

# Reflection process on chronic diseases in the EU – the role of chronic pain

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## Table of Contents

<b>List of abbreviations/glossary</b>	8
<b>Forewords Professor Hans G. Kress, MD PhD</b>	10
<b>Executive summary</b>	14
Reflection process on chronic diseases: the role of chronic pain	15
Key Findings	15
Conclusions	17
Relevance for policy makers	17
<b>1. Impact of chronic pain</b>	18
1.1 Prevalence of chronic pain	19
1.2 Cost of chronic pain	22
1.3 Chronic pain in Europe – policies and policy response	25
<b>2. Discussion</b>	28
<b>3. Conclusions</b>	30
3.1 Key Findings	31
3.2 Relevance for policy makers	31
<b>Appendix 1: List of references</b>	32
<b>Appendix 2: Detailed methods and results</b>	38
Background	39
Objective of project	39
Questions addressed	39
Population	40
Intervention/comparator	40
Outcomes	40
Study type	40
Inclusion criteria	41
Literature searches	41
Methods of study selection, quality assessment and data extraction	43
Prevalence Study Results	45
Summary of prevalence study results	48
Cost study results	49
Study quality	52
<b>Appendix 3: Search strategy</b>	58

## List of abbreviations / glossary

<b>AHA</b>	Active and Healthy Ageing
<b>EC</b>	European Commission
<b>DG</b>	Directorate General
<b>EIP</b>	European Innovation Partnership
<b>EFIC</b>	European Federation of International Association for the Study of Pain Chapters
<b>NCD</b>	Non-communicable disease
<b>SIP</b>	Strategic Implementation Plan
<b>UK</b>	United Kingdom
<b>ECHI</b>	European Community Health Indicators
<b>CVD</b>	Cardiovascular disease
<b>WHO</b>	World Health Organisation
<b>UN</b>	United Nations

**Introduction by  
Professor Hans G. Kress, MD PhD**

**Dear Reader,**

On 7<sup>th</sup> December 2010 the European Council adopted conclusions on “Innovative approaches for chronic diseases in public health and healthcare systems”<sup>1</sup>, in which the Council invited EU Member States and the Commission to initiate a reflection process on chronic diseases. Aim of this reflection process is to evaluate potential solutions to meet the challenges induced by chronic diseases in society, to improve collaboration between Member States and eventually summarise the findings in a reflection paper to be finalised in 2012.

According to John Dalli, Commissioner for Health and Consumer Policy, the reflection process “provides an excellent opportunity to shape together innovative ideas to effectively respond to this challenge”<sup>2</sup>. On 11<sup>th</sup> August 2011, in his answer on the written question tabled by Member of EU Parliament Jim Higgins (Ireland), Dalli strengthened the Commission’s intention to support Member States in this process and to “invite a wide range of organisations and stakeholders with an interest in chronic diseases including in relation to pain.”<sup>3</sup>

The question as to whether pain - and in particular chronic pain - will be continued to generally be understood as a mere symptom of an underlying disease or eventually be acknowledged as a disease in its own right and thus be fully considered within the Commission’s reflection process, is one central mission of EFIC® with regard to policy-makers on EU and Member State levels.



<sup>1</sup> [http://www.consilium.europa.eu/uedocs/cms\\_Data/docs/pressdata/en/lsa/118282.pdf](http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/lsa/118282.pdf)

<sup>2</sup> [http://ec.europa.eu/commission\\_2010-2014/dalli/docs/statement\\_wordl\\_heart\\_day\\_29092011\\_en.pdf](http://ec.europa.eu/commission_2010-2014/dalli/docs/statement_wordl_heart_day_29092011_en.pdf)

<sup>3</sup> <http://www.europarl.europa.eu/sides/getAllAnswers.do?reference=E-2011-006569&language=EN>

<sup>4</sup> EU Commission: EU Special Eurobarometer 272e / Wave 66.2 – TNS Opinion & Social\_Health in the European Union\_2006-2007

<sup>5</sup> <http://informahealthcare.com/doi/pdfplus/10.1185/03007995.2010.545813>

<sup>6</sup> [www.fitforworkeurope.eu](http://www.fitforworkeurope.eu)

According to EU Special Eurobarometer <sup>4</sup>, 44% of the EU population of + 55 years were affected by pain involving muscles, joints, neck or back influencing their ability to carry out daily activities. Exactly one quarter of all EU respondents stated that they had experienced chronic restrictive pain at some point in their life.

A systematic literature review on the “Epidemiology of chronic non-cancer pain in Europe”<sup>5</sup> from February 2011 reported that the average number of working days lost due to moderate or severe chronic non-cancer pain within the past six months was 7.8 days and 22% of respondents were reported to be absent from work for at least 10 working days.

Moreover, according to the study “Fit for WorkEurope”<sup>6</sup> conducted by the Work Foundations across 23 European countries, it is to be expected that around half of all EU citizens will suffer from back pain at some stage during their lives, with costs estimated to exceed €12 billion. Approximately 15% of these people with back pain have to stay off work for over one month.

Taking into account these data, it becomes obvious that chronic pain poses a substantial burden both on the individual but also on society at large, including enormous economic costs for healthcare systems in the European Union.

This systematic review will look at existing literature to facilitate the discussion of chronic pain as a separate entity or disease. It will give insights into the interrelation of chronic pain and chronic diseases, and the obvious effect of chronic pain on healthcare and economic systems. Analysing the existing literature on chronic pain as a disease, this review will finally justify chronic pain to be considered and integrated within the Commission’s reflection process.

On behalf of EFIC®, I would like to wish you inspired reading,

**Professor Hans G. Kress, M.D., PhD**  
**President of EFIC®**



## Executive summary

### Reflection process on chronic diseases: the role of chronic pain

In December 2010, the Council of the European Union adopted “Innovative approaches for chronic diseases in public health and healthcare systems”<sup>1</sup>, which invited the European Commission and member states to initiate a reflection process on chronic diseases/non-communicable diseases (NCDs). NCDs are non-infectious medical diseases or conditions which are of long duration and generally slow progression. Examples include: Cancer, cardiovascular disease, diabetes, chronic kidney disease and arthritis. Chronic pain, which is typically defined as pain which lasts longer than three months, is often associated with chronic conditions. The European Commissioner for Health and Consumer Policy, John Dalli, stated on 5 May 2011: “The Commission is well aware of the societal impact of chronic pain, which is often associated with underlying, chronic, diseases. This puts a burden on healthcare systems and on the economy<sup>2</sup>.”

In addition, as well as being part of many other chronic diseases, pain specialists argue that it can be useful to consider chronic pain as a chronic disease in its own right<sup>3,4</sup>. Indeed, the European Federation of IASP Chapters (EFIC) has highlighted that “although acute pain may reasonably be considered a symptom of disease or injury, chronic and recurrent pain is a specific healthcare problem<sup>5</sup>”, with clear characteristics of symptoms, disability, and mental health aspects which are largely independent of the precipitating disease or trauma. We also know that chronic pain is very common but good data about prevalence and utilisation of healthcare are scarce, perhaps partly because chronic pain has been seen not as a separate entity, but as merely a symptom.

In order to establish the contribution of chronic pain to the burden of chronic diseases and to evaluate the available evidence of the impact of chronic pain as a chronic disease by itself, this report reviews the most recent epidemiological and cost data on chronic pain. Furthermore, the report gives an insight on which policies and budgets in the EU, as a whole and in member states, currently include reference to chronic pain.

### Key Findings

1. The overall impact of pain measured in terms of prevalence and cost is high.
2. Chronic pain is most prevalent in those patients with other chronic diseases.
3. Chronic pain can be considered as a very common and costly chronic disease in its own right.
4. There is a strong link between increasing age and prevalence of chronic pain.
5. Chronic pain deserves higher prioritisation within the health care policies and budgets of EU member states as well as at the level of the EU itself.



## **Conclusions**

The study highlights the impact of chronic pain. It reflects that chronic pain, as a chronic disease or NCD, is common. It also shows that the cost of chronic pain is high, perhaps per individual not as high as some other NCDs such as stroke. However, total population cost is perhaps at least as high if not higher when accounting for the high prevalence. Furthermore, despite its high impact, chronic pain as a condition seems to have had little specific policy response. However, there does appear to be sufficient evidence to at least make addressing chronic pain a high priority alongside other chronic diseases as well as to conduct more research, particularly regarding cost.

## **Relevance for policy makers**

This report will show that there is rich evidence for future policy making on chronic diseases to include pain as an essential part of the policy making on chronic diseases and to consider pain as a health state to be treated as a chronic disease in its own right. Policy makers will be advised to include chronic pain and the role of chronic pain within the current and future reflection processes on chronic diseases.

Moreover, the following examination of EU policy documents will show that, whilst there is a move led by EFIC® to prioritise and better fund interventions to deal with chronic pain, chronic pain is not necessarily prioritised adequately by European institutions and the majority of EU member states.

## 1. Impact of chronic pain

This report will deal with the questions of the impact of chronic pain as part of various other chronic diseases; as a chronic disease by itself, relative to other chronic diseases and whether current policies and budgets in the EU, as a whole and in member states, currently reflect this impact adequately.

The impact of chronic pain within this analysis was addressed in terms of prevalence (1.1) and in terms of cost (1.2). Furthermore, the correlation between pain and age was examined (1.2.2).

The following results are based on 10 cost and 28 prevalence studies in the European Union on chronic pain over the last two years.

### 1.1 Prevalence of chronic pain

#### 1.1.1 Prevalence of chronic pain as part of other chronic diseases

Figure 1 shows that chronic pain is more prevalent in those with co-morbidities such as Ehlers Danlos Syndrome<sup>6,7</sup> and cancer<sup>8-10</sup>, but it also appears to be more prevalent in those in elderly care homes<sup>11</sup>. The figure for outpatients came from a study intended to show resource use<sup>12</sup>.

Neuropathic pain was highly prevalent, being reported in up to 31.1% in cancer patients receiving radiotherapy<sup>9</sup>, 50% of individuals with traumatic peripheral injuries<sup>13</sup>, and 35% of type 2 diabetes sufferers<sup>14</sup>. Post-stroke pain was reported in 39% of stroke patients<sup>15</sup>.

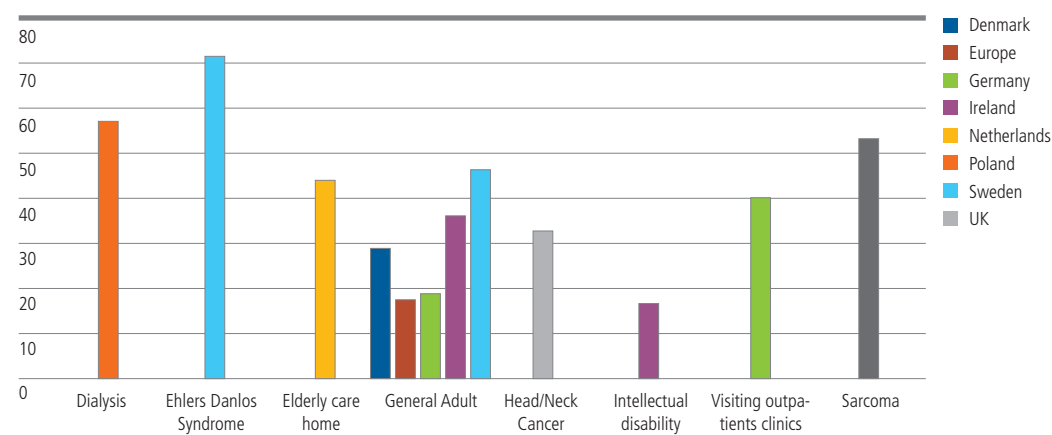


Figure 1

Percentage of chronic pain within some other chronic diseases and certain settings

### 1.1.2 Prevalence of chronic pain as a chronic disease

Prevalence studies of the general adult population included lower-back pain, arm, shoulder, neck, musculoskeletal and 'any' (unspecified) type of pain. The prevalence of 'any' type of chronic pain ranged from 16.61-46%<sup>16, 17</sup>. This is high in comparison to other chronic diseases, as shown in the latest EU Major Chronic Diseases Report<sup>18</sup>. For example, the prevalence of dementia is no more than about 1.25% and, for depression and diabetes, these figures were estimated to be about 4.5% and 7.8% respectively.

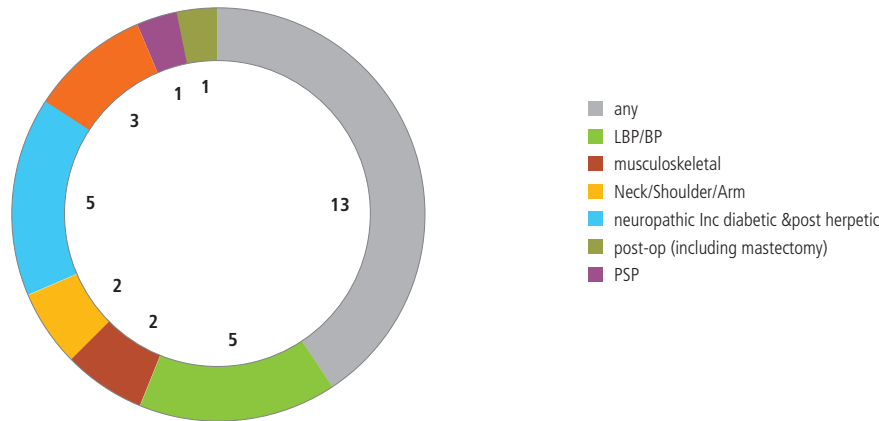


Figure 2 Type of pain in prevalence studies

Eight out of 28 studies showed a strong link between increasing age and the prevalence of pain<sup>16, 17, 19-24</sup>. All of these showed a general increase in the prevalence of chronic pain in the general adult population with increasing age.

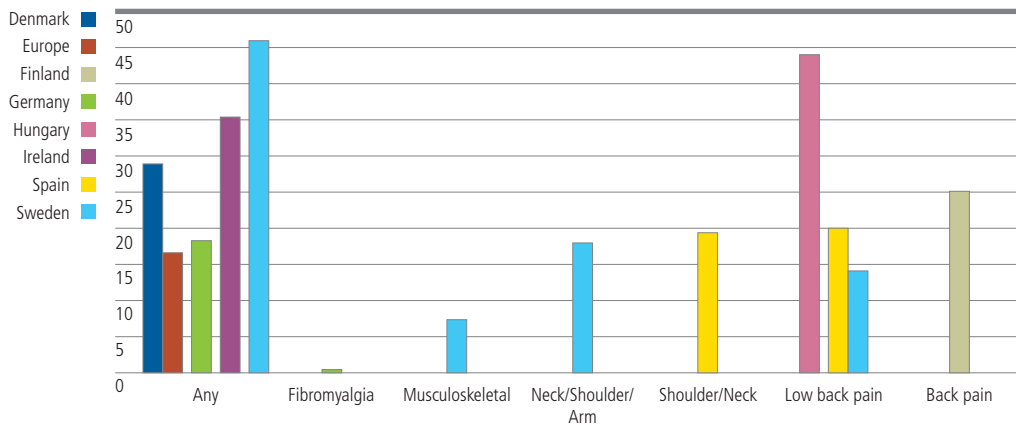


Figure 3 % prevalence of chronic pain in general adult population by type of pain

Neuropathic pain was highly prevalent, being reported in up to 31.1% in cancer patients receiving radiotherapy<sup>9</sup>, 50% of individuals with traumatic peripheral injuries<sup>13</sup> and 35% of type 2 diabetes sufferers<sup>14</sup>.

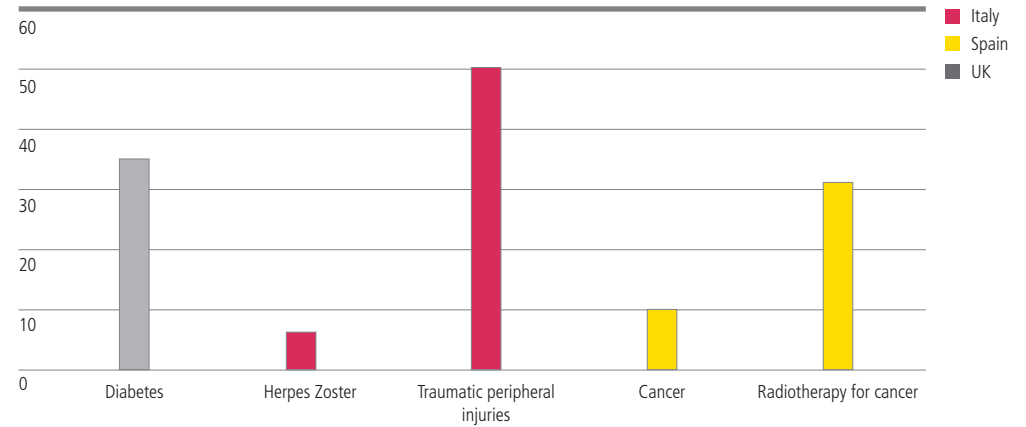


Figure 4 % prevalence of neuropathic type pain in various populations

In subgroups of the general population, such as individuals who have had breast cancer surgery or nephrectomy, post-operative chronic pain was highly prevalent ranging from 24.5-51.1%<sup>25, 26</sup>.

