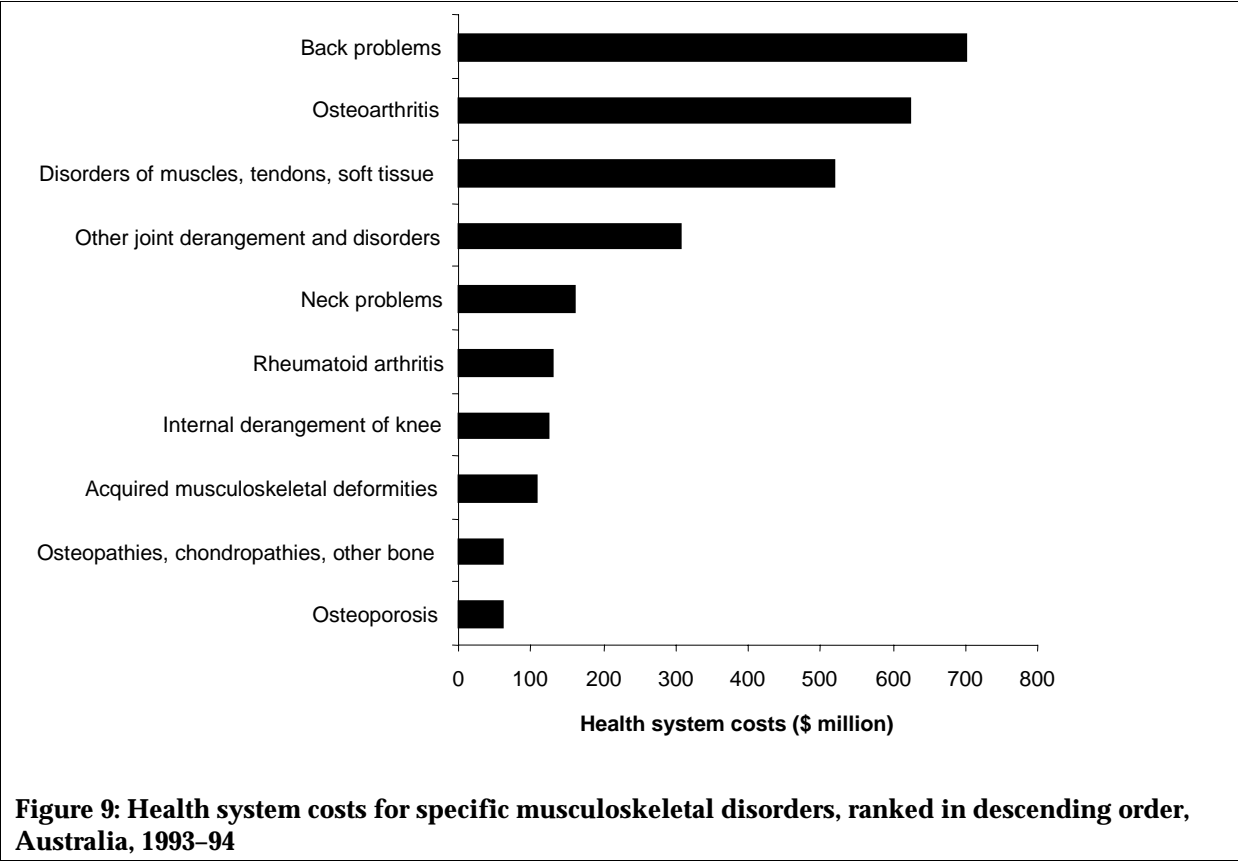


# 3 Health system costs of musculoskeletal disorders

## 3.1 Costs for specific musculoskeletal disorders

Musculoskeletal disorders are the third leading cause of health system expenditures in Australia, with an estimated total expenditure of \$3,002 million in 1993–94, larger than that for all injuries and poisoning, although as noted in Section 1.1 some musculoskeletal conditions are known to be caused by or contributed to by injuries. Figure 9 shows the estimated health system costs associated with specific musculoskeletal disorders in 1993–94. Back problems account for an estimated \$700 million (or 23% of total musculoskeletal costs), followed by osteoarthritis (\$624 million) and disorders of muscles, tendons and soft tissue (\$519 million). Table 8 summarises estimated costs for musculoskeletal disorders by health sector. More detailed estimates of expenditure for the major disease groups shown in Table 8 are given in Appendix D, disaggregated by health sector, age and sex.

