	25.5±7.1
Individual work	0.0	0.0	34	26.4	43.8	32.4	21.3	16.6	24.8±9.5	18.9±7.1
Off.-def. coop.	0.0	0.0	0.0	0.0	0.0	0.0	34.9	26.4	8.7±8.7	6.6±6.6
Team work	6.5	7	5.6	3.3	12.5	10.4	4.6	4.5	7.3±1.8	6.3±1.6
Cool-down	5.5	5.8	4.8	3.6	4.9	4	4.1	3.1	4.8±0.3	4.1±0.6
Circuit training	—	22.2	—	21.9	—	21.3	—	19.1	—	21.1±0.7
Total	100	100	100	100	100	100	100	100	100	100

SP: specialized; MX: mixed training group; Off.-def. coop.: offensive/defensive co-operations between players.

# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

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## Resultados

Capacidad aeróbica:

Solo mejora VO<sub>2max</sub>, similar en ambos grupos

Effects of two different short-term training programs on the physical and technical abilities of adolescent basketball players

Gregory C. Bogdanis<sup>b,\*</sup>, Vagelis Ziahos<sup>a</sup>,  
Michalis Anastasiadis<sup>a</sup>, Maria Maridaki<sup>b</sup>

**Table 2** Maximal oxygen uptake (VO<sub>2max</sub>), oxygen uptake the first (VT1) and second ventilatory threshold (VT2), maximal heart rate (HR<sub>max</sub>) and heart rate at VT1 (HR<sub>VT1</sub>) and VT2 (HR<sub>VT2</sub>), before (PRE) and after (POST) training

	SP		MX		C	
	PRE	POST	PRE	POST	PRE	POST
VO <sub>2max</sub> (ml kg <sup>-1</sup> min <sup>-1</sup> )	52.3 ± 1.4	54.7 ± 0.7*	52.5 ± 1.3	54.9 ± 1.0*	49.8 ± 3.3	49.4 ± 3.4
VT1 (ml kg <sup>-1</sup> min <sup>-1</sup> )	33.9 ± 1.1	35.0 ± 1.1	37.0 ± 1.7	38.1 ± 1.6	33.1 ± 2.2	33.2 ± 2.8
VT2 (ml kg <sup>-1</sup> min <sup>-1</sup> )	43.5 ± 1.2	46.3 ± 0.9	45.6 ± 1.1	46.8 ± 0.9	42.4 ± 2.6	42.1 ± 2.9
HR <sub>max</sub> (b min <sup>-1</sup> )	201 ± 1	200 ± 1	199 ± 1	200 ± 1	200 ± 2	200 ± 3
HR <sub>VT1</sub> (b min <sup>-1</sup> )	163 ± 2	162 ± 2	167 ± 2	166 ± 2	164 ± 3	167 ± 3
HR <sub>VT2</sub> (b min <sup>-1</sup> )	184 ± 2	183 ± 2	186 ± 1	185 ± 2	184 ± 3	184 ± 4

Values are mean ± S.E.

\* p < 0.05 from the corresponding pre training value.

# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

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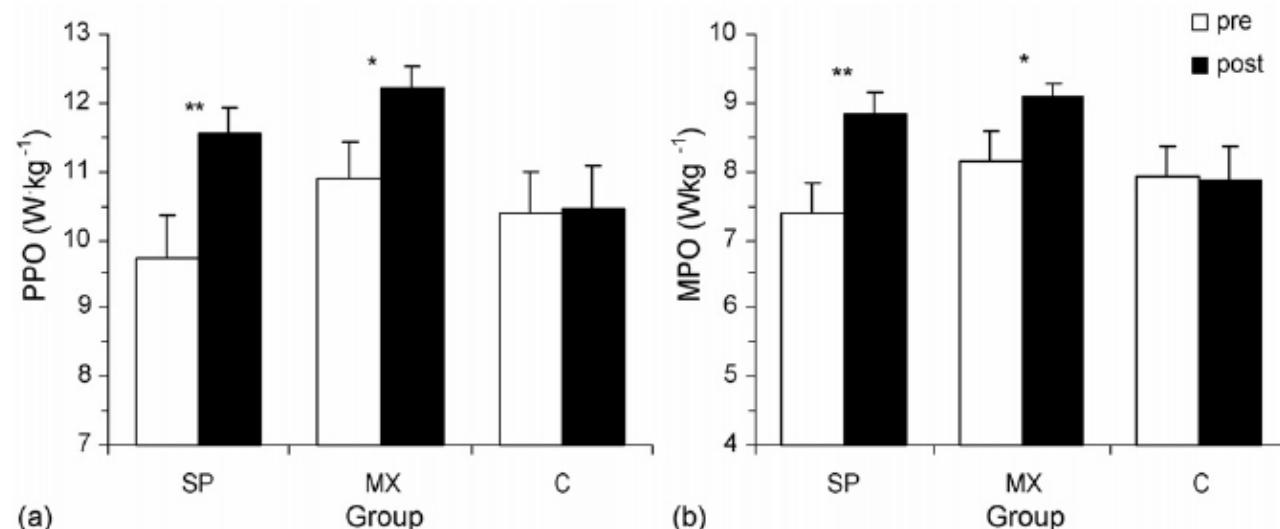
Journal of  
Science and  
Medicine in  
Sport

