

Common Symptoms
of Disease
in Children

R. S. Illingworth

Fourth edition

Second printing

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FOURTH EDITION
SECOND PRINTING



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Preface to the fourth edition

In preparing this new edition of *Common Symptoms of Disease in Children* I have read and re-read every word of the previous edition and made hundreds of alterations or additions in order to bring it thoroughly up to date. In doing this I have been greatly helped by the criticisms and suggestions of my friends, Dr John Lorber, Dr Victor Dubowitz, Dr Frank Harris and Dr John Black, and have paid careful attention to suggestions made by reviewers of the previous edition. I have not been able to take all the advice offered, because I was most anxious to avoid lengthening the book and making it unwieldy and expensive. One friendly critic advised me to include rashes. On careful consideration I decided not to include them, partly because I am not a dermatologist, and partly because I felt that without illustrations the differential diagnosis would be unsatisfactory: though I have added a short section on different types of rash caused by drugs. I must emphasise that I do not claim that listed causes are in order of importance: it would be impossible to arrange this: but I have tried to point out what conditions I think are rare.

It is very difficult to decide whether to include certain rare diseases. This book is intended not only for family doctors but for other doctors who are faced with a difficult diagnosis of a symptom, and accordingly I have included many rare diseases. Although one is far more likely to be right if one diagnoses the common rather than the rare, an individual child may suffer from a rarity. I have again kept descriptions of conditions, especially rare ones, as brief as possible, because of my constant desire to avoid making the book too big and unwieldy.

Though scores of additions have been made to this volume, by means of extensive pruning and the deletion of repetitions, the book has not been materially lengthened.

Once more I should be most grateful for any suggestions for improving this book in case a further edition is required.

Sheffield, August 1972

Preface to the first edition

When I was talking to my thirteen-year-old child about my attempt to write a book concerning the common symptoms of disease in children, mentioning the difficulties which I was encountering, and the fact that no one, to my knowledge, has attempted it, she said, 'Isn't that all the more reason why you should do it?' I replied that it may well be that the reason why others have not done it is the fact that they had more sense than to try.

I have attempted to write a précis of the common symptoms of disease in children because I felt that the family doctor, when faced with a symptom in a child whom he is examining, would find it useful when in difficulty to refer quickly to conditions which have to be considered. The textbooks, general or specialist, for the most part do not deal with symptoms. For instance, I referred to a large textbook of otorhinolaryngology for information about stridor, but the word was not in the index. It is likely to take a family doctor a long time to find a textbook which discusses the very common cyanotic or apnoeic attacks of the newborn. The great majority of the symptoms which I have discussed in this book are not, in fact, mentioned in the index of the majority of textbooks, and many of the symptoms are not mentioned in the index of any of them. This is not intended to be a criticism of textbooks. Discussion of symptoms would have greatly lengthened them, and inevitably have caused repetition.

In consequence I have discussed about a hundred common symptoms of disease in childhood. I have made no attempt to provide a complete list of all the possible causes of a symptom, but I have tried to pick out the important causes, making it clear which I think are the most common ones, and which I consider to be rare.

Though classifications are useful for memorising, and though they look neat and tidy, I have avoided them almost completely, because of their inherent weakness in not giving the common conditions first.

Where a symptom may be psychological or organic I have included it, but where a symptom is entirely psychological I have omitted it, because I have discussed psychological problems in my books *The Normal Child in His First Five Years** and *The Normal School Child*.† I have, however, included a section concerning psychological manifestations of organic disease, and the somatic manifestations of psychological symptoms.

The book is confined to the subject of diagnosis. I have named common investigations which need to be carried out in order to elucidate the problem—but again have made no effort to name them all. (In a recent article on jaundice in the newborn, the author listed 75 special investigations which should be carried out.) I have not described the normal values of the investigations, nor the methods of performing them: but I have named the investigations in order that the family doctor would know some of the tests which are necessary to establish the diagnosis, and would then know when to refer the child to a special centre for study. I thought, furthermore, that knowledge of the necessary tests would help him in his talks with the parents. I have made a special point of emphasising the conditions which do require such special investigation.

