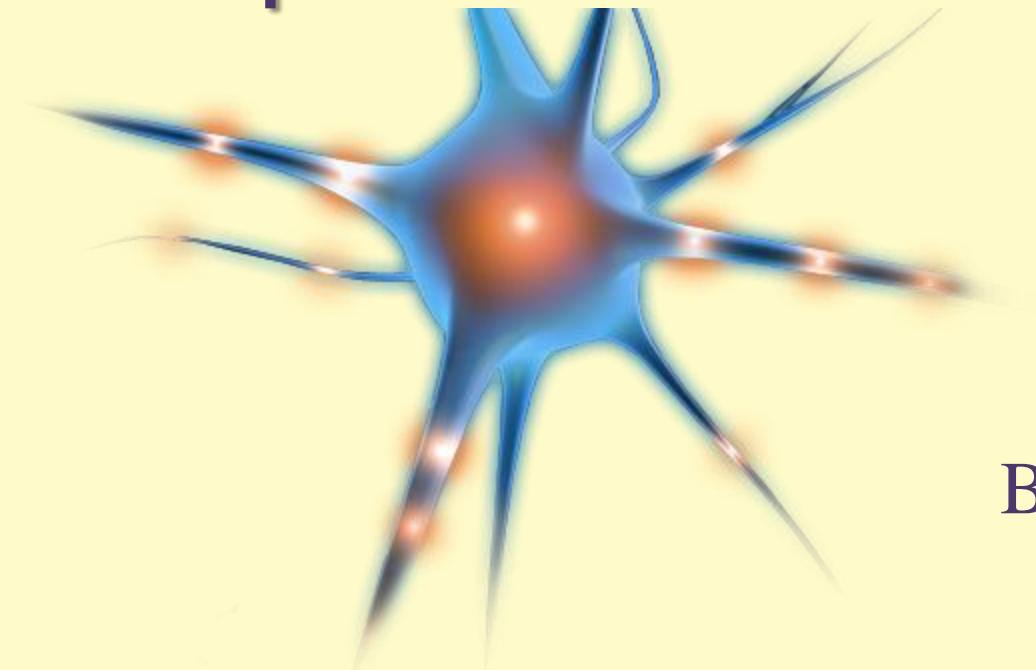




# Spinal cord stimulation: Latvia



Baltic Pain, 2012, Vilnius  
I. Golubovska

- Peripheral stimulation
- Spinal cord stimulation
- Intrathecal drug delivery
- Neurodestructive procedures

# Neuromodulation

**Neuromodulation** is implantable technology, which improves quality of life by electric stimulation or chemical substances

**Neuromodulation** is a reversible therapeutic alteration of activity either through stimulation or medication, both of which are introduced by implanted devices.

# Patient

- **Lady, 26 y.o. ( now 27 y.o.)**
- **Chronic neuropathic pain syndrome in the right leg**
- Status post multiple pelvis fractures and plexus lumbosacralis lesions in year 2001 after car crash
- Epidural abscess (2005 )
- Os ischii osteomyelitis on the right
- Necrectomies after grade IV bedsores. Free flap surgery
- Unsuccessfull SCS implantation in Germany (2008)
- Right hip replacement (2009 ). Problems with hip endoprothesis (2010 ). Revision arthroplasty (2011)
- Real addiction problems (300 mg morphin, clonazepam)

# Placement of electrodes

## Location of pain

Leg  
Uncle  
Knee and shank  
Buttocks  
Lower back and leg  
Thorax& precordium  
Upper extremity  
Minor pelvis

## Distal end of the electrode

Th12-L1  
Th11-Th12  
Th9-Th10  
Th9  
Th8-Th9  
Th1-Th2  
C3-C5  
retrograde L5-S1

