

Project designed to analyse the facts  
on pain related cost in Sweden  
(Fact book on pain)

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## How do we perceive the pain of others? A window into the neural processes involved in empathy

Philip L. Jackson, Andrew N. Meltzoff, and Jean Decety\*

*P.L. Jackson et al. / NeuroImage 24 (2005) 771–779*

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Fig. 1. Sample pictures of hands and feet in painful (Pain) and neutral (No-Pain) conditions. Note that only right limbs were presented, and for each painful stimulus, a corresponding neutral (No-Pain) one was provided.

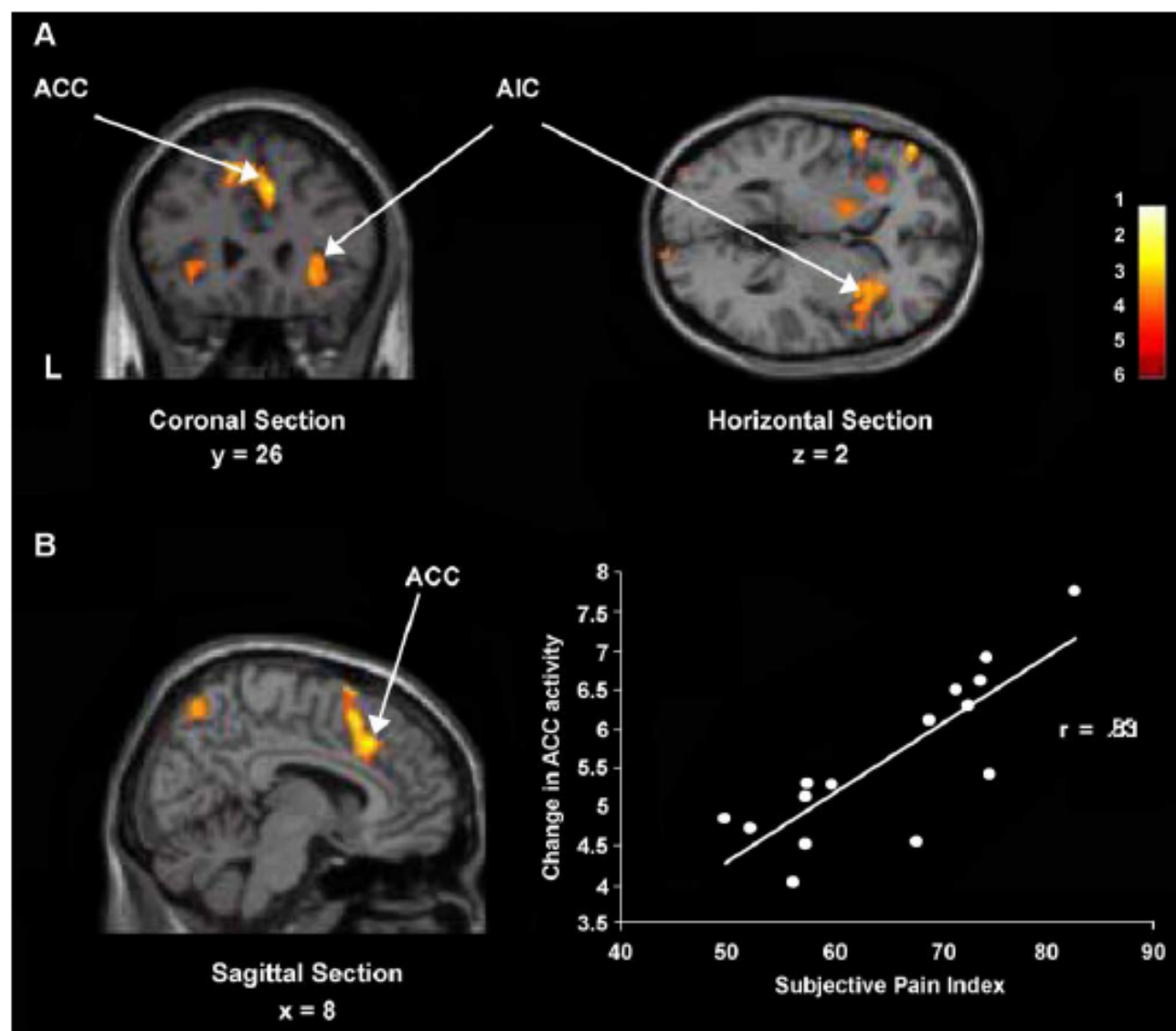


Fig. 2. (A) Anterior insular cortex AIC, thalamus and posterior part of the anterior cingulate ACC activation during the observation and assessment of someone else in painful situations contrasted with neutral (No-Pain) situations. Results are superimposed on the MNI MRI template. (B) ACC cluster superimposed onto a sagittal section and scatter plot showing the positive correlation between the indexed ratings and the level of activity in this region  $x = 14$ ,  $y = 20$ ,  $z = 44$ .

# Pain

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.

Pain is subjective in its nature and therefore ultimately only a person can describe it.