There is inevitably a certain overlap between signs and symptoms and I have allowed myself a little licence in interpreting the word 'symptoms'. For instance, I have included a short section on enlargement of the spleen. Admittedly an adult experiences discomfort when his spleen is felt. My reason for including it, however, was the frequency of splenic enlargement in children and therefore its importance in the diagnosis of so many different diseases.

I have assumed that the family doctor has basic medical knowledge. I have also had to assume that the family doctor does not want or need profound knowledge on any subject. My notes may well, therefore, be criticised for being superficial. They are deliberately made so, because I did not feel that the family doctor would want more. But I have throughout assumed that having looked through a section of this book to read about a particular symptom, he would then refer to one of the recognised textbooks for more

* *The Normal Child*, Fifth Edition, 1972, London, Churchill.

† *The Normal School Child: his problems, physical and emotional*, 1964, London, Heinemann.

information. To this end I have listed principal sources of further knowledge. For instance, as a general source of information on a paediatric problem I have recommended Nelson's *Textbook of Pediatrics*.

In my opinion no one should attempt to make a diagnosis in a sick child without knowing what drugs he has already received. The side effects of drugs are so frequent and far reaching, and the number of drugs taken, whether prescribed by a doctor or otherwise, is so great, that it is essential to know what medicines have been given. I have mentioned the side effects of drugs in the relevant sections, and summarised them in a special section.

At the risk of repetition, I have inserted a brief section about commonly held misbeliefs in paediatric diagnosis—including such a misbelief as the idea that convulsions are caused by teething. I am aware of the fact that there is a small amount of repetition in different sections. I decided to retain this for the convenience of the reader.

I hope that family doctors will find this book useful in General Practice. I believe that students will find this book useful for the purposes of revision. It would not serve as a basic textbook for them, but I believe that it would be useful in conjunction with one of the standard textbooks.

It is certain that many will think of causes of which I have not thought, or of symptoms which should have been included. I should greatly welcome comments and suggestions so that the book can be improved if another edition is required.

I wish to thank my friends Dr Peter Wyon, Family Doctor, of Thirsk, Yorks, Dr Frank Harris, Lecturer in Child Health, the University of Sheffield, and my wife, Dr Cynthia Illingworth, for reading every word of the script and for their most useful criticisms: and to my secretaries, Miss D.Bain, Miss J.Grundy and Mrs D.Ackroyd, for typing the drafts of this book.

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Failure to thrive

All those who are concerned with the care of children are repeatedly faced with the problem of the child who refuses to gain weight in the approved manner. It is surprisingly difficult to obtain a composite picture of this problem in the standard texts. In this chapter I have attempted to put together the main conditions which have to be considered when a child's weight gain is below the average. As the problem in the young baby is different from that in the older child, it will be convenient to discuss it in relation to age groupings. In the first place, however, one must decide whether or not there is anything wrong with the child at all.

Variations in normal physical growth

All children are different. Some are small and some are big, some are thin and some are fat. Though nutrition has much to do with this, it is certainly not true to say that nutrition is the only factor. Many factors are unknown. It is always difficult and usually impossible to draw the line between normal and abnormal. A child may be pounds below the average in weight, and inches below the average in height, and yet be perfectly normal. It is far more important that the child should be full of energy, free from lassitude and abounding in *joie de vivre*, than that he should be average in weight and height. One might add that it is much more healthy to be below the average weight than above it. All that one can say is that the further away from the average is the child's weight and height, the less likely it is to be 'normal'.

A child may be unusually small because he takes after his mother or father in that respect. Whenever an infant or older child is unusually small, one should consider the height of the mother and father. A small child, taking after one of his parents in physical build, is not only small in height (or in the case of a baby, in length), but he is less than the average in weight. As a result his

appetite is commonly less. The result is that parents are apt to become worried because the child has a smaller intake than usual, and so they try to force him to take more. The inevitable result, after the age of six to nine months or so, is that he refuses. He vomits the food which he is forced to take against his will. He begins to associate mealtimes with tears and unpleasantness, and becomes conditioned against food, so that a troublesome vicious circle and difficult behaviour problem results.