Table 9 summarises estimated utilisation of hospitals, doctors and drugs for musculoskeletal disorders. In total they accounted for an estimated 295,000 hospital admissions, 14.8 million medical services and 13.4 million prescriptions in 1993–94.



**Table 8: Musculoskeletal disorders: health system costs by health sector, 1993–94 (\$ million)**

ICD-9 chapter	Total costs	Hospitals <sup>(a)</sup>	Medical	Pharmaceuticals	Allied health	Nursing home	Other <sup>(b)</sup>
Systemic lupus erythematosus	5	3	1	0	0	0	0
Rheumatoid arthritis	129	44	27	27	6	18	7
Osteoarthritis	624	301	80	58	36	117	32
Internal derangement of knee	125	109	4	1	4	1	6
Other joint derangement and disorders	305	102	80	27	33	47	16
Back problems	700	239	133	62	151	79	36
Arthritis (spondylosis, spondylitis)	148	30	37	21	39	14	8
Intervertebral disc disorders	258	80	62	24	70	9	13
Chronic back pain	294	129	35	17	42	56	15
Neck problems	160	54	25	18	46	8	8
Disorders of muscles, tendons and soft tissue	519	165	127	60	112	28	27
Osteopathies, chondropathies and other bone disorders	60	29	9	2	5	12	3
Osteoporosis	60	9	10	12	4	22	3
Acquired musculoskeletal deformities	108	66	11	4	11	12	6
Other	208	87	12	5	9	85	11
<b>Total musculoskeletal disorders</b>	<b>3,002</b>	<b>1,207</b>	<b>518</b>	<b>276</b>	<b>416</b>	<b>430</b>	<b>154</b>

(a) Includes public hospital non-inpatient services and medical services for private patients in hospitals.

(b) Includes health research expenditure and other institutional, non-institutional and administration expenditure. Does not include public health services, community health services, ambulances, or medical aids and appliances.

**Table 9: Musculoskeletal disorders: estimated health services utilisation by sector, 1993–94**

	Hospitals			Medical services			Drugs
	Admissions ('000)	ALOS <sup>(a)</sup> (days)	Non-inpatient services ('000)	GP ('000)	Specialist ('000)	Total ('000)	Prescriptions ('000)
Rheumatoid arthritis	7	9.2	223	371	613	983	765
Osteoarthritis	41	9.4	520	1,452	859	2,310	3,058
Internal derangement of knee	47	1.5	30	67	40	107	26
Other joint derangement and disorders	31	3.1	479	1,120	1,016	2,136	1,437
Back problems	65	6.0	829	2,321	1,300	3,621	2,920
Neck problems	9	4.9	458	523	212	735	501
Disorders of muscles, tendons and soft tissue	52	2.5	877	2,353	1,345	3,698	3,152
Osteopathies, chondropathies, other bone	7	7.9	63	110	122	232	97
Osteoporosis	1	14.5	49	219	94	314	1,030
Acquired musculoskeletal deformities	15	3.9	289	157	127	283	106
Other	20	8.3	208	218	153	372	270
<b>Total</b>	<b>295</b>	<b>5.0</b>	<b>4,026</b>	<b>8,910</b>	<b>5,881</b>	<b>14,791</b>	<b>13,362</b>

(a) Average length of stay.

Table 10 summarises institutional and non-institutional treatment costs for musculoskeletal diseases. Hospital and nursing home costs account for 59% of all musculoskeletal disease treatment costs; the proportion is higher for a number of disorders such as internal derangement of knee and osteopathies and other bone disorders and much lower at 42% for disorders of muscles, tendons and soft tissue and 44% for neck disorders.