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## Resultados

### Test Wingate

Mejora del Pico de potencia (PP) y potencia media (MPP), similar en ambos



**Figure 2** (a) Peak (PPO) and (b) mean power output (MPO) relative to body mass of the control group (C) and the specialized (SP) and mixed training (MX) groups before (pre) and following 4 weeks of training (post). Values are mean  $\pm$  S.E. \*\*\* $p < 0.01$  and \* $p < 0.05$  from the corresponding pre training value.

## EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

### Resultados

No diferencias en variables técnicas

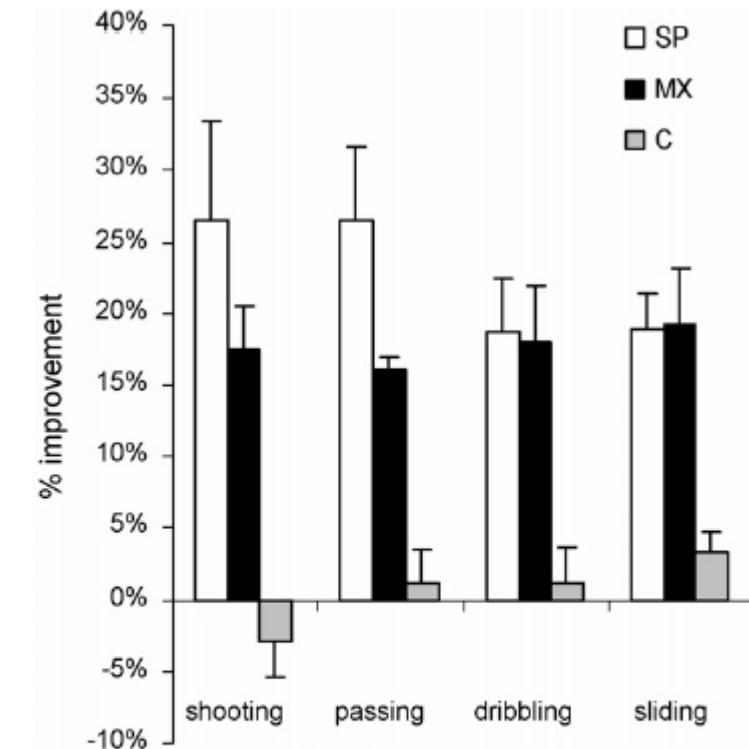


Figure 4 Percent improvement in technical abilities of the control group (C) and the specialized (SP) and mixed training (MX) groups following 4 weeks of training. Values are mean  $\pm$  S.E.

## EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

**¿REALMENTE LOS SSG MEJORAN LAS HABILIDADES TÉCNICAS?**



## EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÉCNICO/TÁCTICAS

¿Y LAS HABILIDADES TÁCTICAS?



## EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÁCTICAS/Toma de decisión

### ANÁLISIS DE LA CAPACIDAD DE DECISIÓN/REACCIÓN



#### Journal of Sports Sciences

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#### **Effects of small-sided game and change-of-direction training on reactive agility and change-of-direction speed**

Warren Young<sup>a</sup> & Nathan Rogers<sup>a</sup>

<sup>a</sup> School of Health Sciences, University of Ballarat, Ballarat, Australia  
Published online: 09 Sep 2013.

## EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÁCTICAS/Toma de decisión

### Participantes

27 jugadores de fútbol Australiano

U18

### Procedimiento

Grupo SSG

Grupo CODA

7 semanas

(2 sesiones semanales, 11 sesiones en total)



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# EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÁCTICAS/Toma de decisión

