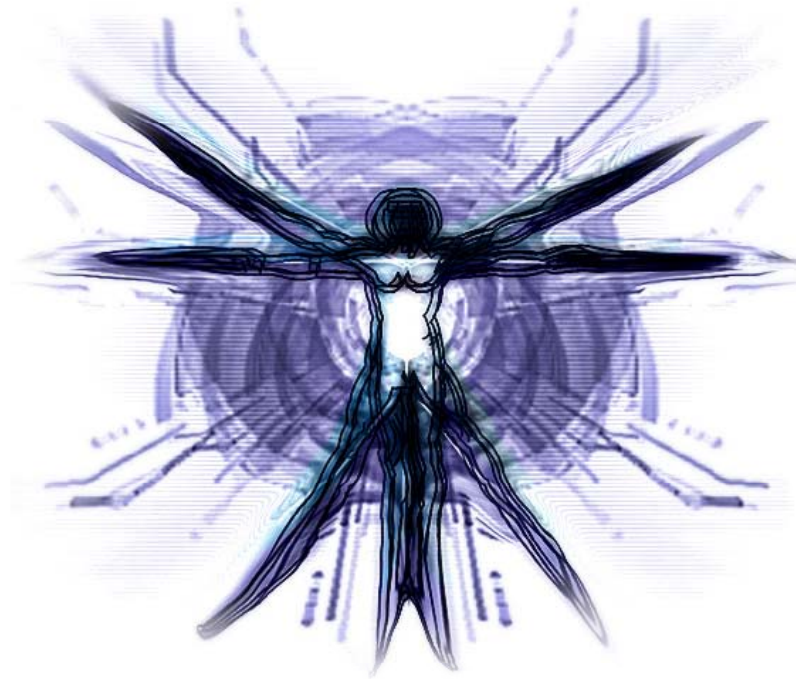


IS-ACTIVE



Inertial Sensing Systems for Advanced Chronic
Condition Monitoring and Risk Prevention



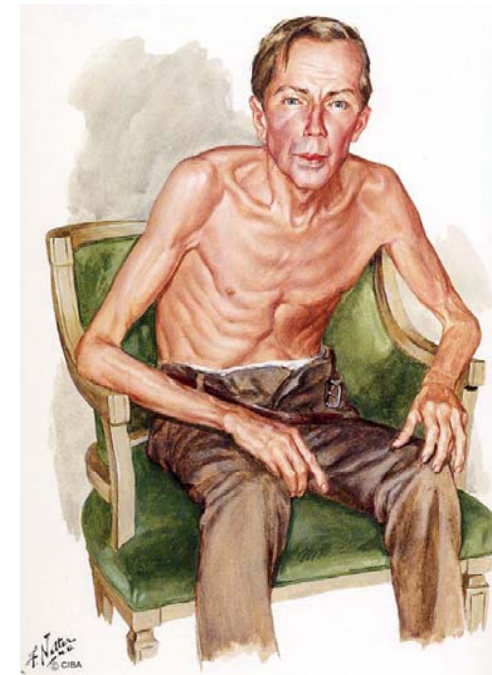
Overview

- Devise person-centric healthcare solutions
 - For Chronic conditions (Elderly, COPD)
 - Home as care environment
 - Stimulate and encourage daily activities
- Real-time support for physical condition
 - Monitor
 - Self-manage
 - Improve
- Wireless sensor system
 - Inertial sensors on persons and in objects
 - Physiological sensors
 - Environmental sensors



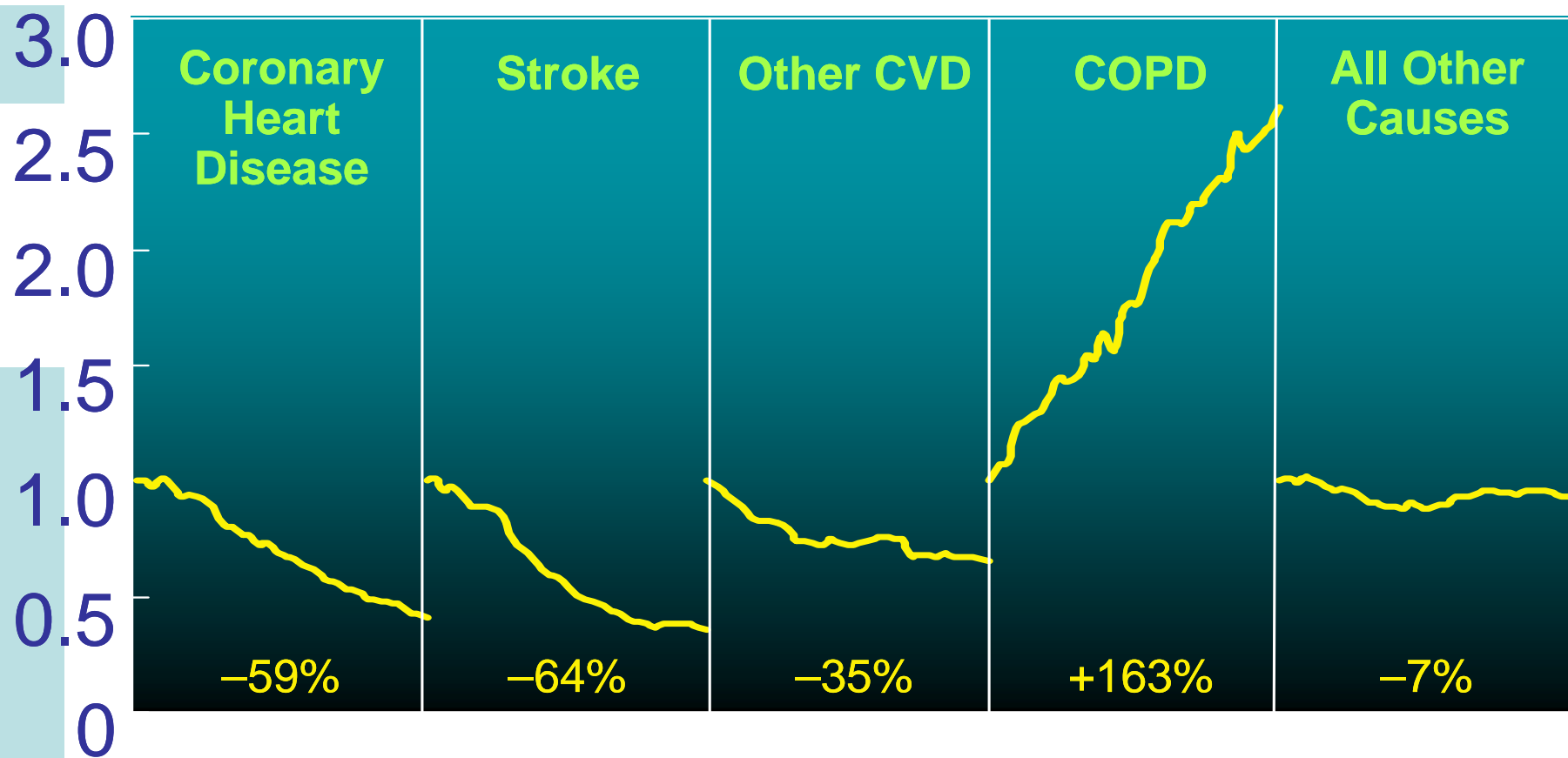
Chronic obstructive pulmonary disease (COPD)

