

El uso de las nuevas tecnologías por parte de las y los profesionales del deporte



Monitores y entrenadores

Arrasate , 16 diciembre de 2014

Eugenio Rodriguez Pujol



The Evolution of Wearables



Take photos with your Google Glasses, iWatch???

Peter Henlin's "Taschenuhr", the earliest known watch



Inspired by *2001: A Space Odyssey* in 1968, the first digital LED watch from Hamilton/Pulsar was released in 1972



Early calculator watch co-built by Hewlett Packard and Hamilton



Multifunction enthusiast devices from Suunto, Casio, Nike, Recon, introduced in 1990s. Multifunction, sometimes connected enthusiast devices begin to appear in early 2000s



Conjunto de aparatos y dispositivos electrónicos que se incorporan en alguna parte de nuestro cuerpo interactuando continuamente con el usuario y con otros dispositivos con la finalidad de realizar alguna función específica.

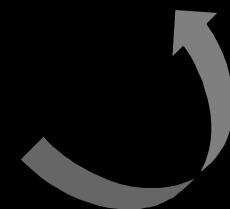
APPS GADGETS SISTEMAS MOVIMIENTO



Sport
better with Bluetooth



“SISTEMAS” DE ENTRENAMIENTO



APLICACIONES

FORMAS EJERCICIO



GAMIFICATION. SERIOUS GAMES.

EXERGAMING





European Directory of Health Apps 2012-2013

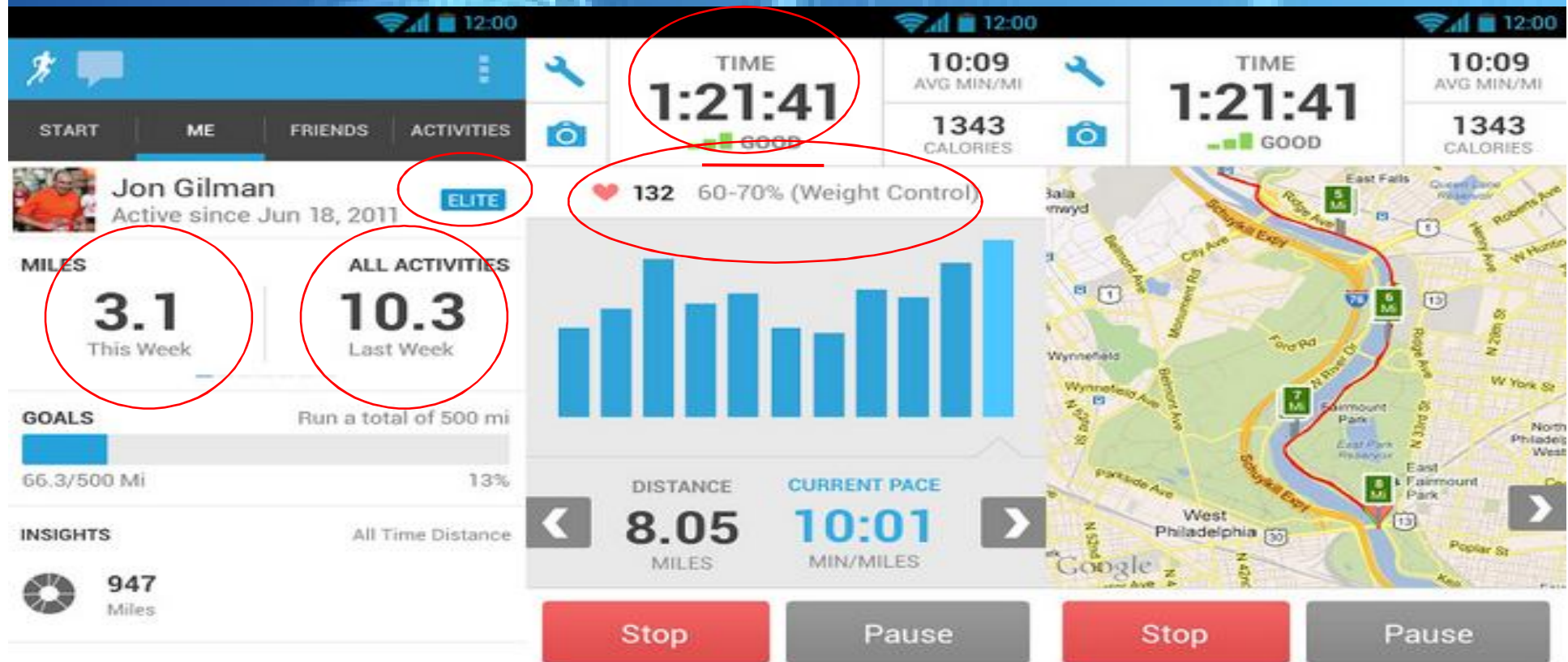
A review by patient groups and empowered consumers

