



UNIVERSIDAD
COMPLUTENSE
MADRID



“La valoración física del paciente crónico”

Programa de Doctorado en Ingeniería informática (RD 99/2011)
Curso 2017-18

Profesor: David Barbado Murillo

MÉDICOS Y PACIENTES .COM



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X Congreso Nacional de Atención Sanitaria al Paciente Crónico

Las enfermedades crónicas motivan el 80% de las consultas de Atención Primaria

El problema de la cronicidad y la atención a los pacientes afectados con estas enfermedades es uno de los retos más importantes del ámbito sanitario español. Estas patologías motivan el 80% de las consultas de Atención Primaria, el 60% de ingresos hospitalarios y el 85% de los pacientes ingresados en Medicina Interna, suponiendo la primera causa de gasto sanitario en nuestro país, según datos aportados por las Sociedades Españolas de Medicina Interna (SEMI) y de Medicina Familiar y Comunitaria (semFYC), con motivo de la celebración del X Congreso Nacional de Atención Sanitaria al Paciente Crónico, celebrado el fin de semana en Zaragoza



Zaragoza | 02/03/2018 | medicosypacientes.com

OPINIÓN

Firmas

Editorial

Artículos

Análisis

Post Destacados



Harvard Heart Letter

Exercise is still the best medicine

Published: October, 2014

You can slow down the aging process with as little as 15 minutes a day of moderate activity.

Exercise is good for you. These words have been a medical mantra for the last 40 years, but the adage is still as fresh as ever. As life expectancy climbs, many people survive into their 80s, 90s, and beyond. Better medicines and safer procedures can largely be thanked for the added years. But exercise maybe the key to why some people not only survive but also thrive in later life.



Image: Thinkstock

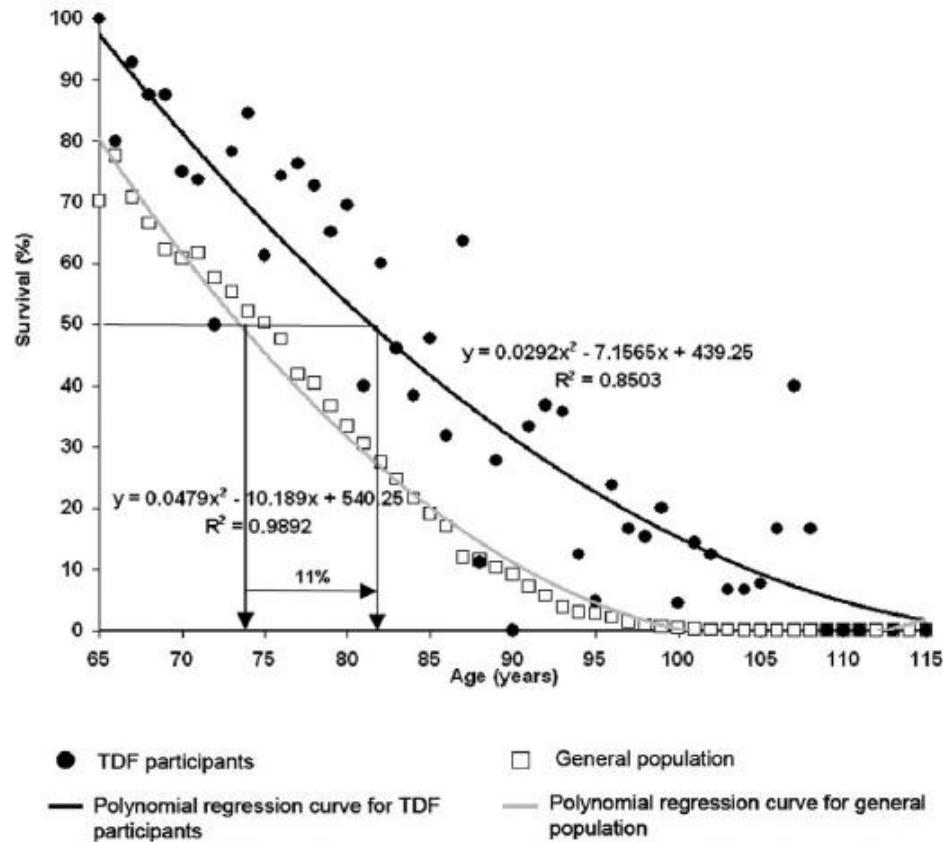
Regular exercise may be able to offset disease-causing cellular damage and slow the aging process.

REVIEW

Exercise acts as a drug; the pharmacological benefits of exercise

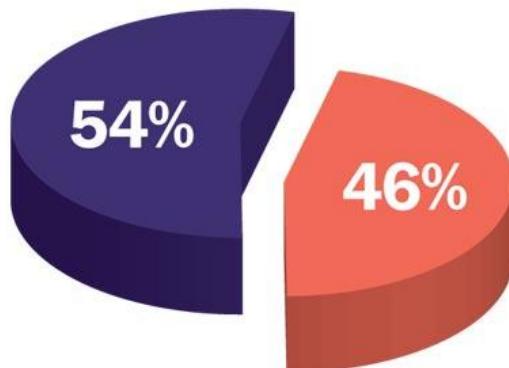
J Vina, F Sanchis-Gomar, V Martinez-Bello and MC Gomez-Cabrera

"Our general conclusion is that exercise is so effective that it should be considered as a drug"

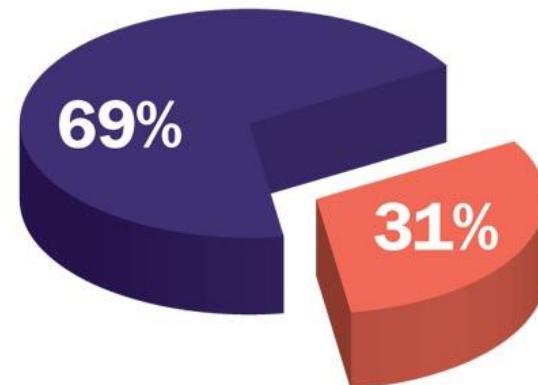


Percentage of adults ages 18-64 with disabilities who have 1 or more chronic diseases, by aerobic physical activity level

Inactive



Active



No chronic disease



1 or more chronic diseases

SOURCE: CDC National Center for Health Statistics, National Health Interview Survey, 2009-2012.



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Author Manuscript

Compr Physiol. Author manuscript; available in PMC 2014 November 23.

Published in final edited form as:

Compr Physiol. 2012 April ; 2(2): 1143–1211. doi:10.1002/cphy.c110025.

Lack of exercise is a major cause of chronic diseases

Frank W. Booth, Ph.D.¹, Christian K. Roberts, Ph.D.², and Matthew J. Laye, Ph.D.³

“Chronic diseases are major killers in the modern era. Physical inactivity is a primary cause of most chronic diseases.”

El "London Bus Study" (1953)

THE LANCET

ARTICLES

[NOV. 28, 1953 1111]

CORONARY HEART-DISEASE AND PHYSICAL ACTIVITY OF WORK

J. N. MORRIS

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(Concluded from p. 1057)



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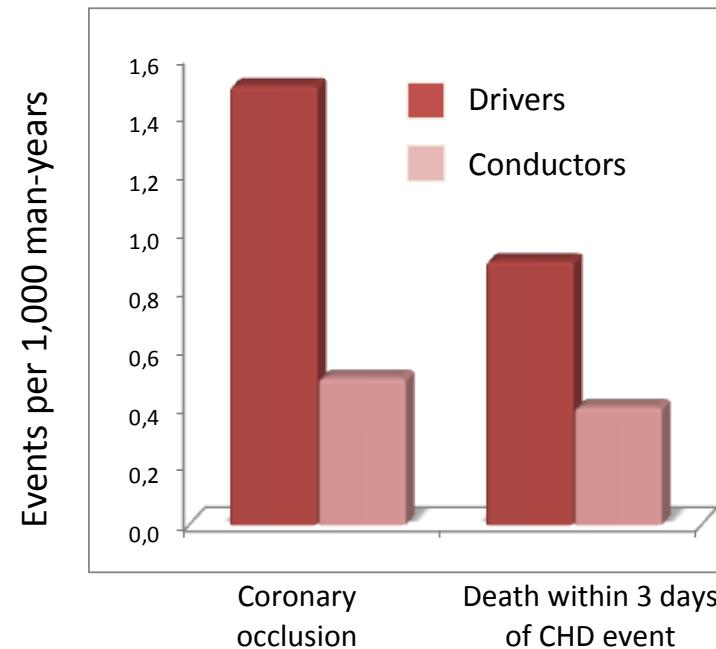
OF THE MEDICAL DEPARTMENT, LONDON TRANSPORT EXECUTIVE

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(Concluded from p. 1057)

Actividad física laboral y enfermedad cardiovascular

Physical Activity at Work and CHD Events in 31,000 London Transport Workers



Original Contribution

Physical Activity and Mortality: Is the Association Explained by Genetic Selection?

Sofia Carlsson^{1,2}, Tomas And Ahlbom^{1,2}



Table 2

Tendency for dose-response between higher physical activity level and lower mortality in Swedish monozygotic twins [modified from (77)].

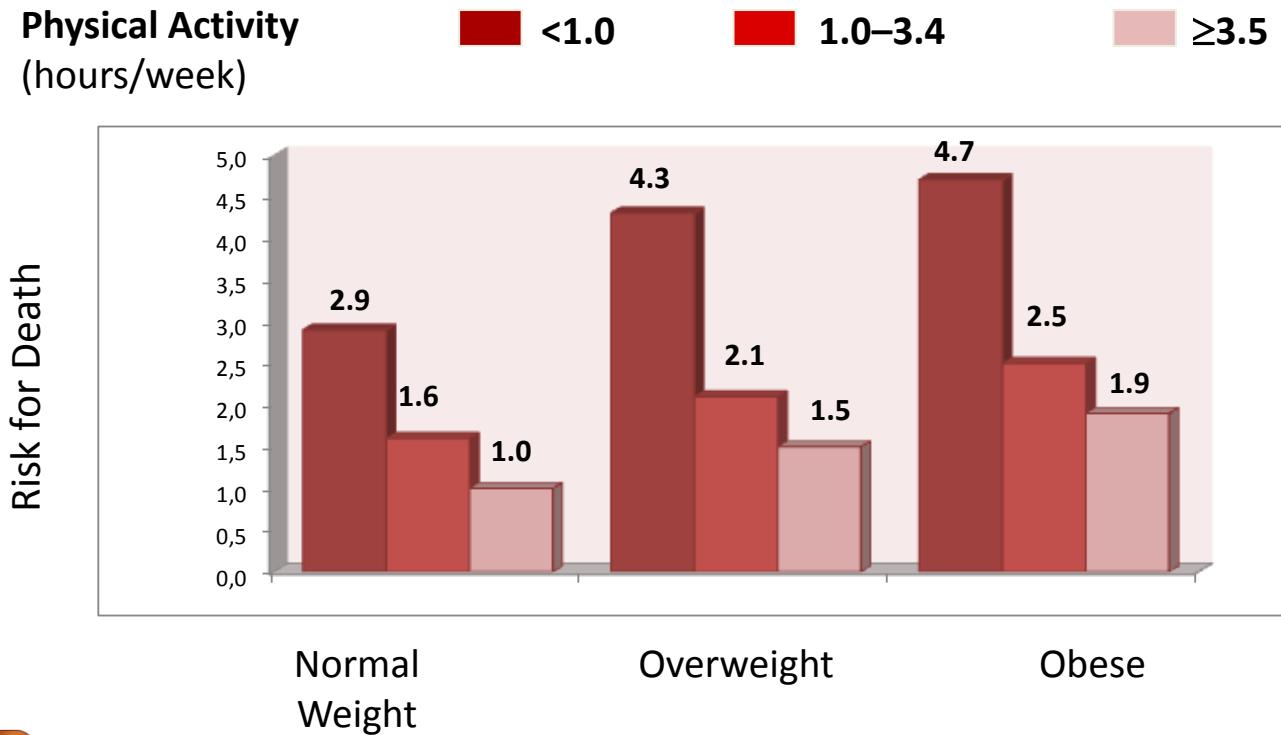
Sex	Physical activity level	All-cause mortality		Cardiovascular mortality	
		Hazard ratio	95% confidence intervals	Hazard ratio	95% confidence intervals
Men	Low	1		1	
	Moderate	0.84	0.72, 0.98	0.86	0.68, 1.08
	High	0.64	0.50, 0.83	0.55	0.36, 0.85
Women	Low	1		1	
	Moderate	0.82	0.70, 0.96	0.85	0.64, 1.13
	High	0.75	0.50, 1.14	0.34	0.1, 0.95



