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Smartphone-based solutions for fall detection and prevention: the FARSEEING approach

Approximately one in three older persons falls unintentionally each year. This causes massive stress and constitutes a burden on the individual, such as loss of independence as well as enormous direct and indirect costs on society [1]. Falls in older persons can be related to multiple causes [2, 3, 4, 5]. Although extensive research has been conducted in this area, some of the fall mechanisms still remain unclear. Different methods for automatic fall detection are proposed in the literature: monitoring the floor or the sound vibrations [6, 7]; image-based recognition using cameras [8]; monitoring body motion by means of body-worn devices, usually including inertial sensors like triaxial accelerometers and/or gyroscopes [9, 10].

Fall detection is important, but falls are not an inevitable consequence of aging. The recent Cochrane reviews on falls and fall prevention [11, 12] have shown that it is possible to significantly reduce both the fall risk and the fall rate in older adults. The first step toward prevention would be to understand the risk factors for falls. A variety of methods and tools for fall risk assessment have been proposed but none of them is universally accepted.

Wearable sensor systems for health monitoring are an emerging trend and may enable proactive personal health management. To date, mobile phones are the most ubiquitous consumer electronics device in the world. The last Eurostat investigation on the use of mobile phones in the Eurozone, referring to 2008, reported that 88% of the total population used a mobile phone (90% Italy, 86% Germany). For the population aged between 65 and 74 years of age, the percentage becomes 64% (70% Italy, 67% Germany), while for the population aged 75 years and older the percentage is 37% in Italy and 39% in Germany. Since 2008, these percentages have most likely risen further. A modern smartphone (SP) is a mobile phone built on a mobile computing platform. Recent SP computational capability is at least comparable to that of a netbook. SPs come with a rich set of embedded sensors that include an accelerometer, magnetometer, gyroscope, global positioning system (GPS), microphone, and camera. By its nature an SP has a variety of connectivity options. Collectively, these features have enabled new applications across a wide variety of domains including healthcare [13] and environmental monitoring, and given rise to a new area of research called mobile phone sensing [14]. Approaches have been made in using mobile-phone-based solutions for real-time fall detection: the iFall [15] application makes use of the embedded accelerometer in order to detect falls. The application asks for the user to respond when a fall is suspected. If the user does not respond (by pressing a button), the system sends an alert message via SMS. The Mover [16] application has been developed to monitor human motor activities, categorizing the user's activity level as "Sleeper, Sitter, Lagger, Walker, Mover, and Hyper." It also includes an experimental fall-detection algorithm, able to send an alert to the user's emergency contacts. The PerFallD [17] is a fall-detection system based on an SP, which takes advantage of an optional magnetic accessory (consisting of a magnet fixed on the leg). The sensitivity and specificity of a fall detector based on accelerometers embedded into SPs have also been compared with those of a dedicated hardware [18].

This paper presents results obtained by the FARSEEING group. This consortium is cofunded by the European Union to build an open access meta-database for real-world fall signals and to develop fall-related technologies (farseeingresearch.eu). In the following, we describe the FARSEEING approach to using smartphones for fall detection and fall prevention.

Methods

The FARSEEING perspective

Information and communication technology (ICT) offers unique proactive opportunities to support older people in their own homes. The FARSEEING project aims to provide solutions for health promotion, fall prevention, and technical development. SPs are one approach toward intervention in a population-based scenario.