With foreword by **Robert Madelin**

European Commission Director General for Communications Networks, Content and Technology

<http://myhealthapps.net/>

SALUD – PROMOCION EJERCICIO



CARGA INTERNA
 Frecuencia cardiaca
 Zona FC
 Calorías

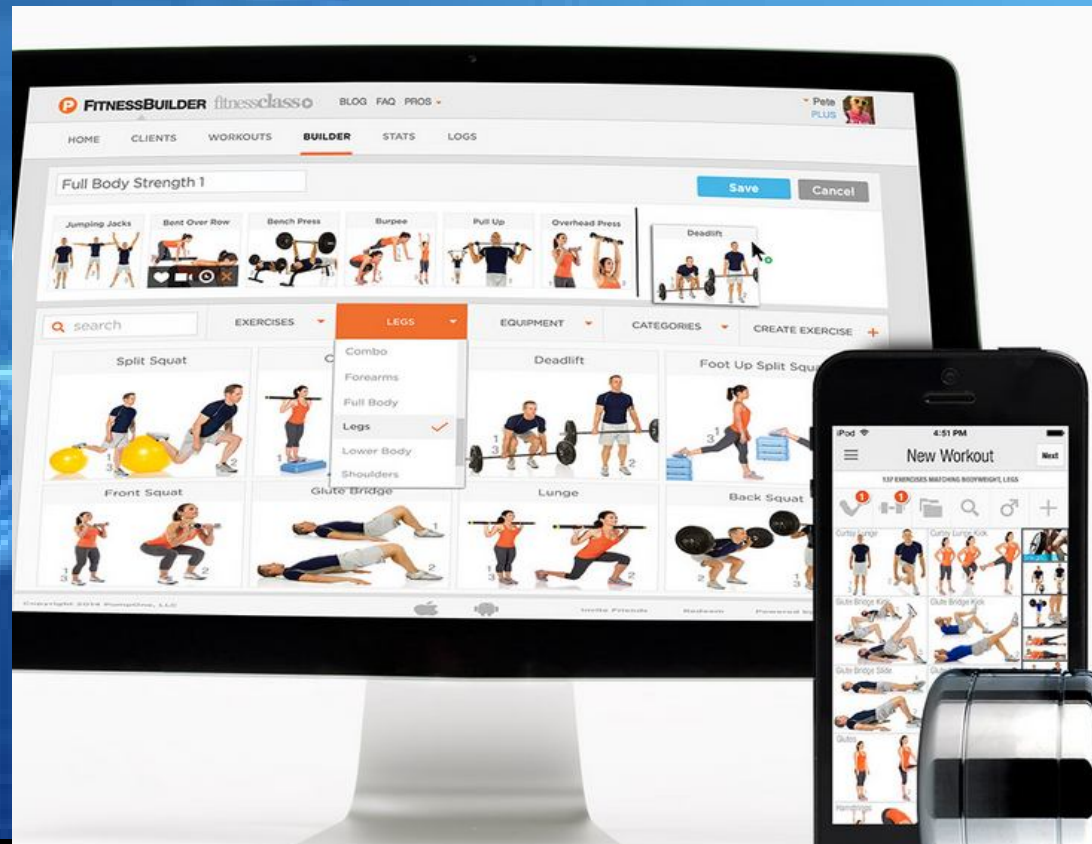
CARGA EXTERNA
 Distancia
 Intensidad

FEED BACK
 Nivel
 Valoración
 Recorrido

COMPARACION
 Grupos de entreno
 Amigos

PLANIFICACION
 Cerrada
 Abierta

SALUD – PROMOCION EJERCICIO



CARGA INTERNA
NO

CARGA EXTERNA
% Rp max

FEED BACK
Imagen
Video

COMPARACION
Amigos

PLANIFICACION
En función del
tiempo
Cerrada
Consulta Streaming



Valoración y prueba de esfuerzo

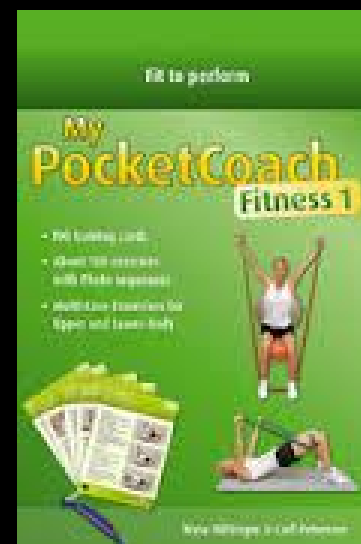


REVIEW

Open Access

Apps to promote physical activity among adults: a review and content analysis

Anouk Middelweerd¹, Julia S Mollee², C Natalie van der Wal^{2,3}, Johannes Brug¹ and Saskia J te Velde^{1*}



TECNICAS CAMBIO DE CONDUCTA

