



Musculoskeletal Conditions Are the Most Common Cause of Chronic Disability

Global Burden of Disease

Globally, the number of people suffering from musculoskeletal conditions increased by 25 percent over the past decade. Musculoskeletal conditions are currently the most common cause of chronic disability. Although the evidence needed to determine the most cost-effective interventions is scant, affordable measures to prevent and treat musculoskeletal conditions are available.

The primary musculoskeletal dysfunctions include:

- Osteoarthritis;
- Inflammatory arthritis (principally, rheumatoid arthritis);
- Back pain;
- Musculoskeletal injuries (such as sports injuries);
- Crystal arthritis (such as gout); and
- Metabolic bone disease (principally osteoporosis).

Musculoskeletal conditions make up 2 percent of the global disease burden. Osteoarthritis accounts for the largest portion—52 percent of the total burden of musculoskeletal conditions in developing countries, and 61 percent of the total burden of musculoskeletal conditions in industrialized countries. Osteoarthritis is increasing as the world's elderly population grows, and is the sixth leading cause of years lost to disability.

Nature and Causes of Musculoskeletal Conditions

Osteoarthritis is the most common problem affecting human joints, causing pain, stiffness, weakness, joint instability, and reduced range of motion.

Rheumatoid arthritis has a prevalence of between 1 and 3 percent in most countries. Although the exact cause is unknown, evidence suggests that an immune reaction causes inflammation of the joints and other tissues, and may result in tiredness, fatigue, weight loss, fever, pain, and disability and deformity of the joints.

Back pain is extremely common in both industrialized and developing countries, with up to half of workers suffering at least one episode each year. More than 80 percent of people in most industrialized countries will have back pain in their lifetime. Back pain results in 800,000 DALYs* lost yearly and is an important cause of absence from work, resulting in economic losses. Nearly 40 percent of back pain is related to occupational risk factors, such as poor lifting behaviors, many of which can be prevented.

Osteoporosis is caused by low bone mass and deterioration in the bone structure, which leads to fracture after mild or moderate trauma. The most common fractures occur in the arms, vertebrae, and hips. Fracture risk increases with age and has an important impact on quality of life, mortality, and health care costs in most countries.

Estimated Burden of Musculoskeletal Conditions, by Gender and Region, 2001

	Total	Males	Females	Developing Countries	Industrialized Countries
Numbers of DALYs (thousands)					
Osteoarthritis	16,372	6,621	9,750	11,049	5,323
Rheumatoid arthritis	4,757	1,353	3,404	3,238	1,520
Other musculoskeletal conditions	8,699	5,033	3,638	6,789	1,880
All musculoskeletal conditions	29,798	13,007	16,792	21,076	8,723

Source: Calculated from WHO (2004).

Intervention Strategies

Prevention Works

Although musculoskeletal conditions are the most common cause of chronic disability worldwide, few data are available on approaches to addressing these conditions. Thus, it is difficult to estimate the most cost-effective interventions for developing countries.

Nevertheless, affordable strategies—good nutrition and exercise—underpin many of the preventive and treatment strategies for musculoskeletal conditions:

- Weight reduction reduces pain and disability from osteoarthritis of the knee.
- Obesity is associated with back pain.
- Poor diet contributes to gout.
- Smoking and excessive alcohol use are linked to osteoporosis.
- Adequate calcium intake helps to maintain bone density and reduce the risk of fractures.

The best way to prevent these conditions is to:

- Engage in adequate physical activity for fitness;
- Maintain ideal body weight;
- Follow a balanced diet that meets the requirements for calcium and vitamin D;
- Avoid smoking;
- Use only moderate amounts of alcohol, if any;
- Put in place accident prevention programs related to road traffic crashes, leisure activities, and workplaces.

Treatment is Effective

Treatment of musculoskeletal conditions starts with pain relief through massage, ice, physical therapy, and/or pain relief medications. Many cases of osteoarthritis, soft-tissue rheumatism, and inflammatory arthritis require non-steroidal anti-inflammatory drugs or other stronger or more specific drugs. The best strategy for addressing osteoarthritis in the developing world is pain management, along with education to facilitate self-management and rehabilitative

programs to improve function, activities, and participation. Joint replacement surgery should be considered for end-stage joint damage.

For rheumatoid arthritis, the greatest successes in recent years have resulted from systematic management of the condition and prevention of tissue damage that lead to better daily function and increased ability to participate in activities. Anti-rheumatic drugs (such as methotrexate) are readily available and effective. Addressing symptoms with nonsteroidal anti-inflammatory drugs and rehabilitation are key components of treatment.

For osteoporosis, a combination of vitamin and mineral supplementation, and specific medications may be needed. Exercise programs, rehabilitation, and education on daily functioning, including encouraging a “bone-healthy” lifestyle to reduce the risk of falls and prevent fractures, are all important. Osteoporosis patients may also need surgical interventions.

Musculoskeletal conditions are responsible for a huge burden of disease globally. But effective interventions are available and affordable. Attention to good nutrition and adequate exercise can prevent these conditions from developing. Musculoskeletal conditions can be reduced and deserve greater priority.

For More Information

Luke B. Connelly, Anthony Woolf, and Peter Brooks. 2006. “Cost-Effectiveness of Interventions for Musculoskeletal Conditions.” In *Disease Control Priorities in Development Countries*, 2nd ed. D. T. Jamison, J. G. Breman, A. R. Measham, G. Alleyne, M. Claeson, D. B. Evans, P. Jha, A. Mills, and P. Musgrove, 963-980. New York: Oxford University Press.

*DALY (disability-adjusted life year) is a composite measure that combines the number of years lived with a disability and the number of years lost to premature death.