

Brief Reports

Joint Hypermobility in South Indian Children

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Joint hypermobility, also known as joint laxity, is defined as a range of motion in excess of normal and, common enough to evoke curiosity(1). Hypermobility is often seen as a benign condition in children which reduces with increasing age(2). A higher prevalence of joint hypermobility is reported in the oriental races(2). We report the prevalence of joint hypermobility in 1000 school children from South India.

Subjects and Methods

One thousand children between the ages of 6 and 15 years from 5 different Corporation Schools in Madras were included. There were equal number of boys and girls. All the children in the class were included except those with Grades III or IV malnutrition, Down's syndrome, Ehlers-Danlos syndrome or any musculoskeletal disorders.

Joint hypermobility was evaluated using the Carter-Wilkinson's scoring method(3): (i) Passive apposition of thumbs to the flexor aspect of forearms; (ii) Hyperextension of fingers so that they lie parallel with the extensor aspect of forearms; (iii) Hyperextension of elbow greater than 10°; (iv) Hyperextension of knee greater than

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10°; and (v) Flexion of trunk with knees extended, so that the palms rest on the floor.

A child could score two points, one for each side, for each of the first 4 items and one point for the last item. Children scoring 4 or more points out of the maximum of 9 were considered to have joint hypermobility. The examinations in all the 1000 children were conducted by one of the authors (KVJ).

Results

Of the 1000 children, the prevalence of hypermobility seen in various age groups is shown in *Table I*. The overall prevalence of benign hypermobility of the joints for both boys and girls was 17.2%.

There were 71 (65%) boys who had hypermobility compared to 38 (35%) girls in the age group of 6-10 years and 26 (41%) boys compared to 37 (59%) girls in the age group of 11 to 15 years. There was a statistically significant difference between boys and girls and between the two age groups ($p = 0.003$)

Discussion

Joint hypermobility is a common

TABLE I-Prevalence of Hypermobility of joints in South Indian Children Aged 6-15 Years

Age (yrs)	Boys n=500 (%)	Girls n=500 (%)
6	18 (3.6)	5 (1.0)
7	16 (3.2)	8 (1.6)
8	13 (2.6)	11 (2.2)
9	18 (3.6)	6 (1.2)
10	6 (1.2)	8 (1.6)
11	5 (1.0)	5 (1.0)
12	8 (1.6)	6 (1.2)
13	7 (1.4)	6 (1.2)
14	2 (0.4)	14 (2.8)
15	4 (0.8)	6 (1.2)

clinical finding and is asymptomatic in majority of children. In general, girls have greater mobility of joints than boys of same age, ranges are greater in the non dominant limb and Asians show more mobility than whites (2). However, in our study boys had greater hypermobility in the age group of 6 to 10 years, and *vice versa* in the age group of 11 to 15 years, ($p = 0.003$).

Carter and Wilkinson showed hypermobility in 7% of 285 healthy children aged 6 to 11 years(3). In the present study, 17.2% of children showed hypermobility of joints. These were all normal school going children and were apparently asymptomatic.

Recognition of hypermobility syndrome itself in a child with previously mysterious aches and pains, prevents over investigation and over use of drugs. Symptoms generally resolve in late adolescence when the periarticular tissue develops resistance. Physical activity should not be restricted unless the child is over indulging in gymnastics, competitive sports or dancing. The advice of a physiotherapist is often required in patients having symptoms of joint pain.

Joint hypermobility is associated with

an increased incidence of motor delay in infancy(4). Excessive foot dorsiflexion, hip abduction and elbow hyperextension are particularly associated with developmental delay. The delay is usually transient and most patients recover by the third year of life.

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