Behavior change techniques



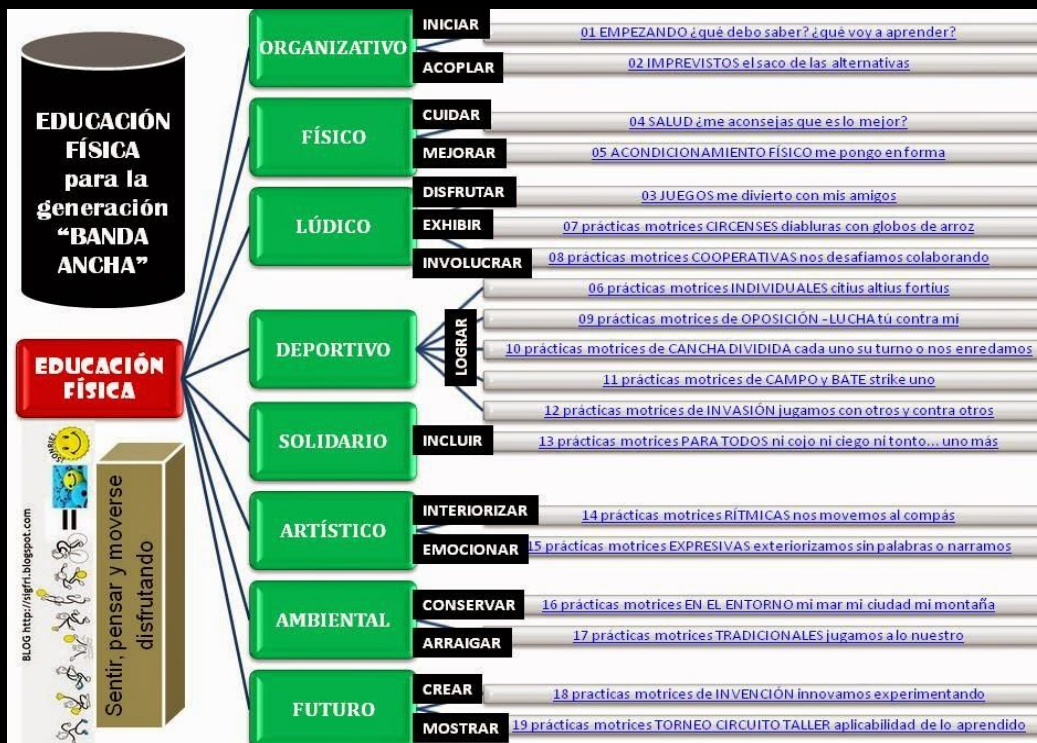
Figure 2 Frequencies of the 23 behavior change techniques used in apps. Behavior change techniques are scored using the taxonomy created by Abraham and Michie [14], ranked by the most frequently applied techniques.

EDUCACION

Psicomotricidad



Actividad física



EDUCACION

Enseñanza Educación Física(secundaria)



**Organización
competiciones**

**Clases
colectivas**



Banco de recursos TIC y APP para Educación Física

PREVENCIÓN REHABILITACIÓN

Obesidad infantil

Original Investigation | May 2014

JOURNAL CLUB

Effects of a Pediatric Weight Management Program With and Without Active Video Games: A Randomized Trial

Stewart G. Trost, PhD¹; Deborah Sundal, MA²; Gary D. Foster, PhD³; Michelle R. Lent, PhD³; Deneen Vojta, MD²

[+] Author Affiliations

JAMA Pediatr. 2014;168(5):407-413. doi:10.1001/jamapediatrics.2013.3436.

