

## *Basic information about IntelliDrug Project presentation*

# INTELLIDRUG

## • • *Controlled Drug Delivery*

**IntelliDrug** is an IST Programme project develops an intra-oral device for controlled drug delivery. It will provide new therapeutic opportunities to people suffering from chronic diseases and drug addiction. The project addresses the need of new, less invasive and better controlled drug delivery.

The occurrence of drug addiction is a great problem in every European country. According to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) the prevalence of drug addiction is growing. The second target group of this project (people suffering from long-term diseases, e.g. diabetes and hypertension) implies huge social and economic burden.

The **Intellidrug** device may improve the health status and quality of life of the afflicted people. It will lead not only to direct benefit for patients (i.e. easiness of control and adjust drug delivery, more discreet and convenient than e.g. insulin pump), but also for the entire society (plumping socio-economic costs related to drug addiction and chronic diseases).

This presentation is aimed at presenting the idea of this multidisciplinary project in a concise and clear form.



Information Society  
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## **How does the IntelliDrug device work?**

The device containing the medicine and the whole system is placed in the mouth and the medicine is released in a controlled manner accordingly to patient's needs, for periods lasting days, weeks or months. The device will be reloaded with fresh medication in a simple non-invasive way.

The micro-system comprises a medication release mechanism, a built-in intelligence, micro-sensors and micro-actuators. It will be possible to adjust the amount of medicine by a remote control available as a part of the system. The remote control will also inform the patient and physician if the drug container needs to be refilled.

The medicine released will be either absorbed by the oral mucosa (soft tissue surfaces) or swallowed by the patient.



## **How does IntelliDrug device look like?**

The system will be contained in a removable dental appliance. The appliance may be of removable or fixed type. It will look similar to natural teeth and will be aligned in the patient's dental arch, allowing free eating and speaking.

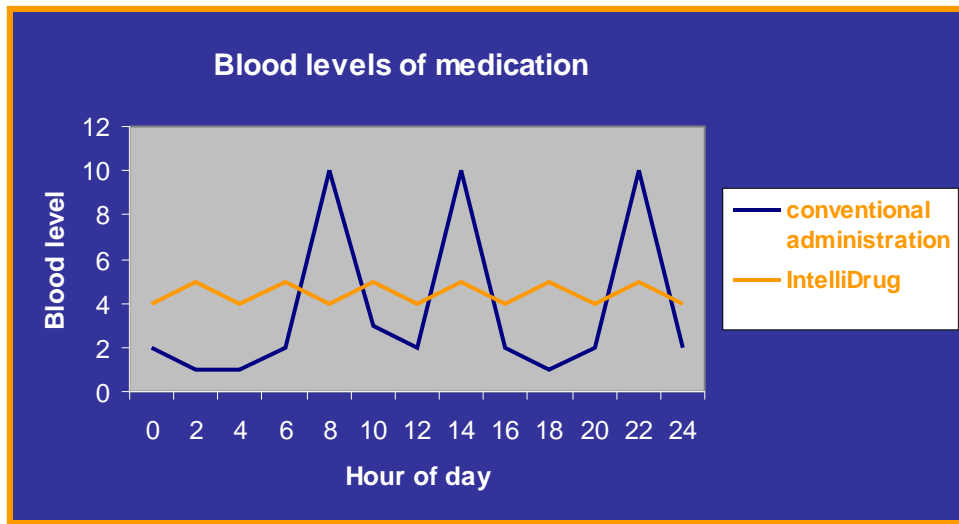
## **What are the target groups?**

**IntelliDrug** is aimed at developing an intelligent micro- and nano- system to provide an alternative approach for the treatment of drug addiction and chronic diseases. Drug addiction and chronic diseases are among the most severe human problems. Drug addiction itself is a major motive of crime and social instability. Chronic diseases are becoming more widespread in the world due to ageing societies and high level of medical care which enables to prolong people's lives more than ever before.

## What are the benefits of the solution for a patient?

Its anatomical shape will assure that the drug delivery is more discreet and less inconvenient than insulin pumps, yet with better control and adjustment of drug delivery in comparison to drug plasters and traditional pills. Non-invasive drug delivery to the oral tissues will replace injections, avoiding pain, discomfort and infections.

Blood level of medication will be better controlled than in conventional administration. It makes the drug more efficient and may reduce side effects.



For instance, if indicated, a stable medication level in blood can be achieved with *IntelliDrug*, as opposed to the peaks of drug level that result from conventional medication intake (such as "one pill three times a day"), as shown in the graph.