After the first year it is useful to be able to consult a table in order to estimate the child's eventual height. Such a table cannot always

Table 1. Present height in relation to eventual height

(a) Boys

Age in years	Eventual height		
	5 feet	5 feet 6 inches	6 feet
1	25.8	28.3	30.9
2	29.4	32.1	35.3
3	31.8	35.1	38.1
4	34.4	37.8	41.2
5	36.6	40.3	43.9
6	38.7	42.7	46.6
7	40.7	44.8	48.9
8	42.6	46.9	51.1
9	44.6	49.0	53.4
10	46.2	50.8	55.5

(b) Girls

1	27.0	28.3	32.4
2	31.1	34.3	37.4
3	33.9	37.2	40.6
4	36.5	40.2	43.9
5	39.0	43.0	46.9
6	41.3	45.4	49.6
7	43.5	47.8	52.2
8	45.6	50.1	54.6
9	47.6	52.4	57.1
10	49.5	54.4	59.4

As a rough guide, the height on the second birthday is half the expected adult height. Calculated from Tanner *et al.* (1966). Example—7-year-old girl, height 43.5 inches. Probable eventual height is 5 feet.

be relied upon for accuracy, because so many individual variables may affect a child's growth; but it may be a good guide which will help the parent to understand the problem. Tables 2 and 3 show the average weight and height of British children, while Table 1, based on the work of Tanner, shows the percentage of eventual height reached at various ages.

An example of the value of such a table is as follows. A child of three years was referred because of her small size, being 34 inches

Table 2. Average height of boys and girls

<i>Boys</i>								
Age in years	10		50		90		% of adult height	
	in	cm	in	cm	in	cm		
0	20.2	51.4	21.3	54.0	22.3	56.6	30.9	
1	28.7	72.8	30.0	76.3	31.4	79.7	43.7	
2	32.6	82.7	34.2	86.9	35.9	91.1	49.8	
3	35.1	89.3	37.1	94.2	39.0	99.1	53.9	
4	37.8	96.1	40.0	101.6	42.1	107.1	58.2	
5	40.2	102.2	42.6	108.3	45.0	114.4	62.0	
6	42.5	108.0	45.1	114.6	47.7	121.2	65.6	
7	44.7	113.5	47.4	120.5	50.2	127.5	69.0	
8	46.8	118.8	49.7	126.2	52.6	133.5	72.2	
9	48.8	124.0	51.8	131.6	54.8	139.3	75.4	
10	50.7	128.8	53.9	136.8	57.0	144.8	78.3	

<i>Girls</i>								
Age in years	10		50		90		% of adult height	
	in	cm	in	cm	in	cm		
0	19.8	50.4	20.9	53.0	21.9	55.6	32.7	
1	27.9	70.8	29.2	74.2	30.6	77.7	45.7	
2	32.0	81.3	33.7	85.6	35.4	89.8	52.8	
3	34.7	88.1	36.6	93.0	38.5	97.9	57.3	
4	37.4	94.9	39.5	100.4	41.7	105.9	61.9	
5	39.8	101.1	42.4	107.2	44.6	113.2	66.1	
6	42.0	106.8	44.5	113.4	47.2	120.0	69.9	
7	44.2	112.4	47.0	119.3	49.7	126.3	73.6	
8	46.3	117.6	49.2	125.0	52.1	132.4	77.1	
9	48.4	122.9	51.4	130.6	54.4	138.3	80.5	
10	50.5	128.3	53.7	136.4	56.9	144.5	83.8	

high. Her mother was five feet tall and was relieved to hear that the girl could be expected to reach the same height as she had.