Text Size: A A A

Un programa de 16 semanas presenta diferencias significativas control peso en población infantil

Hindawi Publishing Corporation
Journal of Obesity
Volume 2013, Article ID 438364, 8 pages
<http://dx.doi.org/10.1155/2013/438364>



Hindawi

Review Article

Exergaming as a Strategic Tool in the Fight against Childhood Obesity: A Systematic Review

Carminda Maria Goersch Fontenele Lamboglia,¹ Vanina Tereza Barbosa Lopes da Silva,¹ José Eurico de Vasconcelos Filho,² Mônica Helena Neves Pereira Pinheiro,³ Marilene Calderaro da Silva Munguba,⁴ Francisco Valmar Isaias Silva Júnior,² Fernando Alberto Ramirez de Paula,³ and Carlos Antônio Bruno da Silva^{1,5}

Alabama public schools turn to Wii childhood obesity

By Marie Leech | mleech@al.com
Email the author | Follow on Twitter
on September 17, 2011 at 12:15 PM

Print



Actress Kelly Monaco works out with the new Wii Fit Plus at Village at the Yard during last year's Sundance film festival. Alabama public schools are using the system to fight childhood obesity. (AP)

Ask most third-graders whether they'd rather run laps in hundred-degree temperatures or play a video game, and it doesn't take a genius to correctly predict their answer.

What did take some brainpower, however, was figuring out how to use that fondness for electronic games to get some of the same benefits as running.

Wee Can Fight Obesity is a fitness program for third-graders in Alabama public schools, and uses the Wii Fit Plus Bundle and EA Sports Active video games to improve physical fitness three days a week during P.E. class.

The one-year program is in 30 schools this year, and was in 30

La tecnología puede ser una estrategia eficaz para reforzar conductas activas y sanas.

Exergaming como potenciador de conductas positivas

PREVENCIÓN REHABILITACIÓN

Evaluación postural



 Sway

Smartphone Sensitivity in Objective Balance Testing

The Science Behind Sway Balance™
Clinical Research Report
July 23rd, 2013

Equilibrio postural 3ª edad

Dan Med J. 2014 Jan;61(1):B4775.

Assessment of postural balance in community-dwelling older adults - methodological aspects and effects of biofeedback-based Nintendo Wii training.

Jørgensen MG.

Parkinson

J Neuroeng Rehabil. 2014 Mar 7;11:33. doi: 10.1186/1743-0003-11-33.

The role of exergaming in Parkinson's disease rehabilitation: a systematic review of the evidence.

Barry G, Galna B, Rochester L¹.

Accidentes cerebro vasculares

Clin Rehabil. 2014 Aug 14. pii: 0269215514542638. [Epub ahead of print]

Participant and caregiver experience of the Nintendo Wii Sports™ after stroke: qualitative study of the trial of Wii™ in stroke (TWIST).

Wingham J¹, Adie K², Turner D³, Schofield C³, Pritchard C³.

PREVENCIÓN REHABILITACIÓN

Aplicaciones prevención readaptación específicas

[BMC Musculoskelet Disord.](#) 2014 Jan 7;15:2. doi: 10.1186/1471-2474-15-2.

The implementation effectiveness of the 'Strengthen your ankle' smartphone application for the prevention of ankle sprains: design of a randomized controlled trial.

[Van Reijen M](#), [Vriend II](#), [Zuidema V](#), [van Mechelen W](#), [Verhagen EA](#)¹.