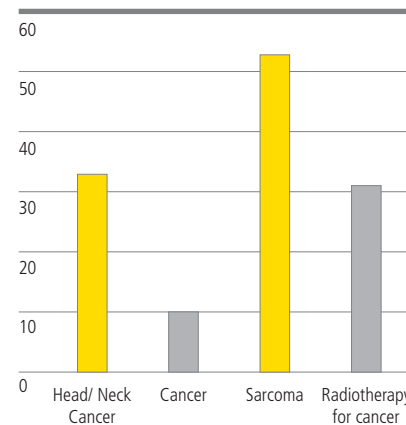


Figure 5 % prevalence of chronic pain in cancer

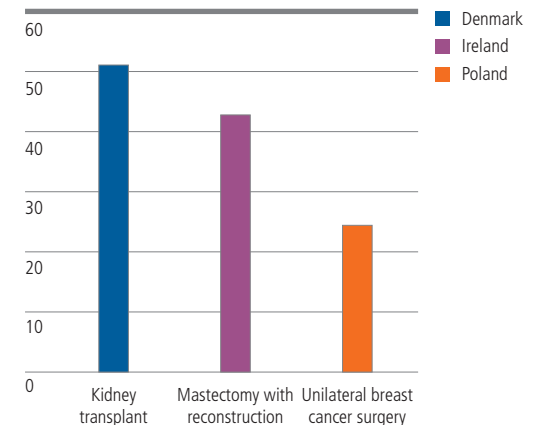


Figure 6 % prevalence of post-operative pain in various populations

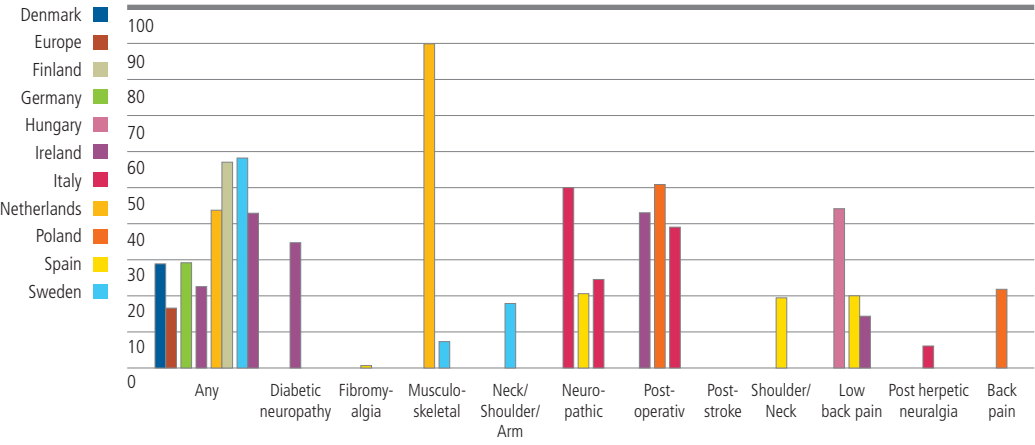


Figure 7 % prevalence of chronic pain (any severity)

**1.1.3 Impact increases with age**

There is a strong link between increasing age and prevalence of chronic pain. This is clearly shown in the general population and more specifically with regard to neck pain<sup>19</sup>, lower-back pain<sup>23</sup> and musculoskeletal pain<sup>20</sup>. In the population with herpes zoster, post herpetic neuralgia has the highest prevalence in the older generation<sup>21</sup>. As already mentioned, common conditions associated with chronic pain are cancer and stroke, and their prevalence increases with age.

**1.2 Cost of chronic pain**

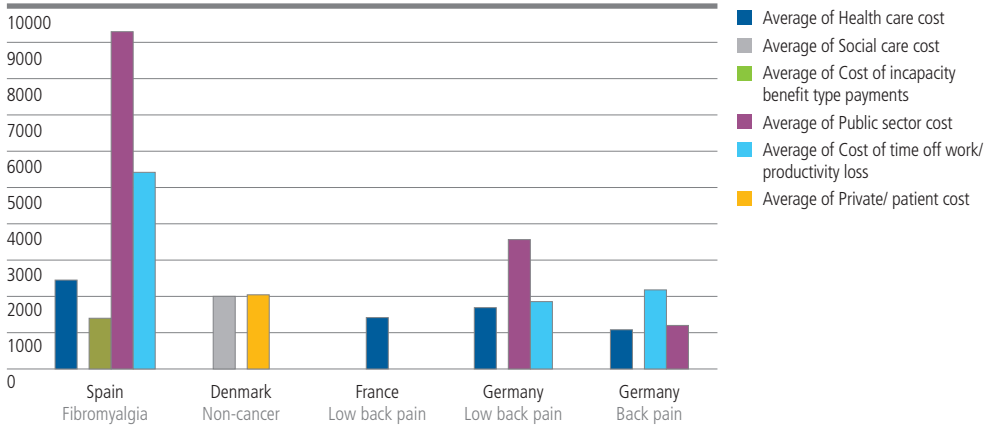
Cost of healthcare per patient per year ranged from €1,095 in Germany<sup>27</sup> for back pain to €3246 for fibromyalgia in Spain<sup>28</sup>. Social care generally cost a little less and incapacity benefit payments were as high as €2267 for fibromyalgia in Spain<sup>28</sup>. Altogether, public sector costs per patient per year ranged from €2089 for low back pain in Germany<sup>29</sup> to €9,982 for fibromyalgia in Spain<sup>28</sup>. These costs are comparable to other chronic diseases such as cardiovascular disease<sup>18</sup>.

Figures 8 to 11 show that fibromyalgia had the highest unemployment rate of 6%<sup>28</sup>, claim rate for incapacity benefit (11.9% in one study<sup>28</sup> and 29.9% in another<sup>30</sup>) and greatest number of days absence from work (73<sup>28</sup> from one study and 20.9 from another<sup>30</sup>). It also incurred the greatest costs, for example Public sector cost of €9982 from one study<sup>28</sup> and €8654 from another<sup>30</sup>.

Given that most data were available for ‘back type’ pain (low back pain or back pain), a comparison between countries (Germany and France) was possible, which showed that health care costs varied little, between €1096 in Germany<sup>27</sup> and €1431 in France<sup>31</sup> per person per year. Cost of time off work in back pain was only available in Germany, at €1219 in one study<sup>27</sup> and €1872 in another study<sup>32</sup>. Note that figure 8 shows an average for each country and type of pain so that the value for public sector cost for back pain in Germany is the average of two different, although similar estimates, €2088 from one study<sup>29</sup> and €2314 from another<sup>27</sup>.

Unemployment attributed to pain ranged from 4% in back pain in Germany<sup>32</sup> to 6% in Fibromyalgia in Spain. From the same studies, this coincided with days off work of 13.6 and 73. Percentage receiving incapacity type benefit was very similar in most countries for back type pain at about 4%<sup>33, 34</sup>.

These results can be compared to those for other chronic diseases. For example, in a 2009 the annual total population societal cost (health care, social care and productivity) of stroke was estimated at just under €9 billion per year in the UK<sup>35</sup>. This calculation was based on a prevalence estimate of 1.95% or 1,173,176 cases, which equates to a per individual amount of about £7,653 or €8929 at the 2009 exchange rate<sup>36</sup>. This does seem much higher than most estimates for chronic pain. However, even if we take a conservative estimate for low back pain of about €1400 per year for total public sector cost only (i.e. excluding productivity) then, applying a conservative estimate for prevalence of 15%, this implies a total annual population cost of about €10 billion (based on a UK population of 62,000,000, 80% of which are over 18). Clearly, this is a similar order of magnitude as stroke and possibly much higher.



note Public sector cost of back pain in Germany and all Spain costs are mean of two studies (see Table 3)

Figure 8 cost (Euros) by country, type of pain and type of cost per patient

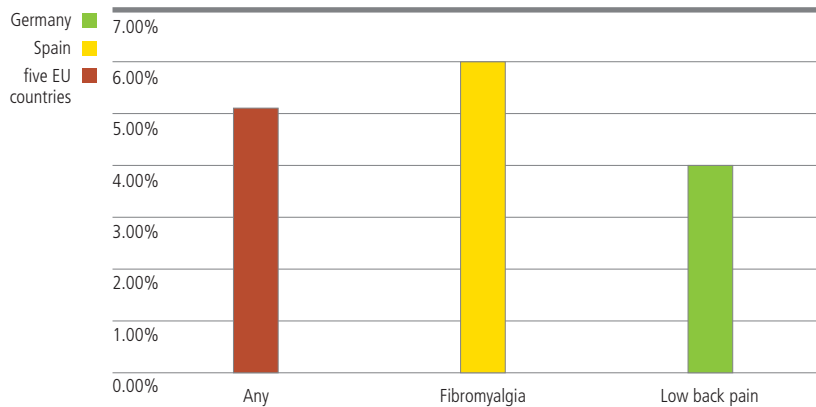


Figure 9 percentage unemployment by type of pain and country

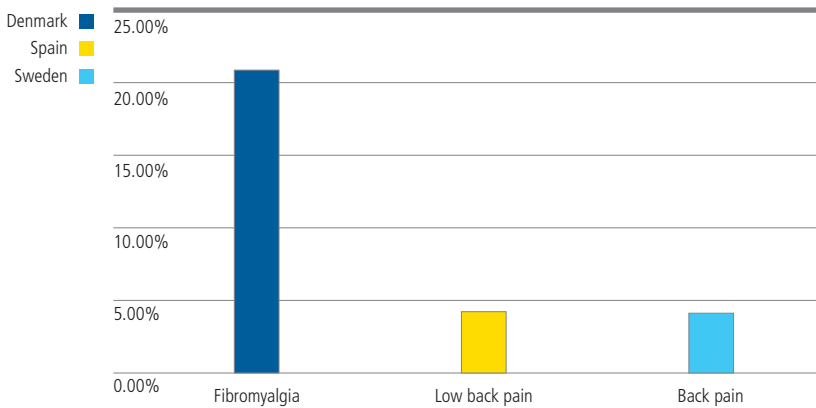


Figure 10 percentage receiving incapacity type benefit by type of pain and country

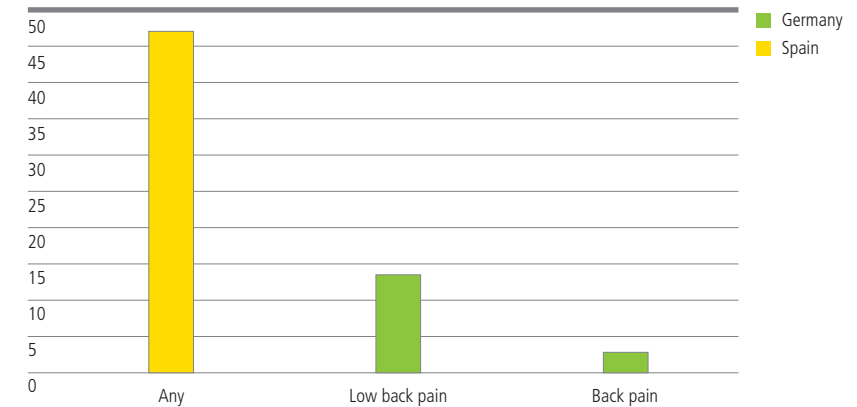


Figure 11 average number of days off work due to back pain by type of pain and country

### 1.3 Chronic pain in Europe – policies and policy response

#### 1.3.1 EU policies on Chronic pain in Europe

The government websites of all 27 European member states, any international and European pain organisations, and the European Commission were searched for documents that mentioned budget allocation for or the priority of chronic pain. Both governments and pain organisations were contacted to ask for possible relevant policy documents. Little information that even mentioned chronic pain could be found on websites and email requests (see Appendix 3) did not yield additional information either. For example, in the Major and Chronic Diseases report<sup>18</sup> by the European Commission’s Directorate-General for Health and Consumers (DG Sanco), cardiovascular disease, diabetes, and mental illness are perceived to be ‘...dominant in mortality and morbidity...’.

We also searched the WHO (World Health Organization) website and found a recent report on chronic diseases, “Tackling chronic disease in Europe: Strategies, interventions and challenges”<sup>37</sup>, which states in the introduction: ‘This book aims to complement the two above-mentioned volumes [also on chronic diseases] by focusing more explicitly on the strategies and interventions that policy-makers have at their disposal to tackle chronic diseases.’ (p.2) However, there is no mention of pain at all and one single mention of musculo-skeletal disease; most of the report focuses on CVD (Cardiovascular disease).

Within the ECHI (European Community Health Indicators) list of indicators<sup>38</sup> published by the European commission towards a sustainable health monitoring system in Europe “General musculoskeletal pain” is mentioned as indicator 37. Unfortunately this indicator has not been specified. Furthermore, chronic pain is not listed on the Public Health web-site<sup>39</sup> under either ‘diseases’ or ‘conditions’ and we could find no routinely collected EC or WHO statistics on the prevalence or cost of chronic pain.

However, there are some promising examples: On 15 September 2011 the European Parliament adopted a Resolution on the European Union’s position and commitment in advance to the UN high-level meeting on the prevention and control of non-communicable diseases. In this Resolution, it states: “whereas the majority of NCDs have common symptoms, such as chronic pain and mental health problems, which directly affect sufferers and their quality of life and should be addressed by means of a common, horizontal approach, so that healthcare systems can tackle these diseases more cost-effectively<sup>40</sup>.”

In the operational plan for the “Strategic Implementation Plan of the Pilot European Innovation Partnership on Active and Healthy Ageing”<sup>41</sup> issued by European Commission, pain is referred to several times. On page 26 of this document, it states: “Chronic conditions, such as heart failure, respiratory and sleep disorders, diabetes, obesity, depression, pain, dementia, and hypertension affect 80% of people over 65, and often occur simultaneously (multimorbidity).”

In some member states, chronic pain has been raised as a priority on the agenda treating it as a disease. Examples are the Netherlands (see report “Chronische pijn” published by the “Regieraad Kwaliteit van Zorg”) and Italy (see legge 038/2010)<sup>42, 43</sup>. The Italian Law 038/2010 is the first law in Europe that officially recognizes the citizens’ right to have access to pain therapy, in case of either cancer or non-cancer pain.

### 1.3.2 Stakeholder responses

EFIC® (European Federation of the International Society of Pain Chapters) has been attempting to raise awareness of the impact of chronic pain in order to encourage policy that raises its priority in order to better tackle chronic pain. This is exemplified by the Societal Impact of Pain (SIP), described as:

“an international platform created in 2010 and aims for

- raising awareness of the relevance of the impact that pain has on our societies, health and economic systems
- exchanging information and sharing best-practices across all member states of the European Union
- developing and fostering European-wide policy strategies & activities for an improved pain care in Europe.” (<http://www.sip-platform.eu>)

While the scientific framework of SIP is under the responsibility of the European Federation of IASP® Chapters (EFIC®), the pharmaceutical company Grünenthal GmbH is responsible for funding and non-financial support (e.g. logistical support).

The most recent activity of SIP was to produce a ‘Road map for action’<sup>44</sup>.

It acknowledges the lack of priority in the last ten years since EFIC® issued its ‘Declaration on Chronic Pain as a Disease in its Own Right’<sup>45</sup> and, amongst other things, calls upon European governments and EU organisations to: ‘...Acknowledge that pain is an important factor limiting the quality of life and should be a top priority of the national health care system...Strengthen pain research (basic science, clinical, epidemiological) as a priority in EU framework programme and in equivalent research road maps at national and EU level, addressing the societal impact of pain and the burden of chronic pain on the health, social, and employment sectors.’ (p.1)

The position that pain requires a higher priority is also acknowledged in last year’s OPENminds report<sup>45</sup> where it recommends strategies that include:

‘Make prevention and management of chronic severe pain and its consequences a healthcare policy priority; allocate adequate resources for organisation, education and training of qualified personnel to ensure optimal and adequate level of service to the large part of the population who suffer from chronic pain conditions’ (p.21).

## 2. Discussion

This project has provided recent estimates of the impact of chronic pain in terms of prevalence and cost both within other chronic diseases of NCD's and as a chronic disease or NCD in its own right. What is generally apparent is the high prevalence and cost of chronic pain. In particular the prevalence of 'any' chronic pain was at least 16.61%<sup>16</sup> and as high as 46%<sup>17</sup>, at least as high as other chronic diseases. Cost per individual is high and sometimes higher than that of other chronic diseases such as cardiovascular disease. It also appears, at least at the level of the European Commission, that chronic pain yet does not have the adequate priority as evidence by lack of mention in policy documents.

Our search strategy was rather pragmatic; nevertheless, it has been fully reported and should be reproducible. Also, the search only focussed on recent studies. However, the validity of both cost and prevalence estimates as an aid to present day decision-making reduces with the passing of time. Another limitation was in terms of government policy. Little data could be obtained from the web and there were few agency responses. It could be argued though that increasing chronic pain as a priority such data would be easier to find.

Caution must be exercised in comparisons between pain categories and countries given variation in reporting and definitions, particularly of incapacity benefit. Indeed it is a strength to have converted all monetary costs into Euros, but the actual cost estimated in one country is unlikely to be entirely transferable due to variations in efficiency of provision of services e.g. the estimated cost might imply a particular length of hospital stay, which might not be the same in another jurisdiction.

## 3. Conclusions

It is the EU Commission's intention to start a reflection process on chronic diseases / non-communicable diseases regarding policy making and budget reallocation. Chronic pain is an essential part of many chronic diseases and it can also be considered as a chronic disease in its own right. For this purpose it is desirable to have a fact base for the upcoming process.

The aim of this project was to review the most recent epidemiological data about the contribution of chronic pain to the burden of chronic diseases, and to establish the impact of chronic pain as a chronic disease by itself. Furthermore, we aimed to assess which policies and budgets in the EU as a whole and in member states currently include reference to chronic pain. Finally, the report is intended to form a basis for discussions about chronic pain as an issue in the EU reflection process on chronic diseases / non-communicable diseases.