## Mediciones

### Agilidad reactiva (toma de decisión)

### Planned-AFL agility test (conocida de antemano)



#### Journal of Sports Sciences

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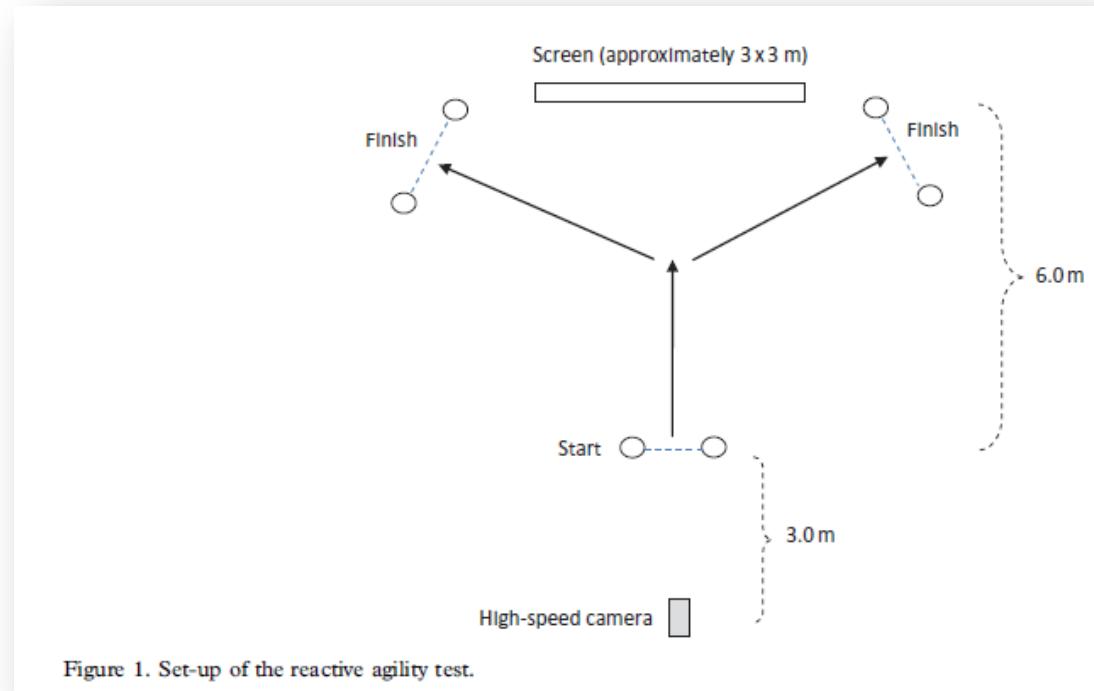


Figure 1. Set-up of the reactive agility test.

## EFFECTOS DE PROGRAMAS CON SSG EN CAPACIDADES TÁCTICAS/Toma de decisión

**Grupo CODA: no mejora**



**Journal of Sports Sciences**

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**Grupo SSG: mejora en test reactivo (tiempo total y tiempo decisión)**

Table I. Mean  $\pm$  standard deviation results for all variables for both groups. The *P*-values are based on paired *t*-tests.

	Change-of-direction ( <i>n</i> = 12)					Small-sided games ( <i>n</i> = 13)				
	Pre	Post	%	<i>P</i> -value	ES	Pre	Post	%	<i>P</i> -value	ES
TT (s)	2.56 $\pm$ 0.10	2.56 $\pm$ 0.09	0	0.941	0 (trivial)	2.64 $\pm$ 0.13	2.54 $\pm$ 0.08	-3.8	0.008	0.93 (moderate)
DT (s)	0.28 $\pm$ 0.07	0.27 $\pm$ 0.05	-3.6	0.383	0.16 (trivial)	0.35 $\pm$ 0.06	0.24 $\pm$ 0.03	-31.4	<0.001	2.32 (very large)
MRT (s)	0.96 $\pm$ 0.10	0.98 $\pm$ 0.17	2.1	0.404	0.20 (small)	0.97 $\pm$ 0.08	0.98 $\pm$ 0.09	1.0	0.644	0.12 (trivial)
Planned AFL agility	8.65 $\pm$ 0.45	8.64 $\pm$ 0.32	-0.1	0.971	0.03 (trivial)	8.67 $\pm$ 0.29	8.74 $\pm$ 0.42	0.8	0.358	0.19 (trivial)

Note: TT = total time, DT = decision time, MRT = movement response time, ES = effect size; 0–0.19 = trivial, 0.20–0.59 = small, 0.60–1.19 = moderate, 1.20–1.99 = large, 2.00–4.00 = very large.

## ÍNDICE

### LOS SMALL SIDED GAMES EN LOS DEPORTES COLECTIVOS

### EFFECTOS DE PROGRAMAS CON SMALL SIDED GAMES EN DEPORTES COLECTIVOS

- EFECTOS EN CAPACIDADES FÍSICAS/CONDICIONALES

- EFECTOS EN CAPACIDADES TÉCNICO/TÁCTICAS

- EFECTOS EN RENDIMIENTO COMPETICIÓN

### CONCLUSIONES

## EFFECTOS DE PROGRAMAS CON SSG EN RENDIMIENTO COMPETICIÓN

¿CUÁLES SON LOS EFECTOS DE  
PROGRAMAS DE SSG EN LA  
PROPIA COMPETICIÓN?