are used with 7 items: low physical activity ("almost never" and "hardly ever") level; moderate ("very little", "not much", and "quite a lot" and "very much")

el Hernández

La inactividad física como factor de riesgo INDEPENDIENTE

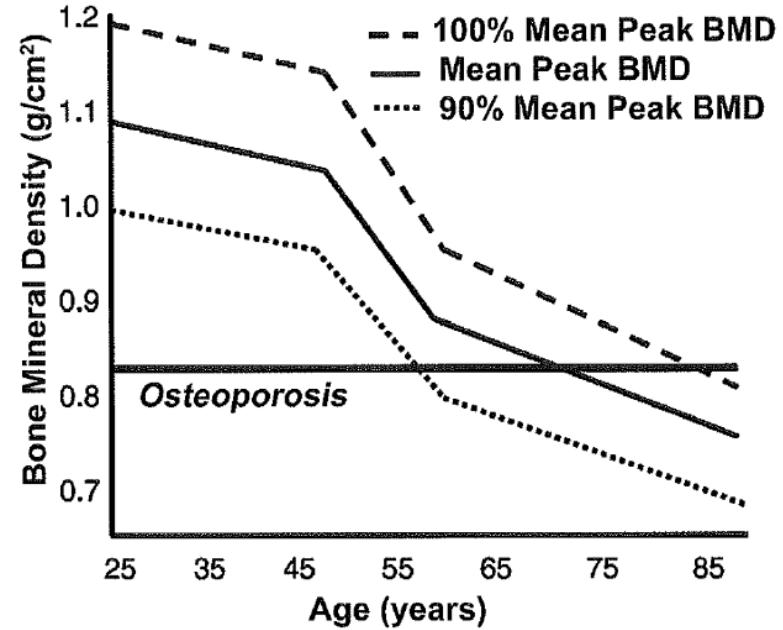
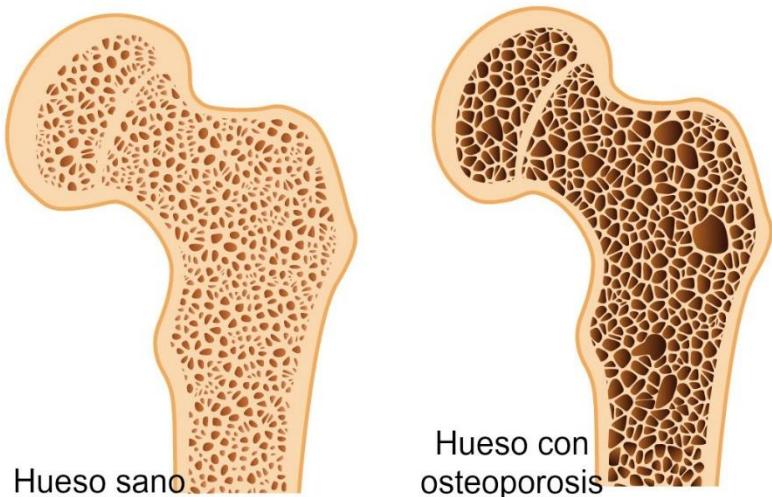


Published in final edited form as:

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Lack of exercise is a major cause of chronic diseases

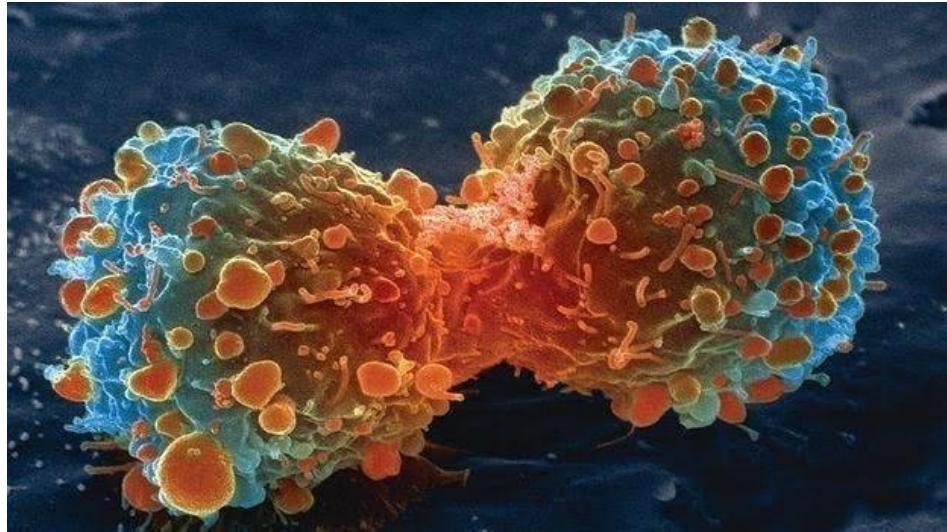
Frank W. Booth, Ph.D.¹, Christian K. Roberts, Ph.D.², and Matthew J. Laye, P



REVIEW

Physical activity and reduced risk of colon cancer: implications for prevention

Graham A. Colditz, Carolyn C. Cannuscio, and A. Lindsay Frazier



“... highest physical activity category had ~40%–50% reduction in risk of colon cancer compared with the least active category ...”

Importancia de la valoración física del paciente crónico

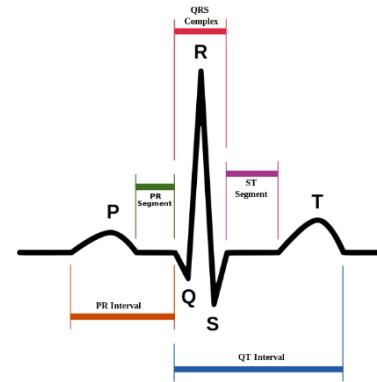


- Conocer el estatus físico del paciente para verificar la efectividad de los programas de intervención.
- Individualizar la carga de entrenamiento.
- Facilitar el diagnóstico y evolución clínicas de ciertas enfermedades con sintomatología motora.
- Incrementar la eficacia de los modelos de predicción para la evolución de la enfermedad

Verificar la efectividad de los programas de intervención



POLAR®
LISTEN TO YOUR BODY



Individualizar la carga de entrenamiento.

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The Lancet, Early Online Publication, 16 August 2011
doi:10.1016/S0140-6736(11)60749-6 [\(?\) Cite or Link Using DOI](#)

Minimum amount of physical activity for reduced mortality and extended life expectancy: a prospective cohort study

Dr Chi Pang Wen MD a b , Jackson Pui Man Wai PhD c d, Min Kuang Tsai MS a b, Yi Chen Yang MS a b, Ting Yuan David Cheng MS d, Meng-Chih Lee MD e, Hui Ting Chan MS a, Chwen Keng Tsao BS f, Shan Pou Tsai PhD g, Xifeng Wu MD h

Summary

Background

The health benefits of leisure-time physical activity are well known, but whether less exercise than the recommended 150 min a week can have life expectancy benefits is unclear. We assessed the health benefits of a range of volumes of physical activity in a Taiwanese population.

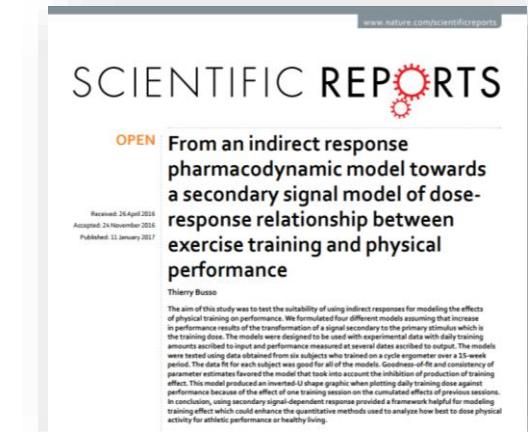
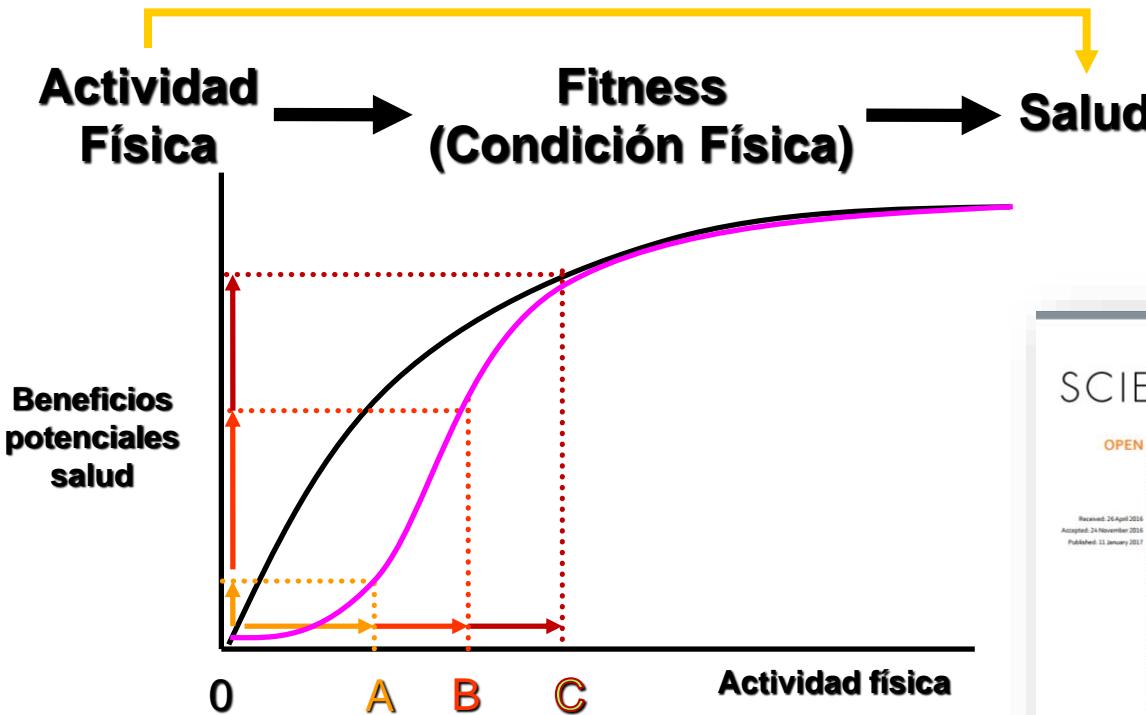
Methods

In this prospective cohort study, 416 175 individuals (199 265 men and 216 910 women) participated in a standard medical screening programme in Taiwan between 1996 and 2008, with an average follow-up of 8·05 years ($SD\ 4\cdot21$). On the basis of the amount of weekly exercise indicated in a self-administered questionnaire, participants were placed into one of five categories of exercise volumes: inactive, or low, medium, high, or very high activity. We calculated hazard ratios (HR) for mortality risks for every group compared with the inactive group, and calculated life expectancy for every group.