Several Android SP models have been tested in order to assess their embedded sensors in terms of signal quality and ergonomics. The Android OS has been chosen, since it is an open platform capable of managing all the relevant processes running on an SP. We selected the Samsung Galaxy S II (GT-I9100) because of its good signal quality, high data-processing capabilities, and its size, being lightweight (116 g) and thin (0.84 cm) enough to be comfortably worn. The embedded accelerometer has a range of ±2 g and a measured resolution of about 1.5 mg, while the embedded gyroscope has a range of ±600°/s and a measured resolution of about 0.02°/s. The maximum sample frequency is 100 Hz. The device is attached to a custom elastic belt, worn at the waist. The soft belt material ensures a close but comfortable fit, while minimizing relative movements between the trunk and the device, even if worn over clothes. The belt is worn in a way that firmly keeps the SP on the lower back. This placement is not optimal for the original SP usage but, at this initial stage of the project, the user is not asked to interact with the device and the applications, it is only being used as an inertial sensor. User interfaces enabling all the other potential features and services are expected to be released later during the FARSEEING project and the placement will be optimized accordingly.

uFall

An application has been developed to continuously acquire inertial sensor data for monitoring at home. It is able to record the signals from the embedded accelerometer, gyroscope, and magnetometer. The sampling frequency can be selected in the range 4–100 Hz. Battery life depends on the sampling frequency and the number of selected sensors. Equipped with a standard battery and sampling at 100 Hz, the battery life ranges from 16 h up to 30 h, using all three sensors or just one sensor, respectively. The data are stored on the SP internal memory and can be exported using a USB cable. Log files are in TXT format in order to be easily read and imported into any other software. The application starts automatically every time the device starts up and it continuously runs in the background. The recording of data also stops automatically when the SP is being charged and starts again as soon as the charger is removed.

The application's provisional name is "uFall" because it supports real-time fall-detection algorithms. The algorithm implemented for testing purpose makes use of the acceleration sum vector (SV; i.e., the acceleration vector norm [19]). If the SV is greater than a threshold (2.3 g, empirically defined), an impact is detected. An impact is considered a fall when the vertical axis orientation before the impact is "vertical" (acceleration of the vertical axis between −0.7 and −1 g or between 0.7 and 1 g) and the orientation after the impact is "horizontal" (acceleration of the vertical axis between 0 and 0.7 g or −0.7–0 g), or both the orientations, before and after the impact, are "horizontal" (e.g., falling out of bed). Our objective is not to validate the fall-detection algorithm but to verify the possibility of: (1) continuously acquiring the signals from the embedded accelerometer, gyroscope, and magnetometer; (2) running another process that simultaneously acts as a fall/event detector. We implemented an algorithm that is similar to the ones already proposed in literature in order to test the system using an algorithm with a comparable complexity. When a fall is detected, an audio alarm is generated for 30 s waiting for the user to press a "Stop Alarm" button. If the user does not press the button, he is assumed to be unconscious and an alarm is automatically sent to the caregivers (by e-mail or SMS). The inertial signals recorded in the event of a fall are sent to a remote server by means of an SSL (secure sockets layer) connection.

The application user interface is composed of two panels: the first panel contains the "Stop Alarm" button; the second one is the settings panel where the user can enable or disable all the features such as the start on boot, the fall detector, and the sensors to be included. Furthermore, it can set all the parameters such as the sampling frequency, the caregiver's telephone number or e-mail, and the remote server IP address.

uTUG

The Android uTUG application is the first of a series of standalone applications instrumenting clinical functional tests. As the applications name suggests, it makes use of the SP embedded accelerometer and gyroscope to instrument the Timed Up and Go test (TUG). The TUG is one of the most widely used clinical tests to assess mobility, whose outcome is well correlated to established balance assessment tools such as the Berg Balance Scale and the Tinetti Balance [20]. Because of its effortlessness it is often included in screening protocols for fall risk assessment [3]. Instrumented versions of the TUG have already proven to be sensitive to pathologies [22, 23] and useful for fall risk prediction [24]. The SP is placed on the lower back by means of a waist belt. The application performs the signal recording, signal processing, features extraction, and it is able to send a report to a remote server. The validity of an SP-based instrumented TUG has already been demonstrated [25]. The application provides a set of parameters already described in the literature that are of clear clinical value to more subtly investigate the user's motor performance.

