# FORMACIÓN PARA SER CRÍTICO CON LA INFORMACIÓN SOBRE SALUD Y ACTIVIDAD FISICA EN INTERNET

## [Tutorial en flash](http://www.nlm.nih.gov/medlineplus/webeval/webeval_start.html) - <http://www.nlm.nih.gov/medlineplus/webeval/webeval.html>

# WEBS Y APP BASADAS EN ALGUNA EVIDENCIA CIENTÍFICA SOBRE PROMOCIÓN DE AF (NUTRICIÓN)

## TRACK Y PLANIFICACION O ADHESIÓN A PLANES DE ACTIVIDAD FÍSICA Y/O DEPORTE (ALGUNAS TAMBIÉN TRACK DE NUTRICIÓN)

### app reviews

#### [Cómo encontrar las mejores apps sobre salud (se calcula que hay 10.000 en App Store)](http://www.eatright.org/Media/Blog.aspx?id=25769803802&blogid=6442451184&terms=app)

#### [Academia de Nutricionistas y Dietistas](http://www.eatright.org/Media/content.aspx?id=6442467041) (WEIHT MANAGEMENT SOBRE TODO)

#### REVIEW DE BORT-ROIG, ET AL (2014). Measuring and Influencing Physical Activity with Smartphone Technology: A Systematic Revie. VÉASE PDF DE DOCUMENTACIÓN.

#### <http://www.surgeongeneral.gov/news/2012/02/sg_healthy_app_challenge-winners.html>

### apps

#### SPARKPEOPLE (web + app pago) (enlace)

#### MYFITNESSPAL (web + app gratuita) (enlace)

#### MAPMYFITNESS (web + app)

##### [MapMyFitness](http://www.mapmyfitness.com) (ctrl + click sobre nombre)

##### [MapMyRun](http://www.mapmyrun.com) (ctrl + click sobre nombre)

##### [MapMyRide](http://www.mapmyride.com) (ctrl + click sobre nombre)

##### [MapMyWalk](http://www.mapmywalk.com) (ctrl + click sobre nombre)

##### [MapMyHike](http://www.mapmyhike.com) (ctrl + click sobre nombre)

#### FITNESSGRAM / ACTIVITYGRM DE HUMAN KINETICS (software pago + app pago, plan integral educativo: auto-evaluar, informar, prescribir, auto-planificar ) ([enlace](http://www.fitnessgram.net/))

#### Noom weight (Android)

#### WALK@WORK (enlace pdf) ([enlace web](http://walkatworkspain.uvic.es/sites/default/files/Walkatwork_presentation.pdf)) – 10.000 PASOS – SMS MÓVILES

##### Gilson,et al (2013). Walk@Work: An automated intervention to increase walking in university employees not achieving 10,000 daily steps. Preventive Medicine 56 (2013 ) 283-287. véase pdf documentación.

#### LIVIFI (app gratuita en Apple, integral, todos los ámbitos de la persona, evidencia) ([enlace](http://www.livifi.com/learn_more))

#### [eaTipster](http://www.eatright.org/Media/content.aspx?id=6442474144#.U4dlo1efGSo) – tips de nutrición

XCULPTURE – Planificación entrenamiento musculación en gimnasio([enlace](http://www.xculpture.com/)

## DIABETES TIPO 2.

### REVIEW

#### [Diabet Med.](http://www.ncbi.nlm.nih.gov/pubmed/23870009) 2013 Dec;30(12):1420-32. doi: 10.1111/dme.12289. The use of technology to promote physical activity in Type 2 diabetes management: a systematic review. [Connelly J](http://www.ncbi.nlm.nih.gov/pubmed?term=Connelly%20J%5BAuthor%5D&cauthor=true&cauthor_uid=23870009)1, [Kirk A](http://www.ncbi.nlm.nih.gov/pubmed?term=Kirk%20A%5BAuthor%5D&cauthor=true&cauthor_uid=23870009), [Masthoff J](http://www.ncbi.nlm.nih.gov/pubmed?term=Masthoff%20J%5BAuthor%5D&cauthor=true&cauthor_uid=23870009), [MacRury S](http://www.ncbi.nlm.nih.gov/pubmed?term=MacRury%20S%5BAuthor%5D&cauthor=true&cauthor_uid=23870009) <http://www.ncbi.nlm.nih.gov/pubmed/23870009>