Findings

Compared with individuals in the inactive group, those in the low-volume activity group, who exercised for an average of 92 min per week (95% CI 71–112) or 15 min a day ($SD\ 1\cdot8$), had a 14% reduced risk of all-cause mortality (0·86, 0·81–0·91), and had a 3 year longer life expectancy. Every additional 15 min of daily exercise beyond the minimum amount of 15 min a day further reduced all-cause mortality by 4% (95% CI 2·5–7·0) and all-cancer mortality by 1% (0·3–4·5). These benefits were applicable to all age groups and both sexes, and to those with cardiovascular disease risks. Individuals who were inactive had a 17% (HR 1·17, 95% CI 1·10–1·24) increased risk of mortality compared with individuals in the low-volume group.

Relación Actividad Física y Salud: Nuevo Paradigma Dosis-respuesta



Facilitar el diagnóstico y evolución clínicas de ciertas enfermedades con sintomatología motora



Neurología

Sección Calidad de Vida

Sitio informativo para personas con afecciones neurológicas, familiares y allegados - Hospital de Clínicas - UBA

Institucional Atención Médica Calidad de Vida Equipo de Salud Afecciones



EL DIAGNÓSTICO EN LA ENFERMEDAD DE PARKINSON Y LOS BIOMARCADORES



El diagnóstico de enfermedad de Parkinson es difícil de precisar en sus inicios cuando los síntomas no motores predominan (disfunción olfatoria, trastornos del sueño, constipación, depresión y ansiedad, entre otros) y en el estadio motor (temblor, rigidez y lentitud) cuando se presentan datos atípicos que pudieran estar causados por otro tipo de enfermedad neurodegenerativa (parkinsonismos).

Mejorar la precisión de los modelos de evolución de la enfermedad



nature
international journal of science

Altmetric: 78

More detail >>

Outlook

Machine learning: Calculating disease

Neil Savage

Machine learning might identify patients earlier, predict their outcomes better, and assign them more efficiently to appropriate clinical trials.

For neurologist Peter Bede, seeing someone he thinks might have amyotrophic lateral sclerosis (ALS) can be vexing. Unlike many disorders, even other neurological diseases, ALS is not an illness that can be identified by an examination and a few lab tests.

A photograph showing a medical professional in a white coat using a sphygmomanometer to take a patient's blood pressure. The patient, a middle-aged man with grey hair, is seated and looking upwards. The medical professional's hands are visible, one holding the gauge and the other adjusting the cuff on the patient's upper arm.

Problemática

- Alto coste:
 - Material
 - Temporal
 - Humano
- Datos restringidos al ámbito científico.
Dificultad de generar grandes bases de datos.
- Imposibilidad de uso para la monitorización continua del paciente



OPINION

Universities need a new social contract

To reconcile solution-driven research and blue-sky thinking, academic institutions urgently need innovative collaborations and new funding models, says Indira V. Samarasekera.

Over the past year, academic leaders from around the world have had to contemplate the future of higher education and university research against the backdrop of global financial upheaval. As president of the University of Alberta in Edmonton, Canada, I have participated in some of these international roundtables. My conclusion? It is time to construct a new social contract between research universities and their public and private partners—one that both promotes the pursuit of basic research and encourages solution-driven work. While academic leaders and university should enhance this new relationship, establishing a funding mechanism to do so. We should devise new ways to measure success, and actively copy the organizations that work best. If we can do all that, we stand a better chance of solving the world's problems—now and in future.

Public and private universities worldwide face a bleak financial future. The value of endowments has plummeted—by as much as 30% in some instances over the past year. Government support has been slashed—by up to 20% in the United States and up to 8% in Canada. Philanthropic support is harder to come by, and springing rates can outpace current fees, let alone increase in debt.

Yet nations are counting on the talent of graduate and on the discoveries of university researchers to nation and advance the global economy. As testimony to this faith, investment in research and development has increased—*including US\$16 billion in the United States and C\$21 billion in Canada*. Many of these investments are targeted to support solution-driven research in specific fields. The US stimulus package includes funding for advanced energy research and climate-change research. The Canadian package funds research to build infrastructure projects at colleges and universities. In addition, Can\$200 million over seven years has been committed to the Canada Excellence Research Chair, a new federal programme to attract top academics to build world-class centres. These funds will focus on areas identified as strategically important to Canada's long-term economic plan: environment, natural resources, life and



Health sciences and information technology

This push towards more solution-driven research funding, which pre-dates the recession, is a source of growing concern for many academic researchers, and for good reason. They are worried about the potential devolution of basic-science research and academic scholarship, which have led to profound advances in human knowledge and to major commercial successes. Such 'blue-sky' research was, until recently, considered the mainstay of universities and a crucial part of the education of undergraduate and graduate students, and it must remain so.

But converging forces—the expansion of globalization, the increasing use of computers—

and the trend of basic innovation whereby companies pursue research outside their own buildings—are reshaping how public universities operate.

The implications for the university research enterprise are significant. Academic research agencies are under pressure to reduce costs. Some academic institutions are dealing with this by

reducing their basic research budgets, or by shifting to more applied research.

Already a few organizations embody the

To be fast and effective, we must stimulate and support interdisciplinary, inter-profession and inter-sector approaches, funded internationally.

SUMMARY

- Answers to big global problems are being lost to structural inertia.
- Interdisciplinary, inter-institutional, international projects need support.
- The world's government funding leaders must design a fix together.

interdisciplinarity. Universities jockey for position in a glacial time frame, but we aren't alone. Funders also contribute to delay, requiring repeated rounds of negotiating, reworking of proposals and multiple levels of review. This needs to change. A new social contract would involve establishing a review, approval and funding process for solution-driven research that sits parallel to processes for basic research, and has the same focus and urgency defined in the outcome, without compromising the caution that will lead to protect the quality of the research.

At present, researchers, funders and universities fight for research funding, rating and reputation. We must reduce this competitive energy by using funding models that encourage collaboration, fund with speed the passage from problem to solution, we need to play with, rather than against, each other.

Universities have a bigger part to play in today's world. With major companies doing less of their own basic and solution-driven research, universities are increasingly becoming repositories of the specialized environments, state-of-the-art equipment and talent needed for blue-sky and solution-driven research. Companies and governments increasingly depend on them for technology development and innovation.

Universities and companies are recognizing that innovation is a contact sport. We need to encourage and support collaboration between universities and the private sector. Efforts to bring university researchers into more frequent contact with industry, to better identify predictable challenges, need to be strengthened—internally and externally—through partnership agreements.

Already a few organizations embody the

up to \$1 million more. The programme does not discriminate between application from students or well-established researchers and it encourages proposals that take unconventional, interdisciplinary approaches.

The European Research Council, established in 2007, is another cross-border organization that promotes frontier science and encourage application from early-career researchers as well as established scholars. But the council has a fairly traditional structure, with a focus on curiosity-driven projects developed by principal investigators. There are no barriers to developing international or interdisciplinary research teams, but neither are there special mechanisms to do so. This seems to be a lost opportunity, especially in an organization that aims, in part, from a desire to unite research effort across European countries.

'Collaboratoriums'

Looking to public-private partnerships, we can see other promising developments that encourage both basic and solution-driven research. In Canada, Mike Lazaridis, co-chief executive of Research in Motion in Waterloo, Ontario, and founder of the BlackBerry communication tool, founded the Perimeter Institute for Theoretical Physics adjacent to the University of Waterloo. He has made a commitment to support blue-sky thinking on the nature of the Universe with investments of more than C\$150 million, even though the discoveries are not likely to benefit his business for the foreseeable future. At the same time, Microsoft, Intel, Xerox, IBM, HP and others have invested in universities and laboratories in a variety of disciplines.

If we don't forge a new social contract now, we will be stuck to the next generation an even more ramshackle system."

research breakthroughs to new products.

These pockets of promise are emerging organically and, in most cases, rather haphazardly, without an overarching mathematical infrastructure or drive. Without common vision, guidance and metrics for measuring progress, it is difficult to determine which strategies are actually succeeding and to build on them.

There are two ways we can respond to this situation. We can continue to muddle forward and hope for the best. If no, we risk long delays—or failure—in achieving the results that the world needs now. Researchers eager to create interdisciplinary, international collaborations will continue to find it difficult, sometimes impossible, to find the funding they need. The alternative is to be proactive: to analyze the success of emerging models and copy strategies that work best.

I suggest we begin by bringing together leaders from major government funding agencies across the world—particularly from North America, Europe, India and China. Together they need to define a funding model designed to reward interdisciplinary, inter-institutional and international projects. They would then need to determine what percentage of their funding budgets could be reallocated to these kinds of projects. They would also develop systems for efficient submission and evaluation of proposals and for distribution of funds. The format for these discussions could be guided by lessons learned during the establishment of the European Research Council and the ongoing Bologna Process, which is working to standardize degree requirements and quality control in universities across Europe.

Some may say that a time of economic uncertainty is not a good moment for linguistic change, but I believe there will never be better time. I think of the research ecosystem to be gained through collaboration and integration across boundaries. I see the speed with which global problems could find solutions, once old obstacles are removed.

If society doesn't seize the opportunity to forge the new social contract now, while economic growth strengthens our will to change, we will approach to the next generation of researchers an even more ramshackle system than we are coping with now. And many discoveries that might an ever surging global problems will be left in inertia and inaction.

Indira V. Samarasekera is president and vice-chancellor of the University of Alberta in Edmonton, Alberta, Canada.
e-mail: indira.samarasekera@ualberta.ca

Abrir el campo sanitario a ingenieros, físicos o analistas de datos

Última Hora



FUERTEVENTURA GABARRAS (Actualización)

Los equipos de descor

[Inicio](#) / [Profesionales](#) / Las nuevas tecnologías médicas abren paso a nuevas especialidades en salud

Las nuevas tecnologías médicas abren paso a nuevas especialidades en salud

javier | MADRID/EFE/REDACCIÓN SALUD

Miércoles 21.02.2018

SHARE

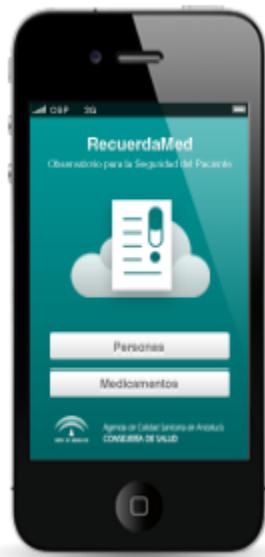


Las nuevas tecnologías con fines médicos están abriendo el campo de las profesiones relacionadas con la sanidad y dan paso, al menos, a una decena de nuevas especialidades que son cada vez más demandadas en el campo de la salud, tanto público como privado, entre ellas, fisioterapia manual, y dolor cráneo-cervical, genética médica, cuidados paliativos pediátricos y psicoterapia online

RecuerdaMed: controla tu medicación

Versión para iOS

Versión para Android



RecuerdaMed: Facilita al paciente, o su cuidador, la creación de un listado completo de los medicamentos que está tomando, aumentando la adherencia al tratamiento y mejorando la conciliación de la medicación, especialmente en polimedicados y crónicos.