The uTUG user interface is made of three panels: in the first panel the user can enter an ID for the subject or reload an existing one, then start or stop the test by pressing the "Start/Stop" button, or press the "Report" button to visualize the parameters after the processing. The second panel can be used to visualize and process previously recorded trials. The last panel is for the settings where the user can select the sensors to be included, set the sample frequency, and enable or disable the data processing, the audio trigger, and the data transfer to a remote server. The data processing is available only if the accelerometer and the gyroscope are both selected with a sample frequency of 100 Hz or 50 Hz. The audio trigger indicates the beginning and the end of the recording. The SP generates a sound when the user is seated quietly, indicating that the test can be started. When the user is seated quietly after completing the test, the SP generates another sound. All signals recorded during a trial are stored on the local memory. Log files are in TXT format.

Results

The practical implementation of the Android applications described above is shown in **Fig. 1 and Fig. 2**. The uFall application (**Fig. 1**) can be configured before the SP is given to the patient/participant. The user is not required to interact with the application. He only has to charge the battery. We stressed the device with hundreds of recording hours (approx. 500 h cumulatively) in order to precisely estimate the battery life. Recording tests were performed both in static and in dynamic conditions, for example, carrying the SP outside the laboratory or wearing it during daily activities. During the test we periodically applied a forcible shaking in order to trigger the fall detector. The alarm was always audible and an SMS was received each time on the chosen mobile number indicating/confirming that the background process was always running properly. No errors or system crashes were generated during the tests. No user's action can influence the recording or the fall-detection process; on the other hand, the application does not interfere with the typical phone usage except contributing to discharging the battery.

Once configured, the uTUG application (■ **Fig. 2**) can be started by simply pressing the "Start" button after entering an ID for the subject. Then the SP is placed inside the belt. The clinician obtains the results right after the TUG. About 200 TUGs were performed, mostly by laboratory staff, in order to test the application features. The audio cue was always generated correctly when the subject was seated quietly.

Abstract · Zusammenfassung

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Smartphone-based solutions for fall detection and prevention: the FARSEEING approach

Abstract

Falls are not an inevitable consequence of aging. The risk and rate of falls can be reduced. Recent improvements in smartphone technology enable implementation of a wide variety of services and applications, thus making the smartphone more of a digital companion than simply a communication tool. This paper presents the results obtained by the FARSEEING project where smartphones are one example of intervention in a population-based scenario. The applications developed take advantage of the smartphone-embedded inertial sensors and require that subjects wear the smartphone by means of a waist belt. The uFall Android application has been developed for monitoring the user's motor activities at home. The application does not require any direct interaction with the user and it is also capable of running a real-time fall-detection algorithm. uTUG is a stand-alone application for instrumenting the Timed Up and Go test, which is a test often included in fall risk assessment protocols. The application acts like a pocket-sized motion laboratory, since it is capable not only of recording the trial but also of processing the data and immediately displaying the results. uTUG is designed to be self-administrable at home.

Keywords

Smartphone · Fall detection · Fall prevention · Monitoring · Timed Up and Go test

Smartphonebasierte Lösungen zur Sturzerkennung und -prävention: das FARSEEING-Projekt

Zusammenfassung

Stürze sind keine notwendige Folge des Alterns, sie können verhindert werden. Die jüngsten Entwicklungen der Smartphonetechnologie ermöglichen eine Vielzahl von Anwendungen und Applikationen, wodurch das Gerät nicht nur als Kommunikationswerkzeug, sondern zunehmend als digitaler Alltagsbegleiter dient. In diesem Artikel werden Ergebnisse des FARSEEING-Projekts präsentiert, bei dem Smartphones ein Interventionsbeispiel in einem populationsbezogenen Szenario sind. Die hier vorgestellten Applikationen nutzen die im Gerät integrierten Inertialsensoren. Das Smartphone wird dabei mit einem Hüftgurt getragen. Die uFall-Applikation dient zur innerhäuslichen Beobachtung der körperlichen Aktivität des Nutzers und ermöglicht eine algorithmusbasierte Echtzeitsturzerkennung. Die uTUG-Applikation instrumentalisiert den Timed-up-and-go(TUG)-Test (Zeit bis zum Aufstehen und Gehen), welcher häufig zur Messung des Sturzrisikos verwendet wird. Dieses „miniaturisierte Bewegungslabor" erlaubt nicht nur die Durchführung einzelner Messungen, sondern stellt auch prozessierte Daten zur direkten Auswertung bereit. Die Applikationen ermöglichen die Eigenanwendung und erfordern keine direkte Interaktion des Nutzers mit dem Gerät.