Table 3. Average weight of boys and girls

Age in years	10		50		90	
	lb	kg	lb	kg	lb	kg
0	6.17	2.8	7.72	3.5	9.04	4.1
0.25	11.05	5.01	13.07	5.93	15.41	6.99
0.5	14.99	6.8	17.42	7.9	20.28	9.2
0.75	17.59	7.98	20.28	9.2	23.43	10.63
1.0	19.40	8.8	22.49	10.2	25.79	11.7
2	24.25	11.0	28.0	12.7	32.19	14.6
3	28.00	12.7	32.41	14.7	37.26	16.9
4	31.52	14.3	36.60	16.6	42.11	19.1
5	34.61	15.7	40.72	18.5	47.4	21.5
6	38.14	17.3	45.20	20.5	52.91	24.0
7	41.89	19.0	49.82	22.6	59.29	26.9
8	46.03	20.9	55.11	25.0	66.13	30.0
9	50.48	22.9	60.62	27.5	73.63	33.4
10	55.56	25.2	66.80	30.3	82.23	37.3

Girls

Age in years	10		50		90	
	lb	kg	lb	kg	lb	kg
0	6.28	2.85	7.50	3.4	8.71	3.95
0.25	10.6	4.81	12.26	5.56	14.13	6.41
0.5	14.2	6.44	15.21	6.9	18.72	8.49
0.75	16.71	7.58	19.22	8.72	22.09	10.02
1.0	18.52	8.4	21.38	9.7	24.69	11.2
2	22.93	10.4	26.89	12.2	31.09	14.1
3	27.11	12.3	31.52	14.3	36.15	16.4
4	31.09	14.1	35.93	16.3	41.44	18.8
5	35.05	15.9	40.34	18.3	47.17	21.4
6	38.8	17.6	44.97	20.4	53.79	24.4
7	42.33	19.2	49.82	22.6	61.07	27.7
8	46.29	21.0	55.34	25.1	68.78	31.2
9	50.7	23.0	61.07	27.7	78.04	35.4
10	55.34	25.1	68.56	31.1	90.39	41.0

Tanner, J.M., Whitehouse, R.H., Takaishi, M. (1966). 'Standard from Birth to Maturity for Height, Weight, Height Velocity and Weight Velocity.' *Arch. Dis. Childh.*, 41, 613.

The next most common factor to consider when an apparently well child is unusually small for his age is the birth weight, and in particular the birth weight in relation to the duration of gestation. The smaller the child is at birth, the smaller he is likely to be in later years, and the larger he is at birth, the larger is he likely to be in later childhood. There is evidence that the baby who is small at birth in relation to the duration of pregnancy is likely to be even smaller in later years than the child whose weight at birth corresponded with the usual weight for the duration of gestation. It seems as if the child's growth potential was indicated by his unusually small growth in utero, and that his subsequent growth is correspondingly less than that of most other children (Illingworth, 1972).

Many mothers are worried about the normal slowing down of the weight gain in the second half of the first year. This is associated with a falling off in the appetite. It is apt to cause food forcing and so food refusal. Others are worried by the small appetite of a child who has a small build because he takes after the mother or father or has congenital heart disease or other condition which affects physical growth. Once more, this is apt to lead to food forcing and so to food refusal. It is important that parents should know that children take all that they need if given a chance, and that it is never necessary to try to make a child eat. A poor appetite in a well child is always due to food forcing. A poor appetite is most unlikely to cause defective nutrition.

Defective physical growth from previous disease, now cured

There is evidence from work on animals that if growth is retarded in early life, the growth remains defective later in spite of adequate nutrition.

Many human infants who suffered major surgical procedures in the early weeks, and who were excessively small in weight in that period, are small in later years. (Eid, 1970.) The longer the growth retardation persisted before the cause is corrected, the greater is the subsequent growth deficit. Umansky & Hauck (1962) showed that children operated on for ligation of a patent ductus arteriosus, and who were far below the average in size at the time of the operation, did not usually catch up to the average height after the ligation. In

fact only 20 per cent of 444 children showed a marked postoperative acceleration of growth in height. It seems that there is a 'critical period' in physical growth, and that after that a normal diet will not restore the child to an average size.

For true dwarfism, see p. 20.

