

# Hip fracture frequent in hospital

In the year 1982, 112 hip fractures – cervical and trochanteric – were recorded in residents of Malmö after having been admitted to hospitals. During that same year, a total of 463 hip fractures occurred in the city. The risk of sustaining a hip fracture was 11 times greater in hospital patients aged 50 years or more than in persons of the same age who had not been admitted to hospitals.

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Fractures have been reported to be very common among the patients in a mental hospital: Hansson et al. (1982) found a many times higher incidence of hip fractures and a doubled incidence of wrist fractures when compared with those expected in the general population. Fractures are also common in somatic hospitals (Udén 1985).

We have compared the incidence of hip fractures occurring in and outside of hospitals.

## Materials and methods

In a prospective survey of the accidents occurring in patients admitted to hospitals and nursing homes in the city of Malmö in 1982, 127 fractures of the proximal femur, trochanteric or cervical, were recorded (Udén 1985).

The fracture incidence of the hospital population was calculated using the number of observed fractures per age and sex group in relation to the number of hospital beds occupied during 1982. The number of days in the hospital and the age and sex of each patient were recorded. The days in the hospital of each patient were allocated to the proper age and sex group. Altogether, 48,567 admissions contributed to the total hospital population of 3,008 occupied beds, of which 2,536 beds were occupied by patients aged 50 years or more. For the nursing homes, no like data were available or could be reconstructed – the hip fractures in nursing homes were included in the nonhospitalized group. The numbers for the general, the geriatric, and the psychiatric services were calculated separately – both fractures and occupied beds.

The number of fractures in Malmö residents recorded at the Department of Radiology during 1982 was used. Because of the health care system of the

city, these records include all radiographically diagnosed fractures in the population at risk, including those occurring in hospital patients. The population at risk is known from annual census data. From the total city population, the calculated hospital population was then subtracted. Obviously, individuals may be part of both population.

Mortality was calculated by listing 3- and 12-month survival from the city population records.

For the statistical analysis of comparisons between the non-hospital and hospital populations, the chi-square test was applied.

## Results

Twenty-four per cent of the hip fractures in the city of Malmö occurred in patients admitted to hospitals (Table 1). The incidence of hip fractures in hospitalized patients aged 50 years or more was 11 times higher ( $P < 0.001$ ). The incidence increased earlier in life in hospital patients (Figure 1). In men the incidence was 24 times higher (Figure 2). The mortality was higher in those patients who sustained their fracture in the hospital (Table 2). There was no preponderance for the geriatric, the psychiatric, or the general somatic services.

## Discussion

Hip fracture patients appear to belong to a subset of the population with an increased risk of fall accidents (Cook et al. 1982, Hohnell & Nilsson 1985). Dizziness may be one of several reasons for this tendency to falls (Ceder et al. 1981, Abdon & Nilsson 1980). Also, sedatives

Table 1. Hospitalized and nonhospitalized Malmö residents with hip fracture grouped according to age, sex, and type of fracture (C = cervical, T = trochanteric)

Age	Men occupying hospital beds (N)			Other Malmö men (N)		
	Hospital beds	Hip fractures in hospitals		Number (thousands)	Hip fractures outside hospitals	
		T	C		T	C
≥ 90	58	0	1	0,17	3	2
80-89	213	11	3	2,0	14	16
70-79	321	9	9	8,2	10	13
60-69	187	4	3	13,7	5	4
50-59	106	0	0	14,5	6	2
All ≥ 50	885	24	16	38,5	38	37

Age	Women occupying hospital beds (N)			Other Malmö women (N)		
	Hospital beds	Hip fractures in hospitals		Number (thousands)	Hip fractures outside hospitals	
		T	C		T	C
≥ 90	267	6	0	0,45	13	16
80-89	683	20	20	4,6	44	61
70-79	457	9	12	13,0	46	52
60-69	167	1	4	16,6	1	25
50-59	77	0	0	16,0	5	13
All ≥ 50	1.651	36	36	50,1	109	167

have been suggested to contribute to falls in the elderly (MacDonald & MacDonald 1977).