Original Paper

Direct Adherence Measurement Using an Ingestible Sensor Compared With Self-Reporting in High-Risk Cardiovascular Disease Patients Who Knew They Were Being Measured: A Prospective Intervention

David Thompson¹, MRCPI; Teresa Mackay², RN; Maria Matthews², RN; Judith Edwards², RN; Nicholas MD, FRCP, FHRS; Susan B Connolly³, MRCPI, PhD

¹International Centre for Circulatory Health, National Heart and Lung Institute, Imperial College London, London, United Kingdom

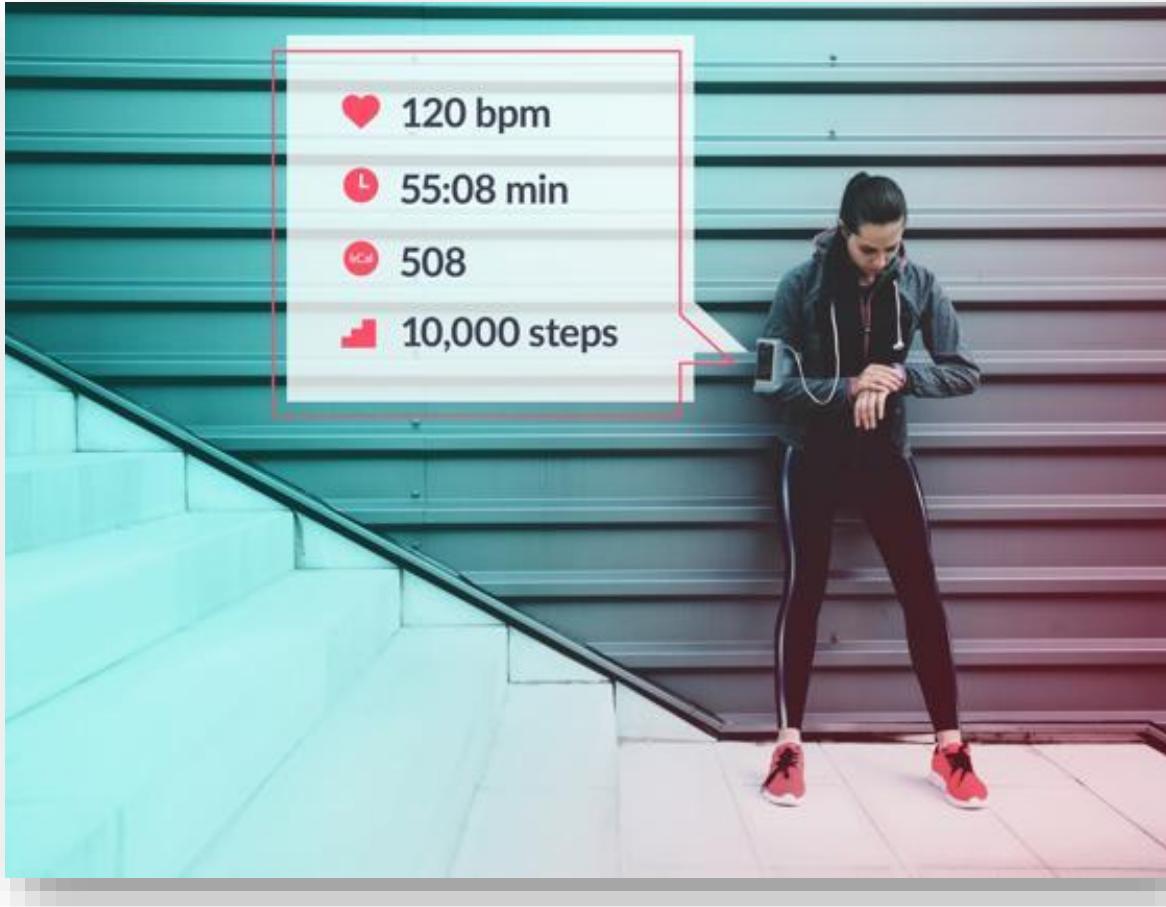
²Imperial College Healthcare NHS Trust, London, United Kingdom

³National Heart and Lung Institute, Imperial College London, London, United Kingdom

Figure 1. Integrated Lifenote system featuring a tablet computer, ingestible sensor, and externally worn patch.



	08:00h	12:00h	16:00h	18:00h			
dose 1	●	●	●	●	●	●	●
dose 2	●	●	●	●	●	●	●
dose 3	●		●	●	●	●	●
dose 4	●		●	●	●	●	●





myBrain: a novel EEG embedded system for epilepsy monitoring

Francisco Pinho, João Cerqueira, José Correia, Nuno Sousa & Nuno Dias



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Un sistema inteligente para monitorizar a niños con enfermedades crónicas



Un nuevo sistema inteligente permitirá medir de forma continua y precisa parámetros como la frecuencia cardíaca o la temperatura corporal en niños que sufren enfermedades crónicas como el

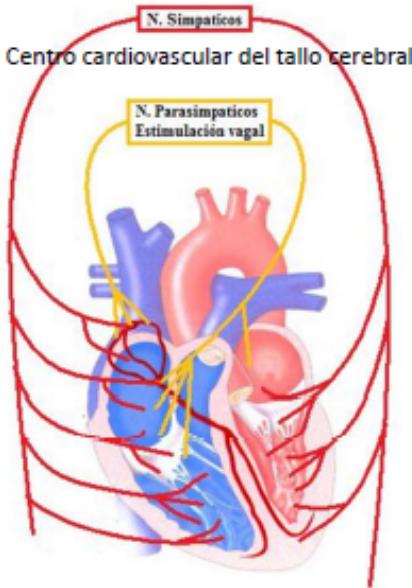
Lo +

Lo último Lo + visto Lo + compartido

- 1 Una Ley de Protección de Datos que mantenga el equilibrio con la investigación biomédica
- 2 El PSOE advierte de que el Gobierno "aparca" el decreto de gestión clínica y la troncalidad
- 3 La EDS presenta su nº1 del V13
- 4 El Sespa presentará a los profesionales un Plan contra las agresiones a sanitarios
- 5 La SEFH amplía su base de datos hasta las 168 formulaciones para dar respuesta a 115 EE RR
- 6 La Fundación IDIS apuesta por el trabajo en equipo para aportar valor a la sanidad
- 7 Diego Murillo recibe el premio Eugenio Espejo del Colegio de Médicos de Ecuador
- 8 Un galardón por la 'magia' en sanidad
- 9 "El acuerdo de la AGP con el Msssi es inminente"
- 10 La SEHH presenta "El viaje de Pedro"

“.... Un pequeño dispositivo portátil, conectado a un teléfono inteligente, que permite medir en tiempo real parámetros como la frecuencia cardíaca o la temperatura corporal...”

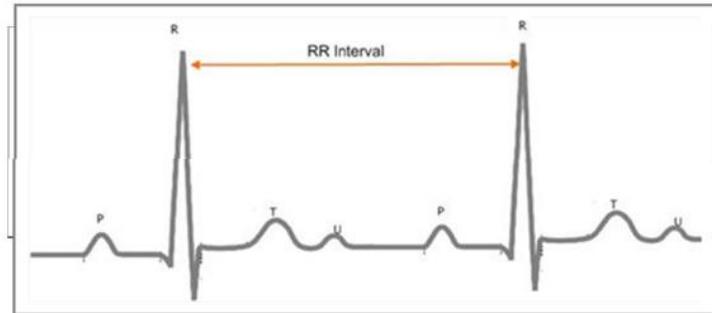
Variabilidad Frecuencia Cardiaca (HRV) y riesgo cardiovascular



La **estimulación simpática** actúa acelerando la despolarización del nodo sinusal, produciendo taquicardia

La **estimulación parasimpática** produce liberación de acetilcolina, lo que disminuye el ritmo de descarga del nodo sinusal, produciendo bradicardia

Rodas et al. (2008) lo definieron como la variación de la frecuencia del latido cardíaco durante un intervalo de tiempo definido con anterioridad (nunca superior a 24 horas) en un análisis de períodos circadianos consecutivos.



Sztajzel J. Heart rate variability: a noninvasive electrocardiographic method to measure the autonomic nervous system. Swiss Med Wkly 2004;134:514–522



Table 3

Reference values for measurement of time domain and spectral parameters in healthy middle-aged subjects and in patients after myocardial infarction.

Variable	Healthy subjects (n = 274)	Recent MI (n = 684)	One year after MI (n = 278)
SDNN (ms)	141 ± 39	81 ± 30	112 ± 40
SDANN (ms)	127 ± 35	70 ± 27	99 ± 38
RMSSD (ms)	27 ± 12	23 ± 12	28 ± 15
pNN50 (%)	9 ± 7	7 ± 9	10 ± 11
Total power (ms ²)	21222 ± 11663	7323 ± 5720	14303 ± 19353
LF (ms ²)	791 ± 563	277 ± 335	511 ± 538
HF (ms ²)	229 ± 282	129 ± 203	201 ± 324
LF/HF ratio	4.61 ± 2.33	2.75 ± 2.13	3.60 ± 2.43

MI = myocardial infarction

Chronic low back pain

A Systematic Review of the Effects of Exercise and Physical Activity on Non-Specific Chronic Low Back Pain.pdf - Adobe Acrobat Pro DC

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1 / 19

MDPI

healthcare

Review

A Systematic Review of the Effects of Exercise and Physical Activity on Non-Specific Chronic Low Back Pain

Rebecca Gordon * and Saul Bloxham

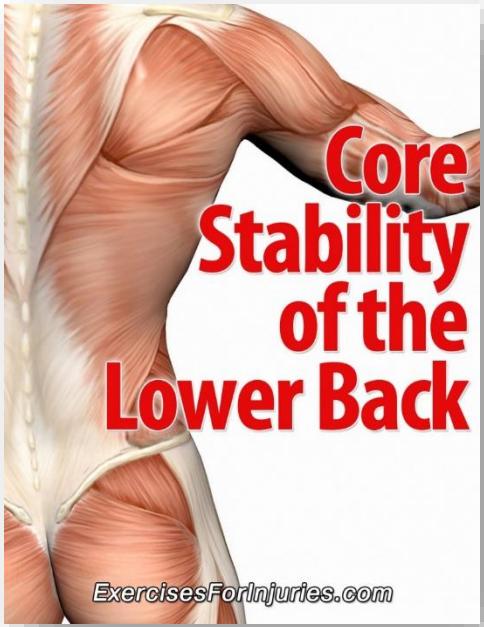
Department of Sport and Health Sciences, University of St Mark and St John, Plymouth PL6 8BH, UK; sbloxham@marjon.ac.uk

