

# Japan

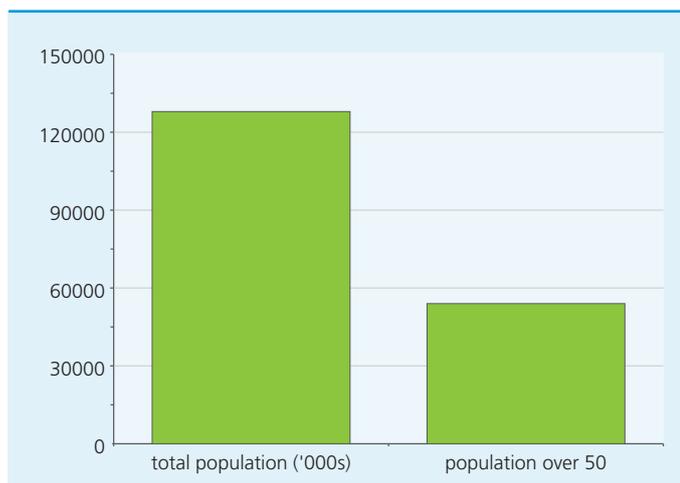
## Overview

Today, the population in Japan is approximately 126 million, with 27% aged over 60. Although the total population is expected to decrease to 95 million in 2050, with one of the longest life expectancy rates (83 years) in the world, it is believed that the percentage of the population over 60 will be over 37% in 2050<sup>1</sup>. Today, the prevalence of osteoporosis in Japan is around 12 million and the hip fracture incidence rate in the oldest population (over 75) is increasing dramatically in both men and women.

Professor Hajime Orimo, chairman of the Japan Osteoporosis Foundation, wrote: “Japan has become a country of longevity. Women’s average life expectancy has exceeded 80 years of age, placing them in a situation where they are likely to live 30 or more years after menopause. For the women to enjoy enriched lives in these 30 years, with good health, is now a great issue to their families, to Japanese society, as well as to themselves.”

The Japanese Osteoporosis Foundation is actively promoting osteoporosis awareness by providing services to patients, public and health care professionals

**Figure 1** Population of Japan in 2007



and by developing medical and scientific activities throughout the year.

## Key findings

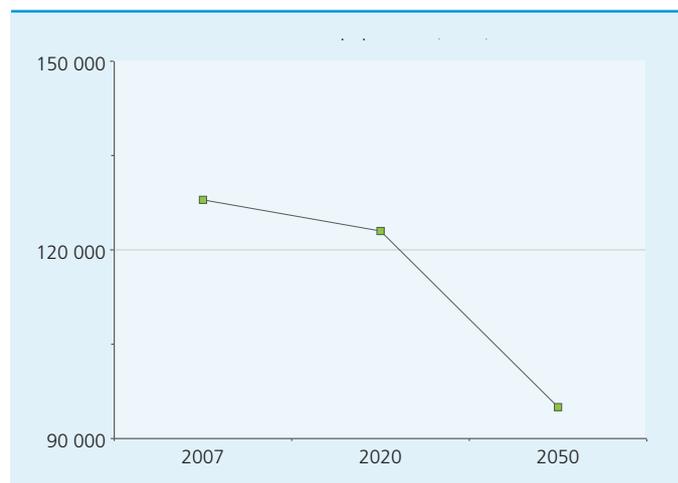
The total population of Japan was 126 million in 2007. The estimated number of men and women above the age of 50 is about 25 and 29 million respectively (*figure 1*). Current projections estimate that population will decrease to 123 million by 2020 and 95 million by 2050<sup>2</sup> (*figure 2*).

The total number of Japanese affected by osteoporosis is approximately 11.6 million (women 8.4 million, men 3.2 million)<sup>3</sup> and the number of osteoporotic hip fractures was 117 900 in 2002<sup>5</sup>. An average of 90 000 hip fractures are estimated to occur each year in Japan (*figure 3*). Unlike other western countries, the incidence of hip fracture is continuing to rise. The explanation for this is unclear.

The average hospital stay is about 48.4 days (2001). Average hospital costs, including nursing care, was estimated at 6.34-7.58 billion USD per year in 2002<sup>6,7</sup>.