Table 11 shows the estimated health care costs for musculoskeletal disorders for males and females by health sector in 1993–94. Total hospital inpatient costs for males are 40% higher than those for females, whereas total nursing home costs and pharmaceutical costs are substantially lower for males than females.

**Table 10: Musculoskeletal diseases: institutional and non-institutional treatment costs (\$ million) and institutional costs as a per cent of total treatment costs, 1993–94**

	Institutional <sup>(a)</sup>	Non-institutional <sup>(b)</sup>	Total	Institutional as per cent of total
Rheumatoid arthritis	68	61	129	52
Osteoarthritis	445	179	624	71
Internal derangement of knee	115	10	125	92
Other joint derangement and disorders	162	143	305	53
Back problems	348	353	700	50
Neck problems	70	90	160	44
Disorders of muscles, tendons and soft tissue	216	303	519	42
Osteopathies, chondropathies, other bone	43	16	60	73
Osteoporosis	34	26	60	57
Acquired musculoskeletal deformities	82	26	108	76
Other	184	29	213	86
<b>Total</b>	<b>1,765</b>	<b>1,236</b>	<b>3,002</b>	<b>59</b>

(a) Includes recognised public hospitals, private hospitals, psychiatric hospitals, repatriation hospitals, nursing homes, other institutional and administration expenditure.

(b) Includes out-of-hospital medical services, pharmaceutical drugs, dental and allied health services, research, and other non-institutional expenditure.

**Table 11: Health care costs of all musculoskeletal disorders by sex and sector of expenditure, Australia, 1993–94 (\$ million)**

Sector of expenditure	Males	Females	Male/female ratio
Hospital inpatient	457.9	483.2	0.9
Hospital outpatient	138.8	127.1	1.1
Nursing home	83.1	346.7	0.2
Medical	223.2	295.1	0.8
Allied health professional	186.5	229.3	0.8
Pharmaceutical	107.4	169.1	0.6
Other	64.8	89.4	0.7
<b>Total</b>	<b>1,261.8</b>	<b>1,740.0</b>	<b>0.7</b>

## 3.2 Costs and impact of musculoskeletal disorders

Table 12 shows the self-reported prevalence of back problems, arthritis (rheumatoid arthritis plus osteoarthritis) and other musculoskeletal disorders from the 1995 ABS National Health Survey. The National Health Survey allows estimation of the prevalence of chronic conditions (those that have lasted or are expected to last six months or longer), recent conditions that are not chronic (those that have occurred in the last two weeks and are not chronic) and treated conditions (defined in terms of whether the condition has resulted in hospitalisation, contact with health services or health professionals, or use of medication).

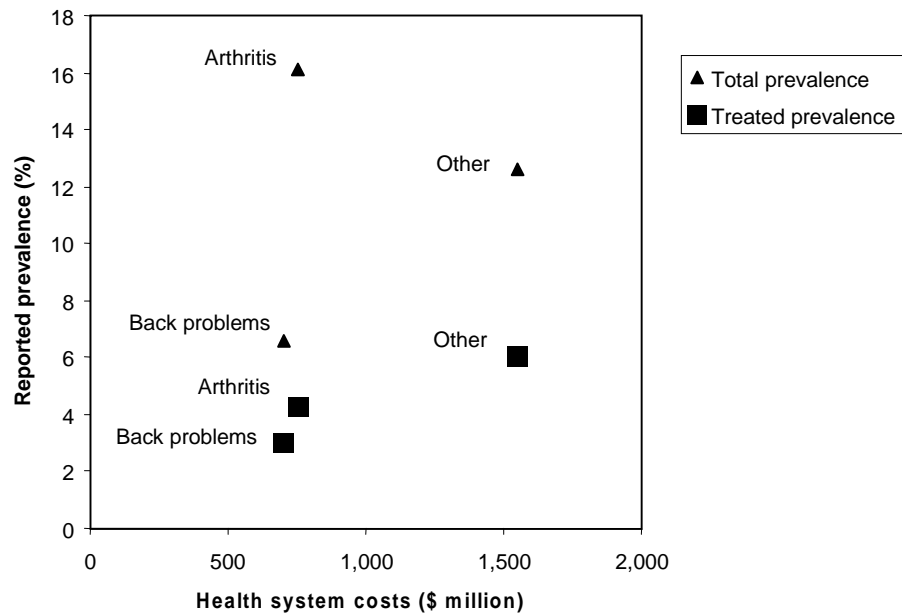
Figure 10 compares the prevalence of these three groups of musculoskeletal disorders in 1995 with their health system expenditures for 1993–94. There is a reasonable correlation between total health system expenditures and the treated prevalence of these conditions. Total prevalence bears less relation to health system expenditure, particularly for arthritis, where the total prevalence (16.1%) is substantially higher than the treated prevalence (4.3%).