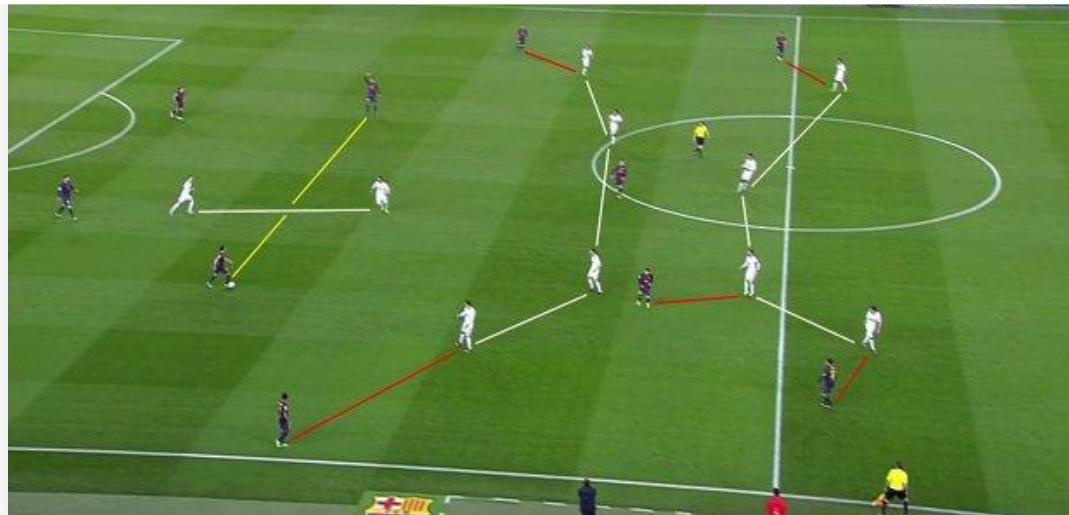


# EFFECTOS DE PROGRAMAS CON SSG EN RENDIMIENTO COMPETICIÓN

F. M. Impellizzeri<sup>1</sup>  
 S. M. Marcora<sup>2</sup>  
 C. Castagna<sup>3</sup>  
 T. Reilly<sup>4</sup>  
 A. Sassi<sup>1</sup>  
 F. M. Iaia<sup>1</sup>  
 E. Rampinini<sup>1</sup>

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

No diferencias en las intensidades de carrera tras programa de SSG ni ITG



Impellizzeri et al.<sup>[58]</sup> also examined the influence of generic and specific training strategies on physical performance during matches. The results revealed non-significant increases (pre-season training phase only) in low-intensity activity (forwards, backwards and sideways jogging), high-intensity activity (higher speed running and sprinting) and total distance travelled for both the ITG and SSG groups following the 12-week training period. However, when match performance measures for the in-season phase of training were analysed, the magnitude of the increases (for both groups) in low- and high-intensity activity are considerably smaller.<sup>[58]</sup>

## EFFECTOS DE PROGRAMAS CON SSG EN RENDIMIENTO COMPETICIÓN

¿...Y LOS EFECTOS EN ASPECTOS TÉCNICOS Y TÁCTICOS EN PARTIDOS?

## EFFECTOS DE PROGRAMAS CON SSG EN RENDIMIENTO COMPETICIÓN

¿...Y LOS EFECTOS EN ASPECTOS TÉCNICOS Y TÁCTICOS EN PARTIDOS?

"A VECES PARECE QUE ESTAMOS EN EL CENTRO DE LA FIESTA.  
SIN EMBARGO, EN EL CENTRO DE LA FIESTA NO HAY NADIE.  
EN EL CENTRO DE LA FIESTA ESTÁ EL VACÍO.  
PERO EN EL CENTRO DEL VACÍO HAY OTRA FIESTA."

– ROBERTO JUARROZ, POESÍA VERTICAL XII - 21

A COLLECTION OF MOMENTS FROM SPAIN, FRANCE, CANADA, USA, SERBIA AND MAROCCO

## ÍNDICE

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## CONCLUSIONES

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## CONCLUSIONES

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**Poca evidencia sobre la mejora de variables técnico/tácticas.**

**Escasísima evidencia de si los programas de SSG tienen efectos en el rendimiento en competición.**

**La mayor parte de estudios con jugadores jóvenes o poblaciones concretas**

## CONCLUSIONES

***“Estos son los datos, tuyas son las conclusiones”***



## CONCLUSIONES

**LO QUE SI SÉ...**



¿SON LOS SMALL SIDED GAMES LA SOLUCIÓN PERFECTA PARA EL ENTRENAMIENTO EN LOS  
DEPORTES COLECTIVOS?

# MUCHAS GRACIAS

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