



## **WHAT IS THE IMPACT OF BURDEN OF MUSCULOSKELETAL DISORDERS AND WHY IS THE U.S. BONE AND JOINT INITIATIVE IMPORTANT?**

In December 2012, a study on the Global Burden of Disease and the worldwide impact of all diseases found musculoskeletal conditions, such as arthritis and back pain, affect more than 1.7 billion people worldwide. They are the 2<sup>nd</sup> greatest cause of disability, and have the 4<sup>th</sup> greatest impact on the overall health of the world population when considering both death and disability.<sup>1</sup>

In the United States alone, musculoskeletal conditions rank first among diseases using measures of disability; visits to physicians' offices; and among impairments. Musculoskeletal conditions are a cause of impairment in performing activities of daily living for half of all persons reporting such impairments in the annual National Health Interview Survey.<sup>2</sup> Musculoskeletal conditions, injuries, and deformities also deprive children of normal development.

Musculoskeletal conditions are reported by 1 out of every 2 Americans,<sup>3</sup> accounting for 18% of all health care visits in 2011.<sup>4</sup> Musculoskeletal conditions were estimated to cost \$213 billion direct and indirect (mortality and morbidity) in 2011, representing 1.4% of the Gross Domestic Product. For people with a musculoskeletal condition as well as other conditions, the direct and indirect costs total \$874 billion, or 5.7% of GDP.<sup>5</sup>

In 2012, 126.6 million persons reported they suffered from a musculoskeletal injury or condition. The 65.8 million musculoskeletal injuries for which medical attention was sought in 2010/2011 accounted for more than 75% of injuries. Musculoskeletal injuries are the result of falls, unintentional injuries, workplace injuries, sports, and military injuries. Falls are a common cause of injuries in the older population, and often result in long-term care. Musculoskeletal injuries accounted for more than 1.7 million hospitalizations, 23.3 million emergency or outpatient visits, and 40.8 million physician office visits.<sup>6</sup>

Arthritis is the most common cause of disability in adults in the US, and a leading cause of work limitations. By 2030, the number of adults affected with doctor-diagnosed arthritis is projected to reach 67 million, or 25% of the adult population. Arthritis is reported by almost 50 percent of people age 65 and older. Today, arthritis is a more frequent cause of limitation of activity than heart disease, cancer, or diabetes. Arthritis is also the primary cause of joint replacement procedures. In 2010-2011, and estimated 1.3 to 1.4 million inpatient joint replacement procedures were performed, with hospital costs of more than \$66 billion dollars.<sup>7</sup>

Back and spine impairments are the most prevalent among musculoskeletal impairments, affecting more than 1 in 4 adults annually and accounting for 53.8 million physician visits in 2012. Back pain is also a major cause of disability and inability to work or restricted work. Back pain accounts for 1 in 20 health care visits for any cause.<sup>8</sup>

Osteoporosis affects 10 million Americans and 43 million more with low bone mass are at risk, with women four times more likely than men to be affected.<sup>9</sup> Annually for the years 2008 to 2011, 3.6 million fragility fracture health care visits were attributed to osteoporosis, including nearly 1,000,000 visits for hip fractures.<sup>10</sup> Nearly one-in-two hip fractures and one-in-three of all fragility fractures occur in persons age 80 and older. In 2011 dollars, the cost to treat osteoporosis and related fractures rose by 160% since the late 1990s, and now stands at \$70.5 billion.<sup>11</sup> As the share of the population in older cohorts in coming years, osteoporosis treatments are expected to continue increasing unless prevention and treatment strategies are initiated. In addition, hip fractures are associated with an 84% increase in probability of a stay in a skilled nursing facility, further increasing the cost associated with osteoporosis.<sup>12</sup>

Despite this current formation on burden of disease, and with costs currently more than \$213 billion per year, current musculoskeletal research expenditures are estimated to total only about \$7.8 billion annually between 2009 and 2013, less than 2% of the annual National Institutes of Health funding budget.<sup>13</sup> Recent studies have also shown that training in musculoskeletal medicine is inadequate in both medical school and non-musculoskeletal residency training programs. Among nonorthopaedists, scores were significantly better if they had taken a medical school course or residency musculoskeletal rotation, suggesting that such a rotation would improve the general level of musculoskeletal knowledge.<sup>14,15</sup>

Musculoskeletal impairments will increase over the next 25 years, as they are most prevalent in older segments of the population. By 2040, 1 in 5 persons in the US will be age 65 or older and approximately equal to the cohort age 18 and younger.<sup>16</sup> Through the partnerships facilitated and promoted by ***The Bone and Joint Decade***, musculoskeletal care providers, patients, patient advocacy groups, government, and industry will be better able to achieve the goals of the ***Global Alliance for Musculoskeletal Health of the Bone and Joint Decade***, and reduce the burden of musculoskeletal diseases on the population.

***The United States Bone and Joint Initiative*** (USBJI) is an outgrowth of the US Bone and Joint Decade 2002-2011, and part of the Global Alliance for Musculoskeletal Health, formerly called The Bone and Joint Decade (BJD), a global campaign to improve quality of life for people with musculoskeletal conditions and to advance understanding and treatment of these conditions through research, prevention, and education.<sup>17</sup> The USBJI aims to raise the awareness of the increasing societal impact of musculoskeletal injuries and disorders; empower patients to participate in decisions about their care; increase funding for prevention activities and research; and promote cost-effective prevention and treatment of musculoskeletal injuries and disorders.