**Table 12: Self-reported prevalence (%) of musculoskeletal disorders from the 1995 ABS National Health Survey, by type of disorder, sex and whether chronic or treated**

	Back problems	Rheumatoid and osteoarthritis	Other musculoskeletal disorders
<b>Males</b>			
Chronic conditions	5.6	13.1	8.9
Chronic and recent conditions <sup>(a)</sup>	7.3	13.3	12.1
Treated conditions <sup>(b)</sup>	3.2	3.1	5.2
<b>Females</b>			
Chronic conditions	3.9	18.6	9.4
Chronic and recent conditions <sup>(a)</sup>	5.8	18.9	13.2
Treated conditions <sup>(b)</sup>	2.9	5.6	6.9
<b>Persons</b>			
<b>Chronic conditions</b>	<b>4.7</b>	<b>15.9</b>	<b>9.1</b>
<b>Chronic and recent conditions<sup>(a)</sup></b>	<b>6.6</b>	<b>16.1</b>	<b>12.6</b>
<b>Treated conditions<sup>(b)</sup></b>	<b>3.0</b>	<b>4.3</b>	<b>6.0</b>

(a) Includes conditions experienced in last two weeks and long-term conditions, whether experienced in last two weeks or not.

(b) Includes conditions in relation to which the person was hospitalised in the last year, had contact with any health service or professional in last two weeks, or used medication in last two weeks.



Note: Refer to Table 12 for more information.

**Figure 10: Health system costs of musculoskeletal disorders in 1993–94 compared with self-reported prevalence of arthritis, back problems and other musculoskeletal disorders from the 1995 ABS National Health Survey**

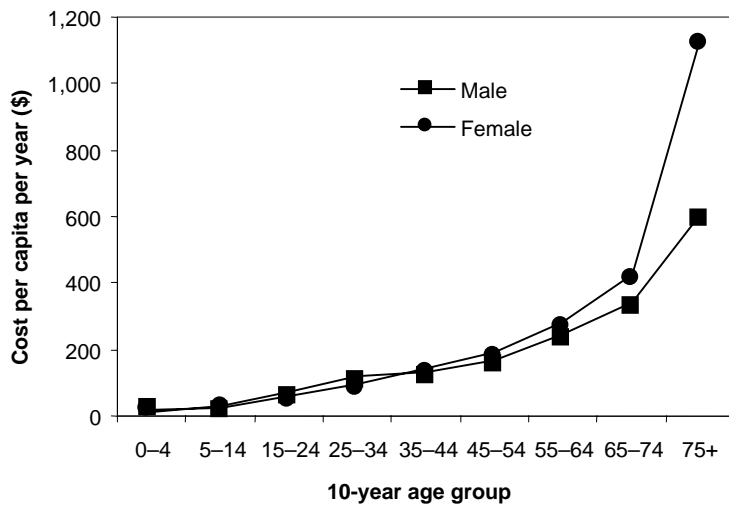
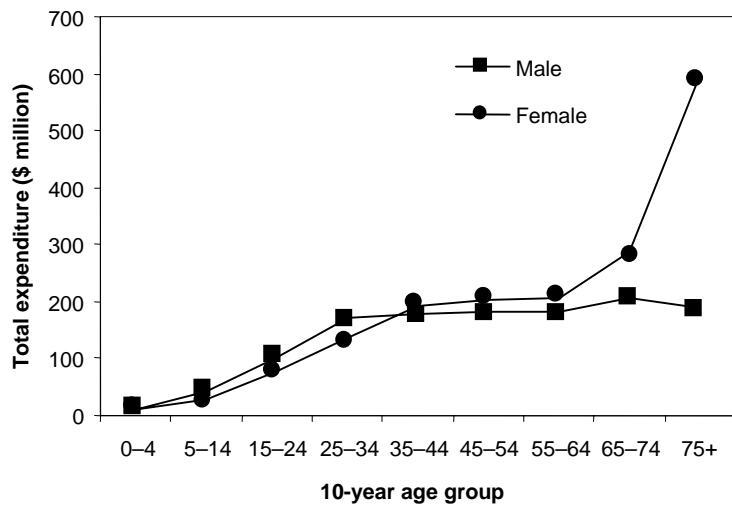
### 3.3 Musculoskeletal disorder costs by age and sex