Other causes to consider

The following is a useful classification of the causes of failure to thrive:

Defective intake

Breast feeding without weight checks

Artificial feeding

Fear of overfeeding

Errors in preparing the feeds

Incorrect feeding of premature baby

Inadequate fluid in hot climates

Emotional deprivation; prolonged crying; child abuse

Chronic infection, e.g., urinary tract

Vitamin deficiency on synthetic diets

Subdural haematoma (rare)

Pink disease (rare)

Defective Absorption

Fat. Steatorrhoea, including fibrocystic disease of the pancreas, coeliac disease, and other conditions

Carbohydrate. Carbohydrate intolerance

Protein

Hirschsprung's disease

Increased loss

Excessive perspiration. Overclothing

Vomiting

Diarrhoea

Errors of metabolism (all rare)

Renal acidosis

Hypercalcaemia

Nephrogenic diabetes insipidus

Adrenocortical hyperplasia

Hypophosphatasia

Organ diseases, involving the brain, heart, chest, kidney, liver, pancreas

Mental deficiency, cerebral tumour, subdural haematoma

Congenital heart disease

Severe asthma, bronchiectasis, tuberculosis

Chronic renal insufficiency

Cirrhosis of the liver

Diabetes mellitus

Chronic infection

No known cause

Defective intake

A breast-fed baby is more likely to suffer from underfeeding than an artificially fed baby, because the mother cannot know how much milk she has without weighing the baby. In my experience every mother thinks that the leaking of milk from the breast (lactorrhoea) signifies that there is an abundance of milk, though it signifies nothing more than the draught reflex, or the unusually easy escape of milk from the breast. Many doctors think that if a baby is contented he must be obtaining sufficient milk from the breast. This is far from the truth. Many young babies are content to starve and do not cry, even though they are receiving a totally inadequate amount of milk.

The most accurate way of establishing the diagnosis of defective intake in a breast fed baby is the test feed—weighing the baby before and after every feed in the day, expressing milk fully after each feed and measuring it, and then adding up the total. If expression is not carried out, the result is seriously misleading, for all that one is then measuring is the milk which the baby has taken from the breast, but not the milk available in the breast. If a baby sucks badly or is drowsy or irritable or if the nipple is a difficult one for him, he may not obtain milk which is in the breast.

An artificially fed baby may be underfed either because of starvation, or because of *errors in the constitution of the feeds*. In investigating the method of feeding, it is essential to ask how much milk powder, sugar, and water the mother is putting into each feed. It is futile to accept a mother's statement that she is

giving the baby 'five ounces of Cow and Gate' at each feed. She may be making the feed up far too dilute, so that the baby is underfed.

One of the commonest causes of underfeeding is the *fear of overfeeding*. Mothers wrongly ascribe the vomiting, the loose stools, the crying or the wind to overfeeding, when in fact they are due to underfeeding. They then reduce the quantities taken and starve the baby still further. Overfeeding may interfere with weight gain in a small premature baby because of fat intolerance, but not in a full term baby, who knows when to stop.

In hot climates I have seen infants who were given quantities of fluid suitable for the British climate, but unsuitable for the country in question. They were being given $2\frac{1}{2}$ ounces per pound (160 ml per kg) per day, which is the usual quantity needed in England, but insufficient in a country such as Egypt, where there is more fluid loss through perspiration.

A small premature baby may refuse to gain weight on human milk, but thrive on skimmed cow's milk. A common cause of the failure of a premature baby to gain weight is inadequate intake: it is commonly forgotten that whereas a full term baby usually needs $2\frac{1}{2}$ ounces of milk per pound per day (160 ml per kg), a premature baby after two weeks usually needs 3 ounces per lb per day (188 ml per kg) and 4 ounces per lb per day (250 ml per kg) after four weeks: but overfeeding may cause vomiting and loss of weight.

When a baby is seriously underweight, one commonly finds that the quantity which the mother states that she is giving is adequate, but that when the baby is admitted to the ward he is ravenously hungry, has a far bigger than average weight gain, and has been half starved. I have known such babies gain as much as 25 ounces a week when given as much as they want. *It is important to accept with scepticism the mother's story of the quantity given. When a child is failing to thrive, and no obvious cause can be found, one should suspect underfeeding, whatever the mother says.*

In the case of the older infant and young child, underfeeding may be due to parental food fads and ignorance.

An important cause of defective intake of food is *emotional deprivation*. One often sees older babies who refuse to gain weight in