We differentiate between acute and chronic pain in terms of length of persistence

Research strongly indicates that acute and chronic pain are different phenomena, the first functional, the second

Chronic pain **is not** acute pain. It is a functional disorder. Chronic pain episodes extended in time and should therefore be addressed in a different way

, 1979

## Do epidemiological results replicate? The prevalence and health-economic consequences of neck and back pain in the general population

Steven J. Linton and Marianne Ryberg

Department of Occupational and Environmental Medicine, Örebro Medical Center, S-701 85 Örebro, Sweden

The distribution of health-care consumption is graphically depicted in Figure 2. This is a highly skewed distribution where a small number of people account for a large number of the total visits. In fact, 6% of the sufferers accounted for 50% of the health-care consumption.

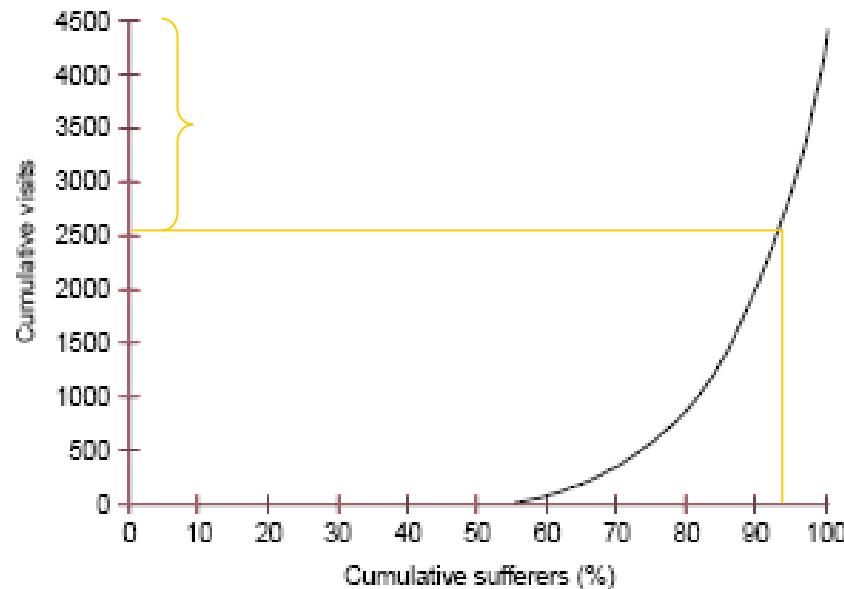


FIG. 2. The distribution of health-care consumption, shown as the cumulative number of visits, by the cumulative percent of spinal pain sufferers. Note the skewness of the curve as over 50% have no reported visits while a few percent consume the majority of visits.

Estimated to be the same as those in pain in Sweden.

and getting some sort of relief.

Spinal pain in Sweden is estimated to be 1.5 million Euros (year 2003)

Spinal pain is estimated to be 1.5 million Euros, are

losses, as a

loss from work

Healthcare (SBU-report ) 2006, 177

Prevalence of neck and back pain in Sweden is about 10% according to reports.

Many of these are chronic and cause a lot of health-economic consequences.

The total cost of spinal pain in Sweden is estimated to be 1.5 million Euros (year 2003)

Of these, 1.1 million Euros are direct costs and 0.4 million Euros are indirect costs.

Spinal pain is estimated to be 1.5 million Euros, are losses, as a loss from work

# What is "Fact Book on Pain"?

- Primary Objective  
to estimate societal costs related to chronic pain
- Secondary Objectives  
to describe cost drivers and cost components and  
to describe treatment patterns
- Results will be used to develop hypothesis for  
potential improvements in the treatment and  
management of chronic pain

# Rationale for "Fact Book on Pain"

- Chronic pain is the third most common healthcare problem after heart disease and cancer with large impact on quality of life and societal costs worldwide
- The Swedish Council on Technology Assessment in Health Care (SBU) estimated 2006 the yearly total costs of chronic pain to 87,5 billion SEK, where of 80 billion are indirect costs. In a follow-up report May 2010 SBU is using the same estimated costs for chronic pain
- Costs estimates are estimated based on patient surveys
- Previous retrospective research have focused on restricted patient segments, e.g. Low-Back Pain

# Rationale for "Fact Book on Pain"

There is a need for a deeper understanding of the cost drivers and structures for pain treatment based on reliable data to better understand the current situation and to be able to develop approaches to better deal with pain from a societal perspective



# Method

- Retrospective Database Analysis
- Databases (data from 2004/2005 - 2009):
  - Regional primary care and inpatient registries
  - National prescription registry
  - National sick-leave and early retirement database
- Primary care and inpatient data from *Västra Götalands* Region (VGR)

# Method

- Patient selection based on a method used to identify diagnosis with increased probability of Pain prescriptions. The diagnoses were organized into nine different groups, adapted to Swedish diagnosis-related practices
- Patients with diagnosis defined as “pain related diagnoses” were selected from the regional primary care and hospital databases
- Data from the other databases were selected based on the “personal identification number”
- All data related to the patients with pain related diagnoses were merged into on single database