Figure 11 illustrates the age–sex distribution of total expenditure and per capita expenditure on musculoskeletal disorders in 1993–94. Total expenditure rises during childhood and plateaus around \$200 million dollars for each 10-year age group between ages 30 and 70. Health system costs rise steeply for older women to a total of \$594 million for women aged 75 years and over. Nearly 60% of this \$594 million results from nursing home costs attributable to disabling musculoskeletal disorders.

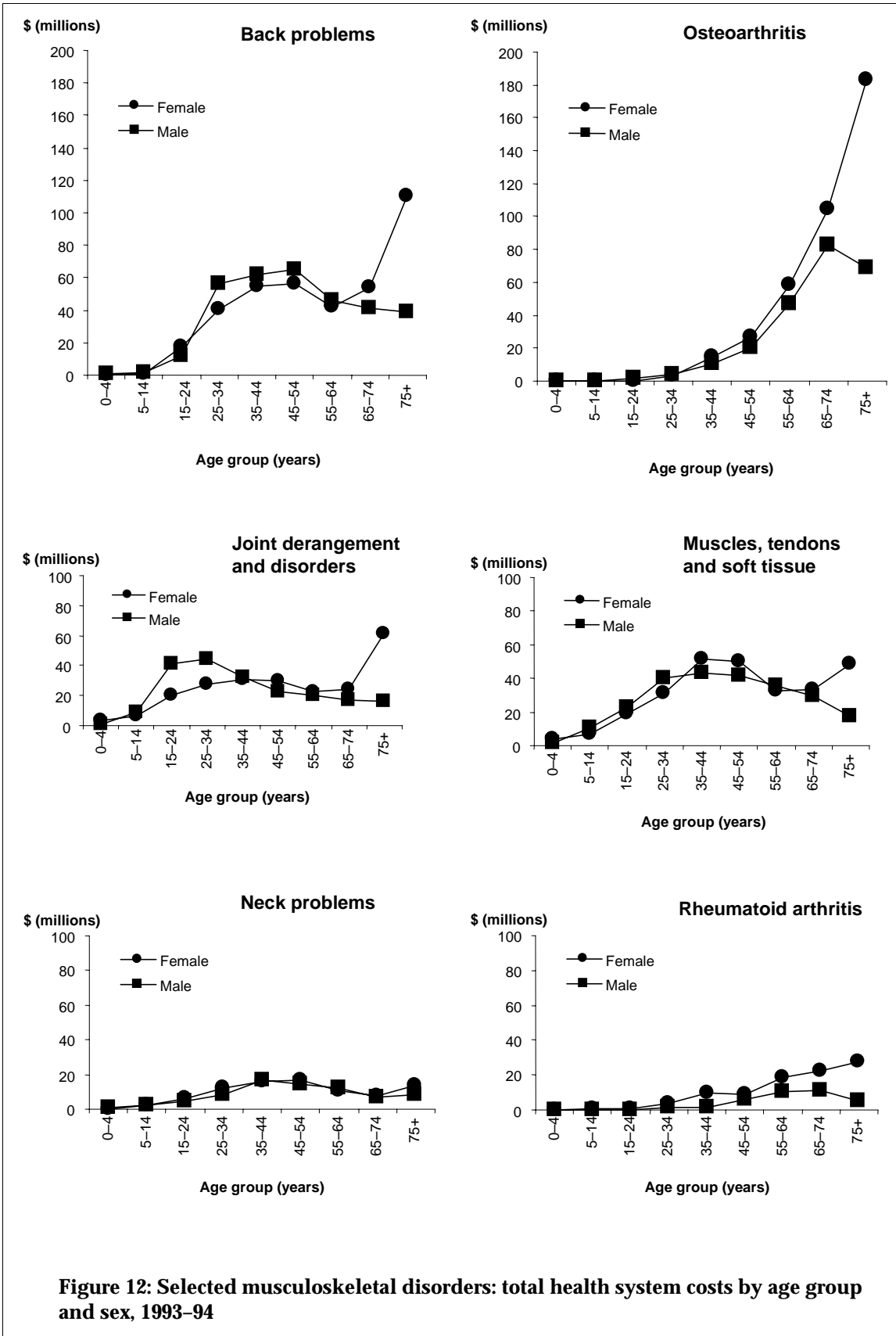
Per capita expenditure rises steadily with age to ages 65–74 years and then jumps substantially to around \$600 and \$1,150 per capita for men and women aged 75 years and over respectively.