Alcohol abuse is an important cause of fractures in men (Kristensson et al. 1980) and possibly one reason why men have increased their

fracture risk more rapidly than women. In our study the most impressive difference in hip fracture risk was in men aged 60-69 years. Also, Hansson et al. (1982) found the relative risk greater in men than in women admitted to

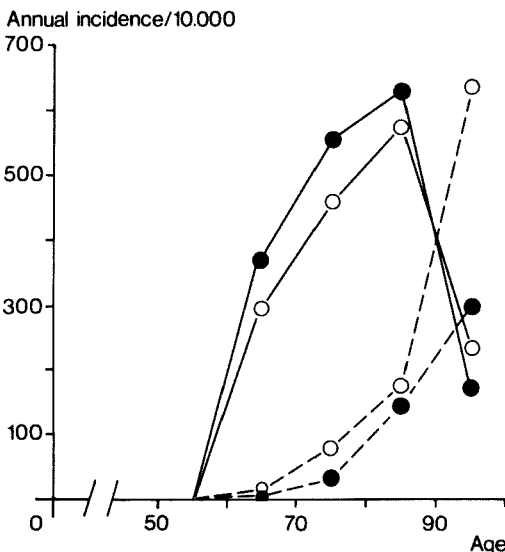


Figure 1. Age- and sex-specific incidence of fractures of the hip in hospitalized patients — compared with the rest — of the population of Malmö. ● men, ○ women.

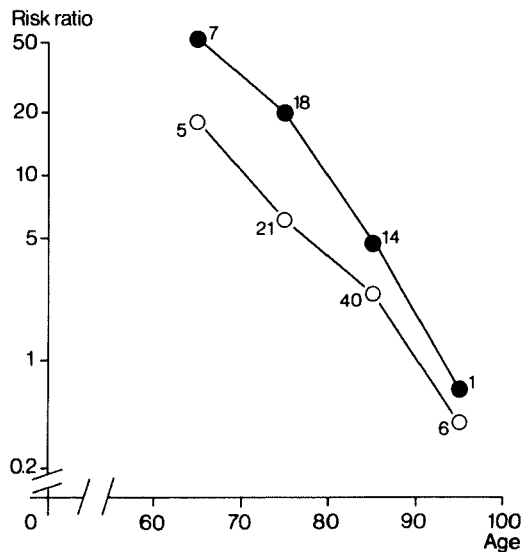


Figure 2. Risk ratio of hip fractures; age- and sex-specific incidence of hospitalized/nonhospitalized city residents in 1982. Number of fractures in hospitalized residents given. ● men, ○ women.

Table 2. Mortality after hip fracture

At the time of fracture	Within 3 months	Within 12 months
Admitted to hospital	27%	38%
Not admitted	8%	17%
Total	13%	23%
	( $p < 0.001$ )	( $p < 0.001$ )

a mental institution. Because the consequences of alcohol misuse have an enormous impact on the pattern of disease, abusers are not only apt to have fractures but many also sustain their fractures in the hospital.

By definition, persons admitted to the hospital are, on the average, in worse physical condition than those not admitted. This explains why the 3-month mortality was three times higher in the hospital hip fracture patients as compared with those not admitted before their fracture, and in spite of the fact that the former patients were younger.

The fact that one fourth of the hip fractures occurred among hospitalized patients is hardly surprising in the face of the condition of the hospital population. In Lund and Göteborg, one third of all hip fracture patients came from institutions: hospitals, nursing homes, and old peoples' homes (Ceder 1983, Zetterberg et al. 1983).

The risk of fall accidents in hospitals has also to some extent been related to the nursing routines: a poor staff-patient relationship, poor supervision, and faulty equipment may contribute (Udén 1985).

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