Schlüsselwörter

Smartphone · Sturzdetektion · Sturzprävention · Monitoring · Timed-Up-and-Go-Test

Discussion

Mobile phone sensing is a relatively new concept with the potential to revolutionize many aspects of our lives, but is still in an early phase in practice. The possibility of continuous sensing is a key factor in a number of sectors especially in healthcare. Since by its nature an SP is not optimized for continuous sensing, its operating system must be very flexible. The most important requirement is that the SP operating system (OS) must support true multitasking and background processing. The Android OS supports multitasking, whereas the Apple iOS is still inadequate for continuous sensing [13].

The SP applications presented in this paper already cover most of the key factors on the basis of the FARSEEING vision. The complete FARSEEING technological infrastructure also includes a smart home system, a dedicated wearable unit for high-risk subjects, and a telemedical service model. SP-based solutions are mostly designed for the population scenario. The smart home system is capable of indoor tracking of the user. It is equipped with environmental sensors and a distributed audio/video system. Both the dedicated sensing unit and the smart home system can monitor the user during the night, while solutions based only on SPs would not be suitable for nighttime. The complexity and the cost of the system will depend on the user needs and assets. SP-based solutions would be the cheapest ones while still providing a fair level of service for subjects with a low to mild risk of falling. The overall acceptance of the system will be an outcome of the forthcoming pilot study. We will then apply the users' feedback to improve adher-

