

# How can our smartphone help to stay fit and healthy

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***Abstract:** Smartphones today are provided with lots of knowledge and due to their operating systems they can easily be extended with new functions. A smartphone could recognize the types of movements and calculate their speed on the basis of the changing of the GPS co-ordinates and can compute how much calorie- and fluid intake people need in their momentary state of health. In an other case a smartphone could give signal with the help of a pulse counter to stop doing exercises when the maximum individual pulse rate has been reached during a training session. Smartphones could be used to signal if people have to take a given medicament. They could also make sure the different medications do not neutralize or reinforce their effects by indicating when to take them to avoid the undesired consequences.*

***Keywords:** smartphone; healthy; fit*

## 1 Introduction

Nowadays the use of smartphones gets more and more widespread in the whole world [1]. The earlier trials on the field of the different PDAs anticipated the era of smartphones, since in this case the functions of the mobile phones and the PDAs are realized in one apparatus.

Smartphones today are provided with lots of knowledge and due to their operating systems they can easily be extended with new functions [2]. They are usually supplied with GPS receivers, gyroscopes and cameras and they also have access to the Internet.

These attributes have aroused the interest in how people could use a smartphone nowadays to satisfy the need that appears more and more often that is to live a healthier life. Since people have such appliances with them all the time, they should exploit the opportunities hidden in them.

What about the fields in which these functions could be made a good use of once they have been built in smartphones?

A smartphone could recognize the types of movements and calculate their speed on the basis of the changing of the GPS co-ordinates and can compute how much calorie- and fluid intake people need in their momentary state of health. In an other case a smartphone could give signal with the help of a pulse counter to stop doing exercises when the maximum individual pulse rate has been reached during a training session.

With the help of their cameras smartphones could make an attempt to recognize the types of a given food and recognize how much food people have already had, how many times people have lifted their forks to their mouths and how much food they have put on their forks. They could give a sign that people have had enough and should put down their spoons, knives, forks, chopsticks... etc.

Smartphones could recognize how much fluid people need. A portable sensor that can communicate wireless could measure the amount of liquid leaving the body through the skin; the appliances could calculate the required amount with regard to this data.

Smartphones could be used to signal if people have to take a given medicament. They could also make sure the different medications do not neutralize or reinforce their effects by indicating when to take them to avoid the undesired consequences.

## **2 To stay fit and healthy**

It is a big problem in the modern world the people eat more, than they needs to preserve their life cycles and make fewer excersice, than they need to stay the muscles in good condition. People should not take in superfluous energy because it is stored up, they become fatter and fatter and also their heart becomes more and more burdened.

We can use a smartphone to know how many calories people need. It could count it on the basis of their weight, percentage of bodily fat, age, sex, height and it also has to take into consideration how much they actually move and what type of work they do.

Some of the values can be measured and indicated but it is more difficult to calculate the daily motion. To do so, people need the help of their phones. They could tell how many minutes it took them to walk to work, how much time they have spent standing, sitting, doing sports, sleeping... etc.

A simple application needs the data of the types of the movements and the time spent doing them. On the basis of these data a smartphone could count the amount of calories users need. Then the types of food that the users want to have could be named or selected from a list and the application could count how many gramms of it they can consume to compensate for the energy used (figure 1.).



Figure 1. User can give the type of foods and exercise

The application can show a list about the foods and exercises and how much energy burned the user on this day (figure 2.).



Figure 2. The smartphone make a list of type foods and exercises

In the field of proper nutrition smartphones could help choosing the food by precisely determining the amount on the basis of their users' calorific needs and so the development of overweight could be avoided or their users could gradually get rid of their existing extra weight.

### 3 Take in time the medicament

We can use our smartphone in other way too. A simply smartphones application could be used to signal if their users have to take a given medicament and they could make sure the different medications do not neutralize or reinforce their effects by indicating when to take them to avoid the undesired consequences (figure 3.). The user can make a list about the medicament that have to take in, the application can see the details in a database and write an alert if the user not allow to take some of them in same time.

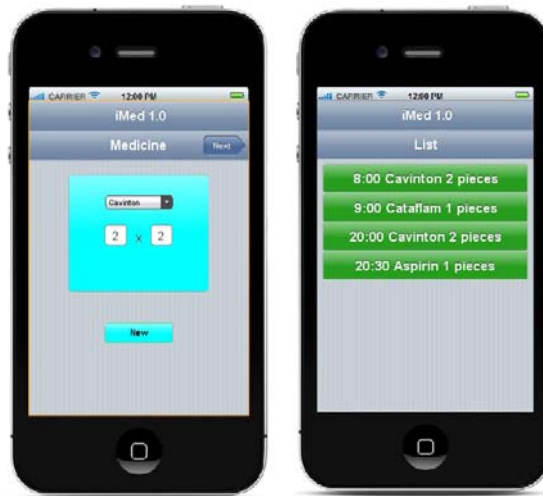


Figure 3. The user give the data of the medicine and smartphone make a scedule

Patients suffering from Alzheimer's disease could be warned to eat, drink and take medication on the basis of a given regularity.

#### Conclusions

The smartphones have founded a new way to live healthier. The developer can use the new functions to make complex application to help the people to stop eating, if the had have enough. In other way we can use this appliances to calculate the exercises to know we have moved enough or not to hold the muscles in good condition. If we need different medicament our smartphone can help do not neutralize or reinforce their effects. We can use our smartphone in more situation in the live to make it healthier and save [3].

#### References

- [1] <http://www.email-marketing-reports.com/wireless-mobile/smartphone-statistics.htm>

- [2] <http://www.physorg.com/news/2011-01-smart-functions-seep-sectors.html>
- [3] Gábor Kiss - Using smartphones in healthcare and to save lives / 2011 IEEE International Conferences on Internet of Things and Cyber, Physical and Social Computing (CpsCom/IoT 2011), Dalian, China, 2011