RENDIMIENTO

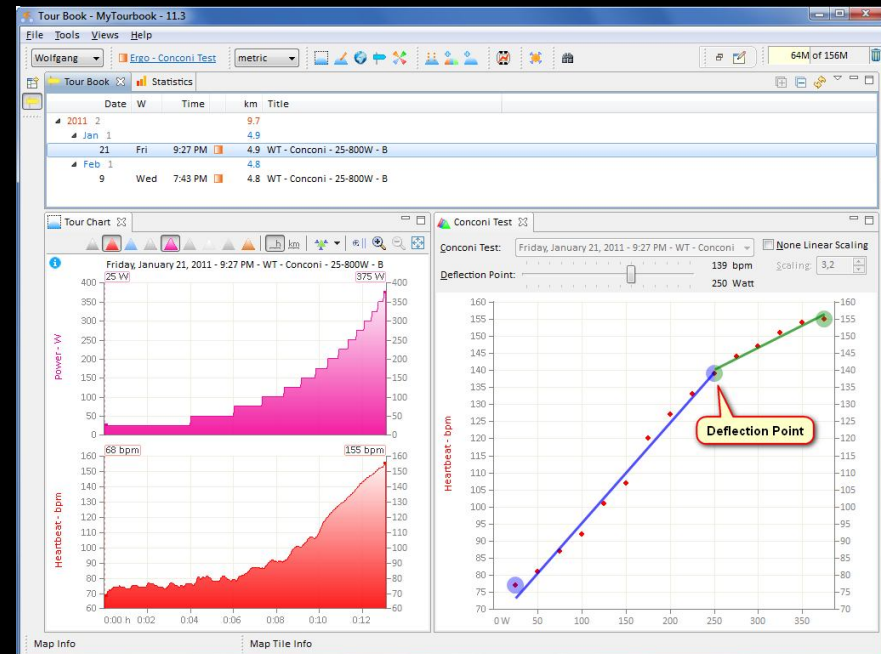
Determinación zonas trabajo (UAI)



Int J Sports Physiol Perform. 2010 Dec;5(4):437-47.

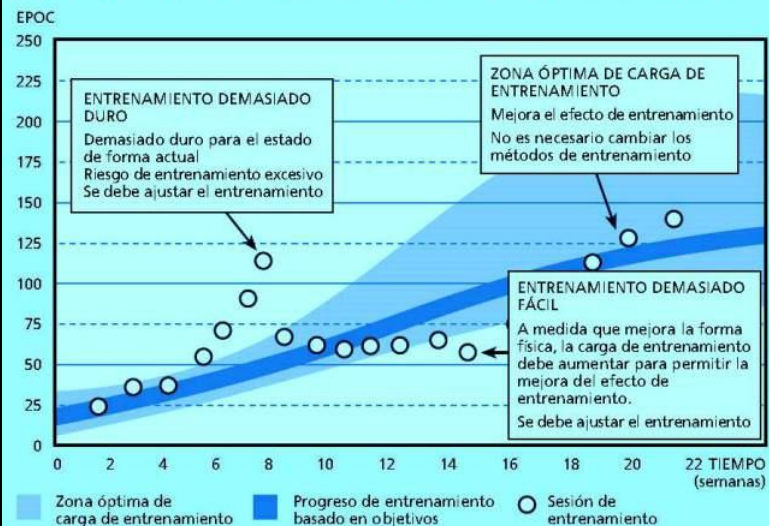
Value of the application of the heart rate performance curve in sports.

Hofmann P¹, Pokan R.




Estados sobreentrenamiento (EPOC - TRIMP)

UNA CARGA DE ENTRENAMIENTO CORRECTA GARANTIZA UN PROGRESO ÓPTIMO






 **Shooting Arc**
 Soften your shot for more consistency by learning to shoot with ideal arc.

[▶ Watch it in Action](#)

 **Shot Release Speed**
 Increase scoring with more shot attempts by always shooting at game speed.

[▶ Watch it in Action](#)

 **Dribble Intensity + Speed**
 Become more versatile by learning to dribble harder under pressure with either hand.

[▶ Watch it in Action](#)

 **Shot Backspin**
 Improve accuracy by developing a strong wrist for better follow through and a

94Fifty



Actividades específicas





BoatCoach

The Android app for rowing and erging

BoatCoach

DASHBOARD | PROGRAMS | GRAPH

Predefined Programs

Pyramid to 5 minutes
Build speed at race cadence

Tabata for 20 minutes
Maximize your workout in a limited amount of time. Alternate high intensity and medium intensity work.

500m x 10 with 1 minute rest
Build strength and speed by rowing at faster than race cadence

40 minutes with wind sprints
A steady-state workout with 30 seconds of high intensity every 5 minutes

5000m x 2
Preparation for head races. Over the season build gradually to race cadence

500m / 1:00r



1.		Charles Gagliano	<div style="width: 85%;"></div>	686 km
2.		RowerTobiSchad	<div style="width: 65%;"></div>	368 km
3.		Jacky	<div style="width: 55%;"></div>	285 km
4.		Doug Lof	<div style="width: 50%;"></div>	242 km
5.		Teresa Taylor	<div style="width: 40%;"></div>	126 km
6.		Johannes Rudolph	<div style="width: 35%;"></div>	101 km
7.		Jacob Christian Lindegaard	<div style="width: 25%;"></div>	72 km