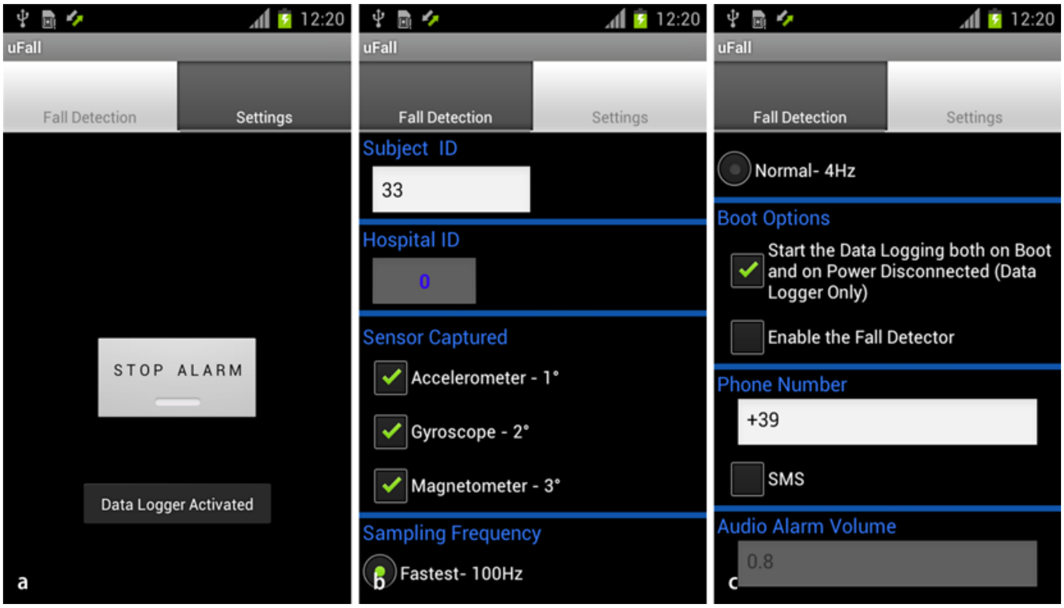

Fig. 1 ▲ Screenshots of the uFall application user interface. **a** The main panel only contains the "Stop Alarm" button, allowing the user to stop the alarm process if a fall is detected. **b** Portion of the settings panel where the user can enter a subject ID, select the sensors to be included in the recording and the sampling frequency; this panel can slide up and down. The hospital ID is fixed (0), there is a unique ID associated to each clinical site. **c** In this portion of the setting panel the user can enable the fall detector and the automatic data logging

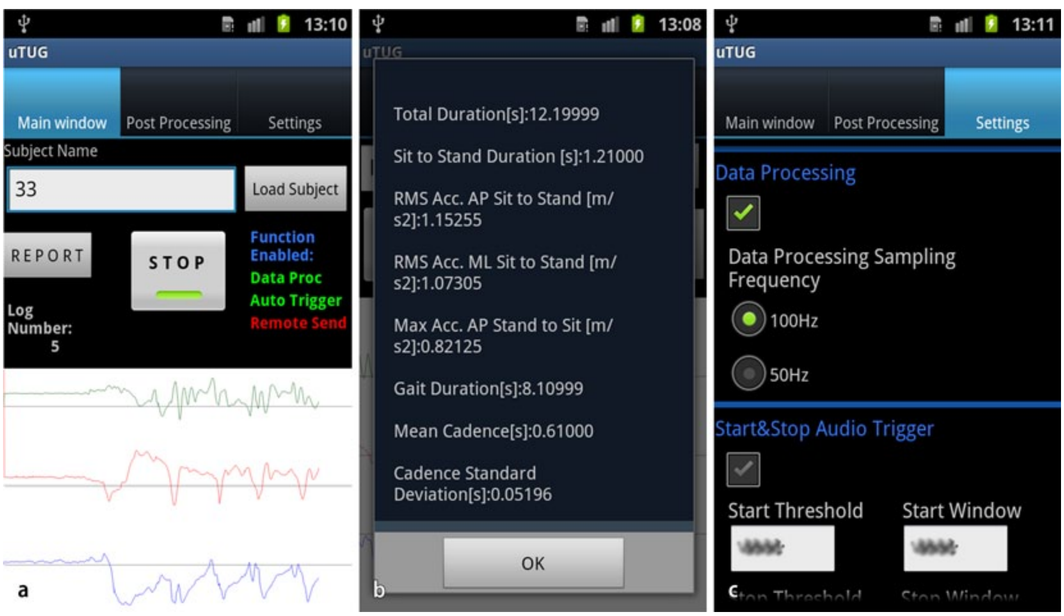

Fig. 2 ▲ Screenshots of the uTUG application user interface. **a** The main panel. The user can enter an ID for the subject or reload an existing one. On the *right* it is possible to verify which function is enabled; on the *left* there is the button to visualize the parameter list after the processing. The *central button* is used to start/stop the test. The *white bottom panel* is used to visualize the signals during the recording: the anterior–posterior acceleration is displayed in *blue*, the mediolateral acceleration is displayed in *green*, and the vertical acceleration is displayed in *red*. The postprocessing panel can be used to load, visualize, and process trials stored on the local memory. **b** Portion of the parameter list; this panel can slide up and down to visualize all the parameters. **c** Portion of the settings panel; this panel can slide up and down. The user can enable/disable the automatic data processing and can also enable/disable the audio triggers

ence and acceptance. It is also worth noting that the applications can be installed on any Android device.