The report highlights the impact of chronic pain. It reflects that chronic pain, as a chronic disease or NCD, is common. It becomes even more common as part of NCDs such as stroke. It also shows that the cost of chronic pain is high, perhaps per individual not as high as some other NCDs such as stroke. However, total population cost is perhaps at least as high if not higher when accounting for the high prevalence. Furthermore, despite its high impact, chronic pain as a condition seems to have had little specific policy response. Of course, this review has been based on a limited number of studies, particularly in terms of cost and incomplete access to policy documents. There does, however, appear to be sufficient evidence to at least make addressing chronic pain a high priority alongside other chronic diseases as well as to conduct more research, particularly regarding cost.

### 3.1 Key Findings

1. The overall impact of pain measured in terms of prevalence and cost is high.
2. Chronic pain is most prevalent in those patients with other chronic diseases.
3. Chronic pain can be considered as a very common and costly chronic disease in its own right.
4. There is a strong link between increasing age and prevalence of chronic pain.
5. Chronic pain is not adequately prioritised within policies and budgets.

### 3.2 Relevance for policy makers

An examination of EU policy documents shows that, whilst there is a move led by EFIC<sup>®</sup> to prioritise and better fund interventions to deal with chronic pain, chronic pain is not necessarily prioritised adequately by the EC or some of its member states.

There is rich evidence for future policy making on chronic diseases to include pain as an essential health state in policy making on chronic diseases and to consider pain as a health state to be treated as a chronic disease in its own right. Policy makers are advised to include chronic pain and the role of chronic pain within current and future reflection processes on chronic diseases.



## Appendix 1: List of references

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## Appendix 2: Detailed methods and results

### Background

It is the EU Commission's intention to start a reflection process on chronic diseases / non-communicable diseases regarding policy making and budget reallocation. Chronic pain is an essential part of many chronic diseases and it is also a chronic disease in its own right. For this purpose it is desirable to have a fact base for the upcoming process.

Kleijnen Systematic Reviews Ltd previously produced a number of reports about the epidemiology of chronic pain in Europe; these were commissioned by Grünenthal<sup>46</sup>. Co-morbidities of chronic pain were part of that work. In order to establish the contribution of chronic pain to the burden of chronic diseases, and to establish the impact of chronic pain as a chronic disease by itself, this new project used the data from these previous reports but also provided an update of new findings published in the last two and a half years. Furthermore, the project assessed which policies and budgets in the EU as a whole and in member states currently include reference to chronic pain.

### Objective of project

To undertake a literature review on the most recent epidemiological data about the contribution of chronic pain to the burden of chronic diseases, and to establish the impact of chronic pain as a chronic disease by itself. Furthermore, the project assessed which policies and budgets in the EU as a whole and in member states currently include reference to chronic pain.

Countries included: any EU country and EU overall. The resulting report is intended to form a basis for discussions about chronic pain as an issue in the EU reflection process on chronic diseases / non-communicable diseases.

### Questions addressed

- 1) What is the impact (epidemiology, burden, costs) of chronic pain as part of various chronic diseases?
- 2) What is the impact (epidemiology, burden, costs) of chronic pain as a chronic disease by itself relative to other chronic diseases?
- 3) Which policies and budgets in the EU as a whole and in member states currently include reference to chronic pain?

## Population

For question (1) this was patients with diagnoses of the most common chronic diseases. The previous review showed that the most common co-morbidities are: arthritis, other arthropathy, low back pain and other spinal pain. However, this list was modified according to evidence as to the prevalence of these and other diseases.

For question (2) this was the general population and informed the list of chronic conditions for question (1).

For question (3) this was the set of policies and budgets of the EU.

## Intervention/comparator

There was no limit by intervention or comparator.

## Outcomes

For questions (1) and (2) we extracted and summarised data on:

- 1) incidence and prevalence
- 2) resource use such as number of physician visits
- 3) cost in each country's currency as well as in Euros.

Resource use and cost data was from the perspective of:

- a. health care provider
- b. other public sector e.g. social care
- c. patient (lost work, travel expense)
- d. society (lost productivity)

For question (3) we extracted a list of statements regarding chronic pain, including in particular any reference to expenditure and priority.

## Study type

For questions (1) and (2), included study types were any report of primary research findings, including reports of both single studies and reviews.

For question (3), reports from government and specialist pain agencies were included. The cut-off for recent was the last 5 years in order to indicate current policy.

## Inclusion criteria

Any papers reporting data that fulfilled criteria according to the population, outcomes and study type.

## Literature searches

### Search strategy

Searches were undertaken in several stages to identify relevant information on incidence, prevalence, costs, burden of disease and policies or budgets concerning chronic pain in members states of the European Union (EU) and the EU as a whole. In addition to the large medical databases, searches were undertaken using smaller resources and EU or country specific sites to find grey literature and national and international guidelines and guidance. EU health ministries and pain associations were searched and contacted for relevant material.

These searches were a partial update of those undertaken in the broader Literature Review on the Epidemiology of Chronic Pain project previously undertaken for Grünenthal and date limits were employed accordingly. Searches looked to find both published and unpublished material.

Full search strategies for all databases are detailed in Appendix 3.

### Incidence/Prevalence

Focused searches were undertaken to identify literature on the incidence and prevalence of chronic pain. An EU countries filter was utilized where appropriate.

The following resources were searched from September 2009-2011:

- Medline (OvidSP): 2009/08–2011/11/wk3
- Medline In-Process Citations (OvidSP): 2009-2011/11/29
- Medline Daily Update (OvidSP): 2009-2011/11/16
- Embase (OvidSP): 2009/wk36–2011/wk47
- Cochrane Database of Systematic Reviews (CDSR) (Wiley): 2009-2011/Issue 11
- Database of Abstracts of Reviews of Effects (DARE) (Wiley): 2009-2011/Issue 4
- Health Technology Assessment Database (HTA) (Wiley): 2009-2011/Issue 4
- NHS Economic Evaluation Database (NHS EED) (Wiley): 2009-2011/Issue 4

### **Costs/Burden of disease**

Focused searches were undertaken to identify literature on costs and economic burden of chronic pain. An EU countries filter was utilized where appropriate.

The following resources were searched from September 2009-2011:

- Medline (OvidSP): 2009/08–2011/11/wk3
- Medline In-Process Citations (OvidSP): 2009-2011/11/29
- Medline Daily Update (OvidSP): 2009-2011/11/16
- Embase (OvidSP): 2009/wk36–2011/wk47
- Cochrane Database of Systematic Reviews (CDSR) (Wiley): 2009-2011/Issue 11
- Database of Abstracts of Reviews of Effects (DARE) (Wiley): 2009-2011/Issue 4
- Health Technology Assessment Database (HTA) (Wiley): 2009-2011/Issue 4
- NHS Economic Evaluation Database (NHS EED) (Wiley): 2009-2011/Issue 4
- HEED: Health Economic Evaluations Database (Wiley): 2009-2011/11/28
- Cost-Effectiveness Analysis (CEA) Registry (Internet): 2009-2011/11/28

### **Guidelines and Guidance**

The following resources were searched from September 2009-2011:

- GIN International Guidelines Library (Internet) 2009-2011/11/28
- NICE Guidance (Internet) 2009-2011/11/28
- National Guidelines Clearinghouse (Internet) 2009-2011/11/28
- INAHTA (International Network of Agencies for Health Technology Assessment) (Internet) 2009-2011/11/28

### **Grey Literature**

The following resources will be searched from 2005-2011:

- OpenGrey (Internet)
- OAlster (WorldCat)
- King's Fund Library Database (Internet)

### **EU Ministries of Health websites**

Ministries of Health websites for each EU country were identified and searched for relevant chronic pain policy and budget documents. The websites were browsed or searched using a range of chronic pain terms. Searches were limited to English language resources and websites were translated using Google Translate where possible.

A full list of resources can be found in Appendix 3.

### **Professional bodies, associations and societies**

Pain association websites were identified where possible for each EU country. These were searched for relevant chronic pain policy and budget documents using a range of chronic pain terms. Searches were limited to English language resources and websites were translated using Google Translate where possible.

A full list of resources can be found in Appendix 3.

### **Contacting relevant organisations**

The health ministries and pain associations detailed in appendix 3 were contacted by e-mail or web-form. A request was made for statements or documents regarding priorities for or recommendations for spending/resource allocation in Chronic Pain within their country.

The e-mail template can be found in Appendix 3.

Identified references were downloaded in Endnote X4 software for further assessment and handling.

### **Methods of study selection, quality assessment and data extraction**

This literature review followed the methods and processes recommended in the Centre for Reviews and Dissemination (CRD) "Systematic Reviews: Guidance for undertaking systematic reviews in health care"<sup>47</sup>.

#### **Study selection**

Two reviewers independently inspected the abstract of each reference identified by the search and determine the potential relevance of each article. For potentially relevant articles, or in cases of disagreement, the full article was obtained, independently inspected, and inclusion criteria applied. Any disagreement was resolved through discussion and checked by a third reviewer. Justification for excluding studies from the review has been documented.

#### **Assessment of methodological quality**

Quality assessment was carried out independently by two reviewers using appropriate checklists from CRD's guidance document. Any disagreements were resolved by consensus. The results of the quality assessment have been used for descriptive purposes to provide an evaluation of the overall quality of the included studies and to provide a transparent method of recommendation for design of any future studies. Based on the findings of the quality assessment, recommendations have been made for the conduct of future studies.

### Data collection

For each study, data was extracted by one reviewer and checked by a second reviewer. Any disagreements were resolved by consensus. Data extraction was discussed and decisions documented. Studies can be identified by the name of the first author and year in which the study was first published.

### Data presentation

We employ a narrative method to present the data and for any synthesis. Typically, narrative synthesis involves the use of narrative text and tables to summarise data in order to allow the reader to consider outcomes in the light of differences in study designs and potential sources of bias for each of the studies being reviewed. This involves organizing the studies by (as appropriate) intervention, population, or outcomes assessed, summarizing the results of the studies, summarizing the range and size of the associations these studies report, and describing the most important characteristics of the included studies. A detailed commentary on the major methodological problems or biases that affected the studies is also included, together with a description of how this has affected the individual study results.

### Prevalence Study Results

Out of 141 full papers screened, 100 were excluded: This left 10 cost and 28 prevalence studies that were in the European Union, in English (three non-English full papers were not screened) and in chronic pain.

Reason for exclusion: in appropriate...	Count of Reason for exclusion
Country	7
Design	21
Outcomes	63
Population	11
<b>Grand Total</b>	<b>102</b>

Table 1

Reasons for exclusion

### Prevalence study characteristics

The majority of studies were face-to face prospective studies with some notable exceptions. For example, Langley's 2011<sup>16</sup> study was an internet based survey. Sauer (2011)<sup>48</sup> also carried out their research retrospectively by accessing the German GEK health insurance records for 2007.

Some single studies provided us with a number of results such as Fernandez-de-la-Penas (2011)<sup>19</sup>, which gave prevalence's for both shoulder/neck pain and for lower back pain in the general adult population. Masajtis-Zagajewska (2011)<sup>26</sup> provided figures for % prevalence in both the population receiving dialysis and the population having had a kidney transplant. While Klit (2011)<sup>15</sup> and Neva (2011)<sup>49</sup> both investigated pain in their chosen population and compared it with a reference group.

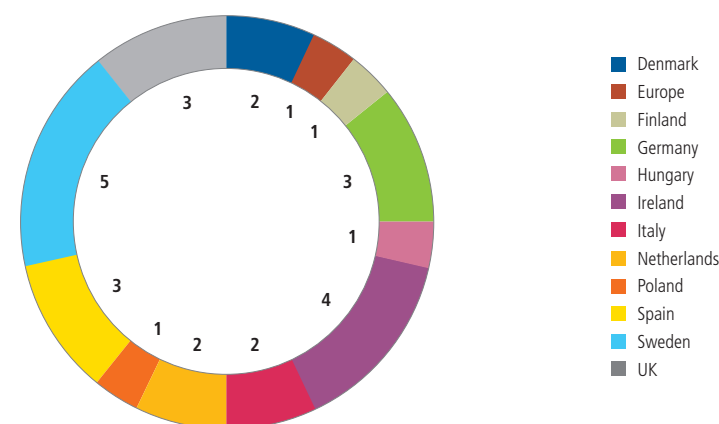


Figure 13

Number of prevalence studies per country

Study ID	Country	Definition of chronic pain	Population	Type of pain	Study design	Sample Size	Age	Prevalence %
Abbot 2011 <sup>14</sup>	UK	nr	Diabetes	diabetic neuropathy	Face to face	14166	Mean 63.6+/- 11.8	35.00
Baan 2011 <sup>11</sup>	Netherlands	3 months	Elderly care home	any	Face to face	957	Mean 77.5	44.00
Berglund 2001 <sup>6</sup>	Sweden	nr	Ehlers Danlos Syndrome	any	Postal	77	Mean 39	71.00
Ciaramitaro 2010 <sup>13</sup>	Italy	nr	Traumatic peripheral injuries	neuropathic	Face to face	158	Median 37	50.00
Fernandez-de-la-Penas 2011 (i) <sup>19</sup>	Spain	nr	General adult	shoulder/neck	Face-to-face	29478	Over 16	19.50
Fernandez-de-la-Penas 2011 (ii) <sup>19</sup>	Spain	nr	General adult	low back pain	Face-to-face	29478	Over 16	19.90
Frieem 2009 <sup>12</sup>	Germany	6 months	Visiting outpatient clinics	any	Face-to-face	1201	Mean 53.4	40.00
Garcia de Paredes 2011 <sup>8</sup>	Spain	nr	Cancer	neuropathic	Face-to-face	8615	nr	9.90
Gartner 2009 <sup>25</sup>	Denmark	nr	Unilateral breast cancer surgery	post-operative	Postal	3253	18-70	24.50
Gerdle 2008 <sup>20</sup>	Sweden	3 months	General adult	musculoskeletal	Postal	7637	Range 18-74	7.40
Gialloreti 2009 <sup>21</sup>	Italy	3 months	Herpes Zoster	post herpetic neuralgia	Retrospective	5675	Range 15-85+	6.20
Hensler 2009 <sup>22</sup>	Germany	3 months	General adult	any	Face to face	1834	3/4 CP over 50	18.4
Hickey 2011 <sup>50</sup>	Ireland	2 months	Mastectomy with reconstruction	post-operative	Face to face	42	PPSP 46.5 No PPSP 52.5*	42.90
Horvath 2010 <sup>23</sup>	Hungary	nr	General adult	low back pain	Face to face	9957	Average 42.1	44.10
Jakobsson 2010 <sup>17</sup>	Sweden	3 months	General adult	any	Postal	826	Average 58.9 Range 18-102)	46.00
Klit 2011 (i) <sup>15</sup>	Denmark	nr	Stroke	post-stroke	Postal	608	Median 72.6	39.00
Klit 2011 (ii) <sup>15</sup>	Denmark	nr	General adult	any	Postal	519	Median 71	28.90
Kuo 2011 <sup>51</sup>	UK	nr	Sarcoma	any	Face to face	149	Median62	53.00
Langley 2011 <sup>16</sup>	Europe	3 months	General adult	any	Retrospective	53524	nr	16.61
Leijon 2009 a <sup>52</sup>	Sweden	nr	General adult	low back pain	Postal	26611	Mean 43.8	14.20
Leijon 2009 b <sup>53</sup>	Sweden	nr	General adult	Neck/Shoulder/Arm	Postal	34707	Mean 43.8	18.00
Manas 2011 <sup>9</sup>	Spain	nr	Radiotherapy for cancer	neuropathic	Face to face	1098	Mean 61	31.10
Masajtis-Zagajewska 2011 (i) <sup>26</sup>	Poland	3 months	Kidney transplant	post-operative	Face to face	114	Mean 46.6	51.07
Masajtis-Zagajewska 2011 (ii) <sup>26</sup>	Poland	3 months	Dialysis	any	Face to face	164	Mean 60.8	57.07
McGuire 2010 <sup>54</sup>	Ireland	6 months	Intellectual disability	any	Postal	157	Mean 36.9	1.30
Neva 2011 (i) <sup>49</sup>	Finland	3 months	Rheumatoid arthritis	back pain	Postal	1076	Mean 65 RACP/62 RAno CP	19.00
Neva 2012 (i) <sup>49</sup>	Finland	3 months	General Adult	back pain	Postal	1491	Mean 59CP/54no CP	25.00
Rahtery 2011 <sup>24</sup>	Ireland	3 months	General adult	any	Postal	1204	Mean46.8	35.50
Sauer 2010 <sup>48</sup>	Germany	3 months	General adult	fibromyalgia	Retrospective	1646284	nr	0.45
Voermans 2010 <sup>7</sup>	Netherlands	nr	Ehlers Danlos Syndrome	musculoskeletal	Postal	273	Mean 41	90.00
Walsh 2011 <sup>55</sup>	Ireland	3 months	Intellectual disability	any	Postal	753	42	31.10
Williams 2010 <sup>10</sup>	UK	nr	Head/Neck Cancer	any	Face to face	70	71% over 65	18.50

Table 2

Prevalence study characteristics and results



## Summary of prevalence study results

Studies of the general adult population included low back pain, back pain, arm, shoulder, neck, musculoskeletal and any type of pain. The prevalence of any chronic pain in the general adult population ranged from 16.61<sup>16</sup> to 46%<sup>17</sup>. This is high in comparison to other chronic diseases, as shown in the latest EU Major Chronic Diseases Report<sup>18</sup>.

For example that for hypertension was found to be no higher than 52%, although most studies were no more than about 30%. Hypercholesterolaemia was probably a little higher than hypertension and, of course, these are largely only problems (in terms of quality of life, mortality and cost) when manifest as risk factors for cardiovascular disease. The prevalence of dementia is no more than about 1.25% and, for depression and diabetes, these figures were estimated to be about 4.5% and 7.8% respectively.