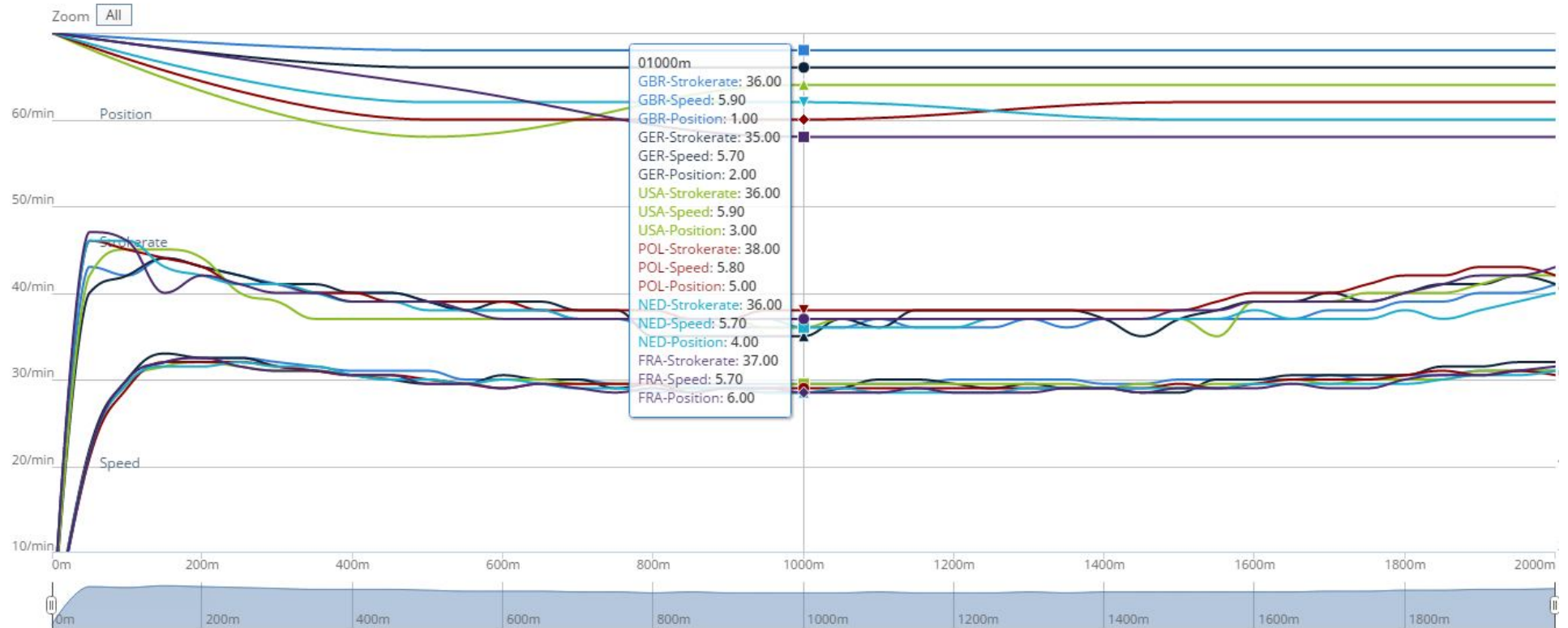
2013 World Rowing Champior ▾

2013

2013 World Rowing Championships, Chungju, Korea

M8+ Final A

— GBR-Strokerate — GER-Strokerate — USA-Strokerate — POL-Strokerate — NED-Strokerate — FRA-Strokerate





Create a customized profile to determine your heart rate zones.



Visualize your heart rate zone in real-time on your lens while you are training.

Blue if fat burning, Green if fitness, Red if maximum performance



Measure crucial training parameters.

Calories, number of laps, number of flip turns & breathing pattern



Upload your information after your workout for a detailed analysis over time.