Figure 12 shows the age–sex distributions of total health system costs for selected musculoskeletal disorders. Figure 13 shows similar distributions for health system costs per capita. It should be emphasised that the per capita costs relate to the total Australian population, not just those people with musculoskeletal disorders.

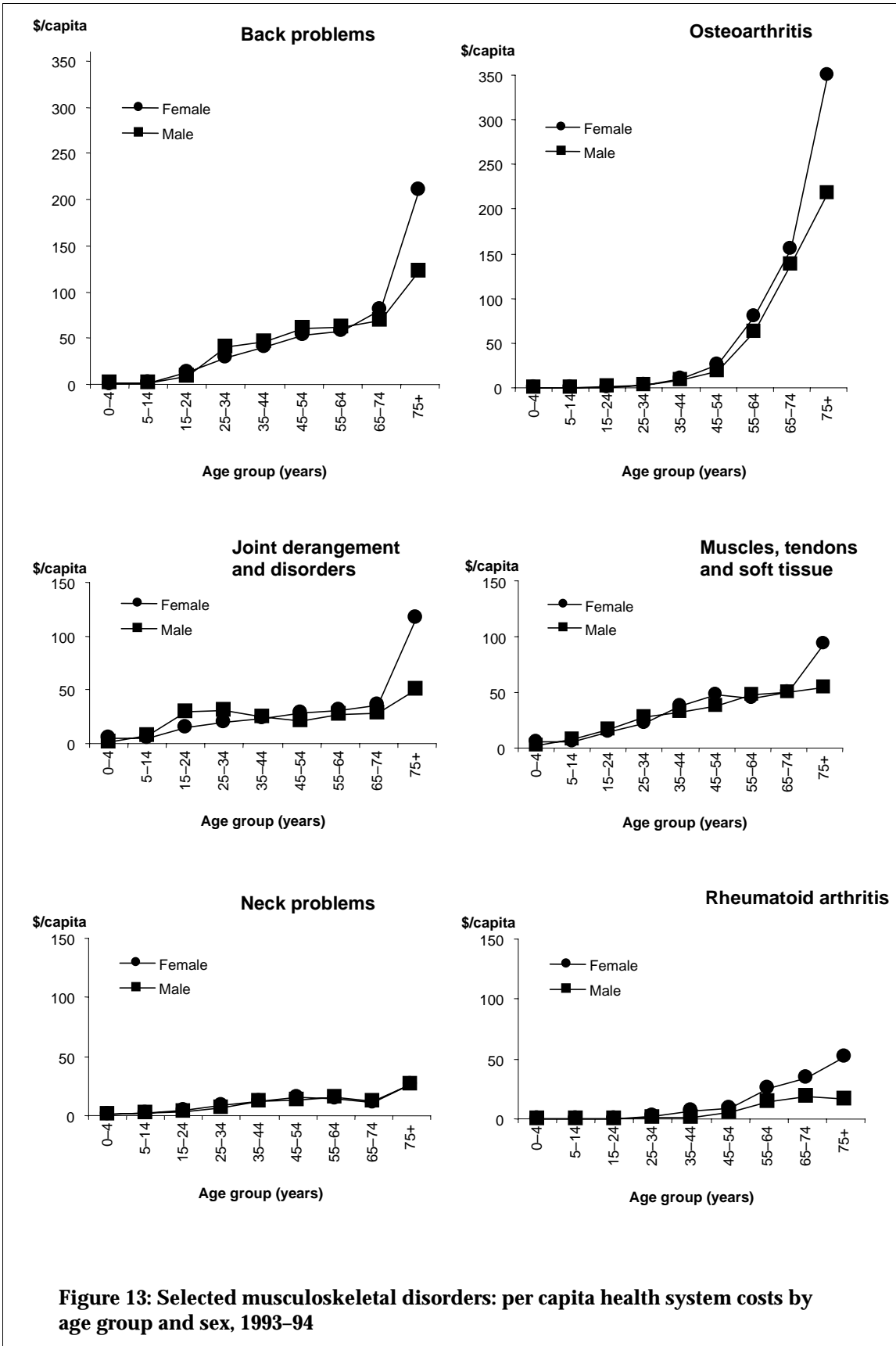
Detailed information on total costs and health services utilisation by health sector, age and sex and on total costs and health services utilisation by health sector, age, sex and type of musculoskeletal problem are provided in Tables D.5 to D.16 (Appendix D).



