

# Incidence of meniscal lesions in children

## Increase associated with diagnostic arthroscopy

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In the population of Malmö the average annual incidence of symptomatic meniscal lesions in children increased from 0.7 to 2.5 per 10,000 from 1960-1965 inclusive to 1980-1985 inclusive. Soccer was the predominant cause of the lesions, and the increased incidence of the diagnosis was associated with the introduction of arthroscopy.

The incidence of meniscal injuries in children is not known. Up to 6 percent of all the meniscectomies are undertaken on children (Springorum 1959, Barucha 1967, Schulitz 1973, Heisel and Schwarz 1984). Landin (1983) reported an increasing frequency of fractures in children from 1950 to 1980, and the findings of Heisel and Schwarz (1984) indicate an increasing incidence of meniscal lesions in children.

We determined the incidence of symptomatic meniscal lesions in a well-defined population of children during two different 6-year periods 20 years apart.

### Patients and methods

The city of Malmö has a well-defined population (229,000 inhabitants), where all the meniscal operations are performed at the Department of Orthopedics, Malmö General Hospital. Operative notes of all the children 18 years old or younger at the time of arthroscopy or meniscectomy were analyzed for the years 1960-1965 inclusive and 1980-1985 inclusive. The diagnosis was made on clinical grounds, and arthrography was not in general use. For the purpose of this study, only meniscal lesions warranting surgery were included. Also, patients with associated injuries in the knees were not included. In the

1960s total meniscectomy was always performed, whereas in the 1980s partial meniscectomy either as an open procedure or arthroscopically was the routine procedure.

The population at risk was defined with respect to age and sex on the basis of population census data. During the early 1960s, only 2 years had been defined: 1960 and 1965; thus, the mean population at risk for each year was used for that period. During the 1980s, annual census data were taken, and the population at risk for each year could thus be accurately defined. The mean population at risk decreased from an average of 63,000 boys and girls per year during the 1960s to 45,000 during the 1980s.

Table 1. Annual incidence of meniscal lesions per 10,000 boys and girls 18 years old or less in Malmö from 1960 to 1965 inclusive (1960s, mean value) and from 1980 to 1985 inclusive. The actual number is given in parentheses

	Boys		Girls		All
	Medial	Lateral	Medial	Lateral	
1960s	0.9 (17)	0.3 (4)	0.2 (4)	0.1 (2)	0.7
1980	2.5 (6)	2.5 (6)	0.9 (2)	0.9 (2)	3.4
1981	1.3 (3)	2.1 (5)	2.6 (6)	0.4 (1)	3.2
1982	1.7 (4)	2.2 (5)	0.5 (1)	0 (0)	2.2
1983	1.3 (3)	0.9 (2)	0.9 (2)	0.5 (1)	1.8
1984	1.8 (4)	0.9 (2)	1.0 (2)	1.0 (2)	2.3
1985	2.3 (5)	1.8 (4)	0 (0)	0 (0)	2.1
Subtotal 1980-1985 (68)	1.8 (25)	1.7 (24)	1.0 (13)	0.5 (6)	2.5

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## Results

The average annual incidence of meniscectomy in children increased from 0.7 per 10,000 in the 1960s to 2.5 in the 1980s (Table 1). The ratios boys/girls and medial/lateral injuries changed only slightly from 3.5 to 2.4 and 3.5 to 2.6, respectively. The average age was 17 years in the boys and 16 years in the girls, without any change from one period to the other.

Soccer was the most dominant etiologic factor, notably in the 1980s (Table 2).

Table 2. Etiologic factors of meniscal tears in children 18 years old or younger in Malmö from 1960 to 1965 inclusive and from 1980 to 1985 inclusive

	1960s	1980s
Soccer	1	18
Contact sports (basketball, handball, etc.)	2	7
Gymnastics	2	5
Downhill skiing	3	3
Athletics	3	3
Other sports	5	9
Traffic accidents	0	3
Indirect, not sports-related (kneeling, squatting, etc.)	4	6
No known trauma	7	14

## Discussion

During these two 6-year periods with a 20-year interval, meniscal injuries warranting surgery increased by a factor of 3.5 irrespective of sex and site of injury. During the early 1980s, the increase was dramatic as compared with the 1960s. Since 1982,

the incidence has reached a steady state, probably due to improved arthroscopic technique. We believe that the latter years of this period therefore reflect the true incidence of symptomatic meniscal injuries in this age group.

## References

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