In the FARSEEING population scenario, we chose to stress the prevention aspect rather than the detection aspect, which is more related to the high-risk scenario where we make use of a dedicated wearable sensing unit. The uFall application is capable of recording the user's motor activities on a daily basis and it is completely transparent to the user (i.e., no direct interaction with the user is required). In addition we verified the possibility of running parallel real-time fall-detection algorithms, able to trigger local and remote alarm procedures. We opted for a good acceleration resolution instead of a wide measurement range in order to assess the activities of daily living, particularly those immediately before and after the fall. The aim is to identify fall risk factors in the user motor profile. At this stage the uFall application does not include any algorithm for activity recognition. The SP acts as an inertial measurement unit and it is possible to apply any activity recognition method in the literature that makes use of wearable inertial sensors. Although we performed a small validation study of the fall-detection algorithm [26], we will not enable this feature during the first pilot study. This feature shall be understood as a proof of concept. Our assessment does not prove the validity of the fall-detection algorithm but the capability of the system to run this kind of process. The implemented method is similar to the ones already presented in the literature, which all share a very weak spot: they are all designed and tested relying on simulated falls. Instrumental data about real-world falls are, in general, extremely rare. From the few data available, it is clear that simulated falls and real-world falls can be quite different in terms of acceleration magnitude and dynamics [27]. As a consequence, the performance of the published algorithms is unsatisfactory when applied to falls recorded in real-world conditions [28]. The uFall fall-detection algorithm will be ultimately defined on the basis of the real-world falls collected during the FARSEEING project and it will be released and validated at a later stage.

Regarding the uTUG application, we compared the Matlab implementation of algorithms already published in literature [25] with their implementation on an Android OS obtaining almost identical results [29]. Of course this does not prove the validity of the activity-recognition methods themselves, which we assumed valid from the literature. The signal-/data-processing methods will be refined and validated during a proper validation study. The SP signal-processing capabilities enable the implementation of the same numerical methods that would be used in popular software like MATLAB (The MathWorks Inc., Natick, MA). The average time taken to process a TUG trial and to present the result is about 1 s. uTUG is a tool designed for fast screening protocols in order to assess the patient's mobility [19, 20] and hence identify possible fall risk factors. The application allows one to follow up the patient even at home and to perform pre-postintervention assessments targeting specific risk factors (e.g., enhance muscle strength in order to improve the motor performance during the sit to stand transition). The uTUG application will be administered by clinicians in supervised settings during the pilot study.

Conclusions

The world is changing. Recent improvements in SP technology enable implementation of a wide variety of services and applications, thus making an SP more a of digital companion than simply a communication tool. The uFALL application presented can effectively turn an SP into a long-term monitoring device with real-time fall-detection capability. The uTUG turned an SP into a pocket-sized mobility laboratory providing a useful tool for fast screening, fast assessment, and follow up. All the SP-based solutions presented are capable of cost-effectively supporting clinical research and clinical practice in fall detection and fall prevention at different levels.

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Conflict of interest. On behalf of all authors, the corresponding author states that there are no conflicts of interest.