### APPS

#### [Blood Sugar Tracker](http://www.eatright.org/Media/content.aspx?id=6442467021#.U4dqKFefGSo)

#### [Vree for Diabetes](http://www.eatright.org/Media/content.aspx?id=6442467019#.U4dxnVefGSo)

## LESIONES EN EL DEPORTE

### VÉASE PDF ADJUNTO CON ABSTRACT DE REVISIÓN DE APPS. lA MAYORÍA DE RUNNING.

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| PROGRAMAS DE PROMOCIÓN (SOPORTE WEB) |
| PHYSICAL BEST ([enlace](http://www.aahperd.org/naspe/professionaldevelopment/physicalBest/))([Physical Best: Promoting lifetime fitness for children](http://www.aahperd.org/naspe/grants/instructionalPrograms/upload/Physical-Best.pdf) |
| PRESIDENTS CHALLENGE (OBAMA) (enlace)  [President's Challenge: Physical Activity & Fitness Awards Program](http://www.aahperd.org/naspe/grants/instructionalPrograms/upload/Presidents-Challenge.pdf) |
| LET’S MOVE ACTIVE SCHOOLS Michelle Obama ([enlace](http://www.aahperd.org/whatwedo/prodev/lmas.cfm)) |
| RINGLING BROS – CIRCUS FIT  (enlace) [Ringling Brothers and Barnum & Bailey's: CircusFit](http://www.aahperd.org/naspe/grants/instructionalPrograms/upload/Ringling-Bros.pdf) |

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| WEBS DE ADMNISTRACIONES GUBERNAMENTALES EUROPEAS O MUNDIALES VINCULADAS CON RESPONSABILIDADES |
| European Health and Fitness Association EHFA ([enlace](http://www.ehfa.eu.com/)) |
| HEPA ([enlace](http://www.panh.ch/hepaeurope/materials/)) |
| WHO – Europe Young and physically active: a blueprint for making physical activity appealing to youth ([enlace](http://www.euro.who.int/en/publications/abstracts/young-and-physically-active-a-blueprint-for-making-physical-activity-appealing-to-youth)) |
| COMISIÓN EUROPEA - Nutrition and physical activity ([enlace](http://ec.europa.eu/health/nutrition_physical_activity/policy/index_en.htm)) |

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| CONSEJO SUPERIOR DE DEPORTE |
| Plan Integral para la Actividad Física y el Deporte en el ámbito del Deporte en Edad Escolar ([enlace](http://www.csd.gob.es/csd/promocion/deporte-escolar/plan-integral-para-la-actividad-fisica-y-el-deporte-en-el-ambito-del-deporte-en-edad-escolar/)) |
| Centros Escolares Promotores de la Actividad Física y el Deporte: subvenciones a Comunidades Autónomas para su desarrollo ([enlace](http://www.csd.gob.es/csd/promocion/deporte-escolar/2022-centros-escolares-promotores-de-la-actividad-fisica-y-el-deporte-subvenciones-a-comunidades-autonomas-para-su-desarrollo/view)) |

# Using technology to promote physical activity. This is an excerpt from Advanced Fitness Assessment and Exercise Prescription, Sixth Edition, by Vivian Heyward

Technology is a double-edged sword. Computers, for example, contribute to sedentary leisure-time behaviors (e.g., playing sedentary computer games). On the other hand, technology has been used to promote physical activity and change exercise behavior. For years, pedometers, accelerometers, and heart rate monitors have been used as motivational tools. Newer technologies and approaches being used to promote physical activity include global positioning system (GPS), geographic information systems (GIS), interactive video games, and persuasive technology. Also, experts suggest that Internet-based physical activity interventions should be used by clinicians to promote and change exercise behavior (Marcus, Ciccolo, and Sciamanna 2009).