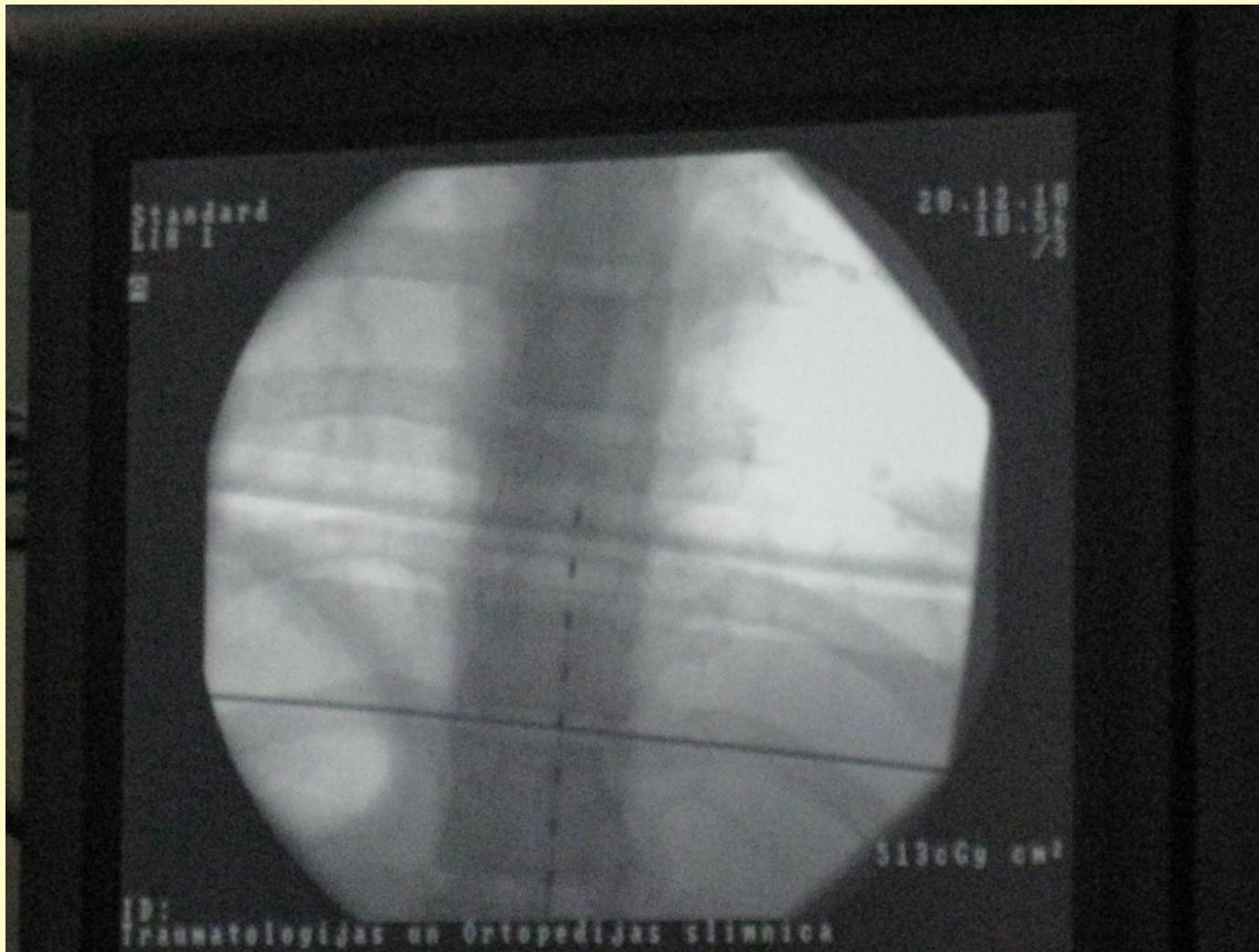


**SCS implantation 20.12.2010**

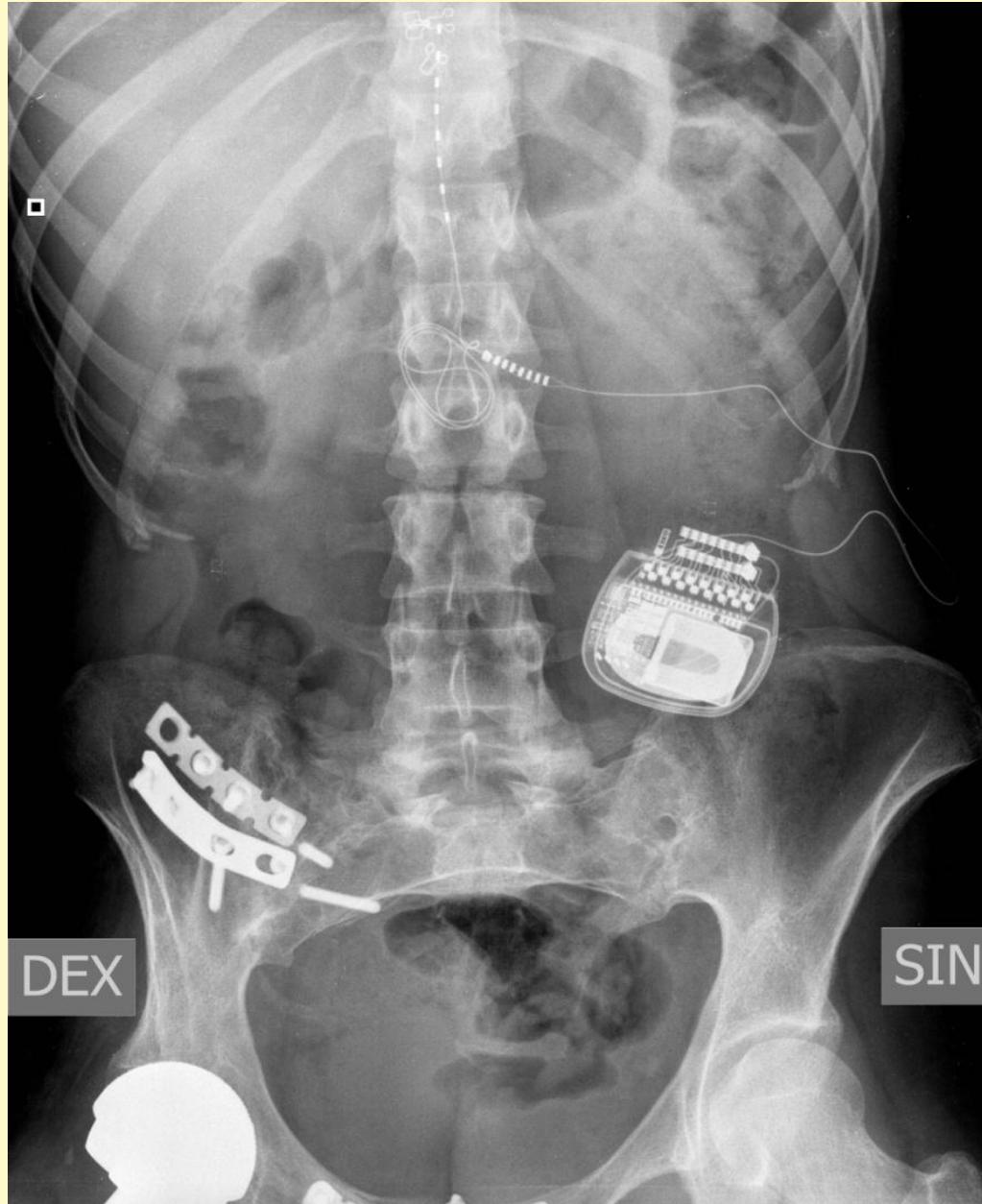
Spinal cord stimulation: Latvia. I. Golubovska