# Limitations to the study (examples)

- Casual relationships between e.g. specific treatments and cost-differences can not be established
- Sick-leave less than 2 weeks is not included
- Costs in the study are not restricted to chronic pain costs, but all costs of patients with chronic pain
- Non-prescribed medicines are not included
- Community Care Services are not included

# Project Organization

- Analysis Agency: i3 Innovus Stockholm
- Expert Advisory Board:
  - Clas Mannheimer, Göteborg
  - Karl-Fredrik Sjölund, Stockholm
  - Marcelo Rivano Fischer, Lund
  - Narinder Raval, Örebro
- Funding: Grunenthal

# Project Timeline

- Q2 2009: Start Development of Study Protocol
- 26th of Nov 2009: Final Study Protocol
- 30th of April 2010: Draft Study Report
- Q3 2010: Submission of Main Manuscript

# Study Population VGR

837 896 unique patients out of approx 1 556 000 inhabitants

56% women

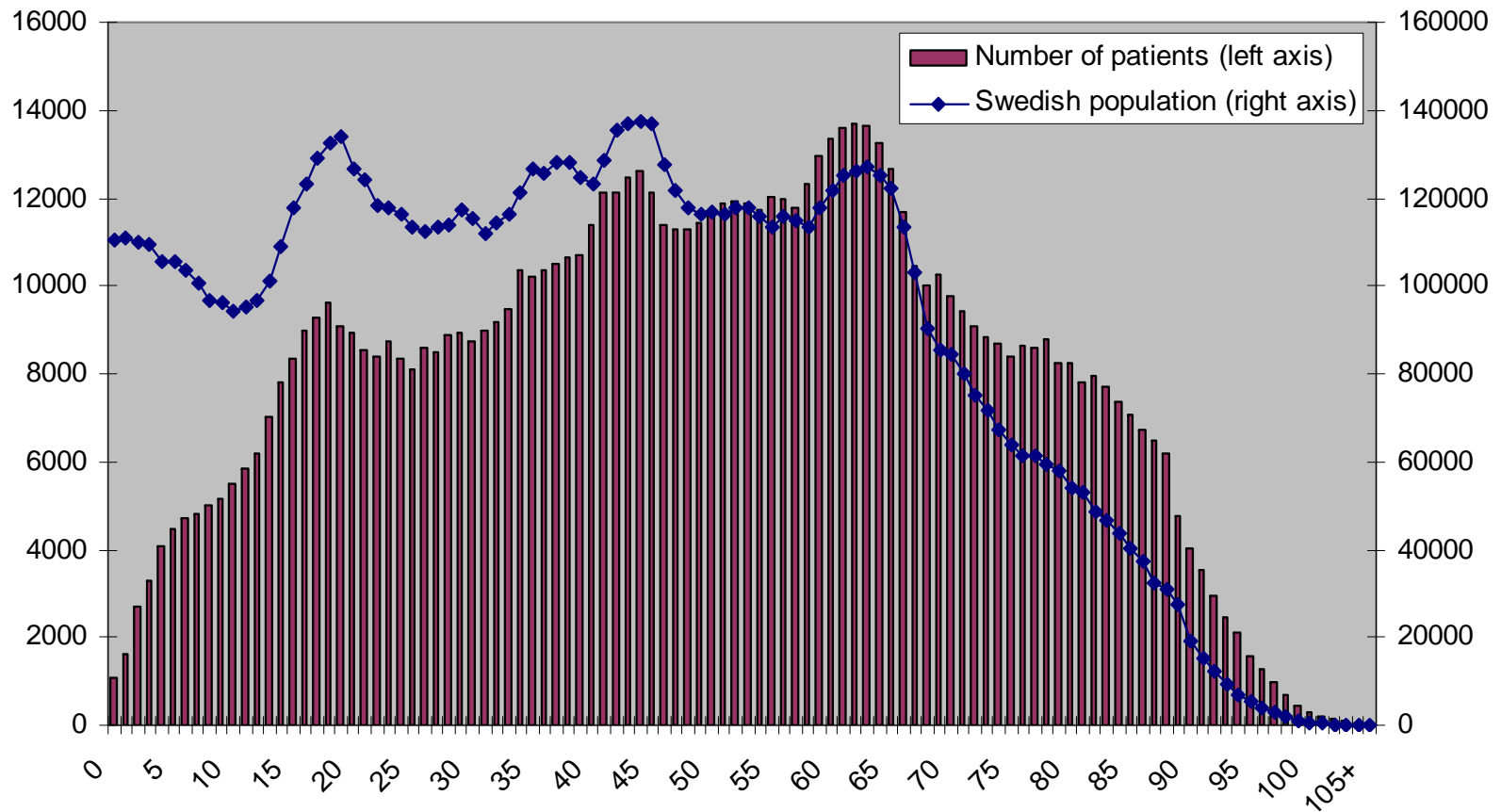
Average age 48 years

35 million outpatient visits (2004-2009)

One million inpatient stays (2004-2009)

60 million prescriptions of which 8 million were pain prescriptions (including opioids 2 million) (July 2005-2009)

# Study Population VGR, age



Thank you for your  
attention