Seven out of 28 Studies showed a strong link between increasing age and the prevalence of pain. Hensler (2009)<sup>22</sup>, Jakobsson (2010)<sup>17</sup>, Langley (2011)<sup>16</sup> and Raftery (2011)<sup>24</sup> all showed a general increase in the prevalence of chronic pain in the general adult population with increasing age. Fernandez-de-la-Penas (2011)<sup>19</sup> showed the same trend of increasing prevalence of pain with increasing age for neck pain and low back pain and Gerdle (2008)<sup>20</sup> for musculoskeletal pain. Also, in the study by Gialloreti (2009)<sup>21</sup>, 90.9% of those with post herpetic neuralgia were over 50.

In contrast Klit (2011)<sup>15</sup> showed odds of post stroke pain in stroke patients vs. a reference group from the general adult population appeared to decrease with age, although this does not imply that the absolute risk decreases. However, Kuo (2011)<sup>51</sup> and Manas (2011)<sup>9</sup> showed chronic pain in cancer patients is independent of age.

Also, the studies that displayed a general increase in prevalence did also show a decrease in the oldest age groups, although this is from about 75 years of age in most cases. Gerdle (2008)<sup>20</sup> showed the highest prevalence is in the 50+ group with the peak in the 50-64 group, but only decreasing slightly beyond this. In Langley (2011)<sup>16</sup>, the peak appeared to be younger, but the age range is wide (40-59) and 60+ group is still higher than the 18-39 age group.

Chronic pain is more prevalent in those with co-morbidities such as Ehlers Danlos Syndrome<sup>7</sup> and cancer<sup>8-10, 51</sup> but it also appears to be more prevalent in those in elderly care homes<sup>11</sup>.

## Cost study results

### Cost study characteristics

In total there were 10 cost studies. The method of data collection was in seven cases only through questionnaire, either face-face interview, postal or self-administered and in two cases medical records facilitated by costing data from reimbursement authorities and primary care centres and in two cases it was mixed. Countries included France, Spain, Germany, Denmark and Sweden and only one of studies, by Langley<sup>16</sup>, targeted more than one country (United Kingdom (UK), France, Spain, Germany and Italy).

Seven were related to back pain such as low back pain, neck pain, and spinal pain, the rest covering fibromyalgia, non-cancer pain or any (unspecified) chronic pain. Of 10 studies, three of them defined chronic pain as pain last at least three months, one defined pain experienced consistently within the last four weeks, one as more than six weeks sick leave or two prescriptions of opioids within a period of 180 days and the rest did not have a clear definition. Where there was no clear definition studies were included because the term 'chronic' was used to describe the pain. The recruited samples in all studies were adult, but the widest age range was greater than 18<sup>28</sup>, the narrowest being 35-75<sup>31</sup>. There was only one study by Holmberg (2006)<sup>33</sup> in Sweden that sampled men only: the rest of studies composed both sexes with slightly more female than male.

In terms of cost type, only one study reported private/patient cost. The most commonly reported type was health care (six out of 10) and then cost of time off work (five out of 11). Total public sector cost (including any category but private) was reported in five out of 10 studies.

### Summary of cost study results

Fibromyalgia had the highest unemployment rate, claim rate for incapacity benefit, and also incurred greater cost of productivity loss, health care cost per year compare to other kind of pain.

Given that most data was available for 'back type' pain (low back pain, back pain or spinal pain), a comparison between countries (Germany and France) was possible, which showed that health care costs varied little, between 1096<sup>27</sup> and 1707<sup>31</sup> Euros per person per year. Similarly, cost of time off work seemed to vary little, between about 1219<sup>27</sup> and 1872<sup>32</sup> Euros.

Unemployment attributed to pain ranged from 4% in back pain in Germany<sup>32</sup> to 6% in Fibromyalgia in Spain<sup>28</sup>. From the same studies, this coincided with days off work of 13.6 and 73.

These results can be compared to those for other chronic diseases. For example, in a 2009 the annual total population societal cost (health care, social care and productivity) of stroke was estimated at just under £9 billion per year<sup>35</sup>. This calculation was based on a prevalence estimate of 1.95% or 1,173,176 cases, which equates to a per individual amount of about £7,653 or 8929 Euros at the 2009 exchange rate<sup>36</sup>. This does seem much higher than most estimates for chronic pain. However, even if we take a conservative estimate for low back pain of about 1400 Euros per year for total public sector cost only (i.e. excluding productivity) then, applying a conservative estimate for prevalence of 15%, this implies a total annual population cost of about 10 billion Euros (based on population of 62,000,000, 80% of which are over 18). Clearly, this is a similar order of magnitude as stroke and possibly much higher.

Study ID	Country	Type of pain	Severity	Definition of chronic pain	Public sector cost	Health care cost	Social care cost	Private/ patient cost	Cost of incapacity benefit type payments	Cost of time off work
Depont 2010 <sup>31</sup>	France	low back pain	severe	3 months	NR	1431.20	NR	NR	NR	NR
Rivera 2009 <sup>28</sup>	Spain	fibromyalgia	any	NR	9982	3245.80	NA	NA	2266.90	4469.3
Wieser 2011 <sup>56</sup>	Switzerland	low back pain	any	1 month	4768	1275	567	NR	1141	1785
Sicras-Mainar 2009 <sup>30</sup>	Spain	fibromyalgia	any	3 months	8654.30	1677.3	NA	NA	6161.20	815.80
Muller-Schwefe 2011 <sup>29</sup>	Germany	back pain	any	**	503.22	NR	NR	NA	NA	NR
Schmidt 2009 <sup>27</sup>	Germany	back pain	any	NR	2314.98	1095.83	NA	NA	NA	1219.51
Langley 2011 <sup>16</sup>	five EU countries*	any	any	NR	NA	NA	NA	NA	NA	NA
Kronborg 2009 <sup>57</sup>	Denmark	non-cancer	any	NR	NA	NA	2021.05	2064.80	NA	NR
Leboeuf-Yde 2011 <sup>34</sup>	Denmark	Spinal pain	any	NR	NA	NA	NA	NA	NA	NA
Becker 2010 <sup>32</sup>	Germany	low back pain	any	NR	3579.62	1707.62	NA	NR	NA	1872
Holmberg 2006 <sup>33</sup>	Sweden	low back pain/neck pain	any	NR	NA	NA	NA	NA	NA	NA

\* (the UK, France, Spain, Germany and Italy)

\*\* more than 6 weeks sick leave or two prescriptions of opioids within a period of 180 days

\*\*\* converted to Euros by multiplying cost in DKK by 0.1342

Table 3

Cost study characteristics and results (Euros per person per year)

Study ID	Country	Type of pain	Severity	Definition of chronic pain	Unemployed %	Days off work	Incapacity benefit type payments (%)	Incapacity benefit type definition	Study design
Depont 2010 <sup>31</sup>	France	low back pain	severe	3 months	NA	NA	NA	NA	face-to-face
Rivera 2009 <sup>28</sup>	Spain	fibromyalgia	any	NR	6.00	73	11.9	Permanent working disability	self-administered questionnaire and administrative
Wieser 2011 <sup>56</sup>	Switzerland	low back pain	any	1 month	NA	4.7	3.70	Disability or accident insurance pension	face-to-face
Sicras-Mainar 2009 <sup>30</sup>	Spain	fibromyalgia	any	3 months	NA	20.9	29.9	Permanent disability pension	telephone, postal and administrative
Becker 2010 <sup>32</sup>	Germany	back pain	any	3 months	4.00	13.6	NA	NA	internet-based
Langley 2011 <sup>16</sup>	five EU countries*	back pain	any	NR	5.12	NR	NA	NA	postal
Muller-Schwefe 2011 <sup>29</sup>	Germany	spinal pain	any	**	NA	2.90	NA	NA	administrative
Schmidt 2009 <sup>27</sup>	Germany	non-cancer	any	NR	NA	NA	NA	NA	face-to-face
Leboeuf-Yde 2011 <sup>34</sup>	Denmark	any	any	NR	NA	NA	4.15	Disability pension	postal
Kronborg 2009 <sup>57</sup>	Denmark	low back pain	any	NR	NA	NA	NA	NA	administrative
Holmberg 2006 <sup>33</sup>	Sweden	low back pain/neck pain	any	NR	NA	NA	4.0	NR	self-administered questionnaire

\* (the UK, France, Spain, Germany and Italy)

\*\* more than six weeks sick leave or two prescriptions of opioids within a period of 180 days

Table 4

Time off work study characteristics and results

## Study quality

### Prevalence study quality

The majority of studies included were of high quality, as judged by our quality assessment. However, some studies such as Berglund (2001)<sup>6</sup> and Gerdle (2008)<sup>20</sup> provided no definition or measurement of pain and so subjective perception of pain was reported. Leijon (2009)<sup>52, 53</sup> described low back pain and neck-shoulder-arm pain as pain a couple of days per week or every day. For our purposes we have defined low back pain and neck-shoulder-arm pain as chronic pain.

Garcia de Paredes 2011's<sup>8</sup> study population was undiagnosed with cancer while their target population were diagnosed. Again they give no definition of chronic pain or more specifically neuropathic pain and no description of participants other than they were being screened for cancer.

McGuire (2010)<sup>54</sup> showed some discrepancies between number of questionnaire responses and number of results recorded. It also only categorised pain as mild and severe. As mild pain has been excluded from our search criteria some potentially valid data may be excluded through inadequate categorisation of pain. Walsh (2011)<sup>55</sup> did a similar study using a higher number of participants and categorising pain as mild, moderate and severe. Here the prevalence was 31.1% as compared to 1.3% for McGuire (2010).

### Cost study quality

Overall the quality of the 10 studies was good. Inadequate description of eligibility criteria and participants characteristic were the main issue: six required further explanation. One study did not describe statistical method appropriately and another one needed more detail about the measurement and calculation of outcomes.

Study ID	Adequate description of study design and setting	Adequate description of eligibility criteria	Study population is representative of target population	Adequate description of outcomes (and how / how often measured) e.g. Definition of chronic pain	Adequate description of statistical methods	Adequate description of study participants	Adequate description of losses to follow-up (for longitudinal studies), loss to follow-up less than 10% at 12 months or less than 25% for longer follow-up
Abbot 2011 <sup>14</sup>	yes	yes	yes	no	yes	yes	NA
Baan 2011 <sup>11</sup>	yes	yes	yes	yes	yes	yes	NA
Berglund 2001 <sup>6</sup>	yes	yes	yes	no	na	yes	NA
Ciaramitaro 2010 <sup>13</sup>	yes	yes	yes	no	yes	yes	NA
Fernandez-de-la-Penas 2011 <sup>19</sup>	yes	yes	yes	no	yes	yes	NA
Frieem 2009 <sup>12</sup>	yes	yes	yes	yes	yes	yes	NA
Garcia de Paredes 2011 <sup>8</sup>	yes	yes	no	no	yes	no	NA
Gartner 2009 <sup>25</sup>	yes	yes	yes	no	yes	yes	NA
Gerdle 2008 <sup>20</sup>	yes	yes	yes	yes	yes	no	NA
Gialloreti 2009 <sup>21</sup>	yes	yes	yes	yes	yes	yes	NA
Hensler 2009 <sup>22</sup>	yes	yes	yes	yes	yes	yes	NA
Hickey 2011 <sup>50</sup>	yes	yes	yes	yes	yes	yes	NA
Horvath 2010 <sup>23</sup>	yes	yes	yes	no	yes	yes	NA
Jakobsson 2010 <sup>17</sup>	yes	yes	yes	yes	yes	yes	NA
Klit 2011 <sup>15</sup>	yes	yes	yes	no	yes	yes	NA
Kuo 2011 <sup>51</sup>	yes	yes	yes	no	yes	yes	NA
Langley 2011 <sup>16</sup>	yes	yes	yes	yes	yes	yes	NA
Leijon 2009 a <sup>52</sup>	yes	yes	yes	no	yes	yes	NA
Leijon 2009 b <sup>53</sup>	yes	yes	yes	no	yes	yes	NA
Manas 2011 <sup>9</sup>	yes	yes	yes	no	yes	yes	NA
Masajtis-Zagajewska 2011 <sup>26</sup>	yes	yes	yes	yes	yes	yes	NA
McGuire 2010 <sup>54</sup>	yes	yes	yes	yes	yes	yes	NA
Neva 2011 <sup>49</sup>	yes	yes	yes	yes	yes	yes	NA
Raftery 2011 <sup>24</sup>	yes	yes	yes	yes	yes	yes	NA
Sauer 2010 <sup>48</sup>	yes	yes	yes	yes	yes	yes	NA
Voermans 2010 <sup>7</sup>	yes	yes	yes	no	yes	yes	NA
Walsh 2011 <sup>55</sup>	yes	yes	yes	yes	yes	yes	NA
Williams 2010 <sup>10</sup>	yes	yes	yes	no	yes	yes	NA

Table 5

Prevalence studies quality

Study ID	Adequate description of study design and setting	Adequate description of eligibility criteria	Study population is representative of target population	Adequate description of outcomes (and how / how often measured), exposures, predictors	Adequate description of statistical methods	Adequate description of study participants	Adequate description of losses to follow-up (for longitudinal studies), loss to follow-up less than 10% at 12 months or less than 25% for longer follow-up	Results reported as unadjusted and confounder-adjusted including precision
Depont 2010 <sup>31</sup>	yes	yes	yes	yes	yes	yes	yes	yes
Rivera 2009 <sup>28</sup>	yes	yes	yes	yes	yes	yes	na	yes
Wieser 2011 <sup>56</sup>	yes	no	yes	yes	no	no	na	yes
Sicras-Mainar 2009 <sup>30</sup>	yes	yes	yes	yes	yes	yes	yes	yes
Becker 2010 <sup>32</sup>	yes	yes	yes	yes	yes	yes	yes	yes
Muller-Schwefe 2011 <sup>29</sup>	yes	no	yes	yes	no	no	na	yes
Schmidt 2009 <sup>27</sup>	yes	yes	yes	no	yes	yes	yes	yes
Leboeuf-Yde 2011 <sup>34</sup>	yes	no	yes	no	yes	no	yes	yes
Kronborg 2009 <sup>57</sup>	yes	no	yes	yes	yes	no	yes	yes
Langley 2011 <sup>16</sup>	yes	no	yes	yes	yes	no	no	yes
Holmberg 2006 <sup>33</sup>	yes	no	no	yes	yes	no	yes	yes

Table 6

Cost studies quality

## Appendix 3: Search strategy

### Incidence/Prevalence

#### Medline (OvidSP) 2009/08–2011/11/wk3

Date searched: 30.11.11

- 1 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj3 (back\$ or muscl\$ or neck or shoulder\$) adj3 (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or strained or sprain or sprains or sprained or injur\$ or damag\$)).ti,ab. (6174)
- 2 Diabetic Neuropathies/ or exp polyneuropathies/ or exp Mononeuropathies/ or exp neoplasms/ or (cancer\$ or neoplas\$ or malignan\$ or tumo?r\$ or paraneoplas\$).ti,ab. (2709315)
- 3 (neuropath\$ or arthralg\$ or neuralg\$ or fibromyalg\$ or DPN or mononeuropath\$ or polyneuropath\$ or nerve\$ pain\$).ti,ab. (99897)
- 4 exp osteoarthritis/ or Arthritis, Rheumatoid/ or (rheumatoid arthrit\$ or osteoarthritis).mp. (129683)
- 5 or/2-4 (2896176)
- 6 exp Pain/ or (pain or pains or painful\$).ti,ab. (467857)
- 7 5 and 6 (110967)
- 8 exp muscle, skeletal/ or muscl\$.ti,ab. (541861)
- 9 exp Pain/ or (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or strained or sprain or sprains or sprained or injur\$ or damag\$).ti,ab. (1462166)
- 10 8 and 9 (71006)
- 11 chronic disease/ (207208)
- 12 ((longterm or chronic\$ or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj2 (disorder\$ or condition\$ or illness\$ or illhealth\$ or ill health\$ or malad\$ or sickness or disease\$)).mp. (322306)
- 13 or/11-12 (322306)
- 14 13 and 6 (30590)
- 15 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj2 (pain or pains or painful\$)).ti,ab. (31900)
- 16 pain, intractable/ or pain, referred/ (5394)
- 17 exp Back Pain/ (25320)
- 18 exp neuralgia/ (10979)
- 19 Neck Pain/ (3489)