References

1. Heinrich S, Rapp K, Rissmann U et al (2010) Cost of falls in old age: a systematic review. Osteoporos Int 21(6):891–902
2. Tinetti ME, Kumar C (2010) The patient who falls: "It's always a trade-off." JAMA 303:258–266
3. Panel on Prevention of Falls in Older Persons, American Geriatrics Society and British Geriatrics Society (2011) Summary of the Updated American Geriatrics Society/British Geriatrics Society clinical practice guideline for prevention of falls in older persons. J Am Geriatr Soc 59(1):148–157
4. Cesari M, Landi F, Torre S et al (2002) Prevalence and risk factors for falls in an older community-dwelling population. J Gerontol 57A(11):M722–M726
5. Delbaere K, Close JCT, Heim J et al (2010) A multifactorial approach to understanding fall risk in older people. J Am Geriatr Soc 58(9):1679–1685
6. Alwan M, Rajendran PJ, Kell S et al (2006) A smart and passive floor-vibration based fall detector for elderly. Conf Proc. of the 2nd ICTTA 1003–1007
7. Popescu M, Li Y, Skubic M, Rantz M (2008) An acoustic fall detector system that uses sound height information to reduce the false alarm rate. Conf Proc 30th IEEE EMBS 4628–4631
8. Lee T, Mihailidis A (2005) An intelligent emergency response system: preliminary development and testing of automated fall detection. J Telemed TeleCare 11(4):194–198
9. Bourke AK, Van de Ven P, Gamble M et al (2010) Evaluation of waist-mounted tri-axial accelerometer based fall-detection algorithms during scripted and continuous unscripted activities. J Biomech 43:3051–3057
10. Bourke AK, Lyons GM (2008) A threshold-based fall-detection algorithm using a bi-axial gyroscope sensor. Med Eng Phys 30(1):84–90
11. Gillespie LD, Gillespie WJ, Robertson MC et al (2009) Interventions for preventing falls in elderly people. Cochrane Database Syst Rev:CD007146
12. Cameron ID, Murray GR, Gillespie LD et al (2010) Interventions for preventing falls in older people in nursing care facilities and hospitals. Cochrane Database Syst Rev:CD005465
13. Consolvo S, McDonald DW, Toscos T et al (2008) Activity sensing in the wild: a field trial of Ubifit garden, Conf Proc 26th ACM SIGCHI Human Factors Comp. Sys 1797–1806

14. Lane ND, Miluzzo E, Hong LU et al (2010) A survey of mobile phone sensing. IEEE Commun Mag 48(9):140–150
15. Sposaro F, Tyson G (2009) iFall: an Android application for fall monitoring and response. Conf Proc IEEE Eng Med Biol Soc 6119–6122
16. http://mover.projects.fraunhofer.pt/index.html. Accessed June 2012
17. Dai J, Bai X, Yang Z et al (2010) Mobile phone-based pervasive fall detection. J Personal and Ubiquitous Computing 14(7):633–643
18. Lee RY, Carlisle AJ (2011) Detection of falls using accelerometers and mobile phone technology. Age Ageing 40(6):690–696
19. Kangas M, Konttila A, Lindegren P et al (2008) Comparison of low-complexity fall detection algorithms for body attached accelerometers. Gait Posture 28(2):285–291
20. Berg KO, Maki BE, Williams KI (1992) Clinical and laboratory measures of postural balance in an elderly population. Arch Phys Med Rehabil 73:1073–1080
21. Lin M, Hwang H, Hu M et al (2004) Psychometric comparisons of the timed up and go, one-leg stand, functional reach, and tinetti balancemeasures in community-dwelling older people. J Am Geriatr Soc 52:1343–1348
22. Weiss A, Herman T, Plotnik M et al (2010) Can an accelerometer enhance the utility of the Timed Up & Go Test when evaluating patients with Parkinson's disease? Med Eng Phys 32(2):119–125
23. Zampieri C, Salarian A, Carlson-Kuhta P et al (2010) The instrumented timed up and go test: potential outcome measure for disease modifying therapies in Parkinson's disease. J Neurol Neurosurg Psychiatry 81(2):171–176
24. Marschollek M, Nemitz G, Gietzelt M et al (2009) Predicting in-patient falls in a geriatric clinic: a clinical study combining assessment data and simple sensory gait measurements. Z Gerontol Geriatr 42(4):317–321
25. Mellone S, Tacconi C, Chiari L (2012) Validity of a Smartphone-based instrumented Timed Up and Go. Gait Posture 1(36):163–165
26. Tacconi C, Mellone S, Chiari L (2011) Smartphone-based applications for investigating falls and mobility, Conf Proc 5th PervasiveHealth 258–261
27. Klenk J, Becker C, Lieken F et al (2011) Comparison of acceleration signals of simulated and real-world backward falls. Med Eng Phys 33(3):368–373
28. Bagalà F, Becker C, Cappello A et al (2012) Evaluation of accelerometer-based fall detection algorithms on real-world falls. PLoS ONE 7(5):e37062
29. Tacconi C, Mellone S, Chiari L (2012) uTUG: a smartphone application for home-based TUG testing. Conf Proc 1st Joint World Conference of ISPGR and Gait & Mental Function 329–330