Spinal cord stimulation: Latvia. I. Golubovska



Spinal cord stimulation: Latvia. I. Golubovska



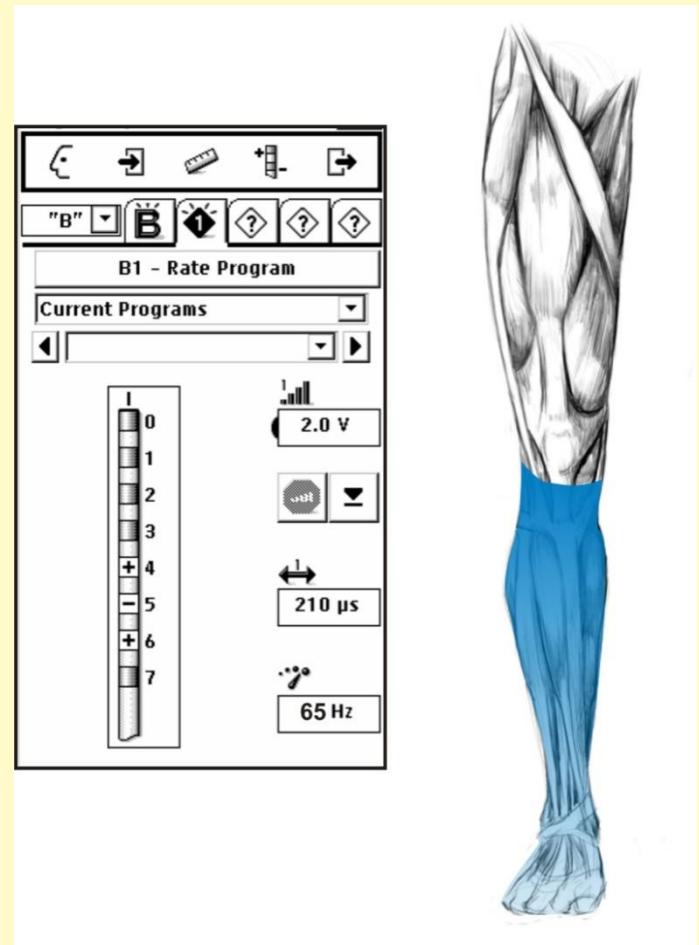
Spinal cord stimulation: Latvia. I. Golubovska