- 20 exp Arthralgia/ (5828)
- 21 Fibromyalgia/ (5292)
- 22 low\$ back pain\$.mp. (17966)
- 23 or/15-22 (81089)
- 24 or/1,7,10,14,23 (237746)
- 25 \*morbidity/ (6090)
- 26 \*Epidemiology/ (11623)
- 27 \*epidemiologic studies/ (943)
- 28 \*prevalence/ (541)
- 29 \*incidence/ (419)
- 30 \*Cross-Sectional Studies/ (269)
- 31 (morbidity\$ or incidence\$ or prevalen\$ or epidemiolog\$).ti. (228570)
- 32 or/25-31 (239557)
- 33 24 and 32 (3279)
- 34 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj5 (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or strained or sprain or sprains or sprained or injur\$ or damag\$) adj5 (morbidity\$ or incidence\$ or prevalen\$ or epidemiolog\$)).ti,ab. (1538)
- 35 Pain, Intractable/ep (87)
- 36 or/33-35 (4599)
- 37 European Union/ or EU.ti,ab. (17560)
- 38 (Europe\$ adj3 (union or community)).ti,ab. (8574)
- 39 (Austria\$ or vienn\$ or austro\$).ti,ab,in,hw. (78342)
- 40 (Belgium or belgian\$ or Brussels or Antwerp\$ or ghent\$).ti,ab,in,hw. (108106)
- 41 (bulgaria\$ or sofia).ti,ab,in,hw. (15848)
- 42 (Cyprus or Cypriot\$ or Lefkosia or nicosia).ti,ab,in,hw. (1669)
- 43 (Czech\$ or prague or praha).ti,ab,in,hw. (59816)
- 44 (denmark or Danish or copenhagen or Aarhus).ti,ab,in,hw. (116752)
- 45 (Estonia\$ or Tallinn).ti,ab,in,hw. (4431)
- 46 (finland or finnish or finns or finn or Helsinki).ti,ab,in,hw. (93800)
- 47 (france or French or paris\$ or Marseille or Lyon or Toulouse or nantes or Strasbourg or lille).ti,ab,in,hw. (478495)
- 48 (Germany or german\$ or berlin\$ or hamburg or munich or munchen or cologne or koln or Frankfurt or Stuttgart or dusseldorf).ti,ab,in,hw. (628192)
- 49 (Greece or greek\$ or Athens or Athenian or Thessaloniki).ti,ab,in,hw. (79933)
- 50 (hungary or Hungarian\$ or Budapest).ti,ab,in,hw. (47266)
- 51 (Ireland or irish or eire or Dublin\$).ti,ab,in,hw. (72041)
- 52 (Italy or Italian\$ or rome or roman or Milan or naples or turin).ti,ab,in,hw. (396177)
- 53 (Latvia\$ or riga).ti,ab,in,hw. (1900)
- 54 (Lithuania\$ or Vilnius).ti,ab,in,hw. (4991)
- 55 (Luxembourg\$ or luxemburg\$).ti,ab,in,hw. (1795)
- 56 (malta or maltese or Mdina or Notabile or Imdina).ti,ab,in,hw. (1446)
- 57 (netherlands\$ or Holland or dutch or Amsterdam or Rotterdam or hague or Utrecht or Eindhoven).ti,ab,in,hw. (257657)
- 58 (polish or Poland or warsaw or Krakow or lodz or Wroclaw).ti,ab,in,hw. (99528)
- 59 (portuguese\$ or Portugal or Lisbon or porto).ti,ab,in,hw. (40136)
- 60 (Romania\$ or Bucharest).ti,ab,in,hw. (15599)
- 61 (Slovakia\$ or Bratislava or pozsony).ti,ab,in,hw. (12821)
- 62 (slovenia\$ or Ljubljana).ti,ab,in,hw. (9480)
- 63 (Spanish or spain or Madrid or Barcelona or Valencia or Seville or Zaragoza or Malaga or Mallorca or iberia\$).ti,ab,in,hw. (253593)
- 64 (Swedish or Sweden or swede\$ or Stockholm or norrland or svealand or gotaland).ti,ab,in,hw. (208162)
- 65 (Britain or british or wales or welsh or Scottish or scots or Scotland or England or English or Birmingham or leeds or London or Liverpool or Manchester or Glasgow or Edinburgh or Cardiff or Belfast or UK or GB or aberdeen).ti,ab,in,hw. (2764338)
- 66 Austria/ or Belgium/ or exp france/ or exp Germany/ or Bulgaria/ or Cyprus/ or Czech Republic/ or Denmark/ or Estonia/ or Finland/ or Greece/ or hungary/ or Ireland/ or exp Italy/ or Latvia/ or Lithuania/ or Luxembourg/ or malta/ or Netherlands/ or Poland/ or portugal/ or Romania/ or Slovakia/ or Slovenia/ or spain/ or Sweden/ or exp Great Britain/ (821907)
- 67 Mediterranean Islands/ or Baltic States/ (890)
- 68 or/37-67 (5428359)
- 69 36 and 68 (2021)
- 70 (200908\$ or 200909\$ or 20091\$ or 2010\$ or 2011\$).ed. (1869690)
- 71 69 and 70 (372)
- 72 exp animals/ not humans.sh. (3722514)
- 73 71 not 72 (365)
- 74 remove duplicates from 73 (346)

**Medline In-Process & Other Non-Indexed Citations (OvidSP) up to 2011/11/29**

**Medline Daily Update (OvidSP) up to 2011/11/16**

**Date searched: 30.11.11**

- 1 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj3 (back\$ or muscl\$ or neck or shoulder\$) adj3 (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or strained or sprain or sprains or sprained or injur\$ or damag\$)).ti,ab. (563)

- 2 Diabetic Neuropathies/ or exp polyneuropathies/ or exp Mononeuropathies/ or exp neoplasms/ or (cancer\$ or neoplas\$ or malignan\$ or tumor\$ or paraneoplas\$).ti,ab. (72302)
- 3 (neuropath\$ or arthralg\$ or neuralg\$ or fibromyalg\$ or DPN or mononeuropath\$ or polyneuropath\$ or nerve\$ pain\$).ti,ab. (4575)
- 4 exp osteoarthritis/ or Arthritis, Rheumatoid/ or (rheumatoid arthrit\$ or osteoarthritis).mp. (4414)
- 5 or/2-4 (80224)
- 6 exp Pain/ or (pain or pains or painful\$).ti,ab. (19813)
- 7 5 and 6 (4667)
- 8 exp muscle, skeletal/ or muscl\$.ti,ab. (17052)
- 9 exp Pain/ or (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or strained or sprain or sprains or sprained or injur\$ or damag\$).ti,ab. (68122)
- 10 8 and 9 (3546)
- 11 chronic disease/ (108)
- 12 ((longterm or chronic\$ or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj2 (disorder\$ or condition\$ or illness\$ or illhealth\$ or ill health\$ or malad\$ or sickness or disease\$)).mp. (7648)
- 13 or/11-12 (7648)
- 14 13 and 6 (525)
- 15 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj2 (pain or pains or painful\$)).ti,ab. (2304)
- 16 pain, intractable/ or pain, referred/ (3)
- 17 exp Back Pain/ (8)
- 18 exp neuralgia/ (18)
- 19 Neck Pain/ (5)
- 20 exp Arthralgia/ (8)
- 21 Fibromyalgia/ (3)
- 22 low\$ back pain\$.mp. (1081)
- 23 or/15-22 (3272)
- 24 or/1,7,10,14,23 (10547)
- 25 \*morbidity/ (1)
- 26 \*Epidemiology/ (5)
- 27 \*epidemiologic studies/ (1)
- 28 \*prevalence/ (0)
- 29 \*incidence/ (0)
- 30 \*Cross-Sectional Studies/ (0)
- 31 (morbidit\$ or incidence\$ or prevalen\$ or epidemiolog\$).ti. (10151)
- 32 or/25-31 (10153)
- 33 24 and 32 (157)
- 34 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj5 (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or strained or sprain or sprains or sprained or injur\$ or damag\$) adj5 (morbidit\$ or incidence\$ or prevalen\$ or epidemiolog\$)).ti,ab. (119)
- 35 Pain, Intractable/ep (0)
- 36 or/33-35 (248)
- 37 European Union/ or EU.ti,ab. (2157)
- 38 (Europe\$ adj3 (union or community)).ti,ab. (546)
- 39 (Austria\$ or vienn\$ or austro\$).ti,ab,in,hw. (4702)
- 40 (Belgium or belgian\$ or Brussels or Antwerp\$ or ghent\$).ti,ab,in,hw. (7148)
- 41 (bulgaria\$ or sofia).ti,ab,in,hw. (1028)
- 42 (Cyprus or Cypriot\$ or Lefkosa or nicosia).ti,ab,in,hw. (198)
- 43 (Czech\$ or prague or praha).ti,ab,in,hw. (3180)
- 44 (denmark or Danish or copenhagen or Aarhus).ti,ab,in,hw. (6182)
- 45 (Estonia\$ or Tallinn).ti,ab,in,hw. (351)
- 46 (finland or finnish or finns or finn or Helsinki).ti,ab,in,hw. (4537)
- 47 (france or French or paris\$ or Marseille or Lyon or Toulouse or nantes or Strasbourg or lille).ti,ab,in,hw. (33223)
- 48 (Germany or german\$ or berlin\$ or hamburg or munich or munchen or cologne or koln or Frankfurt or Stuttgart or dusseldorf).ti,ab,in,hw. (51512)
- 49 (Greece or greek\$ or Athens or Athenian or Thessaloniki).ti,ab,in,hw. (10411)
- 50 (hungary or Hungarian\$ or Budapest).ti,ab,in,hw. (2601)
- 51 (Ireland or irish or eire or Dublin\$).ti,ab,in,hw. (9917)
- 52 (Italy or Italian\$ or rome or roman or Milan or naples or turin).ti,ab,in,hw. (27468)
- 53 (Latvia\$ or riga).ti,ab,in,hw. (145)
- 54 (Lithuania\$ or Vilnius).ti,ab,in,hw. (332)
- 55 (Luxembourg\$ or luxemburg\$).ti,ab,in,hw. (165)
- 56 (malta or maltese or Mdina or Notabile or Imdina).ti,ab,in,hw. (120)
- 57 (netherlands\$ or Holland or dutch or Amsterdam or Rotterdam or hague or Utrecht or Eindhoven).ti,ab,in,hw. (16399)
- 58 (polish or Poland or warsaw or Krakow or lodz or Wroclaw).ti,ab,in,hw. (6938)
- 59 (portuguese\$ or Portugal or Lisbon or porto).ti,ab,in,hw. (4394)
- 60 (Romania\$ or Bucharest).ti,ab,in,hw. (1101)
- 61 (Slovakia\$ or Bratislava or pozsony).ti,ab,in,hw. (646)
- 62 (slovenia\$ or Ljubljana).ti,ab,in,hw. (994)
- 63 (Spanish or Spain or Madrid or Barcelona or Valencia or Seville or Zaragoza or Malaga or Mallorca or iberia\$).ti,ab,in,hw. (23172)



- 64 (Swedish or Sweden or swede\$ or Stockholm or norrland or svealand or gotaland).  
ti,ab,in,hw. (10199)
- 65 (Britain or british or wales or welsh or Scottish or scots or Scotland or England or  
English or Birmingham or leeds or London or Liverpool or Manchester or Glasgow or  
Edinburgh or Cardiff or Belfast or UK or GB or aberdeen).ti,ab,in,hw. (111096)
- 66 Austria/ or Belgium/ or exp france/ or exp Germany/ or Bulgaria/ or Cyprus/ or Czech  
Republic/ or Denmark/ or Estonia/ or Finland/ or Greece/ or hungary/ or Ireland/ or  
exp Italy/ or Latvia/ or Lithuania/ or Luxembourg/ or malta/ or Netherlands/ or Poland/  
or portugal/ or Romania/ or Slovakia/ or Slovenia/ or spain/ or Sweden/ or exp Great  
Britain/ (469)
- 67 Mediterranean Islands/ or Baltic States/ (1)
- 68 or/37-67 (321409)
- 69 36 and 68 (95)
- 70 exp animals/ not humans.sh. (1559)
- 71 69 not 70 (95)
- 72 limit 71 to yr="2009 -Current" (66)
- 73 remove duplicates from 72 (66)

**Embase (OvidSP) 2009/wk36–2011/wk47**

**Date searched: 30.11.11**

- 1 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$  
or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or  
continuous\$ or constant\$ or unending or unceasing) adj3 (back\$ or muscl\$ or neck  
or shoulder\$) adj3 (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or  
ache\$ or aching or strains or strained or sprain or sprains or sprained or injur\$ or  
damag\$)).ti,ab. (8444)
- 2 peripheral neuropathy/ or diabetic neuropathy/ or exp polyneuropathy/ or exp  
mononeuropathy/ or neuropathy/ or exp neoplasm/ or (cancer\$ or neoplas\$ or  
malignan\$ or tumo?r\$ or paraneoplas\$).ti,ab. (3156325)
- 3 (neuropath\$ or arthralg\$ or neuralg\$ or fibromyalg\$ or DPN or mononeuropath\$ or  
polyneuropath\$ or nerve\$ pain\$).ti,ab. (125365)
- 4 exp osteoarthritis/ or rheumatoid arthritis/ or (rheumatoid arthrit\$ or osteoarthritis\$).  
mp. (183440)
- 5 or/2-4 (3386315)
- 6 exp Pain/ or ((Chronic\$ or longterm or long term or sustained or long standing  
or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or  
continual\$ or continuous\$ or constant\$ or unending or unceasing) adj3 (pain or  
pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or  
strained or sprain or sprains or sprained or injur\$ or damag\$)).ti,ab. (657038)
- 7 5 and 6 (185536)
- 8 exp skeletal muscle/ or muscl\$.ti,ab. (568329)

- 9 exp Pain/ or (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or  
aching or strains or strained or sprain or sprains or sprained or injur\$ or damag\$).  
ti,ab. (1897339)
- 10 8 and 9 (89807)
- 11 chronic disease/ (137148)
- 12 ((longterm or chronic\$ or long term or sustained or long standing or permanent\$  
or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or  
continuous\$ or constant\$ or unending or unceasing) adj2 (disorder\$ or condition\$  
or illness\$ or illhealth\$ or ill health\$ or malad\$ or sickness or disease\$)).ti,ab.  
(161094)
- 13 or/11-12 (268104)
- 14 6 and 13 (22508)
- 15 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$  
or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or  
continuous\$ or constant\$ or unending or unceasing) adj2 (pain or pains or  
painful\$)).ti,ab. (43179)
- 16 chronic pain/ or intractable pain/ or phantom pain/ or referred pain/ or cancer pain/  
(38898)
- 17 exp backache/ (52103)
- 18 exp neuralgia/ (57048)
- 19 neck pain/ (9330)
- 20 arthralgia/ (27221)
- 21 fibromyalgia/ (10135)
- 22 low\$ back pain\$.mp. (31491)
- 23 or/15-22 (193601)
- 24 or/1,7,10,14,23 (384116)
- 25 \*Incidence/ (2503)
- 26 \*epidemiology/ (23175)
- 27 \*Prevalence/ (9591)
- 28 exp \*morbidity/ (11684)
- 29 \*epidemiological data/ (1379)
- 30 (morbidity\$ or incidence\$ or prevalen\$ or epidemiolog\$).ti. (260936)
- 31 or/25-30 (281716)
- 32 24 and 31 (5173)
- 33 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$  
or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or  
continuous\$ or constant\$ or unending or unceasing) adj5 (pain or pains or painful\$  
or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or strained or  
sprain or sprains or sprained or injur\$ or damag\$) adj5 (morbidity\$ or incidence\$ or  
prevalen\$ or epidemiolog\$)).ti,ab. (2037)
- 34 chronic pain/ep (710)

35 or/32-34 (7274)  
 36 European-Union/ or EU.ti,ab. (25036)  
 37 (Europe\$ adj3 (union or community)).ti,ab. (11724)  
 38 (Austria\$ or vienn\$ or austro\$).ti,ab,in,ad,hw. (155844)  
 39 (Belgium or belgian\$ or Brussels or Antwerp\$ or ghent\$).ti,ab,in,ad,hw. (211251)  
 40 (bulgaria\$ or sofia).ti,ab,in,ad,hw. (35735)  
 41 (Cyprus or Cypriot\$ or Lefkosia or nicosia).ti,ab,in,ad,hw. (3819)  
 42 (Czech\$ or prague or praha).ti,ab,in,ad,hw. (114584)  
 43 (denmark or Danish or copenhagen or Aarhus).ti,ab,in,ad,hw. (195973)  
 44 (Estonia\$ or Tallinn).ti,ab,in,ad,hw. (7509)  
 45 (finland or finnish or finns or finn or Helsinki).ti,ab,in,ad,hw. (144381)  
 46 (france or French or paris\$ or Marseille or lyon or Toulouse or nantes or Strasbourg or lille).ti,ab,in,ad,hw. (944727)  
 47 (Germany or german\$ or berlin\$ or hamburg or munich or munchen or cologne or koln or Frankfurt or Stuttgart or dusseldorf).ti,ab,in,ad,hw. (1280026)  
 48 (Greece or greek\$ or Athens or Athenian or Thessaloniki).ti,ab,in,ad,hw. (127629)  
 49 (hungary or Hungarian\$ or Budapest).ti,ab,in,ad,hw. (84158)  
 50 (Ireland or irish or Dublin\$ or eire).ti,ab,in,ad,hw. (184171)  
 51 (Italy or Italian\$ or rome or roman or Milan or naples or turin).ti,ab,in,ad,hw. (747755)  
 52 (Latvia\$ or riga).ti,ab,in,ad,hw. (4133)  
 53 (Lithuania\$ or Vilnius).ti,ab,in,ad,hw. (7699)  
 54 (Luxembourg\$ or luxemburg\$).ti,ab,in,ad,hw. (4286)  
 55 (malta or maltese or Mdina or Notabile or Imdina).ti,ab,in,ad,hw. (2887)  
 56 (netherlands\$ or Holland or dutch or Amsterdam or Rotterdam or hague or Utrecht or Eindhoven).ti,ab,in,ad,hw. (448348)  
 57 (polish or Poland or warsaw or Krakow or lodz or Wroclaw).ti,ab,in,ad,hw. (184806)  
 58 (portuguese\$ or Portugal or Lisbon or porto).ti,ab,in,ad,hw. (78208)  
 59 (Romania\$ or Bucharest).ti,ab,in,ad,hw. (29066)  
 60 (Slovakia\$ or Bratislava or pozsony).ti,ab,in,ad,hw. (28224)  
 61 (slovenia\$ or Ljubljana).ti,ab,in,ad,hw. (18307)  
 62 (Spanish or spain or Madrid or Barcelona or Valencia or Seville or Zaragoza or Malaga or Mallorca or iberia\$).ti,ab,in,ad,hw. (470566)  
 63 (Swedish or Sweden or swede\$ or Stockholm or norrland or svealand or gotaland).ti,ab,in,ad,hw. (331391)  
 64 (Britain or british or wales or welsh or Scottish or scots or Scotland or England or English or Birmingham or leeds or London or Liverpool or Manchester or Glasgow or Edinburgh or Cardiff or Belfast or UK or GB or aberdeen).ti,ab,in,ad,hw. (1483042)  
 65 Austria/ or Belgium/ or Benelux/ or france/ or exp Germany/ or Bulgaria/ or Cyprus/ or Czech-Republic/ or Denmark/ or Estonia/ or Finland/ or Greece/ or hungary/ or Ireland/ or Italy/ or Latvia/ or Lithuania/ or Luxembourg/ or malta/ or Netherlands/ or