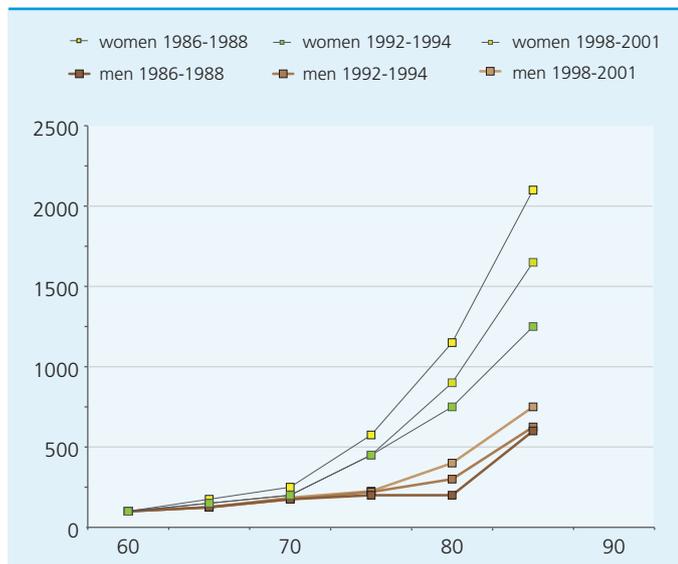
There are a total of 10 369 DXA machine (0.8/10 000p) in Japan which is high compared to other countries. The number of ultrasound is 5437 (0.4/10 000p)<sup>8</sup>. The cost for a DXA scan is about 33.6 USD and 7.5 USD for an ultrasound (income per capita per month 2737 USD)<sup>9</sup> (*table 1*).

**Figure 2** Total population ('000s)



**Table 1** Diagnostic tools and cost

total DXA machine	DXA machine/ 10 000	cost of DXA scan (USD)	cost of US (USD)	income per capita per month (USD)
10 369	0.8	33.6	7.5	2737

**Figure 3** Age- and gender-specific hip fracture incidence<sup>7</sup>

A retrospective study based on 10 992 hip fractures in patients aged 65 to 111 years and treated from 1999 to 2001 was conducted in 158 core orthopaedic hospitals<sup>10</sup>. It reports that the mean duration from fracture to admission was 3.1 days, and the mean duration from admission to surgery was 11.2 days. The mean duration from surgery to discharge over the 3-year period was 48.4 days. Patient function was assessed following criteria established by the Ministry of Health, Labour and Welfare of Japan. The Activity of Daily Living (ADL) independence was assessed pre-operatively

and 1 year after the initial postoperative visit (table 2 and 3). Over the 3-year period, grade 1 and 2 patients accounted for 24.3% and 26.6%, respectively, of the patients pre-operatively. Thus, 50.9% of patients were able to walk without assistance, but at 1 year after the initial visit grade 1 and 2 patients accounted for 12.7% and 14.1%, respectively, for a total of 26.8%. This represented a decrease of 24.1 percentage points. Of the various types of functional disabilities experienced by patients with hip fracture, the degree of disability in stair climbing is marked.

There is no program for lifestyle prevention of osteoporosis but calcium and vitamin D supplements are available throughout the country.

The usual drugs for osteoporosis treatment are available: alendronate, risedronate, etidronate (bisphosphonates); estriol, 17 $\beta$ -estradiol (HRT) • selective oestrogen receptor modulators (SERMs) • calcitonin, active vitamin D<sub>3</sub>(alfacalcidol, calcitriol).

Osteoporosis is not yet recognized as a major health problem in Japan. However the Ministry of Health, Labour and Welfare has performed osteoporosis screening since 1995, with the number of examinees in 2006 being 295 434<sup>11</sup>.