Galenus-von-Pergamon-Preis 2012

Die Jury hat entschieden

Für manche ist er der inoffizielle „Nobelpreis" für Pharmakologie: der Galenus-von-Pergamon-Preis. Am 18. Oktober wurde er im Rahmen einer festlichen Gala erneut verliehen – an drei beeindruckende Preisträger.

Primary Care

Der Preis in der Kategorie Primary Care würdigt ein Medikament, das bei einer breiten Patientengruppe eingesetzt wird. In diesem Jahr hat Novartis Pharma diesen Preis für Gilenya® (Fingolimod) erhalten. Fingolimod ist ein orales Medikament zur Therapie von Patienten mit Multipler Sklerose (MS). Es ist zugelassen für bisher nicht behandelte Patienten, die an einer rasch fortschreitenden, schweren schubförmigen MS erkrankt sind. Es ist zudem indiziert zur Eskalationstherapie, wenn trotz Behandlung mit einem Beta-Interferon eine hohe Krankheitsaktivität vorliegt. Mit Fingolimod gelingt es, die Schubrate zu verringern.

Specialist Care

Der Preis in der Kategorie Specialist Care zeichnet ein Medikament aus, das zur Behandlung seltener Erkrankungen verwendet wird. Der diesjährige Gewinner ist Zelboraf® (Vemurafenib) von Roche Pharma. Vemurafenib ist die erste Option für eine personalisierte Therapie bei inoperablem oder metastasiertem Melanom. Das Medikament in Form von Filmtabletten ist zugelassen zur Therapie von Melanompatienten, die ein mutiertes BRAF-Gen haben. In der Zulassungsstudie betrug die geschätzte mediane progressionsfreie Überlebenszeit 5,6 Monate im Vergleich zu Patienten mit der Standardchemotherapie mit Dacarbazin. In der Vemurafenib-Gruppe war zudem das Sterberisiko um 63% und das Progressionsrisiko um 74% verringert.

Grundlagenforschung

In der Kategorie Grundlagenforschung wurde das Team um Dr. Thomas Worzfeld aus Bad Nauheim für die Entwicklung eines neuen Ansatzes zur Therapie bei metastasierendem Brustkrebs geehrt. Worzfeld und sein Team haben herausgefunden, dass der Rezeptor Plexin-B1 eine besondere Bedeutung für die Metastasierung bei Brustkrebs hat. Anhand von Gewebeproben von Patientinnen mit einem Mammakarzinom stellten sie fest, dass die Frauen eine umso bessere Überlebenschance hatten, je weniger Rezeptoren im Tumorgewebe vorhanden waren. Inzwischen steht ein monoklonaler Antikörper gegen diesen Rezeptor zur Verfügung, der derzeit präklinisch getestet wird.

Springer Medizin CharityAward 2012

Das Kinder- und Jugendhospiz Balthasar in Olpe ist für sein unermüdliches Engagement mit dem Springer Medizin CharityAward ausgezeichnet worden. Balthasar wurde im Jahr 1998 gegründet und ist damit das erste Kinder-und Jugendhospiz in Deutschland. Der von Schirmherr Daniel Bahr überreichte Springer Medizin CharityAward umfasst einen Barscheck über 50.000 Euro und ein Medienpaket über weitere 100.000 Euro. Damit unterstützt die Fachverlagsgruppe den Gewinner gezielt bei seiner Öffentlichkeitsarbeit.

Quelle: Springer Medizin