Poland/ or portugal/ or Romania/ or Slovakia/ or Slovenia/ or spain/ or Sweden/ or United-Kingdom/ (846478)  
 66 Southern-Europe/ or Scandinavia/ or Western-Europe/ or Baltic-States/ (13540)  
 67 or/36-66 (6683740)  
 68 35 and 67 (3188)  
 69 ("200936" or "200937" or "200938" or "200939" or 20094\$ or 20095\$ or 2010\$ or 2011\$).em. (2383365)  
 70 68 and 69 (774)  
 71 animal/ or animal experiment/ (3123853)  
 72 (rat or rats or mouse or mice or murine or rodent or rodents or hamster or hamsters or pig or pigs or porcine or rabbit or rabbits or animal or animals or dogs or dog or cats or cow or bovine or sheep or ovine or monkey or monkeys).mp. (4830062)  
 73 71 or 72 (4830062)  
 74 exp human/ or human experiment/ (12738143)  
 75 73 not (73 and 74) (3870815)  
 76 70 not 75 (769)  
 77 limit 76 to embase (685)  
 78 remove duplicates from 77 (677)

**Cochrane Database of Systematic Reviews (CDSR): 2009-2011/Issue 11**  
**Database of Abstracts of Reviews of Effects (DARE): 2009-2011/Issue 4**  
**Health technology Assessment Database (HTA): 2009-2011/Issue 4**  
**NHS Economic Evaluation Database (NHS EED): 2009-2011/Issue 4**  
**Date searched: 30.11.11**

#1 ((Chronic\* or longterm or long term or sustained or long standing or permanent\* or intractable\* or persistent\* or unremitting or unrelenting or continual\* or continuous\* or constant\* or unending or unceasing) near (back\* or muscl\* or neck or shoulder\*) near (pain or pains or painful\* or sore\* or tender\* or discomfort or ache\* or aching or strains or strained or sprain or sprains or sprained or injur\* or damag\*)):ti,ab 1701  
 #2 MeSH descriptor Diabetic Neuropathies, this term only 629  
 #3 MeSH descriptor Polyneuropathies explode all trees 234  
 #4 MeSH descriptor Mononeuropathies explode all trees 587  
 #5 (neuropath\* or arthralg\* or neuralg\* or fibromyalg\* or DPN or mononeuropath\* or polyneuropath\* or nerve\* pain\* or cancer\* or neoplas\* or malignan\* or tumor\* or tumour\* or paraneoplas\*):ti,ab or (rheumatoid arthrit\* or osteoarthritis\*):ti,ab,kw 70584  
 #6 MeSH descriptor Neoplasms explode all trees 42019  
 #7 MeSH descriptor Arthritis, Rheumatoid, this term only 3471  
 #8 MeSH descriptor Osteoarthritis explode all trees 2835  
 #9 (#2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8) 83586

#10 MeSH descriptor Pain explode all trees 28322  
 #11 (pain or pains or painful\*):ti,ab 47585  
 #12 (#10 OR #11) 56070  
 #13 (#9 AND #12) 10824  
 #14 MeSH descriptor Muscle, Skeletal explode all trees 5925  
 #15 muscl\*:ti,ab 15515  
 #16 (#14 OR #15) 17224  
 #17 (pain or pains or painful\* or sore\* or tender\* or discomfort or ache\* or aching or strains or strained or sprain or sprains or sprained or injur\* or damag\*):ti,ab 71099  
 #18 (#10 OR #17) 79023  
 #19 (#16 AND #18) 4587  
 #20 MeSH descriptor Chronic Disease explode all trees 9766  
 #21 ((longterm or chronic\* or long term or sustained or long standing or permanent\* or intractable\* or persistent\* or unremitting or unrelenting or continual\* or continuous\* or constant\* or unending or unceasing) near (disorder\* or condition\* or illness\* or illhealth\* or ill health\* or malad\* or sickness or disease\*)):ti,ab,kw 23094  
 #22 (#20 OR #21) 23094  
 #23 (#12 AND #22) 3213  
 #24 ((Chronic\* or longterm or long term or sustained or long standing or permanent\* or intractable\* or persistent\* or unremitting or unrelenting or continual\* or continuous\* or constant\* or unending or unceasing) near (pain or pains or painful\*)):ti,ab 4237 0  
 #25 MeSH descriptor Pain, Intractable, this term only 222  
 #26 MeSH descriptor Pain, Referred, this term only 8  
 #27 MeSH descriptor Back Pain explode all trees 2345  
 #28 MeSH descriptor Neuralgia explode all trees 595  
 #29 MeSH descriptor Neck Pain, this term only 437  
 #30 MeSH descriptor Arthralgia explode all trees 614  
 #31 MeSH descriptor Fibromyalgia, this term only 483  
 #32 low\* back pain\*:ti,ab,kw 4135  
 #33 (#24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32) 6496  
 #34 (#1 OR #13 OR #19 OR #23 OR #33) 20775  
 #35 MeSH descriptor Morbidity, this term only 605  
 #36 MeSH descriptor Epidemiology, this term only 13  
 #37 MeSH descriptor Epidemiologic Studies, this term only 39  
 #38 MeSH descriptor Prevalence, this term only 2859  
 #39 MeSH descriptor Incidence, this term only 6247  
 #40 MeSH descriptor Cross-Sectional Studies, this term only 2269  
 #41 (morbidity\* or incidence\* or prevalen\* or epidemiolog\*):ti 6163

#42 (#35 OR #36 OR #37 OR #38 OR #39 OR #40 OR #41) 15760  
 #43 (#34 AND #42) 430  
 #44 ((Chronic\* or longterm or long term or sustained or long standing or permanent\* or intractable\* or persistent\* or unremitting or unrelenting or continual\* or continuous\* or constant\* or unending or unceasing) near/5 (pain or pains or painful\* or sore\* or tender\* or discomfort or ache\* or aching or strains or strained or sprain or sprains or sprained or injur\* or damag\*) near/5 (morbidity\* or incidence\* or prevalen\* or epidemiolog\*)):ti,ab 87  
 #45 MeSH descriptor Pain, Intractable, this term only with qualifier: EP 2  
 #46 (#43 OR #44 OR #45) 509  
 #47 (#46), from 2009 to 2011 104

CDSR: 3 references  
 DARE: 3 references  
 HTA: 0 references  
 NHS EED: 0 references

#### Costs/Burden of disease

#### Medline (OvidSP) 2009/08–2011/11/wk3

Date searched: 30.11.11

- 1 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj3 (back\$ or muscl\$ or neck or shoulder\$) adj3 (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or strained or sprain or sprains or sprained or injur\$ or damag\$)).ti,ab. (6174)
- 2 Diabetic Neuropathies/ or exp polyneuropathies/ or exp Mononeuropathies/ or exp neoplasms/ or (cancer\$ or neoplas\$ or malignan\$ or tumor\$ or paraneoplas\$).ti,ab. (2709315)
- 3 (neuropath\$ or arthralg\$ or neuralg\$ or fibromyalg\$ or DPN or mononeuropath\$ or polyneuropath\$ or nerve\$ pain\$).ti,ab. (99897)
- 4 exp osteoarthritis/ or Arthritis, Rheumatoid/ or (rheumatoid arthrit\$ or osteoarthritis).mp. (129683)
- 5 or/2-4 (2896176)
- 6 exp Pain/ or (pain or pains or painful\$).ti,ab. (467857)
- 7 5 and 6 (110967)
- 8 exp muscle, skeletal/ or muscl\$.ti,ab. (541861)
- 9 exp Pain/ or (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or strained or sprain or sprains or sprained or injur\$ or damag\$).ti,ab. (1462166)

- 10 8 and 9 (71006)
- 11 chronic disease/ (207208)
- 12 ((longterm or chronic\$ or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj2 (disorder\$ or condition\$ or illness\$ or illhealth\$ or ill health\$ or malad\$ or sickness or disease\$)).mp. (322306)
- 13 or/11-12 (322306)
- 14 13 and 6 (30590)
- 15 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj2 (pain or pains or painful\$)).ti,ab. (31900)
- 16 pain, intractable/ or pain, referred/ (5394)
- 17 exp Back Pain/ (25320)
- 18 exp neuralgia/ (10979)
- 19 Neck Pain/ (3489)
- 20 exp Arthralgia/ (5828)
- 21 Fibromyalgia/ (5292)
- 22 low\$ back pain\$.mp. (17966)
- 23 or/15-22 (81089)
- 24 or/1,7,10,14,23 (237746)
- 25 exp "costs and cost analysis"/ (161688)
- 26 Resource Allocation/ (6652)
- 27 Economics/ (26510)
- 28 exp Economics, Medical/ (13589)
- 29 exp Budgets/ (11163)
- 30 Health Care Sector/ (4856)
- 31 (value adj2 money).ti,ab. (733)
- 32 budget\$.ti,ab. (14978)
- 33 cost effective\$.tw. (57871)
- 34 or/25-33 (253170)
- 35 Absenteeism/ (6699)
- 36 Caregivers/ (17535)
- 37 ((humanistic or Social or societ\$ or work\$ or employe\$ or business\$ or communit\$ or famil\$ or carer\$ or caregiver\$) adj3 (Burden\$ or Consequenc\$ or impact\$ or problem\$ or productivity or sickness or impairment\$)).ti,ab,ot. (43549)
- 38 ((long standing or longstanding or long term or longterm or permanent or employee\$) adj2 (absence\$ or absent\$ or ill\$ or sick\$ or disab\$)).ti,ab,ot. (5503)
- 39 llsi.ti,ab. (7)
- 40 (burden\$ adj2 disease\$).ti,ab,ot. (6209)
- 41 ((allowance or status or long-term or pension\$ or benefit\$) adj2 disab\$).ti,ab,ot. (5736)
- 42 ((unable or inability or incapacit\$ or incapab\$) adj3 work).ti,ab,ot. (1188)
- 43 or/35-42 (79939)
- 44 24 and (34 or 43) (5337)
- 45 European Union/ or EU.ti,ab. (17560)
- 46 (Europe\$ adj3 (union or community)).ti,ab. (8574)
- 47 (Austria\$ or vienn\$ or austro\$).ti,ab,in,hw. (78342)
- 48 (Belgium or belgian\$ or Brussels or Antwerp\$ or ghent\$).ti,ab,in,hw. (108106)
- 49 (bulgaria\$ or sofia).ti,ab,in,hw. (15848)
- 50 (Cyprus or Cypriot\$ or Lefkosia or nicosia).ti,ab,in,hw. (1669)
- 51 (Czech\$ or prague or praha).ti,ab,in,hw. (59816)
- 52 (denmark or Danish or copenhagen or Aarhus).ti,ab,in,hw. (116752)
- 53 (Estonia\$ or Tallinn).ti,ab,in,hw. (4431)
- 54 (finland or finnish or finns or finn or Helsinki).ti,ab,in,hw. (93800)
- 55 (france or French or paris\$ or Marseille or Lyon or Toulouse or nantes or Strasbourg or lille).ti,ab,in,hw. (478495)
- 56 (Germany or german\$ or berlin\$ or hamburg or munich or munchen or cologne or koln or Frankfurt or Stuttgart or dusseldorf).ti,ab,in,hw. (628192)
- 57 (Greece or greek\$ or Athens or Athenian or Thessaloniki).ti,ab,in,hw. (79933)
- 58 (hungary or Hungarian\$ or Budapest).ti,ab,in,hw. (47266)
- 59 (Ireland or irish or eire or Dublin\$).ti,ab,in,hw. (72041)
- 60 (Italy or Italian\$ or rome or roman or Milan or naples or turin).ti,ab,in,hw. (396177)
- 61 (Latvia\$ or riga).ti,ab,in,hw. (1900)
- 62 (Lithuania\$ or Vilnius).ti,ab,in,hw. (4991)
- 63 (Luxembourg\$ or luxemburg\$).ti,ab,in,hw. (1795)
- 64 (malta or maltese or Mdina or Notabile or lmdina).ti,ab,in,hw. (1446)
- 65 (netherland\$ or Holland or dutch or Amsterdam or Rotterdam or hague or Utrecht or Eindhoven).ti,ab,in,hw. (257657)
- 66 (polish or Poland or warsaw or Krakow or lodz or Wroclaw).ti,ab,in,hw. (99528)
- 67 (portuguese or Portugal or Lisbon or porto).ti,ab,in,hw. (40136)
- 68 (Romania\$ or Bucharest).ti,ab,in,hw. (15599)
- 69 (Slovakia\$ or Bratislava or pozsony).ti,ab,in,hw. (12821)
- 70 (slovenia\$ or Ljubljana).ti,ab,in,hw. (9480)
- 71 (Spanish or spain or Madrid or Barcelona or Valencia or Seville or Zaragoza or Malaga or Mallorca or iberia\$).ti,ab,in,hw. (253593)
- 72 (Swedish or Sweden or swede\$ or Stockholm or norrland or svealand or gotaland).ti,ab,in,hw. (208162)
- 73 (Britain or british or wales or welsh or Scottish or scots or Scotland or England or English or Birmingham or leeds or London or Liverpool or Manchester or Glasgow or Edinburgh or Cardiff or Belfast or UK or GB or aberdeen).ti,ab,in,hw. (2764338)

- 74 Austria/ or Belgium/ or exp france/ or exp Germany/ or Bulgaria/ or Cyprus/ or Czech Republic/ or Denmark/ or Estonia/ or Finland/ or Greece/ or hungary/ or Ireland/ or exp Italy/ or Latvia/ or Lithuania/ or Luxembourg/ or malta/ or Netherlands/ or Poland/ or portugal/ or Romania/ or Slovakia/ or Slovenia/ or spain/ or Sweden/ or exp Great Britain/ (821907)
- 75 Mediterranean Islands/ or Baltic States/ (890)
- 76 or/45-75 (5428359)
- 77 44 and 76 (2298)
- 78 (200908\$ or 200909\$ or 20091\$ or 2010\$ or 2011\$).ed. (1869690)
- 79 77 and 78 (464)
- 80 exp animals/ not humans.sh. (3722514)
- 81 79 not 80 (461)
- 82 remove duplicates from 81 (424)

**Medline In-Process & Other Non-Indexed Citations (OvidSP) 2009-2011/11/29**

**Medline Daily Update (OvidSP) 2009-2011/11/16**

**Date searched: 30.11.11**

- 1 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj3 (back\$ or muscul\$ or neck or shoulder\$) adj3 (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or strained or sprain or sprains or sprained or injur\$ or damag\$)).ti,ab. (563)
- 2 Diabetic Neuropathies/ or exp polyneuropathies/ or exp Mononeuropathies/ or exp neoplasms/ or (cancer\$ or neoplas\$ or malignan\$ or tumo?r\$ or paraneoplas\$).ti,ab. (72302)
- 3 (neuropath\$ or arthralg\$ or neuralg\$ or fibromyalg\$ or DPN or mononeuropath\$ or polyneuropath\$ or nerve\$ pain\$).ti,ab. (4575)
- 4 exp osteoarthritis/ or Arthritis, Rheumatoid/ or (rheumatoid arthrit\$ or osteoarthritis).mp. (4414)
- 5 or/2-4 (80224)
- 6 exp Pain/ or (pain or pains or painful\$).ti,ab. (19813)
- 7 5 and 6 (4667)
- 8 exp muscle, skeletal/ or muscul\$.ti,ab. (17052)
- 9 exp Pain/ or (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or strained or sprain or sprains or sprained or injur\$ or damag\$).ti,ab. (68122)
- 10 8 and 9 (3546)
- 11 chronic disease/ (108)
- 12 ((longterm or chronic\$ or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or

- continuous\$ or constant\$ or unending or unceasing) adj2 (disorder\$ or condition\$ or illness\$ or illhealth\$ or ill health\$ or malad\$ or sickness or disease\$)).mp. (7648)
- 13 or/11-12 (7648)
- 14 13 and 6 (525)
- 15 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj2 (pain or pains or painful\$)).ti,ab. (2304)
- 16 pain, intractable/ or pain, referred/ (3)
- 17 exp Back Pain/ (8)
- 18 exp neuralgia/ (18)
- 19 Neck Pain/ (5)
- 20 exp Arthralgia/ (8)
- 21 Fibromyalgia/ (3)
- 22 low\$ back pain\$.mp. (1081)
- 23 or/15-22 (3272)
- 24 or/1,7,10,14,23 (10547)
- 25 exp "costs and cost analysis"/ (118)
- 26 Resource Allocation/ (0)
- 27 Economics/ (3)
- 28 exp Economics, Medical/ (1)
- 29 exp Budgets/ (1)
- 30 Health Care Sector/ (1)
- 31 (value adj2 money).ti,ab. (52)
- 32 budget\$.ti,ab. (1411)
- 33 cost effective\$.tw. (4052)
- 34 or/25-33 (5498)
- 35 Absenteeism/ (1)
- 36 Caregivers/ (31)
- 37 ((humanistic or Social or societ\$ or work\$ or employe\$ or business\$ or communit\$ or famil\$ or carer\$ or caregiver\$) adj3 (Burden\$ or Consequenc\$ or impact\$ or problem\$ or productivity or sickness or impairment\$)).ti,ab,ot. (2788)
- 38 ((long standing or longstanding or long term or longterm or permanent or employee\$) adj2 (absence\$ or absent\$ or ill\$ or sick\$ or disab\$)).ti,ab,ot. (307)
- 39 llsi.ti,ab. (0)
- 40 (burden\$ adj2 disease\$).ti,ab,ot. (614)
- 41 ((allowance or status or long-term or pension\$ or benefit\$) adj2 disab\$).ti,ab,ot. (308)
- 42 ((unable or inability or incapacit\$ or incapab\$) adj3 work).ti,ab,ot. (33)
- 43 or/35-42 (3899)
- 44 24 and (34 or 43) (238)