EJEMPLOS



- *la precisión del aparato es correcta*
- *su validez ha sido demostrada en cuanto a la cantidad de la carga*
- *su fiabilidad es importante*
- *el muestreo parece suficiente para determinar los desplazamientos*
- *es un acelerómetro, no puede medir nada que no sea desplazamiento*

ORIGINAL ARTICLE

A contribution to the validation of the Wii Balance Board for the assessment of standing balance

PIERO PAVAN¹, MATTEO CARDAIOLI¹, ILARIA FERRI², ERICA GOBBI³, & ATILIO CARRARO³



Duclos *et al.* *Journal of NeuroEngineering and Rehabilitation* 2012, **9**:28
<http://www.jneuroengrehab.com/content/9/1/28>

 JNER JOURNAL OF NEUROENGINEERING
AND REHABILITATION

RESEARCH

Open Access

Dynamic stability requirements during gait and standing exergames on the wii fit[®] system in the elderly

Cyril Duclos^{1,2*}, Carole Miéville^{1,2}, Dany Gagnon^{1,2} and Catherine Leclerc^{1,2}

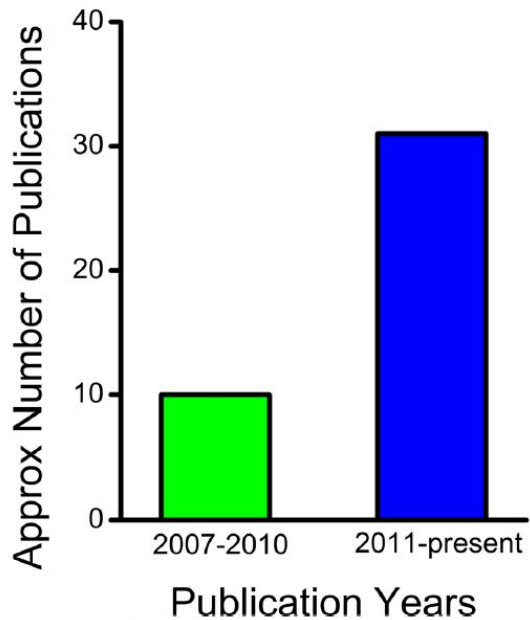


Figure 1 Growth in Wii Fit Research. From 2011 till the fifth anniversary the number of Wii Fit-balance related papers has shown an exponential increase [1,2,4-42].

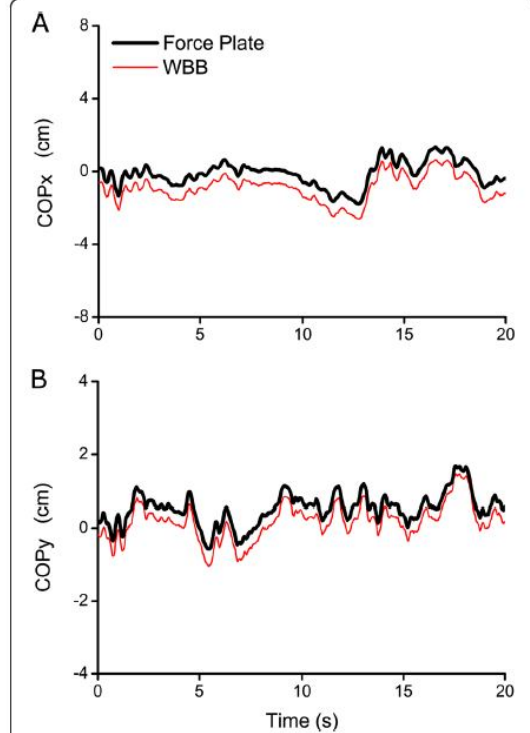


Figure 2 Representative COPx (A) and COPy (B) data for the force plate and WBB over the course of an example 20 s static balance trial. Pearson Correlation between the two signals is $r = 0.99$.

