

The greatest difficulty encountered was the impossibility of making a dogmatic statement about the physical posture of a child—at any rate, up to 11–12 years. The 13–15-year group showed more or less stability of physique, and might be said to have a definite habitual posture; but until one attempts to pigeonhole him one does not conceive the protean quality of the average child and the infinite number of positions which he can assume in the space of a few minutes. For example, by remarking to a child with apparently faulty posture, “Now, are you ready? Stand straight,” the picture can be absolutely altered for a variable period, &c. These variations are bound to lead to discrepancies in figures relating to general incidence; nevertheless, there should be some consistency with regard to incidence at different ages and stages in school progress.

At all stages certain very marked deformities were found, classed as 4, which in practically all cases were accompanied by a history of illness which might be considered as the causative factor—*e.g.*, prolonged illness producing scoliotic conditions, paralysis, asthmatic conditions producing chest-deformities, defective vision producing marked angularity of the neck. This class one feels can be ruled out of a discussion on purely postural deformities.

Allowing for such opportunities for error, a comparison of the results of these investigations brings up certain facts which may be worth mentioning.

(1) As to type, the average New Zealand child would appear to tend towards the thin type, mentioned above. The British child, on the other hand, appears to approximate to the stocky type, judging from literature on the subject. It was also noticeable in the survey that most of those definitely of the stocky type were immigrants.

(2) With regard to incidence of deformities, before quoting my figures I want to remark that we purposely set our standard very high, and when I quote figures relating to percentage of defects these include every slight deviation from the set standard, and, after all, in ordinary common-sense view of the situation a certain degree of variation about the normal must be allowed for. Since it has been decided that groups 1 and 2 may be regarded as normal, and that group 4 is made up of children suffering from definite predisposing weakness, it is evident that group 3 alone is to be considered in estimating faulty posture as a school problem.

The figures show that certain deformities tend to increase steadily during the child's progress through the school—*i.e.*, from 5 to 15 years. The two types of defect in which this increase is most definite are the forward inclination of the head and deformities of the feet. Of the former, the 5–6-year group showed 29 per cent. incidence (group 3, 5·4 per cent.); the 13–15-year group showed 59 per cent. incidence (group 3, 17 per cent.) of the latter, the 5–6-year group showed 25 per cent. incidence (group 3, 1·5 per cent.); the 13–15-year group showed 75 per cent. incidence (group 3, 30·5 per cent.). On the other hand, deformities of the shoulders, spine, and abdomen show some increase for a period between 5 and 10 years, and then a steady decrease in incidence to 15 years. This suggests that these particular defects do have a common causative factor and tend to occur as a syndrome.

Chest-deformities did not seem to vary to such a degree in the different age groups; if anything, they tend to decrease with age. I found less deformity of the chest than I expected; certainly definite cases were very infrequent.

Genu valgum (knock-knees): This defect is very common in all ages. The 5–6-year group showed 79 per cent. It tends to decrease, or, at any rate, to appear less evident in the 13–15-years group. Nevertheless, it is so prevalent at all ages that it appears probable that the usual standing position for the average New Zealand child is with the feet parallel and a few inches apart.

Difficult as it is to examine young children by inspection, it is infinitely more difficult to take measurements with any degree of accuracy. Among other measurements, we endeavoured to measure the pelvic angle of each child. This was done with a goniometer. Our records varied between 6° and 26°. Allowing for difficulties of accurate measurement, it did appear that they varied between 8° and 15° in a normal spine and that a measurement of over 20° was accompanied by a definite lordosis. The angle becomes more amenable to investigation in the older children. In the younger ones the readings varied from moment to moment as the child changed his posture—in fact, I abandoned the struggle of attempting to measure the angle in the 5–6-year group.

When children are classified into four groups according to posture, it is to be noted that 41 per cent. (Class C) of the whole show faulty posture to a degree requiring remedial measures. The 7–8-year-old group once more includes greatest percentage showing faulty posture.

As a result of our observations I make the following tentative suggestions: New Zealand appears to be producing a type of individual with characteristics more closely resembling those of the “thin” type of the earlier classification—a slender, loose-limbed, perhaps rather ungainly-looking child—compared to the stocky type, in which stability is apparently somewhat sacrificed to mobility. This is borne out by previous investigations, which show that in New Zealand children the standing height is increased compared to sitting height. Granted that this type may not come up to the æsthetic and other standards of the sturdy type, is it for practical purposes so much inferior? It is a common experience to find the “staying-powers” of the thin, lanky child, if anything, superior to those of the stocky type; its resistance to ordinary infections as good or even better; I have noticed often that the chest-mobility and lung-expansion are excellent.

It might be asked to what degree winged shoulders are detrimental to health. They are known to be present in children and adults who have exceptionally good health and powers of endurance. With regard to alterations in spinal curvatures, Kerr states, “four-fifths of the recorded cases of spinal curvature are normal physiological variations due to the human being not being absolutely symmetrical” In fact, it is really rather difficult to define what is exactly the normal posture of a child at a certain age.