* Correspondence: rgordon@marjon.ac.uk; Tel.: +44-1752-636700 (ext. 6526)

Academic Editor: Robert J. Gatchel

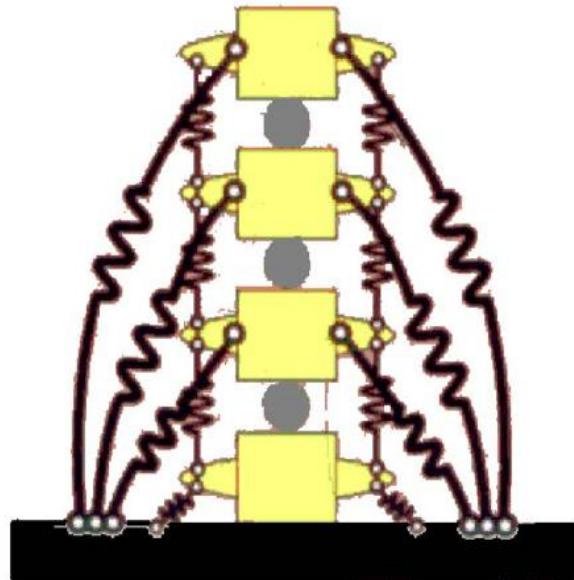
Received: 28 February 2016; Accepted: 19 April 2016; Published: 25 April 2016





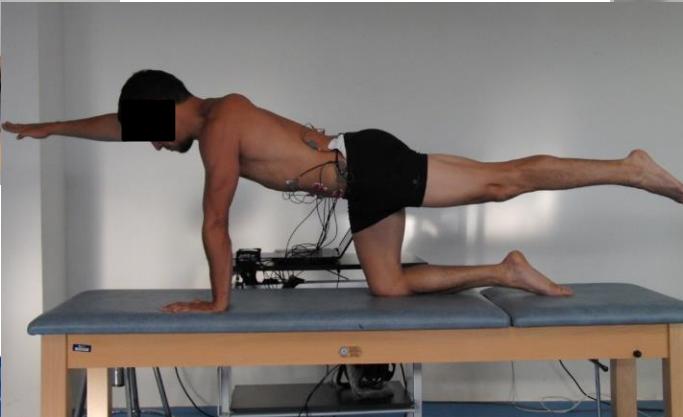
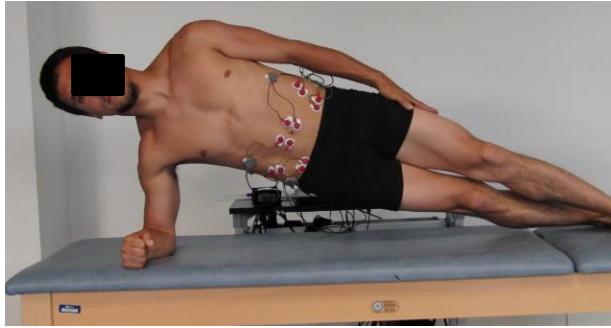
ExercisesForInjuries.com

Estabilidad del tronco



Ejercicio de Estabilidad

Retar/estimular la capacidad del sistema motor para estabilizar el raquis.



Apple Inc. [US] | <https://itunes.apple.com/us/app/lower-back-pain-app/id796330692?mt=8>

Bookmarks Sci-Hub: removing b adAS Servicio de Síntesis Neurociencia Inglés Libros Ocio Entrenamiento Investigación Programación

App Store Preview

This app is only available on the App Store for iOS devices.



Lower Back Pain App 4+

Willem Kraak

\$0.99

Screenshots iPhone iPad



Important!
Indicate your pain level and start the program.
• 3 exercises per day

Indicate the level of pain you experience

Lower back pain
Back pain is a collective noun for various different back complaints. Back problems are common: about 80% of adults at some point experience lingering or stabbing pains in the back, with or without radiation to the posterior and leg. This is not just a social and medical problem, but also a financial problem, as back pain is a major cause of sick leave.

Cause:
In most cases, no definitive physical cause can be found; this is known as non-specific lower back pain. Back problems are caused by a combination of factors that can be both personal and work-related.

Laboratory test of core stability



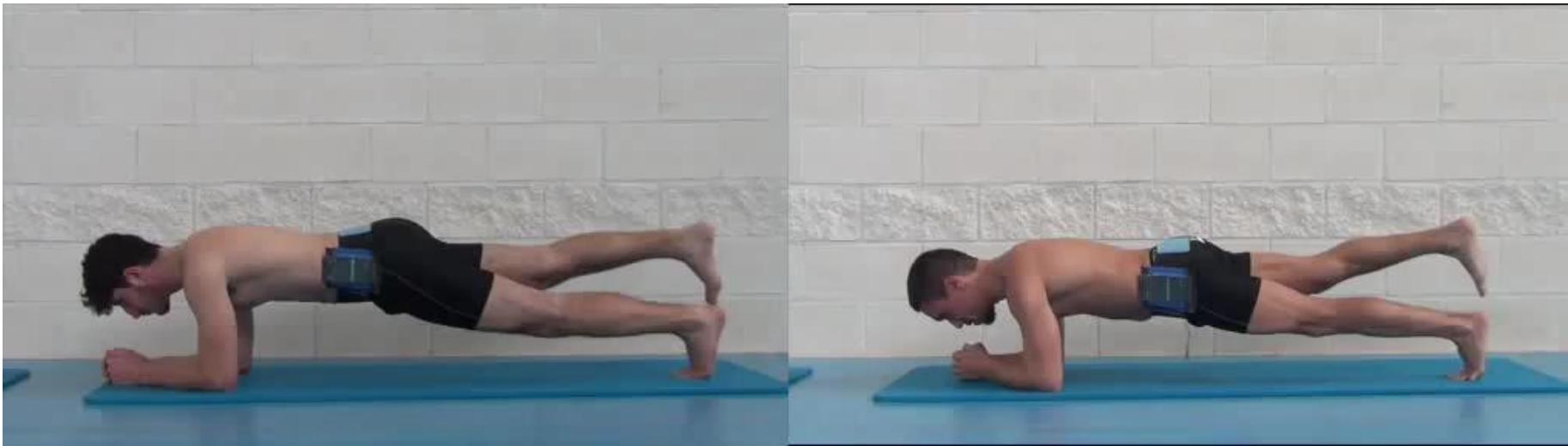
Laboratory test of core stability



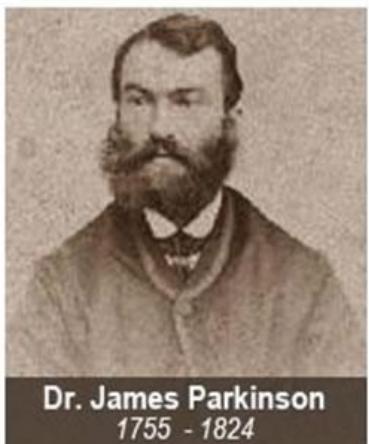
Endurance test



Smartphone-based assessment of core stability



Parkinson's Disease



Dr. James Parkinson
1755 - 1824

AN
ESSAY
ON THE
SHAKING PALSY.
—
BY
JAMES PARKINSON,
MEMBER OF THE ROYAL COLLEGE OF SURGEONS.
—
LONDON:
PRINTED BY WHITTINGHAM AND ROWLAND,
GANTLET STREET,
FOR SHERWOOD, NEELY, AND JONES,
PATERNOSTER ROW.
1817.

resting tremor

parkinson's disease

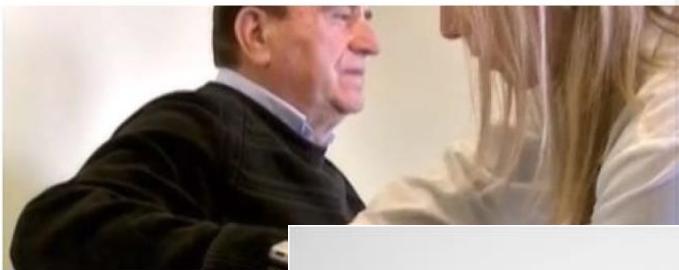
drcrunch.co.uk

Criterios de la United Kingdom Parkinson's Disease Society Brain Bank [5], para el diagnóstico de la enfermedad de parkinson:

1. Síntomas esenciales para el diagnóstico del síndrome parkinsoniano.
2. Criterios de exclusión para el diagnóstico de la EP.
3. Criterios de apoyo del diagnóstico de la EP

Nuevas tecnologías para ayudar a enfermos de Parkinson

Investigadores de la Universidad Politécnica de Madrid han desarrollado una herramienta que ayuda a los profesionales sanitarios a gestionar la información que genera un sistema de sensores acoplados a los enfermos de Parkinson para facilitar su tratamiento personalizado. Los sensores registran y procesan las señales del paciente y la información se envía a través acelerometría de forma continua y detectan y c forma automática



 **frontiers**
in Neuroscience

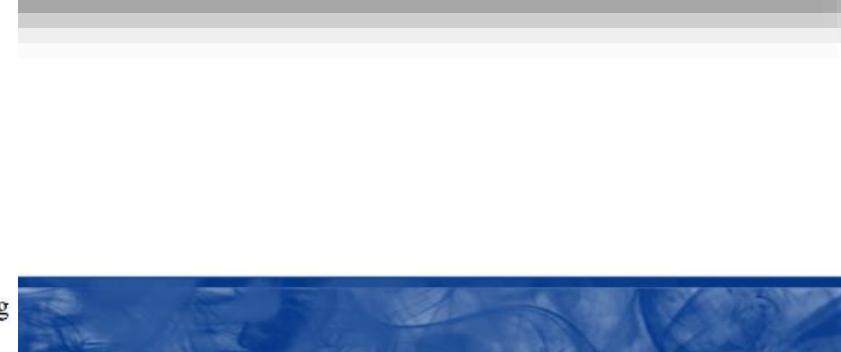
REVIEW
published: 06 October 2017
doi: 10.3389/fnins.2017.00555



Fig. 1. iPhone wireless accelerometer application for characterizing Parkinson's disease tremor.

