

## Osteoporosis in the European Union: medical management, epidemiology and economic burden

### Key findings of the IOF / EFPIA EU 27 report

<p><b>Epidemiology of Osteoporosis in the EU</b></p>	<ul style="list-style-type: none"> <li>• Based on the WHO diagnostic criterion (T-score less than or equal to -2.5 SD) <b>approximately 22 million women and 5.5 million men</b> aged between 50-84 years are estimated to have osteoporosis in the EU (2010 figures).</li> <li>• Due to changes in population demography the <b>number of men and women with osteoporosis</b>, using the diagnostic criterion of the WHO, will rise from <b>27.5 million in 2010 to 33.9 million in 2025</b>, corresponding to an <b>increase of 23%</b>.</li> <li>• The number of <b>new fractures</b> in 2010 in the EU was estimated at <b>3.5 million</b>, comprising approximately 620,000 hip fractures, 520,000 vertebral fractures, 560,000 forearm fractures and 1,800,000 other fractures (i.e. pelvis, rib, humerus, tibia, fibula, clavicle, scapula, sternum, and other femoral fractures).</li> <li>• <b>Two thirds</b> of all incident fractures occurred <b>in women</b>.</li> <li>• In 2010, the <b>number of deaths</b> causally related to fractures was estimated at <b>43,000</b>:             <ul style="list-style-type: none"> <li>○ In women: approximately <b>50%</b> of fracture related deaths in women were due to <b>hip fractures</b>, <b>28%</b> to <b>clinical vertebral</b> and <b>22%</b> to <b>other fractures</b>.</li> <li>○ In men: corresponding proportions were <b>47%</b>, <b>39%</b> and <b>14%</b>, respectively.</li> </ul> </li> <li>• In 2010, <b>3.3 million individuals</b> aged 50 years or more had <b>sustained a prior hip fracture</b> (prevalence of prior hip fracture). The corresponding number of men and women with prior clinical vertebral fractures was estimated at 3.5 million.</li> <li>• <b>Incidence rates of hip fractures were available for most, but not all, countries</b> of the EU whereas information on country-specific incidence rates of forearm, clinical vertebral fractures and other osteoporotic fractures was scarce.</li> </ul>
<p><b>Burden of Disease</b></p>	<ul style="list-style-type: none"> <li>• The cost of osteoporosis, including pharmacological intervention in the EU in 2010 was estimated at <b>€37 billion</b> - out of which:             <ul style="list-style-type: none"> <li>○ Costs of <b>treating incident fractures</b> represented <b>66%</b>,</li> <li>○ <b>Pharmacological prevention</b> 5% and</li> <li>○ <b>Long-term fracture care</b> 29%.</li> </ul> </li> <li>• It is estimated that approximately <b>26,300 life-years</b> were lost in the EU in 2010 due to incident fractures.</li> </ul>