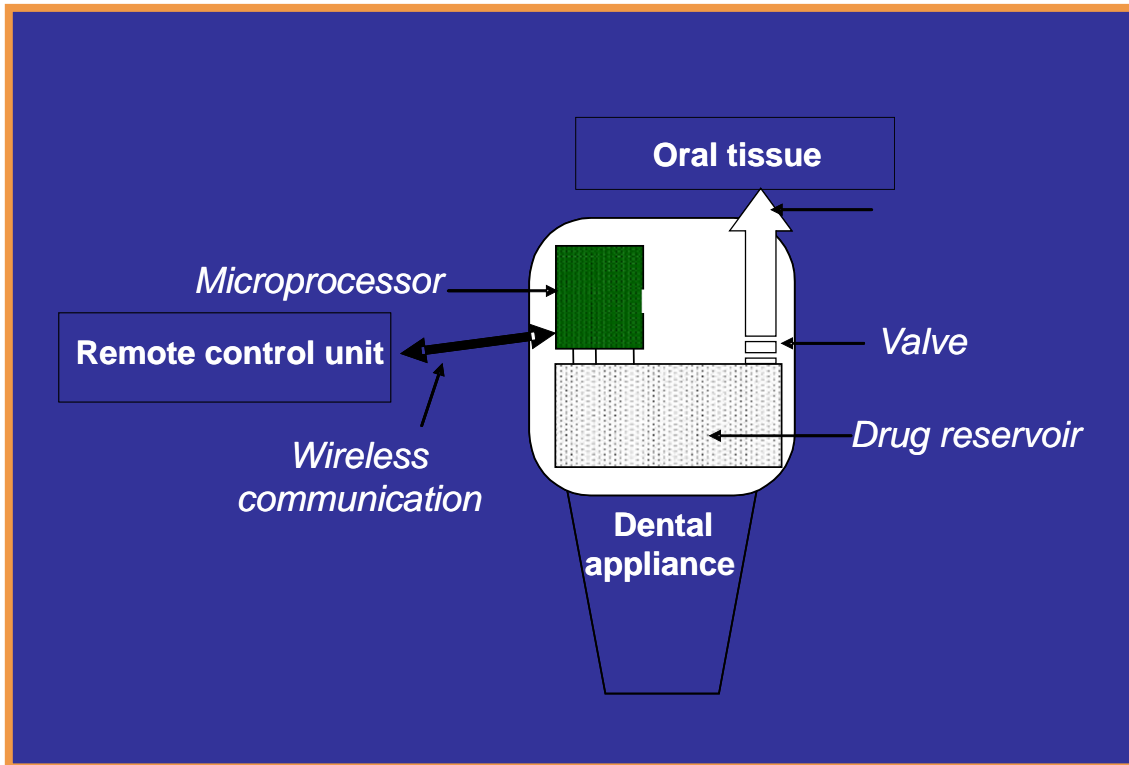
## What are the benefits for the entire society?

The continuous and endless efforts required from treating personnel and the afflicted persons further compromise the quality of life and give rise to severe compliance problems with therapy. In addition, limited effectiveness and adverse side effects are the result of the currently used medication administration methods. The proposed project *IntelliDrug* is aimed at obviating these problems.

The resulting micro-system will help afflicted persons to put an end to their personal misery, to run a life as close as possible to normal and even to turn into a productive member of our society.

It also will contribute to strengthen European research, cooperation and industry.

## Schematic IntelliDrug system overview:



## When the device will be available on the market?

The prototype will be ready and tested by the end of 2006. It is expected that in 2007 the device will be available on the market.

## Detailed information about the project:

Project acronym: **IntelliDrug**

Project full title: Intelligent intraoral medicine delivery micro-system to treat addiction and chronic diseases

Supported by the European Commission 6th Framework Programme, Information Society Technologies

Drugs used for testing: insulin, naltrexone

Project co-ordinator: Assuta Medical Centres Ltd.

Project officer: Thomas Sommer

Project website: [www.intellidrug.org](http://www.intellidrug.org)



## ***How to get more information?***

If you are interested in more details, please visit **IntelliDrug** website: [www.intellidrug.org](http://www.intellidrug.org) or contact the project coordinators:

Ben Z. Beiski: [bbeiski@yahoo.com](mailto:bbeiski@yahoo.com) or  
Dr. Andy Wolff: [awolff@zahav.net.il](mailto:awolff@zahav.net.il)  
from Assuta Medical Centres Ltd in Israel.

## ***Who is working on the Project?***

Assuta Medical Centres Ltd. (Israel) co-ordinator

Fraunhofer IBMT (Germany)

Relsoft Systems Ltd. (Israel)

Hahn-Schickard-Gesellschaft Institute for Micromachining and Information Technology -  
HSG-IMIT (Germany)

Valtronic SA, Les Charbonnières (Switzerland)

Warsaw University of Technology, Faculty of Chemical and Process Engineering (Poland)

Università di Palermo (Italy)

Bio-Dar Ltd. (Israel)

Medical Technology-Promedt Consulting GmbH (Germany)

Hospital Clínico San Carlos, Madrid (Spain)

Charité Universitätsmedizin Berlin (Germany)

Università "Federico II" di Napoli, Department of Odontostomatological and Maxillofacial  
Sciences (Italy)

Israel Anti Drug Authority - IADA (Israel)

ASM - Market Research and Analysis Centre Ltd. (Poland)