- Airflow limitation
 - Progressive
- Patients avoid doing activities
 - Shortness of breath
 - Fatigue
 - Feel scared
- WHO 2020
 - 5th illness worldwide
 - Mortality : 3rd cause
- Increase due to
 - Developing countries
 - New diseases (e.g. cardiovasc.)
 - Elderly people





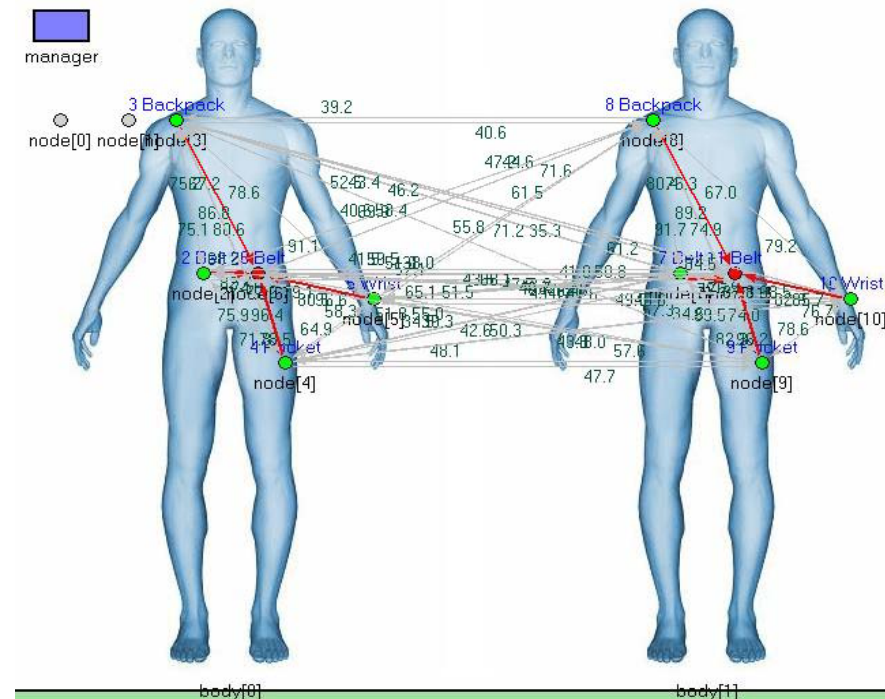
Percent Change in Age-Adjusted Death Rates, U.S., 1965-1998





The IS-ACTIVE approach

- Stimulate and encourage activities
 - Alone,
 - with training objects,
 - in a group
- Monitor and evaluate activities
 - In daily life indoor, outdoor
 - Training with objects
- Give real-time feedback
 - Motivation
 - Positive feedback
- Wireless sensor system
 - Body area network
 - Inertial sensors
 - Physiological
 - Environmental conditions





Goals

- Effective sensing system for daily use
 - Analyzes in real-time physical activity and condition
 - Helps to manage chronic conditions
- Provide easy-to-use interface for patients
 - Natural feedback
 - Self-management
- Provide caregivers effective remote monitoring tool
- Prototype wireless sensing platform
 - Hardware platforms and software packages
 - Algorithms
 - User interfacing and feedback
- Field trials in three countries



Challenges

- Ad hoc deployment
 - Spontaneous and dynamic composition of objects
 - Wireless sensor networking
- Distributed activity recognition
 - Self learning
- Feedback mechanism
 - Unobtrusive, yet effective
- Diversity of patient groups
 - Very different patient groups and expectations



Consortium



- University and Research
 - University of Twente (Netherlands)
 - Northern Research Institute (Norway)
- Industry
 - Inertia Technology (Netherlands)
 - Prosys (Romania)
- Medical Research
 - Roussingh (Netherlands)
 - Norwegian Centre for Telemedicine (Norway)
 - University Hospital Elias (Romania)



Contact

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