## Pedometers

Pedometers count and monitor the number of steps taken throughout the day. Most pedometers provide a fairly accurate count of steps taken during ambulatory activities such as walking, jogging, and running. Estimates of the distance walked and caloric expenditure are less accurate. Some newer devices also provide an estimate of the total time spent during continuous walking at a moderate intensity for durations of 10 min or more. To provide accurate step counts, most pedometers need to be attached to a firm waistband; however, some can be carried in a shirt pocket, a pants pocket, or a bag held close to the body. Studies show that some pedometers provide a valid (bias <3%) and reliable (coefficient of variation <2.1%) measure of steps during constant- and variable-speed walking for both healthy and overweight adults when the pedometer is placed on the waistband (sides and back), in a shirt pocket, or around the neck; however, positioning the pedometer in a pants pocket or in a backpack decreases accuracy (Hasson et al. 2009; Holbrook, Barreira, and Kang 2009).

Studies show that pedometer-based walking increases physical activity (Williams et al. 2008). In a synthesis of studies addressing the use of pedometers to increase physical activity, Bravata and colleagues (2007) reported that on average, pedometer users increase their physical activity by 27% over baseline levels. A key predictor of increased physical activity is setting a step goal (e.g., 10,000 steps per day) for participants. Pedometer-based walking programs are associated with significant decreases in body mass index, body weight, and systolic blood pressure (Bravata et al. 2007; Richardson et al. 2008).

Thresholds for health benefits from walking have been established using pedometers. Accumulating 8000 to 9000 steps per day at a rate of no less than 100 steps·min−1 is equivalent to 30 min of moderate physical activity, the health benefit threshold. For weight loss, accumulating 11,000 to 13,000 steps per day is recommended. Using criterion-referenced approaches, youth-specific thresholds for good health are being established. In the future, minimal levels of steps per day may be used to identify health risk thresholds for cardiovascular diseases, obesity, and osteoporosis. Table 3.4 presents classification of physical activity levels for adults and children based on the number of steps taken daily (Tudor-Locke et al. 2005, 2008). Additional information about the validity and accuracy of pedometers is available (Holbrook, Barreira, and Kang 2009; Lamonte, Ainsworth, and Reis 2006; Tudor-Locke et al. 2002, 2006).

## Accelerometers

Accelerometers record body acceleration minute to minute, providing detailed information about the frequency, duration, intensity, and patterns of movement. Counts from accelerometers are used to estimate energy expenditure. Recently, accelerometers were used to provide an objective measure of compliance with physical activity recommendations for the U.S. population (Troiano et al. 2008). Accelerometer data indicated that less than 5% of adults in the United States engaged in 30 min per day of moderate exercise, 5 to 7 days per week. This is substantially lower than the self-reported value (49%) from national surveys. Also, only 8% of adolescents reached the goal of exercising 60 min per day, 5 to 7 days per week, based on accelerometer data. The relatively higher cost of accelerometers (about $300 per unit) compared to pedometers ($10 to $30 per unit) limits their use in large-scale physical activity interventions. In the future, lower-cost units may be developed and be more widely used in national surveys and community-based interventions. Detailed information about best practices and research recommendations for using accelerometers are available (see Ward et al. 2005).

## Heart Rate Monitors

Heart rate monitors are used primarily to assess and monitor exercise intensity. These devices are especially useful for monitoring exercise intensity of individuals in cardiac rehabilitation programs and highly-trained, competitive athletes. Because heart rate is linearly related to oxygen uptake, it can be used to estimate the individual’s exercise energy expenditure. However, estimates of energy expenditure from heart rate may be affected by factors such as temperature, humidity, hydration, and emotional stress.

## Combined Heart Rate Monitoring and Accelerometry

The prediction of energy expenditure during physical activity is improved by 20% when data from heart rate monitors are used in conjunction with accelerometer measures of physical activity (Strath, Brage, and Ekelund 2005). New devices that simultaneously monitor heart rate and body motion provide valid and reliable measures of physical activity of children, adolescents, and adults in free-living conditions (Barreira et al. 2009; Crouter, Churilla, and Bassett 2008; Zakeri et al. 2008).

## Global Positioning System and Geographic Information System

Global positioning system (GPS) uses 24 satellites and ground stations as reference points to calculate geographic locations and accurately track a specific activity. For example, using a portable GPS unit provides information about altitude, distance, time, and average velocity during hiking. A graph depicting the uphill and downhill portions of the terrain is also provided. Global positioning system can be used in conjunction with accelerometers to assess and monitor physical activity (Rodriguez, Brown, and Troped 2005; Schutz and Herren 2000; Troped et al. 2008). As small receivers become more affordable and accessible to the general public (e.g., in laptop computers and mobile telephones), GPS may be more widely used to assess and to promote physical activity.