45 European Union/ or EU.ti,ab. (2157)  
 46 (Europe\$ adj3 (union or community)).ti,ab. (546)  
 47 (Austria\$ or vienn\$ or austro\$).ti,ab,in,hw. (4702)  
 48 (Belgium or belgian\$ or Brussels or Antwerp\$ or ghent\$).ti,ab,in,hw. (7148)  
 49 (bulgaria\$ or sofia).ti,ab,in,hw. (1028)  
 50 (Cyprus or Cypriot\$ or Lefkosia or nicosia).ti,ab,in,hw. (198)  
 51 (Czech\$ or prague or praha).ti,ab,in,hw. (3180)  
 52 (denmark or Danish or copenhagen or Aarhus).ti,ab,in,hw. (6182)  
 53 (Estonia\$ or Tallinn).ti,ab,in,hw. (351)  
 54 (finland or finnish or finns or finn or Helsinki).ti,ab,in,hw. (4537)  
 55 (france or French or paris\$ or Marseille or Lyon or Toulouse or nantes or Strasbourg or lille).ti,ab,in,hw. (33223)  
 56 (Germany or german\$ or berlin\$ or hamburg or munich or munchen or cologne or koln or Frankfurt or Stuttgart or dusseldorf).ti,ab,in,hw. (51512)  
 57 (Greece or greek\$ or Athens or Athenian or Thessaloniki).ti,ab,in,hw. (10411)  
 58 (hungary or Hungarian\$ or Budapest).ti,ab,in,hw. (2601)  
 59 (Ireland or irish or eire or Dublin\$).ti,ab,in,hw. (9917)  
 60 (Italy or Italian\$ or rome or roman or Milan or naples or turin).ti,ab,in,hw. (27468)  
 61 (Latvia\$ or riga).ti,ab,in,hw. (145)  
 62 (Lithuania\$ or Vilnius).ti,ab,in,hw. (332)  
 63 (Luxembourg\$ or luxemburg\$).ti,ab,in,hw. (165)  
 64 (malta or maltese or Mdina or Notabile or Imdina).ti,ab,in,hw. (120)  
 65 (netherlands\$ or Holland or dutch or Amsterdam or Rotterdam or hague or Utrecht or Eindhoven).ti,ab,in,hw. (16399)  
 66 (polish or Poland or warsaw or Krakow or lodz or Wroclaw).ti,ab,in,hw. (6938)  
 67 (portuguese\$ or Portugal or Lisbon or porto).ti,ab,in,hw. (4394)  
 68 (Romania\$ or Bucharest).ti,ab,in,hw. (1101)  
 69 (Slovakia\$ or Bratislava or pozsony).ti,ab,in,hw. (646)  
 70 (slovenia\$ or Ljubljana).ti,ab,in,hw. (994)  
 71 (Spanish or spain or Madrid or Barcelona or Valencia or Seville or Zaragoza or Malaga or Mallorca or iberia\$).ti,ab,in,hw. (23172)  
 72 (Swedish or Sweden or swede\$ or Stockholm or norrland or svealand or gotaland).ti,ab,in,hw. (10199)  
 73 (Britain or british or wales or welsh or Scottish or scots or Scotland or England or English or Birmingham or leeds or London or Liverpool or Manchester or Glasgow or Edinburgh or Cardiff or Belfast or UK or GB or aberdeen).ti,ab,in,hw. (111096)  
 74 Austria/ or Belgium/ or exp france/ or exp Germany/ or Bulgaria/ or Cyprus/ or Czech Republic/ or Denmark/ or Estonia/ or Finland/ or Greece/ or hungary/ or Ireland/ or exp Italy/ or Latvia/ or Lithuania/ or Luxembourg/ or malta/ or Netherlands/ or Poland/ or portugal/ or Romania/ or Slovakia/ or Slovenia/ or spain/ or Sweden/ or exp Great Britain/ (469)

75 Mediterranean Islands/ or Baltic States/ (1)  
 76 or/45-75 (321409)  
 77 44 and 76 (113)  
 78 exp animals/ not humans.sh. (1559)  
 79 77 not 78 (113)  
 80 limit 79 to yr="2009 -Current" (82)  
 81 remove duplicates from 80 (82)

#### Embase (OvidSP) 2009/wk36–2011/wk47

Date searched: 29.11.11

1 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj3 (back\$ or muscl\$ or neck or shoulder\$) adj3 (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or strained or sprain or sprains or sprained or injur\$ or damag\$)).ti,ab. (8444)  
 2 peripheral neuropathy/ or diabetic neuropathy/ or exp polyneuropathy/ or exp mononeuropathy/ or neuropathy/ or exp neoplasm/ or (cancer\$ or neoplas\$ or malignan\$ or tumor\$ or paraneoplas\$).ti,ab. (3156325)  
 3 (neuropath\$ or arthralg\$ or neuralg\$ or fibromyalg\$ or DPN or mononeuropath\$ or polyneuropath\$ or nerve\$ pain\$).ti,ab. (125365)  
 4 exp osteoarthritis/ or rheumatoid arthritis/ or (rheumatoid arthrit\$ or osteoarthritis).mp. (183440)  
 5 or/2-4 (3386315)  
 6 exp Pain/ or (pain or pains or painful\$).ti,ab. (790299)  
 7 5 and 6 (226573)  
 8 exp skeletal muscle/ or muscl\$.ti,ab. (568329)  
 9 exp Pain/ or (pain or pains or painful\$ or sore\$ or tender\$ or discomfort or ache\$ or aching or strains or strained or sprain or sprains or sprained or injur\$ or damag\$).ti,ab. (1897339)  
 10 8 and 9 (89807)  
 11 chronic disease/ (137148)  
 12 ((longterm or chronic\$ or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj2 (disorder\$ or condition\$ or illness\$ or illhealth\$ or ill health\$ or malad\$ or sickness or disease\$)).mp. (332829)  
 13 or/11-12 (332829)  
 14 6 and 13 (34024)

- 15 ((Chronic\$ or longterm or long term or sustained or long standing or permanent\$ or intractable\$ or persistent\$ or unremitting or unrelenting or continual\$ or continuous\$ or constant\$ or unending or unceasing) adj2 (pain or pains or painful\$)).ti,ab. (43179)
- 16 chronic pain/ or intractable pain/ or phantom pain/ or referred pain/ or cancer pain/ (38898)
- 17 exp backache/ (52103)
- 18 exp neuralgia/ (57048)
- 19 neck pain/ (9330)
- 20 arthralgia/ (27221)
- 21 fibromyalgia/ (10135)
- 22 low\$ back pain\$.mp. (31491)
- 23 or/15-22 (193601)
- 24 or/1,7,10,14,23 (424245)
- 25 Cost of illness/ (11791)
- 26 exp Health care cost/ (167249)
- 27 exp Economic Evaluation/ (174418)
- 28 Health economics/ (30690)
- 29 (value adj2 money).ti,ab. (998)
- 30 budget\$.ti,ab. (19166)
- 31 cost effective\$.tw. (75237)
- 32 or/25-31 (355286)
- 33 Productivity/ (19737)
- 34 Absenteeism/ (10888)
- 35 Caregiver Burden/ (1829)
- 36 Caregiver/ (28165)
- 37 Work Disability/ (2884)
- 38 ((humanistic or Social or societ\$ or work\$ or employe\$ or business\$ or communit\$ or famil\$ or carer\$ or caregiver\$) adj3 (Burden\$ or Consequenc\$ or impact\$ or problem\$ or productivity or sickness or impairment\$)).mp. (71043)
- 39 ((long standing or longstanding or long term or longterm or permanent or employee\$) adj2 (absence\$ or absent\$ or ill\$ or sick\$ or disab\$)).mp. (7555)
- 40 lsi.mp. (7)
- 41 (burden\$ adj2 disease\$).mp. (8332)
- 42 ((allowance or status or long-term or pension\$ or benefit\$) adj2 disab\$).mp. (8039)
- 43 ((unable or inability or incapacit\$ or incapab\$) adj3 work).mp. (1464)
- 44 or/33-43 (141578)
- 45 24 and (32 or 44) (16302)
- 46 European-Union/ or EU.ti,ab. (25036)
- 47 (Europe\$ adj3 (union or community)).ti,ab. (11724)
- 48 (Austria\$ or vienn\$ or austro\$).ti,ab,in,ad,hw. (155844)
- 49 (Belgium or belgian\$ or Brussels or Antwerp\$ or ghent\$).ti,ab,in,ad,hw. (211251)
- 50 (bulgaria\$ or sofia).ti,ab,in,ad,hw. (35735)
- 51 (Cyprus or Cypriot\$ or Lefkosia or nicosia).ti,ab,in,ad,hw. (3819)
- 52 (Czech\$ or prague or praha).ti,ab,in,ad,hw. (114584)
- 53 (denmark or Danish or copenhagen or Aarhus).ti,ab,in,ad,hw. (195973)
- 54 (Estonia\$ or Tallinn).ti,ab,in,ad,hw. (7509)
- 55 (finland or finnish or finn or finns or Helsinki).ti,ab,in,ad,hw. (144381)
- 56 (france or French or paris\$ or Marseille or Lyon or Toulouse or nantes or Strasbourg or lille).ti,ab,in,ad,hw. (944727)
- 57 (Germany or german\$ or berlin\$ or hamburg or munich or munchen or cologne or koln or Frankfurt or Stuttgart or dusseldorf).ti,ab,in,ad,hw. (1280026)
- 58 (Greece or greek\$ or Athens or Athenian or Thessaloniki).ti,ab,in,ad,hw. (127629)
- 59 (hungary or Hungarian\$ or Budapest).ti,ab,in,ad,hw. (84158)
- 60 (Ireland or irish or eire or Dublin\$).ti,ab,in,ad,hw. (184171)
- 61 (Italy or Italian\$ or rome or roman or Milan or naples or turin).ti,ab,in,ad,hw. (747755)
- 62 (Latvia\$ or riga).ti,ab,in,ad,hw. (4133)
- 63 (Lithuania\$ or Vilnius).ti,ab,in,ad,hw. (7699)
- 64 (Luxembourg\$ or luxemburg\$).ti,ab,in,ad,hw. (4286)
- 65 (malta or maltese or Mdina or Notabile or Imdina).ti,ab,in,ad,hw. (2887)
- 66 (netherlands\$ or Holland or dutch or Amsterdam or Rotterdam or hague or Utrecht or Eindhoven).ti,ab,in,ad,hw. (448348)
- 67 (polish or Poland or warsaw or Krakow or lodz or Wroclaw).ti,ab,in,ad,hw. (184806)
- 68 (portuguese\$ or Portugal or Lisbon or porto).ti,ab,in,ad,hw. (78208)
- 69 (Romania\$ or Bucharest).ti,ab,in,ad,hw. (29066)
- 70 (Slovakia\$ or Bratislava or pozsony).ti,ab,in,ad,hw. (28224)
- 71 (slovenia\$ or Ljubljana).ti,ab,in,ad,hw. (18307)
- 72 (Spanish or spain or Madrid or Barcelona or Valencia or Seville or Zaragoza or Malaga or Mallorca or iberia\$).ti,ab,in,ad,hw. (470566)
- 73 (Swedish or Sweden or swede\$ or Stockholm or norrland or svealand or gotaland).ti,ab,in,ad,hw. (331391)
- 74 (Britain or british or wales or welsh or Scottish or scots or Scotland or England or English or Birmingham or leeds or London or Liverpool or Manchester or Glasgow or Edinburgh or Cardiff or Belfast or UK or GB or aberdeen).ti,ab,in,ad,hw. (1483042)
- 75 Austria/ or Belgium/ or Benelux/ or france/ or exp Germany/ or Bulgaria/ or Cyprus/ or Czech-Republic/ or Denmark/ or Estonia/ or Finland/ or Greece/ or hungary/ or Ireland/ or Italy/ or Latvia/ or Lithuania/ or Luxembourg/ or malta/ or Netherlands/ or Poland/ or portugal/ or Romania/ or Slovakia/ or Slovenia/ or spain/ or Sweden/ or United-Kingdom/ (846478)
- 76 Southern-Europe/ or Scandinavia/ or Western-Europe/ or Baltic-States/ (13540)
- 77 or/46-76 (6683740)

- 78 45 and 77 (6699)
- 79 ("200936" or "200937" or "200938" or "200939" or 20094\$ or 20095\$ or 2010\$ or 2011\$.em. (2383365)
- 80 78 and 79 (1601)
- 81 animal/ or animal experiment/ (3123853)
- 82 (rat or rats or mouse or mice or murine or rodent or rodents or hamster or hamsters or pig or pigs or porcine or rabbit or rabbits or animal or animals or dogs or dog or cats or cow or bovine or sheep or ovine or monkey or monkeys).mp. (4830062)
- 83 81 or 82 (4830062)
- 84 exp human/ or human experiment/ (12738143)
- 85 83 not (83 and 84) (3870815)
- 86 80 not 85 (1596)
- 87 limit 86 to embase (1454)
- 88 remove duplicates from 87 (1435)

**Cochrane Database of Systematic Reviews (CDSR): 2009-2011/Issue 11**  
**Database of Abstracts of Reviews of Effects (DARE): 2009-2011/Issue 4**  
**Health technology Assessment Database (HTA): 2009-2011/Issue 4**  
**Date searched: 30.11.11**

- #1 ((Chronic\* or longterm or long term or sustained or long standing or permanent\* or intractable\* or persistent\* or unremitting or unrelenting or continual\* or continuous\* or constant\* or unending or unceasing) near (back\* or muscl\* or neck or shoulder\*) near (pain or pains or painful\* or sore\* or tender\* or discomfort or ache\* or aching or strains or strained or sprain or sprains or sprained or injur\* or damag\*)):ti,ab 1701
- #2 MeSH descriptor Diabetic Neuropathies, this term only 629
- #3 MeSH descriptor Polyneuropathies explode all trees 234
- #4 MeSH descriptor Mononeuropathies explode all trees 587
- #5 (neuropath\* or arthralg\* or neuralg\* or fibromyalg\* or DPN or mononeuropath\* or polyneuropath\* or nerve\* pain\* or cancer\* or neoplas\* or malignan\* or tumor\* or tumour\* or paraneoplas\*):ti,ab or (rheumatoid arthrit\* or osteoarthritis\*):ti,ab,kw 70584
- #6 MeSH descriptor Neoplasms explode all trees 42019
- #7 MeSH descriptor Arthritis, Rheumatoid, this term only 3471
- #8 MeSH descriptor Osteoarthritis explode all trees 2835
- #9 (#2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8) 83586
- #10 MeSH descriptor Pain explode all trees 28322
- #11 (pain or pains or painful\*):ti,ab 47585
- #12 (#10 OR #11) 56070
- #13 (#9 AND #12) 10824
- #14 MeSH descriptor Muscle, Skeletal explode all trees 5925

- #15 muscl\*:ti,ab 15515
- #16 (#14 OR #15) 17224
- #17 (pain or pains or painful\* or sore\* or tender\* or discomfort or ache\* or aching or strains or strained or sprain or sprains or sprained or injur\* or damag\*):ti,ab 71099
- #18 (#10 OR #17) 79023
- #19 (#16 AND #18) 4587
- #20 MeSH descriptor Chronic Disease explode all trees 9766
- #21 ((longterm or chronic\* or long term or sustained or long standing or permanent\* or intractable\* or persistent\* or unremitting or unrelenting or continual\* or continuous\* or constant\* or unending or unceasing) near (disorder\* or condition\* or illness\* or illhealth\* or ill health\* or malad\* or sickness or disease\*)):ti,ab,kw 23094
- #22 (#20 OR #21) 23094
- #23 (#12 AND #22) 3213
- #24 ((Chronic\* or longterm or long term or sustained or long standing or permanent\* or intractable\* or persistent\* or unremitting or unrelenting or continual\* or continuous\* or constant\* or unending or unceasing) near (pain or pains or painful\*)):ti,ab 4237 0
- #25 MeSH descriptor Pain, Intractable, this term only 222
- #26 MeSH descriptor Pain, Referred, this term only 8
- #27 MeSH descriptor Back Pain explode all trees 2345
- #28 MeSH descriptor Neuralgia explode all trees 595
- #29 MeSH descriptor Neck Pain, this term only 437
- #30 MeSH descriptor Arthralgia explode all trees 614
- #31 MeSH descriptor Fibromyalgia, this term only 483
- #32 low\* back pain\*:ti,ab,kw 4135
- #33 (#24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32) 6496
- #34 (#1 OR #13 OR #19 OR #23 OR #33) 20775
- #35 MeSH descriptor Costs and Cost Analysis explode all trees 17247
- #36 MeSH descriptor Resource Allocation, this term only 48
- #37 MeSH descriptor Economics, this term only 48
- #38 MeSH descriptor Economics, Medical explode all trees 91
- #39 MeSH descriptor Budgets explode all trees 45
- #40 MeSH descriptor Health Care Sector, this term only 2
- #41 (value near/2 money):ti,ab 53
- #42 budget\*:ti,ab 253
- #43 ("cost effective" or cost effectiveness):ti,ab 12643
- #44 (#35 OR #36 OR #37 OR #38 OR #39 OR #40 OR #41 OR #42 OR #43) 22174