**Table 2** Independence before fracture

ADL independence before fracture (scores 1-8)		no.	%
1	able to go out using public transportation	2667	24.3
2	can go out to visit neighbours	2928	26.6
3	can go out with assistance and spend the day out of bed	1997	18.2
4	rarely goes out; spends the day in bed	1971	17.9
5	uses a wheelchair and only leaves bed to eat or use the bathroom	700	6.4
6	can get in and out of a wheelchair with assistance	469	4.3
7	able to turn over in bed independently	67	0.6
8	unable to turn over in bed independently	46	0.4
	unknown and other	29	0.3
<b>no response</b>		<b>118</b>	<b>1.1</b>
<b>total responses</b>		<b>10 992</b>	<b>100</b>

ADL activities of daily living

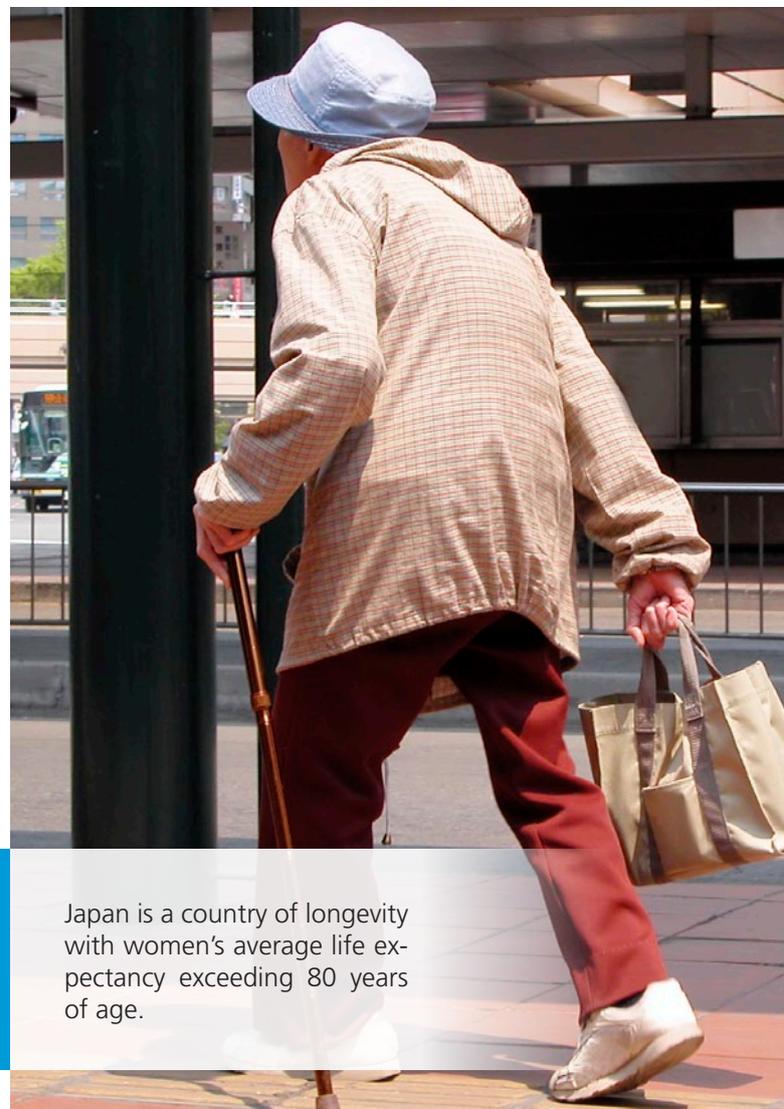
**Table 3** Independence 1 year after surgery/initial visit

ADL independence 1 year after surgery/initial visit		no.	%
1	able to go out using public transportation	1399	12.7
2	can go out to visit neighbors	1550	14.1
3	can go out with assistance and spend the day out of bed	1427	13.4
4	rarely goes out; spends the day in bed	1080	9.8
5	uses a wheelchair and only leaves bed to eat or use the bathroom	1000	9.1
6	can get in and out of a wheelchair with assistance	1034	9.4
7	able to turn over in bed independently	167	1.5
8	unable to turn over in bed independently	174	1.6
	unkown and other	341	3.1
<b>no response</b>		<b>2820</b>	<b>25.7</b>
<b>total responses</b>		<b>10 992</b>	<b>100</b>

*ADL activities of daily living*

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Japan is a country of longevity with women's average life expectancy exceeding 80 years of age.