The geographic information system (GIS) is a computer system that stores information about location and the surrounding environment. With use of GIS, the impact of the environment (i.e., its form and design) on physical activity can be assessed (Zhu 2008). Detailed information about using GIS to assess environmental supports for physical activity is available (Porter et al. 2004).

## Interactive Video Games

Although interactive video games like Dance Dance Revolution (DDR), Wii Sports, and Wii Fit were designed to create more engaging game play, studies show that these games increase energy expenditure and may produce positive health benefits (Chamberlain and Gallagher 2008; Graves et al. 2007; Zhu 2008). Many fitness centers, schools, and senior centers are now offering interactive games to promote physical activity of children, adolescents, and older adults. These interactive games are well suited for playing alone or with others, require little training or skill, provide an alternative to exercising in bad weather, and may serve as a transition to actually participating in sport and physical activities (Chamberlain and Gallagher 2008). Warburton and colleagues (2009) reported that interactive video game cycling significantly increased steady-state heart rate and energy expenditure compared to traditional cycling at constant, submaximal workloads; the two forms of cycling (traditional and interactive video game cycling) resulted in similar ratings of perceived exertion.

Dance Dance Revolution is a video game with a floor pad controller that has a grid of arrow panels. Because dancing is a good aerobic activity, DDR has been used to promote physical activity and weight loss in obese children and adults (Epstein et al. 2007; Zhu 2008). On the basis of the popularity of DDR, Zhu (2008) reported that more than 1500 schools in the United States were planning to use DDR in physical education classes by the end of 2010. Sell and colleagues (2008) reported that energy expenditure of participants playing the DDR video game depends on their experience. On average, DDR was classified as a moderate-intensity (47% .VO2 reserve and 10.5 kcal·min−1) activity. For inexperienced participants, DDR was equivalent to light intensity (18% .VO2 reserve and 4.8 kcal·min−1).

Wii Sports is a home video game that uses a wireless, handheld remote controller to detect movement in multiple dimensions while mimicking sport activities. The games include tennis, golf, bowling, and boxing. Although playing Wii Sports will not burn as many calories as actually playing the sport, Wii bowling, tennis, golf, and boxing games increased energy expenditure by 2% compared to sedentary computer games (Graves et al. 2007). Also, energy expenditure and heart rate were significantly greater in Wii boxing (3.2 METs), bowling (2.2 METs), and tennis (2.4 METs) compared to values in sedentary (1.4 METs) gaming (Graves, Ridgers, and Stratton 2008)

In 2008, Wii Fit was launched by Nintendo. This interactive video game offers over 40 training activities categorized into four areas: aerobics (e.g., hula hoops and running), strength training (e.g., lunges and leg extensions), yoga, and balance training. This exercise game uses the handheld Wii remote controller and a balance board peripheral for some of the activities (e.g., running in place and yoga poses). In light of the positive response that Wii Sports and Wii Fit have received, many fitness centers, senior centers, hospitals, and physical therapy centers are now incorporating this interactive technology into their exercise and rehabilitation programs (Zhu 2008). Research is needed to assess the usefulness of interactive video game technology for promoting healthy behavior and physical activity of children, youth, and sedentary adults.

## Persuasive Technology

Persuasive technology is defined as a computer system, device, or application that is intentionally designed to change a person’s attitude or behavior (Fogg 2003). This technology uses tools (e.g., pedometer or balance board), media (e.g., video, audio, or both), and social interaction (e.g., playing with another person) to persuade individuals to adopt the behavior without their actually knowing it. Although the DDR was not developed specifically to promote physical activity, it has changed exercise attitudes and behavior of children and youth using principles of persuasive technology. Dance Dance Revolution uses video, music, and a dance platform to capture interest and engage children in the activity without their being fully aware that they are exercising. The emerging field of persuasive technology has enormous potential for promoting physical activity and healthy behaviors (Fogg and Eckles 2007; Zhu 2008).