How Wearable Sensors Can Support Parkinson's Disease Diagnosis and Treatment: A Systematic Review

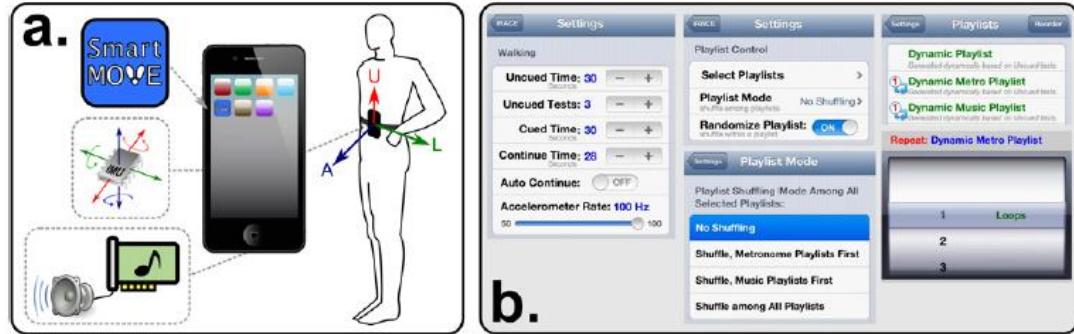
Erika Rovini¹, Carlo Maremmani² and Filippo Cavallo^{1*}



RESEARCH ARTICLE

A Validated Smartphone-Based Assessment of Gait and Gait Variability in Parkinson's Disease

Robert J. Ellis¹, Yee Sien Ng³, Shenggao Z², Gottfried Schlaug⁴, Ye Wang^{1,2*}



Simi Move: entry level mobile app to analyse walking and running gait

Boon Kiak Yeo, Dinesh Sirisen



CrossMark

To cite: Yeo BK, Sirisena D. *Br J Sports Med* Published Online First: [please include Day Month Year]. doi:10.1136/bjsports-2016-097293

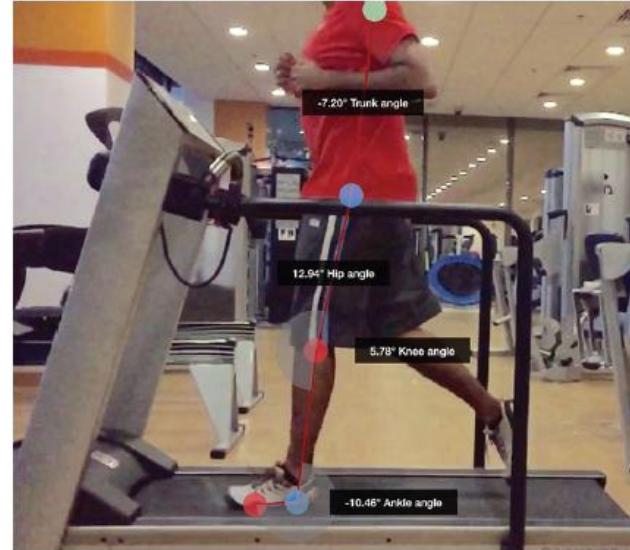
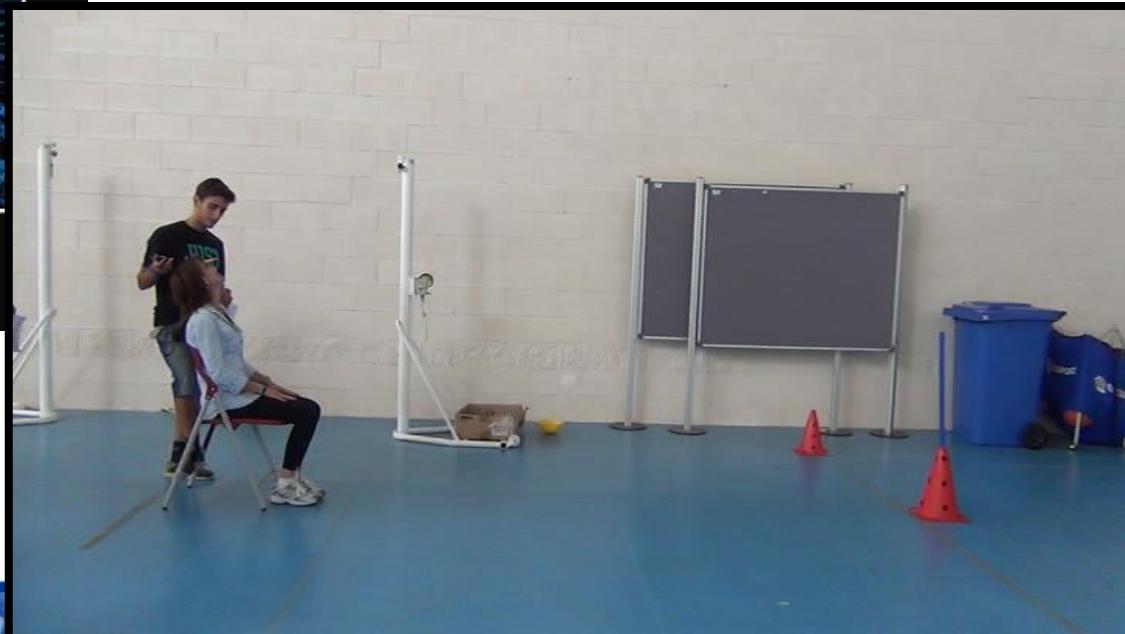


Figure 1 Screenshot of the Simi Move app being used for gait analysis.

Multiple sclerosis



APP Test de campo. Estabilidad dinámica

Es seguro | https://play.google.com/store/apps/details?id=ch.webgearing.tugapp&hl=es_419

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Vicon gait AP.mp3 PLOSone_A Validacion.pdf Walking motion a....mp3

TUG App
webgearing ag Medicina
PEGI 3
No tienes ningún dispositivo.

TUG-Test History

Zurück History

Date	Time	Score	OFI
17.08.2016	15:36	70.3	Moderate OFI
15.08.2016	08:15	72.5	Severe OFI
17.08.2016	15:36	70.3	Moderate OFI
15.08.2016	08:15	72.5	Severe OFI

APP Control postural

FALLSKIP



VS

PPA QuickScreen© test



Low contrast visual acuity test

Visual acuity is measured using a chart with low-contrast (10%) letters (similar to a Snellen scale). The client must be able to correctly identify all of the letters on line 10 (fifth line down) to pass the test.

For the remaining tests, the client needs to remove their shoes and socks.



Tactile sensitivity test

This test involves the use of a pressure aesthesiometer placed on the lateral malleolus of the ankle of the dominant side. The client is seated. The client must be able to feel at least two of the three test trials to pass the test.



Near tandem stand test

This is a measure of balance and ankle strength and involves testing whether the client can stand with feet in a near tandem position for a period of 10 seconds with their eyes closed. Equipment required is a stopwatch and 2.5cm square cardboard template for foot positioning. The client must be able to balance in this position for at least 10 seconds to pass the test.



Alternate step test

This is a measure of strength, balance and co-ordination. Equipment required includes a stopwatch and 18cm high step. The client must complete the task in less than 10 seconds to pass the test.



Sit to stand test

This test involves timing how long it takes the client to stand up and sit down five times from a seated position. Equipment required includes a 45cm high, straight-backed chair and a stopwatch. The client must complete the task in less than 12 seconds to pass the test.



IBV

ICC = 0.88 – 0.95

Review Article

The Clinical Relevance of Force Platform Measures in Multiple Sclerosis: A Review

Luca Prosperini and Carlo Pozzilli

Multiple Sclerosis Centre, S. Andrea Hospital, Department of Neurology and Psychiatry, Sapienza University,

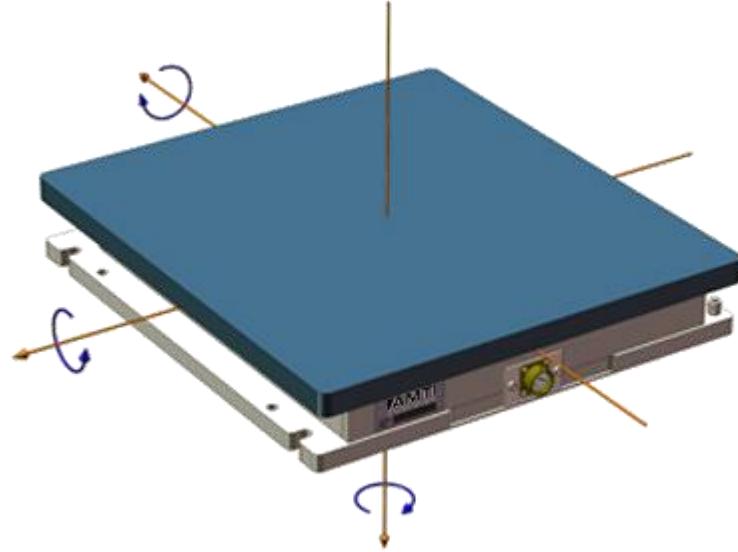
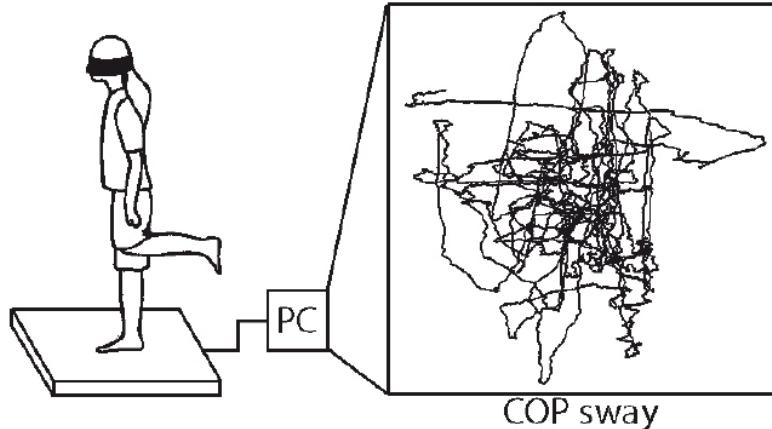


Table 2. Comparison of physical condition parameters and psychological scores between Healthy Control (HC; n=22) and individuals with minimally (MS1; n=20), medium (MS2; n=23) and moderately (MS3; n=20) impaired.

Task	HC		MS1		MS2		MS3		F	p	HC vs MS1		MS1 vs MS2		MS2 vs MS3	
	mean	SD	mean	SD	mean	SD	mean	SD			MD%	dg	MD%	dg	MD %	dg
<i>Funcional mobility</i>																
TUG	4.70	± 0.55			5.10	± 0.58	5.86	± 0.97	10.32	± 2.54	71.08*	<.001	-8.42	0.70	-14.80	0.93*
T25FW	2.50	± 0.32			2.70	± 0.38	3.24	± 0.50	6.41	± 1.67	86.84*	<.001	-7.83	0.56	-20.15	1.21*
<i>Postural control</i>																
TS _{WL}	7.94	± 1.85			10.92	± 3.03	14.99	± 4.96	25.91	± 8.29	46.43*	<.001	-37.50	1.20*	-37.34	0.98*
TS _{SL}	7.22	± 1.74			9.09	± 2.17	12.77	± 4.13	20.45	± 7.30	36.17*	<.001	-25.92	0.96*	-40.45	1.09*
US	8.35	± 3.22			10.73	± 3.56	15.45	± 5.40	23.31	± 10.75	23.78*	<.001	-23.22	0.72	-43.26	0.99
<i>Balance perception</i>																
DHI	0.53	± 1.31			22.56	± 20.82	32.09	± 19.26	47.70	± 17.20	15.45*	<.001	-4185.56	2.00	-42.26	0.48
<i>Knee strength</i>																
EXT _{WPT}	1.94	± 0.34			1.82	± 0.43	1.44	± 0.40	1.22	± 0.49	11.85*	<.001	-6.21	0.32	-21.17	0.94*
EXT _{SPT}	2.08	± 0.36			1.95	± 0.45	1.62	± 0.39	1.56	± 0.36	7.69*	<.001	-6.15	0.32	-16.87	0.80
FLEX _{WPT}	0.94	± 0.20			0.83	± 0.22	0.66	± 0.21	0.36	± 0.25	23.87*	<.001	-11.21	0.52	-20.62	0.80
FLEX _{SPT}	1.06	± 0.26			0.96	± 0.21	0.81	± 0.17	0.60	± 0.23	15.15*	<.001	-9.62	0.43	-16.02	0.83
<i>Hip strength</i>																
ADD _{WL}	2.34	± 0.94			1.67	± 0.58	1.42	± 0.38	1.36	± 0.38	11.33*	<.001	-28.85	0.86*	-14.53	0.50
ADD _{SL}	2.63	± 1.10			1.97	± 0.57	1.61	± 0.40	1.59	± 0.42	10.69*	<.001	-24.88	0.74	-18.49	0.76
ABD _{WL}	2.73	± 0.96			1.89	± 0.48	1.64	± 0.39	1.39	± 0.51	18.01*	<.001	-30.49	1.09*	-13.63	0.59
ABD _{SL}	3.11	± 0.96			2.18	± 0.50	1.81	± 0.43	1.79	± 0.52	19.82*	<.001	-29.86	1.20*	-16.90	0.80
<i>Hand grip strength</i>																
HG _{WH}	0.45	± 0.09			0.45	± 0.10	0.44	± 0.14	0.45	± 0.18	0.53	0.98	-0.71	0.03	-2.09	0.08
HG _{SH}	0.50	± 0.11			0.50	± 0.12	0.49	± 0.14	0.57	± 0.17	1.61	0.19	-1.14	0.05	-0.67	0.03