#45 MeSH descriptor Absenteeism, this term only 358  
 #46 MeSH descriptor Caregivers, this term only 865  
 #47 ((humanistic or Social or societ\* or work\* or employe\* or business\* or communit\* or famil\* or carer\* or caregiver\*) near/3 (Burden\* or Consequenc\* or impact\* or problem\* or productivity or sickness or impairment\*)):ti,ab,kw 2087  
 #48 ((long standing or longstanding or long term or longterm or permanent or employee\*) near/2 (absence\* or absent\* or ill\* or sick\* or disab\*)):ti,ab,kw 279  
 #49 llsi:ti,ab 0  
 #50 (burden\* near/4 disease\*):ti,ab,kw 332  
 #51 ((allowance or status or "long term" or pension\* or benefit\*) near/2 (disab\*)):ti,ab,kw 588  
 #52 ((unable or inability or incapacit\* or incapab\*) near/3 (work)):ti,ab,kw 68  
 #53 (#45 OR #46 OR #47 OR #48 OR #49 OR #50 OR #51 OR #52) 4175  
 #54 (#34 AND ( #44 OR #53 )) 972  
 #55 (#54), from 2009 to 2011 261

CDSR: 59 references

DARE: 2 references

HTA: 3 references

#### NHS Economic Evaluation Database (NHS EED): 2009-2011/Issue 4

Date searched: 30.11.11

#1 ((Chronic\* or longterm or long term or sustained or long standing or permanent\* or intractable\* or persistent\* or unremitting or unrelenting or continual\* or continuous\* or constant\* or unending or unceasing) near (back\* or muscl\* or neck or shoulder\*) near (pain or pains or painful\* or sore\* or tender\* or discomfort or ache\* or aching or strains or strained or sprain or sprains or sprained or injur\* or damag\*)):ti,ab 1701  
 #2 MeSH descriptor Diabetic Neuropathies, this term only 629  
 #3 MeSH descriptor Polyneuropathies explode all trees 234  
 #4 MeSH descriptor Mononeuropathies explode all trees 587  
 #5 (neuropath\* or arthralg\* or neuralg\* or fibromyalg\* or DPN or mononeuropath\* or polyneuropath\* or nerve\* pain\* or cancer\* or neoplas\* or malignan\* or tumor\* or tumour\* or paraneoplas\*):ti,ab or (rheumatoid arthrit\* or osteoarthritis\*):ti,ab,kw 70584  
 #6 MeSH descriptor Neoplasms explode all trees 42019  
 #7 MeSH descriptor Arthritis, Rheumatoid, this term only 3471  
 #8 MeSH descriptor Osteoarthritis explode all trees 2835  
 #9 (#2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8) 83586  
 #10 MeSH descriptor Pain explode all trees 28322

#11 (pain or pains or painful\*):ti,ab 47585  
 #12 (#10 OR #11) 56070  
 #13 (#9 AND #12) 10824  
 #14 MeSH descriptor Muscle, Skeletal explode all trees 5925  
 #15 muscl\*:ti,ab 15515  
 #16 (#14 OR #15) 17224  
 #17 (pain or pains or painful\* or sore\* or tender\* or discomfort or ache\* or aching or strains or strained or sprain or sprains or sprained or injur\* or damag\*):ti,ab 71099  
 #18 (#10 OR #17) 79023  
 #19 (#16 AND #18) 4587  
 #20 MeSH descriptor Chronic Disease explode all trees 9766  
 #21 ((longterm or chronic\* or long term or sustained or long standing or permanent\* or intractable\* or persistent\* or unremitting or unrelenting or continual\* or continuous\* or constant\* or unending or unceasing) near (disorder\* or condition\* or illness\* or illhealth\* or ill health\* or malad\* or sickness or disease\*)):ti,ab,kw 23094  
 #22 (#20 OR #21) 23094  
 #23 (#12 AND #22) 3213  
 #24 ((Chronic\* or longterm or long term or sustained or long standing or permanent\* or intractable\* or persistent\* or unremitting or unrelenting or continual\* or continuous\* or constant\* or unending or unceasing) near (pain or pains or painful\*)):ti,ab 4237 0  
 #25 MeSH descriptor Pain, Intractable, this term only 222  
 #26 MeSH descriptor Pain, Referred, this term only 8  
 #27 MeSH descriptor Back Pain explode all trees 2345  
 #28 MeSH descriptor Neuralgia explode all trees 595  
 #29 MeSH descriptor Neck Pain, this term only 437  
 #30 MeSH descriptor Arthralgia explode all trees 614  
 #31 MeSH descriptor Fibromyalgia, this term only 483  
 #32 low\* back pain\*:ti,ab,kw 4135  
 #33 (#24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32) 6496  
 #34 (#1 OR #13 OR #19 OR #23 OR #33) 20775  
 #35 (#34), from 2009 to 2011 3825

42 references retrieved

**Health Economics Evaluation Database (HEED) (Wiley): 2009-2011/11/28**<http://onlinelibrary.wiley.com/book/10.1002/9780470510933>**Searched 28.11.11**

Compound search, (all data), 2009-2011

(Chronic\* OR longterm OR 'long term' OR sustained OR 'long standing' OR permanent OR intractable OR persistent OR unremitting OR unrelenting OR continual OR continuous OR constant OR unending OR unceasing) AND pain\*

62 references retrieved

**Cost-Effectiveness Analysis (CEA) Registry 2009-2011/11/28**<https://research.tufts-nemc.org/cear4/Home.aspx>**Searched 28.11.11**

Search for: Articles

Search terms: Pain [in title] OR Pain [in abstract] OR Pain [in keyword]

Publication date: 2009-2011

Country of study: Belgium, Czech Republic, Denmark, European Union, France, Germany, Greece, Ireland, Italy, Multicenter (International), Spain, Sweden, The Netherlands, United Kingdom, Other Country

31 references retrieved

**Guidelines and guidance****NICE Guidance (National Institute for Health and Clinical Excellence) (Internet)**<http://guidance.nice.org.uk/>**Searched 28.11.11**

Search term: Pain

Limits: Publication period: 01.09.2009 – 28.11.11

Search type: Guidance

38 references retrieved

**Guidelines International Network (Internet)**<http://www.g-i-n.net/>**Searched 28.11.11**

Date limit: 2009-2011

Terms searched	Hits
Chronic AND pain*	58
Pain	52
Cancer pain*	20
Referred pain*	0
Intractable pain*	3
Phantom pain*	0
<b>Total before deduplication</b>	<b>133</b>
<b>Total after deduplication</b>	<b>113</b>

**National Guidelines Clearinghouse (Internet) 2009-2011**<http://www.guideline.gov/>**Searched 28.11.11****Advanced search**

Terms searched	Hits
Chronic AND pain: limit to 2009, 2010, 2011	256
<b>Total</b>	<b>256</b>

**International Network of Agencies for Health Technology Assessment (INAHTA) (Internet)**<http://www.inahta.org/>**Searched 28.11.11**

Date limit: 2009-2011

Search terms	Hits
pain	17
<b>Total</b>	<b>17</b>

## Grey Literature

### OpenGrey: System for Information on Grey Literature in Europe (Internet) 2005-2011/12/5

<http://www.opengrey.eu/>

Date searched: 05/12/11

2 strategies:

"chronic pain" OR "Back pain" OR "Shoulder pain" OR "Neck pain" OR "Visceral pain" OR "Neuropathic pain" OR Neuralgia OR Neuropathy OR "Phantom limb" OR Radiculopathy OR Fibromyalgia

0 references from 2005-present

Pain

0 references from 2005-present

### OAlster (WorldCat) 2005-2011/12/5

<http://www.opengrey.eu/>

Date searched: 05/12/11

4 strategies

Keyword: pain

Date limit: 2005-2011

83 references

Keyword: Neuralgia OR Neuropathy

Date limit: 2005-2011

1 reference

Keyword: "Phantom limb" OR Radiculopathy

Date limit: 2005-2011

0 references

Keyword: Fibromyalgia

Date limit: 2005-2011

1 reference

83 references after deduplication

## King's Fund Library Database (Internet) 2005-2011/12/05

Strategy: AA\_Grun2\_Kings1

Date searched: 05.12.11

Advanced search. Keyword index.

kw,wrld: chronic pain or kw,wrld: Back pain or kw,wrld: Shoulder pain or kw,wrld: Neck pain or kw,wrld: Visceral pain or kw,wrld: Neuropathic pain or kw,wrld: Neuralgia or kw,wrld: Neuropathy or kw,wrld: Phantom limb or kw,wrld: Radiculopathy or kw,wrld: Fibromyalgia yr,st-numeric=2005-

44 references

## EU Ministries of Health websites

### EU wide

EU Commission

[http://ec.europa.eu/index\\_en.htm](http://ec.europa.eu/index_en.htm)

[http://ec.europa.eu/index\\_en.htm](http://ec.europa.eu/index_en.htm)

2 references

### Austria

Federal Ministry of Health Department

<http://www.bmgf.gv.at/>

1 reference

### Belgium

Belgian Federal Public Service

<http://www.health.belgium.be/eportal/Healthcare/index.htm>

0 references

### Bulgaria

Ministry of Health

<http://www.mh.government.bg/>

No English translation

### Cyprus

Ministry of Health

[http://www.moh.gov.cy/moh/moh.nsf/mission\\_en/mission\\_en?OpenDocument](http://www.moh.gov.cy/moh/moh.nsf/mission_en/mission_en?OpenDocument)

0 references

**Czech Republic**

Ministry of Health

<http://www.mzcr.cz/>

English translation not adequate for thorough searching

**Denmark**

National Board of Health

<http://www.sst.dk/>

0 references

**Estonia**

Ministry of Social Affairs

<http://www.sm.ee/eng.html>

State Agency of Medicines

<http://www.ravimiamet.ee/82>: English translation not adequate for thorough searching

0 references

**Finland**

Ministry of Social Affairs and Health

<http://www.stm.fi/en/frontpage>

0 references

**France**

Ministry of Health

<http://www.sante.gouv.fr/>

Institut de Veille Sanitaire

<http://www.invs.sante.fr/L-Institut>

<http://www.invs.sante.fr/L-Institut>

1 reference

**Germany**

Ministry of Health

<http://www.bmg.bund.de/>

1 reference

**Greece**

Ministry of Health and Social Solidarity

<http://www.yyka.gov.gr/>

English translation not adequate for thorough searching

**Hungary**

Ministry of Health

<http://www.eum.hu/english>

Ministry of Natural Resources

<http://www.kormany.hu/hu/nemzeti-eroforras-miniszterium>

1 reference

**Ireland**

Department of Health

<http://www.dohc.ie/>

4 references

**Italy**

Ministry of Health

<http://www.salute.gov.it/>

4 references

**Latvia**

Ministry of Health

<http://www.vm.gov.lv/index.php?setlang=en>

0 references

**Lithuania**

Ministry of Health

<http://www.sam.lt/>

<http://sena.sam.lt/en/>

0 references

**Luxembourg**

Ministry of Health

<http://www.ms.public.lu/fr/index.html>

0 references

**Malta**

Ministry of Health, the Elderly and Community Care

<http://www.sahha.gov.mt/>

<https://ehealth.gov.mt>

0 references

### **Netherlands**

Ministry of Health, Welfare and Sport

<http://english.minvws.nl/en/>

National Institute for Public Health and the Environment

<http://www.rivm.nl/en/>

5 references

### **Poland**

Ministry of Health and Social Welfare

<http://www.mz.gov.pl/>

0 references

### **Portugal**

Ministry of Health

<http://www.min-saude.pt/portal>

0 references

### **Romania**

Ministry of Health

<http://www.ms.ro/>

0 references

### **Slovakia**

Ministry of Health

<http://www.health.gov.sk/>

0 references

### **Slovenia**

Ministry of Health

<http://www.mz.gov.si/en/>

0 references

### **Spain**

Ministry of Health

<http://www.msps.es/en/home.htm>

0 references

### **Sweden**

Ministry of Health and Social Affairs

<http://www.sweden.gov.se/sb/d/2061>

5 references

### **United Kingdom**

Department of Health

<http://www.dh.gov.uk/en/index.htm>

3 references

Total references retrieved: 27

### **Professional bodies, associations and societies**

#### **EU/World wide**

The Societal Impact of Pain (SIP) - a multi-stakeholder platform in Europe

<http://www.sip-meetings.org/grt-sip/154700556.jsp>

3 references

Paineurope.com

<http://www.paineurope.com/home.html>

6 references

Pain Topics

<http://pain-topics.org/>

1 reference

Pain Online

<http://www.painonline.org/>

0 references

EFIC (Europe Against Pain)

<http://www.efic.org/>

5 references

International Association for the Study of Pain (IASP)

<http://www.iasp-pain.org/>

0 references

#### **Austria**

Österreichische Schmerz Gesellschaft (ÖSG)

<http://www.oesg.at/>

2 references

#### **Belgium**

Belgian Pain Society (BPS)

<http://www.belgianpainsociety.org/>

0 references

**Bulgaria**

Bulgarian Association for the Study and Treatment of Pain

<http://www.anesthesiology.bg/>

0 references

**Cyprus**

No association/society found

**Czech Republic**

Czech Pain Society (SSLB)

<http://www.pain.cz/>

Could not access website

**Denmark**

Dansk Smerte Forum (Danish Pain Society)

<http://dansksmerteforum.dk/>

0 references

**Estonia**

Estonian Pain Society (EVS)

<http://www.valu.ee>

3 references

**Finland**

Suomen Kivuntutkimusyhdistys r.y. (Finnish Association for the Study of Pain (FASP))

<http://www.suomenkivuntutkimusyhdistys.fi/>

2 references

**France**

Société Française d'Etude et de Traitement de la Douleur (SFETD)

<http://www.sfetd-douleur.org/accueil/index.phtml?mapViewDataId=2060ec82-13ed-4969-92e2-c21773a3123a>

<http://www.sfetd-douleur.org/accueil/index.phtml?mapViewDataId=2060ec82-13ed-4969-92e2-c21773a3123a>

<http://www.sfetd-douleur.org/accueil/index.phtml?mapViewDataId=2060ec82-13ed-4969-92e2-c21773a3123a>

<http://www.sfetd-douleur.org/accueil/index.phtml?mapViewDataId=2060ec82-13ed-4969-92e2-c21773a3123a>

7 references

**Germany**

Deutsche Gesellschaft zum Studium des Schmerzes e.V. (DGSS)

<http://www.dgss.org/>

2 references

**Greece**

Hellenic Society of Algology

<http://www.algologia.gr/>

0 references

**Hungary**

Magyarországi Fájdalom Társaság (Hungarian Pain Society)

<http://www.fajdalom-tarsasag.hu/main.php>

No English translation

**Ireland**

Irish Pain Society

<http://www.irishpainsociety.com/>

2 references

**Italy**

Associazione Italiana per lo Studio del Dolore

<http://www.aisd.it/news.php>

7 references

**Latvia**

Latvian Association for the Study of Pain

<http://www.sapes.lv/>

0 references

**Lithuania**

Lietuvos Skausmo Draugija (Lithuanian Pain Society)

<http://www.skausmodraugija.ten.lt/>

1 reference

**Luxembourg**

No association/society found

**Malta**

Association of Anaesthesiologists of Malta

<http://www.aam-malta.org/>

0 references

**Netherlands**

Dutch Pain Society

<http://www.dutchpainsociety.nl/>

2 references

## **Poland**

Polskie Towarzystwo Badania Bólu (Polish Society for the Study of Pain)

<http://www.ptbb.pl/>

0 References

## **Portugal**

Associação Portuguesa para o Estudo da Dor

<http://www.aped-dor.org/>

2 references

## **Romania**

Asociația Romană Pentru Studiul Durerii (ARSD) (Romanian Association for the Study of Pain (RASP))

<http://www.arsd.ro/>

1 reference

## **Slovakia**

Slovenská Spoločnosť Pre štúdium a Liečbu Bolesť (SSSLB) (Slovak Society for Study and Treatment of Pain)

<http://www.pain.sk/>

0 references

## **Slovenia**

Slovensko Združenje Za Zdravljenje Bolesin (Slovenian Association for Pain Management)

<http://www.szzb.si/>

0 references

## **Spain**

Sociedad Española Del Dolor

<http://www.sedolor.es/>

Website down (02.12.11)

## **Sweden**

Svenskt Smärtforum (Swedish Pain Forum)

<http://www.svensktsmartforum.se/>

0 references

## **United Kingdom**

The British Pain Society

<http://www.britishpainsociety.org/>

3 references

Total references retrieved: 49

## **Contacting relevant organisations**

### **Pain association/societies e-mail**

Dear sir/madam,

We are preparing a report that will aim to provide information about chronic pain for the "EU Reflection process on chronic diseases".

With that in mind we would be extremely grateful if you would provide us with any statements or documents that you are aware of regarding priorities for or recommendations for spending/resource allocation in Chronic Pain in your country (for example chronic pain in general, back pain, cancer pain and neuropathic pain). We would be interested in such information from your society, but especially also from your government or other relevant public organisations.

We would of course be grateful if this could be provided in English and, if not possible, then in your own language.

Please feel free to ask for any further information.

### **Health ministry e-mail**

Dear sir/madam,

We are preparing a report that will aim to provide information about chronic pain for the "EU Reflection process on chronic diseases".

With that in mind we would be extremely grateful if you would provide us with any statements or documents that you are aware of regarding priorities for or recommendations for spending/resource allocation in Chronic Pain in your country (for example chronic pain in general, back pain, cancer pain and neuropathic pain). We would also be interested in such information from any other relevant public organisations.

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