

# 1 SUMMARY

## **Troublesome for the patients, problematic for the health care system, and costly for the society**

Musculoskeletal conditions (MSC) are extremely common and have important consequences for the individual and the society. Typically around 50% of the population report musculoskeletal pain at one or more sites for at least one week in the last month. Population surveys show that back pain is the most common site of regional pain in younger and middle aged adults, and knee pain in older people. The prevalence of physical disability is higher in women than men. It rises with age, around 60% of women aged over 75 living in the community report some physical limitations.

In individuals of working age, MSC - in particular back pain and generalised widespread pain - are a common cause of sick leave and long-term work disability and hence a big problem for the individuals affected, with huge economical consequences for society. Among older people rheumatoid arthritis, osteoarthritis and osteoporosis are associated with a loss of independence and a need for more support in the community or admission to residential care.

Around 15-20% of consultations in primary care are for MSC. Many of these people are referred to allied health professions such as physiotherapists, occupational therapists or chiropractors; or to medical specialists such as rheumatologists, orthopaedic surgeons or rehabilitation specialists. Total joint replacement (mainly of the hip or knee) is one of the most common elective operations for older people in most European countries. The major consequences for the health services of osteoporosis are forearm and vertebral fractures and hip fractures. There is a significant mortality associated with hip fracture.

A few European countries have performed 'cost-of-illness' studies. In the Netherlands in 1999 around 50% of all disability payments and 6% of total healthcare costs were accounted for these conditions. A Swedish study from 1994 estimated that 90% of the total socio-economic cost of MSC were indirect costs (31.5% for sick leave and 59% for early retirement). 47% of the total costs were attributed to back disorders, 14% to osteoarthritis and 6% to rheumatoid arthritis. It is difficult to compare costs between countries because of the different ways in which healthcare systems and social services are organised, and the different ways of attributing costs.

Musculoskeletal problems and conditions form a heterogeneous group for a great part with poorly understood causes. The group comprises clear cut diagnoses, biologically and clinically well defined such as rheumatoid arthritis and sciatica; biologically defined, but clinically less well defined diagnoses such as osteoporosis and arthrosis; as well as controversial conditions as nonspecified low back pain, fibromyalgia and myofascial pain syndromes. The common denominators are pain and reduced function resulting from some disturbances in the musculoskeletal system ensuing mainly from inflammation, degenerative processes and trauma.

The term unspecified musculoskeletal problems is a non-diagnostic approach which includes all pain conditions in the musculoskeletal system. This embraces the specific conditions included in this report (rheumatoid arthritis, osteoarthritis, and osteoporosis), as well as malformations, injuries, infections and tumours.

## Need for monitoring

This report argues for monitoring these conditions in the Community and describes how the monitoring should be done. The report is a result of a project under the Community's program for health monitoring. The project has been administered by establishing a project group with representatives from 12 member countries of the European Union (EU), the Bone and Joint Decade, and Norway.

There are several reasons why there is a need for agreed indicators and monitoring. Firstly, the fact that the burden and cost of MSC are high, and the reasons for this can be better understood by measuring agreed indicators. In addition, there is a need to establish the baseline situation in Europe. It is unclear at present whether there are true differences between different areas and countries in Europe with regards to the occurrence and impact of MSC, and if such differences exist, whether they are of practical interest. While it is not necessary to gather country-specific data for every aspect of every MSC, there are some significant gaps in our knowledge which need to be filled. The data which are available are often inconsistent. Many differences between studies can be explained by differences in case definition or survey methodology. Nevertheless, there are some patterns which might provide clues to disease aetiology and to unequal provision of services. For example, the incidence of fractured neck of femur shows an increasing gradient from southern to northern Europe. The need to monitor arises because the epidemiology and prognosis of MSC changes over time. One reason is the alteration in the structure of the population: most MSC are more common in women than men, and occur more frequently in older people. Both the number and the proportion of older people are increasing in most European countries. The United Nations Population Division estimates that the overall population in Europe will fall by an average of 0.37% per annum for the next 50 years. During the same time the number of people aged over 60 will increase by 0.81% per annum and aged over 80 by 2.06%. Thus the proportion of the population aged over 65 is predicted to rise from 14.7% in 2000 to 17.6% in 2015. The overall burden of MSC can therefore be expected to rise over the next few decades.

Another reason for the changing MSC epidemiology are the shifting risk profiles such as smoking and alcohol behaviour, nutrition, obesity and lack of exercise. For example, the prevalence and severity of back pain are influenced by socio-economic status, psychological and occupational factors. Smoking is a risk factor for back pain, RA and OP. Obesity is a risk factor for OA in the knee. Immobility, alcohol and falls are all risk factors for osteoporotic fractures.

The occurrence of MSC and their consequences can also be modified by prevention programs. Such public health programmes need to be monitored.

In addition, effective, although sometimes expensive, treatments are becoming available for the destructive MSC, such as RA and OP. These will not only have an impact on functional capacities, but will also slow down the progression. This requires monitoring criteria for different stages of the disease.

In summary, monitoring will firstly allow the identification of changes in the occurrence of MSC and their consequences. Secondly, the association between determinants and conditions may give better insight into the aetiology of these health problems. Thirdly, monitoring MSC will help health policy makers to adapt resource allocation to the changing needs in the society. Finally, it enables meaningful comparisons between countries and regions throughout the EU.