MS1: multiple sclerosis people with EDSS≤1.5; MS2: multiple sclerosis people with 2<EDSS≤3.5; MS3: multiple sclerosis people with EDSS>4; SD: standard deviation; MD%: percentage mean difference; dg: effect size; p<0.05; EDSS: Expanded Disability Status Scale; TUG: Timed Up and Go Test (s); T25FW: Timed 25-foot Walk Test (s); TS_{SL}: Tandem Stance Balance Test with the stronger leg behind (mm); TS_{WL}: Tandem Stance balance Test with the weaker leg behind (mm); US: Unstable Sitting Balance Test (mm); DHI: Dizziness Handicap inventory (units); EXT_{WPT}: Isokinetic peak torque for knee extension of the weaker leg (Nm/kg); EXT_{SPT}: Isokinetic peak torque for knee extension of the stronger leg (Nm/kg); FLEX_{WPT}: Isokinetic peak torque for knee flexion of the weaker leg (Nm/kg); FLEX_{SPT}: Isokinetic peak torque for knee flexion of the stronger leg (Nm/kg); ADD_W: Isometric peak force for hip adduction of the weaker leg (N/kg); ADD_S: Isometric peak force for hip adduction of the stronger leg (N/kg); ABD_W: Isometric peak force for hip abduction of the weaker leg (N/kg); ABD_S: Isometric peak force for hip abduction of the stronger leg (N/kg); HG_W: Hand grip of the weaker hand (N/kg); HG_S: Hand grip of the stronger hand (N/kg); MFIS: Modified Fatigue Impact Scale (units); FSS: Fatigue severity Scale (units); MSQOL-54: Multiple Sclerosis Quality of Life (units).

*: significant different p<0.05



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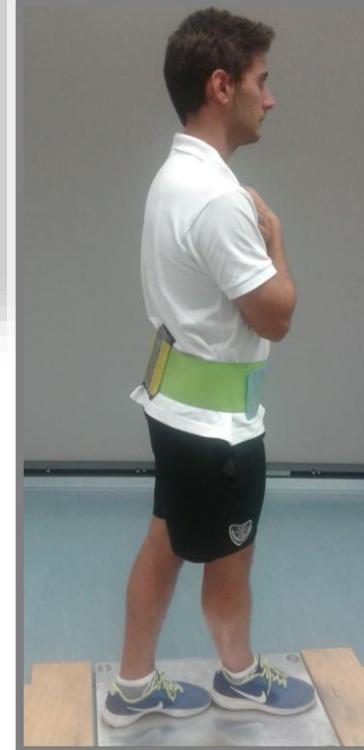
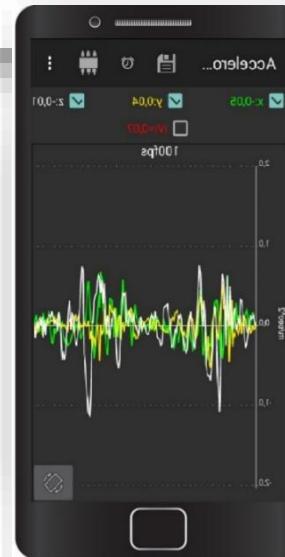
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Validity and reliability of smartphone-accelerometry for the measurement of postural control in people with multiple sclerosis

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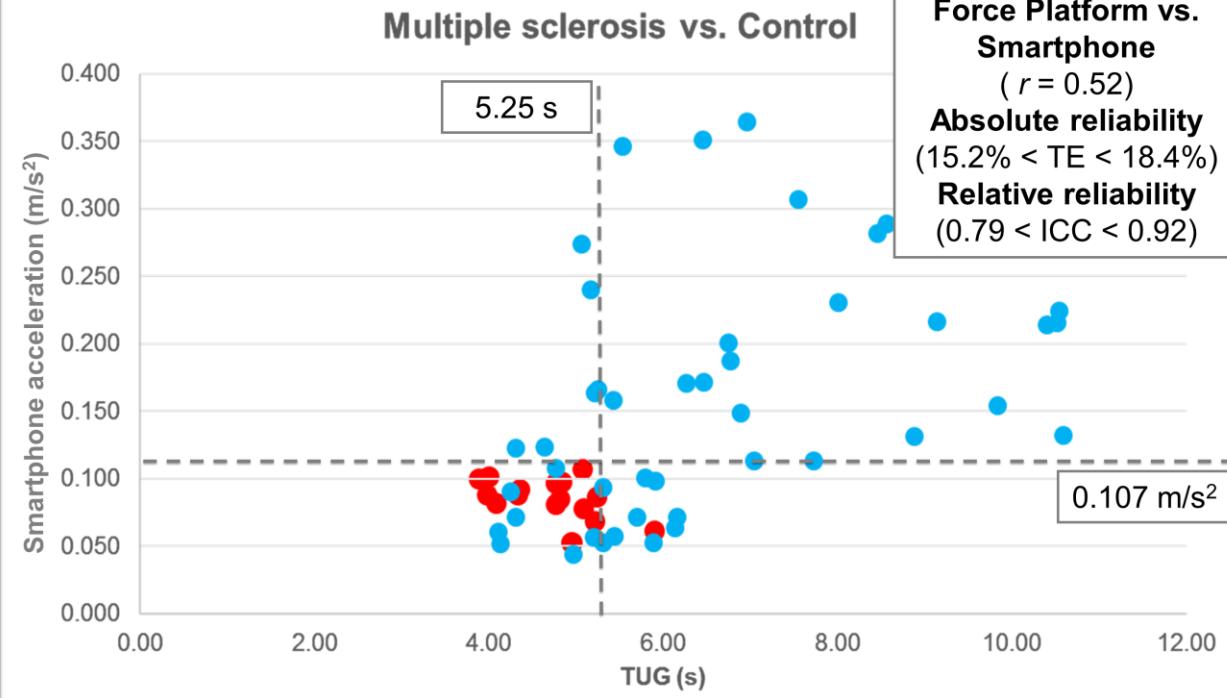
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Validity and reliability of smartphone-accelerometry for the measurement of postural control in people with multiple sclerosis

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Journal homepage: www.intl.elsevierhealth.com/journals/cmpb



Evaluation of a smartphone-based assessment system in subjects with chronic ankle instability

Ya-Lan Chiu ^{a,1}, Yi-Ju Tsai ^{b,1}, Chueh-Ho Lin ^c, You-Ruei Hou ^a,
Wen-Hsu Sung ^{a,*}

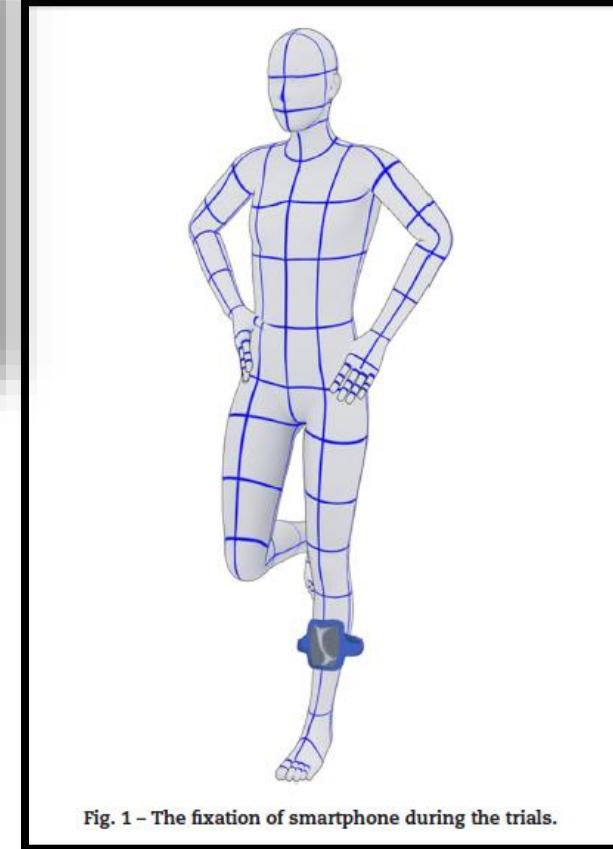
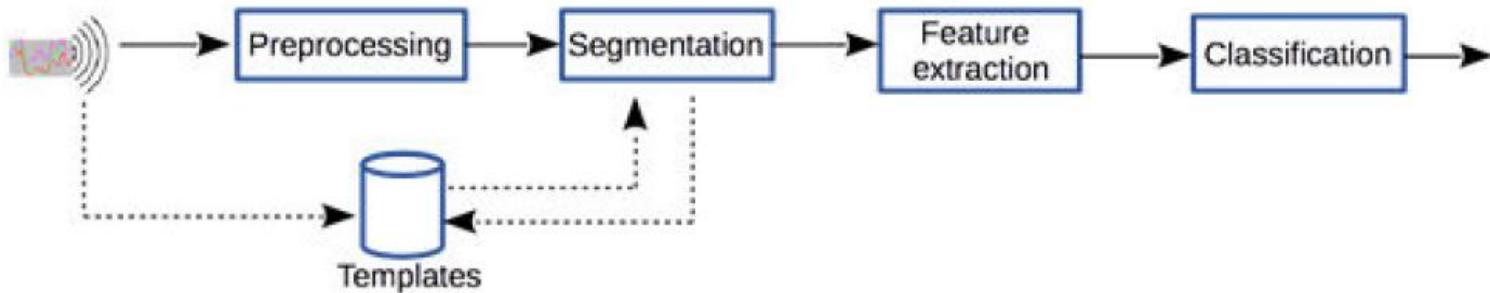


Fig. 1 – The fixation of smartphone during the trials.