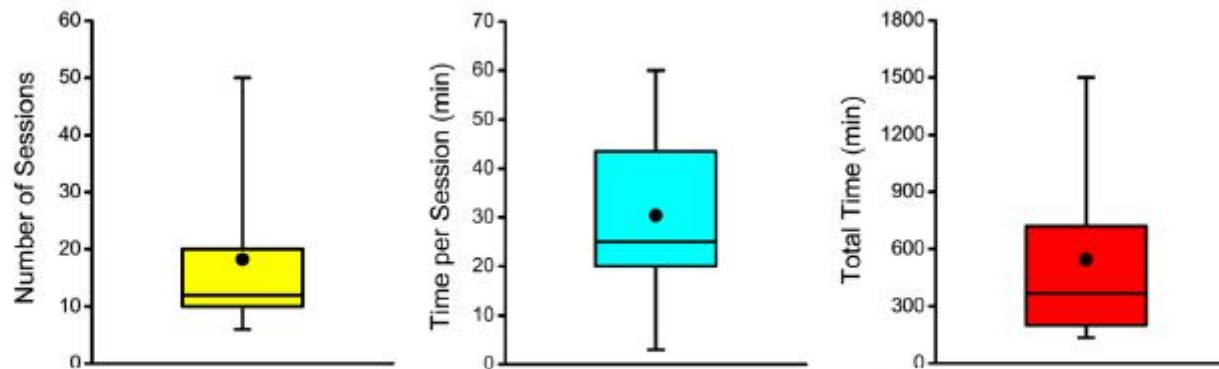


Figure 4 Wii Fit Intervention Dosing Parameters. Box and whisker plots representing the 95th percentile (whiskers), interquartile range (box), mean (black circle) and median (black line) data for the various dosing parameters of Wii Fit interventions [1,2,4,7,10,15,17-19,21,22,27-31,34,36].

Baltaci y col., 2012. Comparison between Nintendo wii fit and conventional rehabilitation on functional performance outcomes after hamstring ACL reconstruction; prospective, randomized, controlled, double blind clinical trial. Knee Sur. Sports Traumatol. Arthroscosc. 2012 Apr. 29

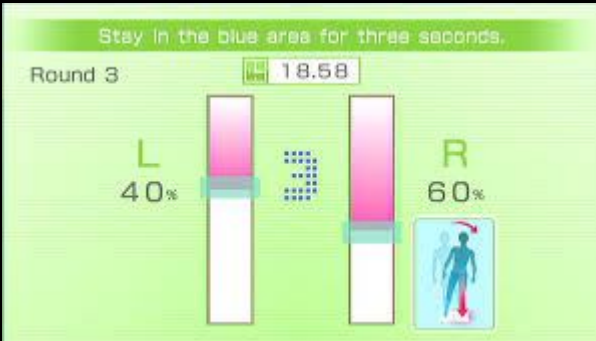
Deutsch y col., 2011. Stroke rehabilitation.



Taylor y col., 2011. Activity-promoting gaming systems in exercise and rehabilitation.

<http://wiihabilitation.co.uk/>

<http://www.rewiire.org.uk/>



EXIT 03

THE FUTURE

NEXT EXIT

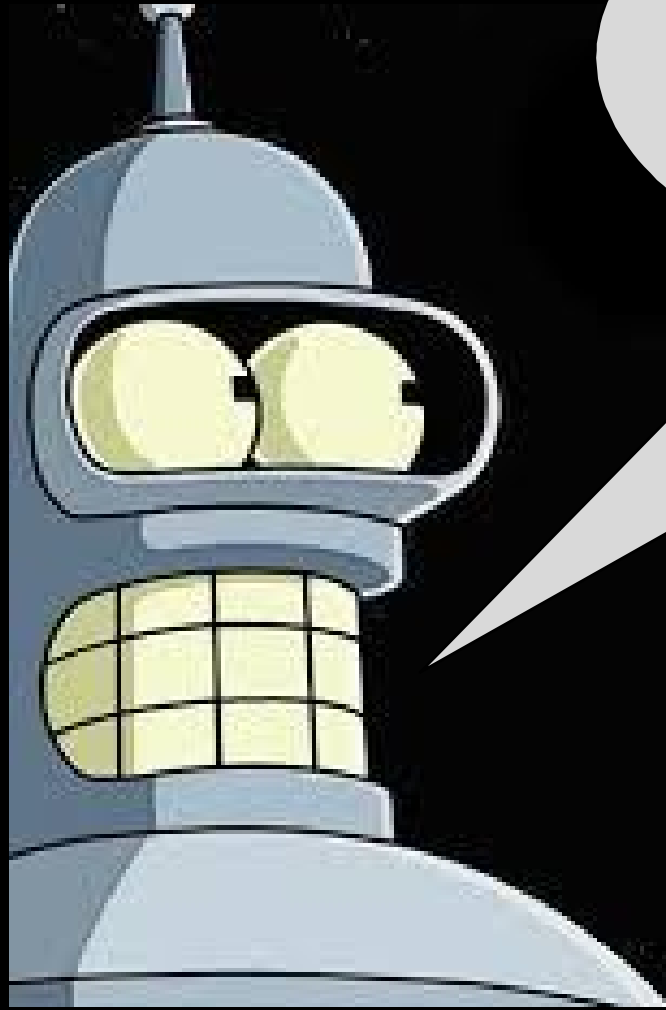




VIDEO 1



VIDEO 2



ESKERRIK ASKO!!