## Recommendations

Information on MSC and functional limitation, its determinants and consequences can be obtained from a variety of sources:

Health interview surveys

Health examination surveys

Health care utilisation

Registers

Research projects

In most member states such information is available. The problem is that a variety of methods are used, and the comparability is limited. The great challenge is to harmonize methods to make international comparisons possible, and to follow time trends.

We have divided the indicators into determinants (for the conditions as well as for outcome), the conditions, and the consequences (personal and societal). The report recommends monitoring the following conditions:

Unspecified musculoskeletal conditions (widespread and localized)

Rheumatoid arthritis,

Osteoarthritis,

Osteoporosis

The report will not present recommendations for other musculoskeletal conditions such as malformations and injuries, although those conditions will be included in the question on unspecified pain, and partly discussed as determinants.

### DETERMINANTS

The most important determinants for MSC are also established risk factors for other illnesses. For the purpose of monitoring determinants for MSC, factors as weight, smoking, and physical activity should be included according to recommendations made by other groups inside the health monitoring project. Although less strong than earlier assumed, work strain, both physical and psychosocial are determinants for musculoskeletal pain. These risk factors will be covered by the group on work environment.

Socioeconomic status seems to be a determinant for some of the conditions. It is a stronger predictor of the outcome of the conditions. Persons with low socioeconomic status run a dramatically higher risk of ending up with a disability pension for any diagnosis, and even more with musculoskeletal complaints. Again we have no specific recommendations but support the recommendations made by others in the health monitoring project.

All of those risk factors/determinants should best be monitored by health interview surveys using standardised questions and categories of answers.

Other of the determinants mentioned in the report are considered to be of lesser significance, and we will not recommend them to be included in a community based monitoring program.

## THE CONDITIONS AND THEIR CONSEQUENCES

Musculoskeletal pain has many dimensions: complaint quality, complaint origin, complaint severity, complaint localisation, start, duration, mode (isolated episodes, recurrent or chronic). For the purpose of including few questions in any health interview study, the group has decided on recommending the following general question on musculoskeletal pain

1. During the last week, have you had any pain affecting your muscles, joints, neck or back which has affected your ability to carry out the activities of daily living? If Yes, please tick the region(s) in the grid (column a)

2. Has this pain (or pains) lasted for 3 months or more? If Yes, please tick the region(s) in the grid (column b)

	a) Pain last week	b) Pain lasted for three months or more
Head		
Neck		
Shoulder(s)		
Upper back		
Elbows		
Wrist(s) / hand(s)		
Low back		
Hip(s) / thigh(s)		
Knee(s)		
Ankles / foot/feet		

This question includes something about time period “the last week”, duration “lasted for three months or more” and something about severity “which has limited your ability to carry out activities of daily living”. The latter relates to reduced function as a consequence of the complaint. As an example, the Nordic questionnaire tries to include most musculoskeletal complaints by asking for “any pain or discomfort”. Pain intensity in itself is not included.

With the suggested question we will get information on affected regions, and might also define widespread pain as pain reported from at least four different regions.

The limitation of such a combination of time period, duration, severity and location is the lack of indication of what is worst, what is most important for the functional restriction. No instruments for monitoring musculoskeletal problems in health interview surveys have been properly validated in an international setting. There might even be cultural differences in the interpretation of a general question such as the one suggested. The need for standardisation is however very strong.

The following is a summary of recommended monitoring:

1. **Occurrence of self reported musculoskeletal pain**  
Self report in health interview survey of pain and limited function from different regions, using the question above.
2. **Occurrence of rheumatoid arthritis**  
Incidence and prevalence of RA in existing and future regional registers
3. **Occurrence of osteoarthritis in hip and knee**  
Prevalence of OA in research projects based on health examination surveys, including x-ray
4. **Occurrence of osteoporosis**  
Prevalence of bone density monitored in health examination studies
5. **Reduced function**  
Prevalence of persons with reduced function, measured in health interview surveys as recommended by other in the health monitoring project
6. **Work disability**  
Permanent or temporal work disability, according to diagnosis from social security statistics
7. **Occurrence of hip fracture**  
Incidence of hip fractures from hospital statistics
8. **Hip and knee arthroplasty**  
Incidence and indicators for hip and knee replacement from hospital statistics
9. **Drugs for treatment and prevention of osteoporosis**  
Defined daily doses of drugs (ATC L 05B) and actual prescription from whole sale statistics and prescription registers
10. **Drugs for treatment of rheumatoid arthritis**  
Defined daily doses of drugs (ATC L 04A) and actual prescription from whole sale statistics and prescription registers

The table shows recommended sources of information

***Recommended sources of information on the occurrence of the index MSCs***

	<b>HIS</b>	<b>HES*</b>	<b>Primary Care</b>	<b>Secondary Care</b>	<b>Registers**</b>
Unspecified MSC					
Incidence	++				
Prevalence	++		(+)		
RA					
Incidence			(+)	+	++
Prevalence	(+)	+	(+)		++
OA					
Incidence			(+)		
Prevalence	(+)	+	(+)		+
Osteoporosis Fractures					
Incidence	+	+	(+)	++	++
Prevalence	++	++	(+)		++
Low BMD					
Incidence					
Prevalence		++			++

\* ***With the addition of x-ray examination, blood test or bone densitometry as indicated***

\*\* ***Including research surveys***

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