Spinal cord stimulation: Latvia. I. Golubovska

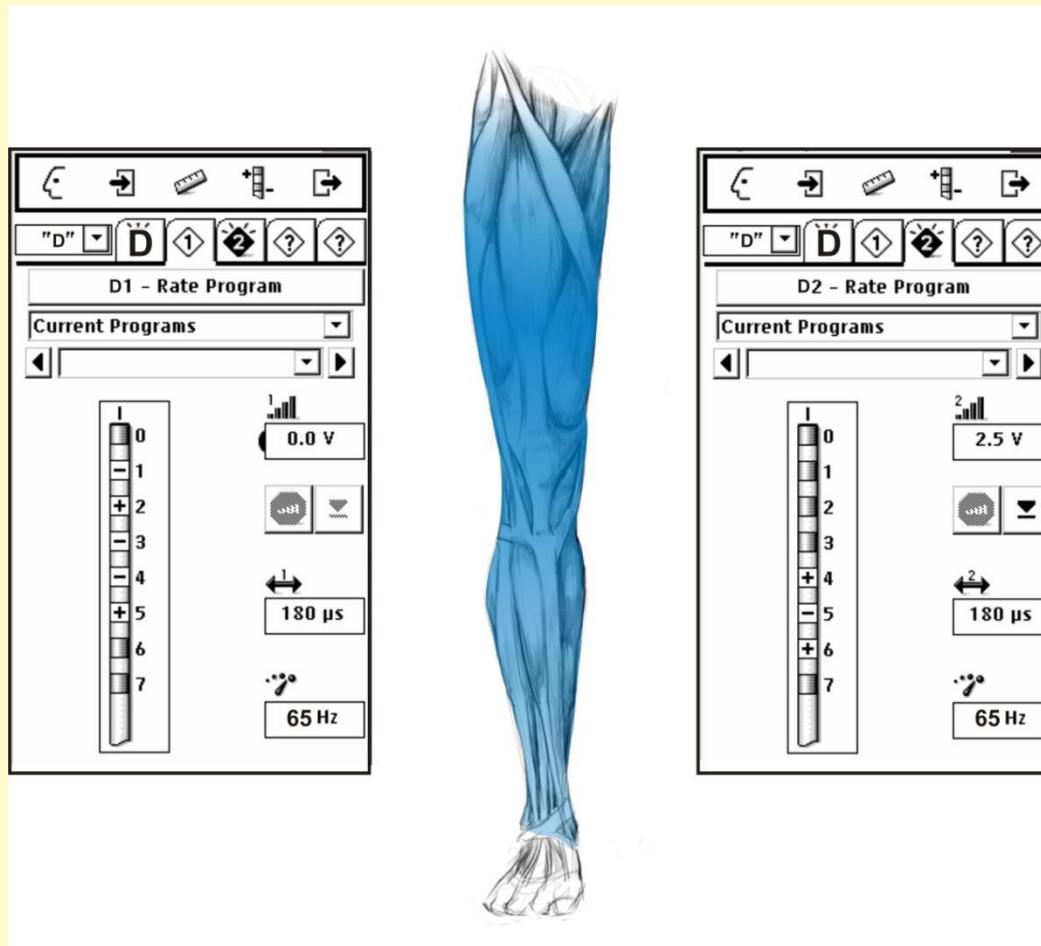
- Transcutaneous octad electrode
- Active electrodes around Th 9
- Rechargeable pulse generator in abdominal wall
- 5 programmes available for now (sleeping, working etc)
- Pulse width 180 - 320 ms, pulse frequency 20 - 60 Hz, amplitude 0.9 to 6.9 mA
- Sensitive to changes in posture

# Programming



Spinal cord stimulation: Latvia. I. Golubovska,

# Programming



Spinal cord stimulation: Latvia. I. Golubovska

# For now

- 800 mg of Gabapentin
- 50 mg of Amitriptilin
- 8 mg of Buprenorphin

# Happy end?

## PLUSES

- Less pain for 60-70 %
- Pain is controllable
- Employed for 1 year
- Happy in personal life

# Happy end?

## MINUSES

- Reimplantation of electrode
- Damage of patient programmer
- Necessary psychostimulator (Buprenorphin)
- Emotional lability
- High risk of infection (intermittent urinary infection, eczema in the numb regions)



Spinal cord stimulation: Latvia. I. Golubovska,

# On the waiting list

**Lady, 37 y.o.**

- gunshot lower back wound with spinal cord damage, cauda equina lesions, paraparesis, minor pelvis disorders, neuropathic pain syndrome in the right leg

# On the waiting list

**Lady, 55 y.o.**

- RA, steroid-dependent, osteoporotic spine fractures, interstitial lung disease, neuropathic pain syndrome in the right leg

# National Medical Service

Accepted 20 cases in a year

We are waiting for replay

A detailed 3D rendering of a neural network. Numerous greyish-blue neurons are interconnected by black synaptic pathways. Many of these synapses are highlighted with a bright red glow, indicating active transmission or firing. The overall effect is one of complex, simultaneous communication within a brain-like structure.

Thank You