**Figure 11: Musculoskeletal disorders: total health system costs (\$ million) and average annual cost per capita, by age group and sex, 1993-94**



**Figure 12: Selected musculoskeletal disorders: total health system costs by age group and sex, 1993-94**



**Figure 13: Selected musculoskeletal disorders: per capita health system costs by age group and sex, 1993-94**



### 3.4 Annual health costs per treated case

Table 12 presented information from the 1995 ABS National Health Survey on the self-reported prevalence of treated back problems, arthritis (rheumatoid arthritis plus osteoarthritis) and other musculoskeletal disorders. Conditions were considered 'treated' if they had resulted in hospitalisation in the last 12 months, contact with health services or health professionals in the last two weeks, or use of medication in the last two weeks. This clearly gives only a very approximate estimate of the number of Australians treated for musculoskeletal disorders in one year.

The estimates of average annual health system costs per treated case of musculoskeletal disorder shown in Table 13 are thus indicative only and should be interpreted with caution. At best, they give an indication of the order of magnitude of annual treatment costs for people with chronic musculoskeletal disorders.

Average annual costs per treated case increase with age and are around twice as high in the age group 65 years and over as in adults aged 25–64 years. In large part, this is because of the substantial contribution of nursing home costs at older ages.

Among adults aged 25–64 years, estimated annual costs per treated case range from around \$700 for arthritis and \$1000 for back problems, to around \$1,300 for other musculoskeletal disorders.

**Table 13: Estimated average annual health system costs (\$) per treated case, by sex and age group, 1993–94**

Sex/age group	Back problems	Rheumatoid and osteoarthritis	Other musculoskeletal disorders	All musculoskeletal disorders
<b>Males</b>				
Less than 25 years	428	320	2,149	1,547
25–64 years	1,090	710	1,593	1,325
65 years and over	2,249	1,382	2,342	2,029
<b>Females</b>				
Less than 25 years	688	91	1,385	1,152
25–64 years	995	642	1,493	1,229
65 years and over	4,255	1,296	2,818	2,349
<b>Persons, all ages</b>	<b>1,291</b>	<b>973</b>	<b>1,819</b>	<b>1,562</b>