	<ul style="list-style-type: none"> <li>• The total health burden was estimated at <b>1,180,000 lost QALYs</b> (Quality Adjusted Life Years) for the EU. <ul style="list-style-type: none"> <li>◦ Twice as many QALYs were lost in women compared to men.</li> <li>◦ The majority of the QALYs lost were a <b>consequence of prior fractures</b>.</li> <li>◦ Assigning a QALY the value of 2xGDP, the <b>total value of QALYs lost in 2010</b> was estimated at <b>€60.4 billion</b>.</li> </ul> </li> <li>• Excluding cost of pharmacological prevention, <b>hip fractures represented 54%</b> of the costs, “other fractures” represented 39%, and vertebral and forearm fractures represented 5% and 1%, respectively.</li> <li>• The <b>annual number of fractures will rise from 3.5 million in 2010 to 4.5 million in 2025</b>, corresponding to an increase of <b>28%</b>.</li> <li>• The number of <b>QALYs lost annually due to fractures will increase from 1.2 million in 2010 to 1.4 million in 2025</b>, corresponding to an increase of <b>20%</b>.</li> <li>• The total cost including <b>values of QALYs lost</b> (valued at 2xGDP per capita) in the EU27 will rise from <b>€98 billion in 2010 to €120 billion in 2025</b>, corresponding to an increase of <b>22%</b>.</li> </ul>
<p><b>Treatment Uptake</b></p>	<ul style="list-style-type: none"> <li>• The treatment uptake of osteoporosis drugs has increased considerably during the study time, however more recently a slight decrease has been observed.</li> <li>• <b>Alendronate</b> is the most commonly prescribed agent, accounting for approximately a <b>quarter of the total value of sales</b>. In terms of DDDs (defined daily dosage), alendronate represents almost <b>half of all DDDs</b> used to treat osteoporosis in the European Union.</li> <li>• The <b>volume in terms of value of sales has decreased</b> more than the volume in terms of DDDs in the two most recent years, mostly due to the <b>decreasing price of generic bisphosphonates</b>.</li> <li>• Uptake of individual treatments differs between regions in Europe. In general, <b>Southern Europe shows a higher uptake of osteoporosis drugs</b>.</li> <li>• There is a <b>large gap</b> between the numbers of women who are treated compared to the proportion of the <b>population that could be considered eligible for treatment</b> based on their fracture risk.</li> </ul>
<p><b>Medical Innovation</b></p>	<ul style="list-style-type: none"> <li>• Approved pharmacological interventions (bisphosphonates, strontium ranelate, raloxifene, denosumab and parathyroid hormone peptides) are <b>widely available but their use is restricted by reimbursement policies</b>: <ul style="list-style-type: none"> <li>◦ <b>Full or near full reimbursement is available in a minority</b> of member states.</li> <li>◦ In other countries reimbursement is <b>partial or restricted</b> to individuals with a prior fracture or to women only.</li> <li>◦ Some countries that provide reimbursement <b>exclude PTH</b>.</li> </ul> </li> <li>• Fracture prevention with generic alendronate in women aged 50 years and older at high risk of fracture is <b>cost-effective in most Western countries</b>.</li> <li>• Other treatments are <b>cost-effective alternatives to no treatment</b>, particularly in patients that cannot take alendronate.</li> <li>• Compliance and persistence with treatment for osteoporosis are poor; <b>approximately 50% of patients do not follow their prescribed treatment regimen and/or discontinue treatment within one year</b>.</li> <li>• <b>Measures to improve adherence will lead to more avoided fractures and are cost-effective complements to currently available treatments</b></li> <li>• There is a <b>marked heterogeneity</b> in the availability of DXA, its cost and service provisions in the EU and most countries</li> </ul>

	<p><b>have insufficient resources to implement practice guidelines.</b></p> <ul style="list-style-type: none"> <li>• BMD forms a cornerstone for the general management of osteoporosis, being used for <b>diagnosis, risk prediction</b>, the selection of patients for <b>treatment and monitoring</b> of patients on treatment.</li> <li>• Fracture risk assessment is improved by the concurrent consideration of risk factors that operate independently of BMD.</li> <li>• FRAX models integrate the weight of CRFs for fracture risk, with or without information on BMD and provide estimates of the <b>probability of fracture</b>. Models are available for <b>16 member states</b>. <ul style="list-style-type: none"> <li>○ <b>Austria, Belgium Denmark, Finland, Hungary and the UK have the highest usage of FRAX.</b></li> <li>○ If Denmark is excluded because of exceptionally high uptake, this amounts to <b>4,800 tests/million</b> of the general population which is within the estimated service requirement for FRAX.</li> <li>○ The <b>uptake of FRAX is sub-optimal in the majority of EU countries</b> for which models are available.</li> </ul> </li> <li>• In all national treatment guidelines a <b>case-finding approach</b> is suggested for patient identification. However, <b>they vary</b> in terms of which risk factors are acknowledged, how fracture risk should be assessed and how BMD measurements should be used.</li> <li>• Notwithstanding the availability of guidelines, recommendations in national guidelines are <b>not always implemented</b>.</li> </ul>
--	--

Reference:

Osteoporosis in the European Union: Medical Management, Epidemiology and Economic Burden Arch Osteoporos 2013.

Hernlund E, Svedbom A, Ivergard M, Compston J, et. al. A report prepared in collaboration with the International Osteoporosis Foundation (IOF) and the European Federation of Pharmaceutical Industry Associations (EFPIA). Arch Osteoporos 2013 8:136

DOI 10.1007/s11657-013-0136-1