Mobile App to Streamline the Development of Wearable Sensor-Based Exercise Biofeedback Systems: System Development and Evaluation

Martin O'Reilly^{1,2}, BEng (Hons), HDip; Joe Duffin¹, BSc; Tomas Ward^{3,4}, BE, MEngSc, PhD; Brian Caulfield^{1,2}, BSc, MSc, PhD



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La UMH firma un contrato con el Hospital del Vinalopó y el de Torrevieja para el desarrollo de actividades de formación

16 marzo 2015 | Campus, Elche, Fuente, Jornadas y seminarios, Noticia

Un grupo de profesores del Centro de Investigación del Deporte de la Universidad Miguel Hernández (UMH) de Elche ha impartido a un centenar de médicos de atención primaria de los Departamentos de Salud del Hospital del Vinalopó y del de Torrevieja un curso de 15 horas sobre aspectos básicos de la actividad física. El curso se ha desarrollado durante el último mes y es fruto de un contrato firmado con ambos centros sanitarios para el desarrollo de actividades de formación.



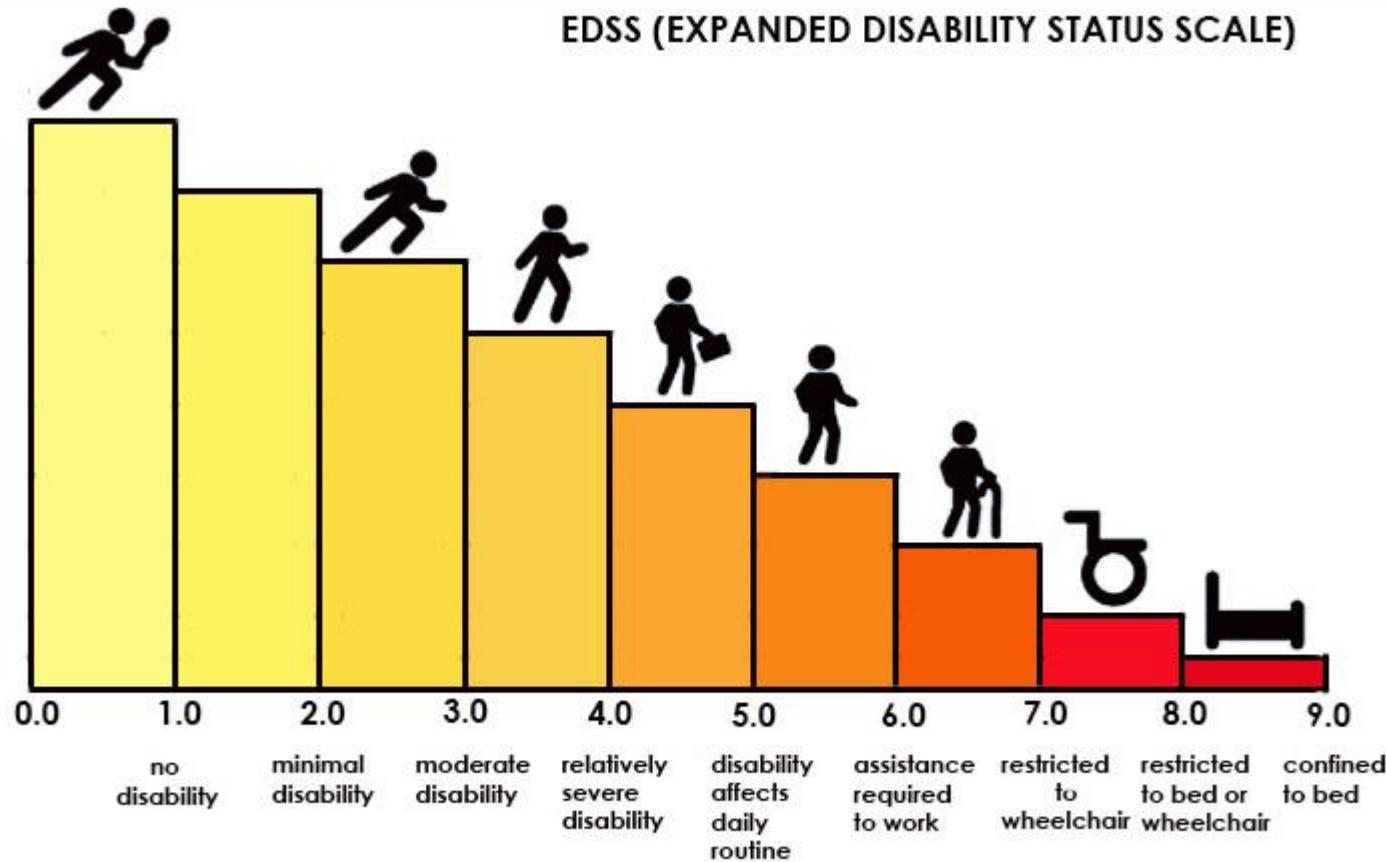
El profesor del Área de Educación Física y Deportiva de la UMH David González-Cutre ha coordinado este curso, desarrollado en cuatro sesiones en las que se han tratado varios aspectos sobre la prescripción de ejercicio físico.

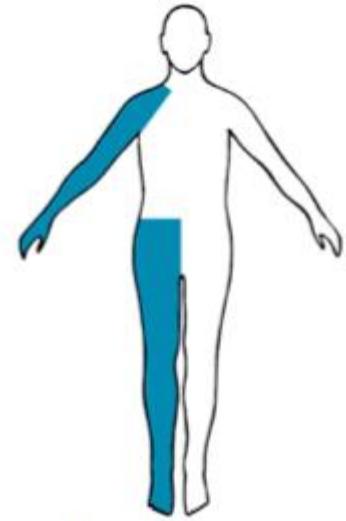
Los profesores de la UMH Adolfo Aracil y José Manuel Sarabia han impartido la primera sesión, basada en las evidencias científicas de los beneficios de la actividad física para la salud y principios básicos del entrenamiento. La segunda sesión, impartida por el profesor de la UMH Francisco Vera, ha tratado sobre mitos y falsas creencias en torno al ejercicio físico, así como sobre las recomendaciones en el acondicionamiento de la musculatura del tronco. Los profesores de la UMH Vicente Beltrán y David González-Cutre han hablado en la tercera sesión sobre aspectos psico-sociales de la promoción de la actividad física, mientras que el profesor de la Universidad Francisco Ayala ha impartido la cuarta sesión, enfocada en las recomendaciones de la actividad física favorable para la mejora de la condición física.

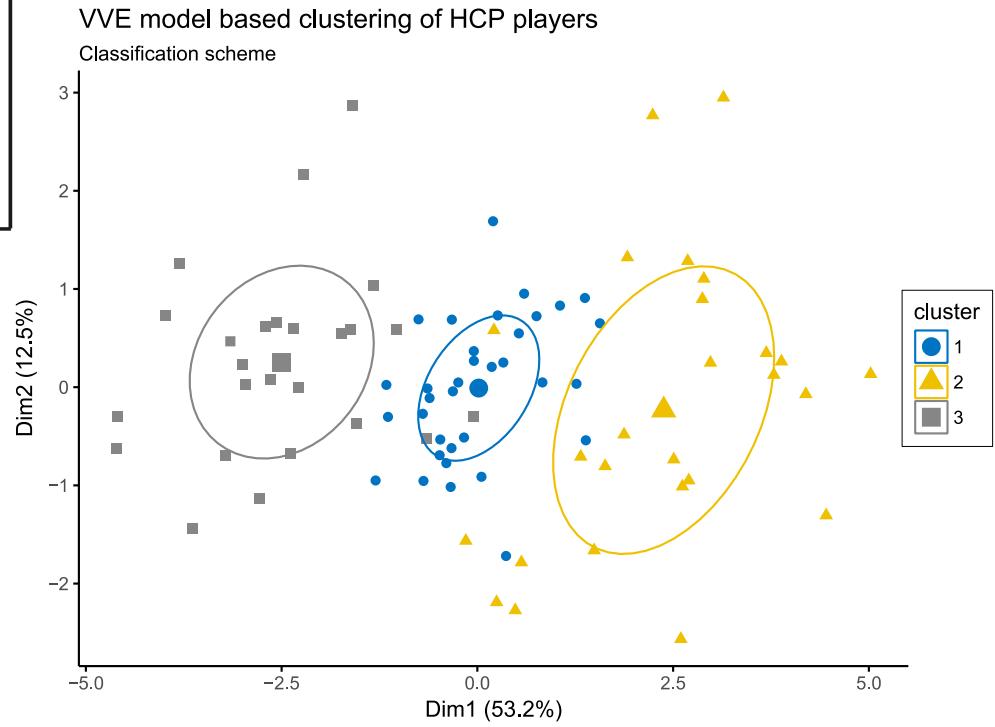
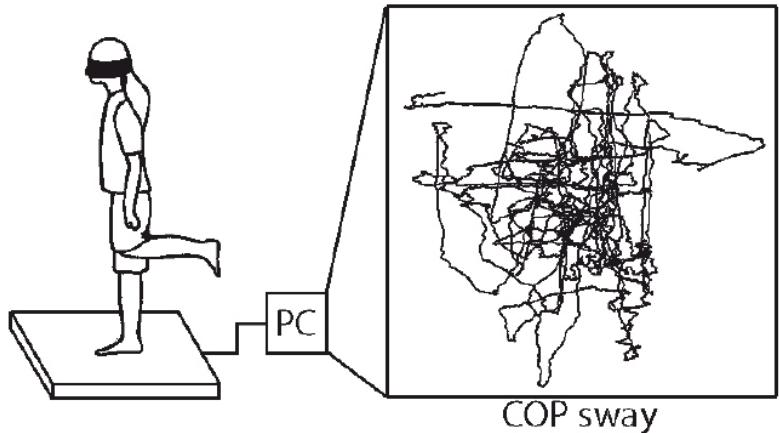
Los objetivos del curso han sido, por un lado, incrementar la formación de los médicos de atención primaria para mejorar las recomendaciones sobre actividad física que dan a los pacientes. Por otro lado, se busca dar a conocer en el sector sanitario la labor que desarrollan los profesionales de

Ciencias del Deporte, con el objetivo final de mejorar la calidad de vida de las personas, a través de un equipo de trabajo multidisciplinar.

EDSS (EXPANDED DISABILITY STATUS SCALE)







RESEARCH ARTICLE

Exploration of machine learning techniques in predicting multiple sclerosis disease course

Yijun Zhao¹, Brian C. Healy^{2,3}, Dalia Rotstein², Charles R. G. Guttmann², Rohit Bakshi², Howard L. Weiner², Carla E. Brodley¹, Tanuja Chitnis^{2*}

Table 2. Predictors of disease classification.

Demographic	<ul style="list-style-type: none">• Visit age• Disease duration at baseline visit• Gender• Race• Ethnicity• Family history of MS• Smoking ever
Clinical	<ul style="list-style-type: none">• EDSS• Ambulation Index• Disease step• Disease category• Disease activity• Pyramidal_functional status score• Cerebellar_functional status score• Brainstem_functional status score• Sensory_functional status score• Bowel_bladder_functional status score• Visual functional status score• Mental functional status score
MRI	<ul style="list-style-type: none">• BPF• T2 lesion volume
Additional predictors	<ul style="list-style-type: none">• <u>Change</u> of each clinical and MRI value over its corresponding initial value

EDSS-Expanded Disability Status Scale, FS-functional status, BPF-brain parenchymal fraction

<https://doi.org/10.1371/journal.pone.0174866.t002>

Programa Integral de Actividad Física y Salud. Un ejemplo de captación de recursos





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“La valoración física del paciente crónico”

Programa de Doctorado en Ingeniería informática (RD 99/2011)
Curso 2017-18

Profesor: David Barbado Murillo