**The Bone and Joint Decade** was formally launched at the World Health Organization (WHO) headquarters in Geneva, Switzerland, on January 13, 2000, following its endorsement by the United Nations on November 30, 1999.<sup>18</sup> In 2010 the global **Bone and Joint Decade** (BJD) was extended to 2010-2020. In 2015 the Bone and Joint Decade announced that it is changing its name to become the Global Alliance for Musculoskeletal Health of the Bone and Joint Decade, and is seeking official recognition as a Non-Governmental Organization (NGO) by the WHO. It is guided by an International Coordinating Council of musculoskeletal specialists from 15 countries. The strength of the BJD comes from its worldwide network, supported by more than a thousand national and international professional, scientific, and patient organizations. National coordinators are established in 96 countries, with Bone and Joint Decade **National Alliances** driving the agenda and goals in 61 countries.<sup>19</sup>

The United States Bone and Joint Initiative is the US National Alliance of the Global Alliance for Musculoskeletal Health of the Bone and Joint Decade. Participating organizations of the USBJI are engaged in developing new research and education programs that will bring about significant advances in the knowledge, diagnosis, and treatment of musculoskeletal conditions, and increase the number of resources at the disposal of the healthcare profession and the public at large. Currently we have 43 member organizations, 64 non-member participating organizations, and 5 associate members (for profit companies). In addition, nearly all major medical schools in the US are supporters.

(Revised November 2, 2015)

- 1 Global Burden of Diseases, Injuries, and Risk Factors Study 2013. *The Lancet*, July 22, 2014. Available at: <http://www.thelancet.com/themed/global-burden-of-disease> Accessed June 30, 2014.
- 2 The Burden of Musculoskeletal Diseases in the United States. "The Big Picture: Activity Limitation Due to Select Medical Conditions." <http://www.boneandjointburden.org/2014-report/ic0/activity-limitation-due-select-medical-conditions> Accessed June 9, 2015.
- 3 The Burden of Musculoskeletal Diseases in the United States. "Big Picture: Prevalence." <http://www.boneandjointburden.org/2014-report/ib0/prevalence-select-medical-conditions> Accessed June 9, 2015.
- 4 The Burden of Musculoskeletal Diseases in the United States. "The Big Picture: Musculoskeletal Diagnoses." <http://www.boneandjointburden.org/2014-report/ie0/musculoskeletal-diagnoses> Accessed June 9, 2015.
- 5 The Burden of Musculoskeletal Diseases in the United States. "The Big Picture: Health Care Utilization and Economic Cost." <http://www.boneandjointburden.org/2014-report/if0/health-care-utilization-and-economic-cost> Accessed June 9, 2015.
- 6 The Burden of Musculoskeletal Diseases in the United States. "Injuries." <http://www.boneandjointburden.org/2014-report/vi0/injuries> Accessed June 9, 2015.
- 7 The Burden of Musculoskeletal Diseases in the United States. "Arthritis and Other Rheumatic Conditions." <http://www.boneandjointburden.org/2013-report/iv-arthritis/iv> Accessed June 9, 2015.
- 8 The Burden of Musculoskeletal Diseases in the United States. "Spine: Low Back and Neck Pain." <http://www.boneandjointburden.org/2014-report/ii/spine-low-back-and-neck-pain> Accessed June 9, 2015.
- 9 The Burden of Musculoskeletal Diseases in the United States. "Osteoporosis: Prevalence." <http://www.boneandjointburden.org/2014-report/va1/current-prevalence-demographics> Accessed November 2, 2015.
- 10 The Burden of Musculoskeletal Diseases in the United States. "Osteoporosis: Fragility Fractures." <http://www.boneandjointburden.org/2014-report/vb0/fragility-fractures> Accessed November 2, 2015.
- 11 The Burden of Musculoskeletal Diseases in the United States. "The Big Picture: Funding." <http://www.boneandjointburden.org/2014-report/ia0/funding> Accessed June 9, 2015.
- 12 The Burden of Musculoskeletal Diseases in the United States. "Osteoporosis: Long Term Care." <http://www.boneandjointburden.org/2014-report/vc2/long-term-care> Accessed November 2, 2015.
- 13 The Burden of Musculoskeletal Diseases in the United States. "The Big Picture: Funding." <http://www.boneandjointburden.org/2014-report/ia0/funding> Accessed June 9, 2015.
- 14 Freedman KB, Bernstein J. The adequacy of medical school education in musculoskeletal medicine. *JBJS* 1998;80(10):1421-7. <http://dx.doi.org/>
- 15 Matzkin E, Smith EL, Freccero D, Richardson AB. Adequacy of education in musculoskeletal medicine. *JBJS* 2005;87(2):310-4.
- 16 Ortman JM, Velkoff VA, Hogan H. An aging nation: the older population in the United States. *Current Population Reports: Population Estimates and Projections* May 2014. <http://www.census.gov/prod/2014pubs/p25-1140.pdf> Accessed June 9, 2015.
- 17 The Bone and Joint Decade 2000-2010 for prevention and treatment of musculoskeletal disorders, *Acta Orthopaedica Scandinavica* 1998; suppl.281, vol. 69, no 3, June 1998.
- 18 Annan, Kofi; The Secretary General Message to Launch The Bone and Joint Decade 2000-2010 For The Prevention and Treatment of Musculoskeletal Disorders. November 30, 1999.
- 19 The Bone and Joint Decade Global Alliance for Musculoskeletal Health. The Global Alliance <http://bjdonline.org/home/organisation/> Accessed June 9, 2015.