

# Childhood morbidity and adulthood ill health

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## Abstract

**Study objective**—The aim of the study was to investigate the relationship between the state of health in childhood and ill health in early adult life.

**Design**—The study used data collected as part of the National Child Development Study and related health at 7 years of age to that at 23. A wide range of information on child health in the cohort was available, which was used to construct a broader measure of health status than selected diagnostic categories.

**Setting**—The survey population was nationwide.

**Participants**—The study population included all children born in the week 3-9 March 1958. They were followed up at 7, 11, 16, and 23 years. Of the target population of 17 733 births, 12 537 (76%) were retraced and interviewed at 23.

**Measurements and main results**—Children at age 7 were allocated to 13 morbidity groups; 20% of children had reported no ill-health apart from the common infectious diseases, but 10% were included in four or more of the morbidity groups. Children with no reported morbidity retained their health advantage into early adulthood: ratios of observed to expected ill health for four of the five indices examined at age 23 were all significantly below one (self rated health 0.81, asthma and/or wheezy bronchitis 0.63, allergies 0.79, emotional health 0.75). Children with more morbidity at age 7 had higher ratios of ill health in adulthood. A chronic condition in childhood was associated not only with excess morbidity in the short term but also with a poor health rating in early adult life (ratio = 1.38). Morbidity was significantly increased for most of the adulthood indices among children with asthma and/or wheezy bronchitis. However most ill health in young adulthood occurred in study members with a relatively healthy childhood.

**Conclusions**—Although the state of health in childhood has long term implications, it does not form a substantial contribution to ill health in early adult life.

There is increasing evidence to suggest that several conditions experienced in adult life have links with ill health in childhood.<sup>1-3</sup> Most research has focused upon specific medical conditions and the extent to which overall health in childhood persists into adulthood has not been

determined. More specifically it is not clear whether a healthy child becomes a healthy adult and an unhealthy child becomes an unhealthy adult, nor conversely, what proportion of adulthood ill health is associated with morbidity in childhood.

In order to answer this question it is necessary to construct comprehensive indicators of health status during childhood, which take account of a wide range of childhood illnesses and not just selected diagnoses. With the exception of a previous study in America<sup>4</sup> there have been few attempts to provide such indicators, even though they are useful for several purposes, as in relating morbidity to patterns of service use or in the investigation of social inequalities in health, where the use of specific conditions is inadequate.<sup>5 6</sup>

The aim of this paper is to describe how indicators of ill health were constructed from data already available in the National Child Development Study and how, given the longitudinal data available for this sample, child health was subsequently related to that reported for early adulthood. Previously, this relationship has been examined among these young people in terms of a few specific illnesses or conditions, such as respiratory illness,<sup>7</sup> epilepsy<sup>8</sup> and obesity<sup>9 10</sup> but not for a wider range of childhood health problems.

## Methods

The 1958 cohort (National Child Development Study) has its origins in the Perinatal Mortality Survey which was designed to examine social and obstetric factors associated with stillbirth and death in early infancy.<sup>11</sup> The subjects included all children born in the week 3-9 March 1958 and resident in England, Scotland and Wales. From a target population of 17 733 births information was obtained on 98%. At ages seven, 11, 16 and 23 the sample was followed up and at each age, except the last, immigrants to Britain born during the same week were incorporated into the study.<sup>12 13</sup>

## MEASURES OF MORBIDITY

During childhood and adolescence reports were based on medical examinations carried out by the school medical officers and, in a home interview, parents were also asked to report the child's past and present health problems. Data were collected on a wide range of conditions described in numerous publications.<sup>12 13</sup> In an attempt to summarise childhood ill health, the data were categorised retrospectively using a scheme similar to that used in America by Starfield *et al.*<sup>4</sup> The basic structure of the American classification was

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retained, although information contained in the National Child Development Study is not strictly comparable. This is largely because the National Child Development Study is limited to illness recalled by parents or detected at a medical examination, whereas the American children were examined on several occasions.

All health questions included in the seven year follow up were scrutinised by the authors and conditions allocated to one of 13 groups of morbidity. Details of the questions available from the National Child Development Study at this age and their allocation to the 13 groups can be obtained elsewhere.<sup>14</sup> It was not always possible to determine severity since categorisation was being imposed retrospectively. However, scales of severity had been employed for several conditions such as visual acuity, so that it was possible to select cut off values, albeit arbitrarily, for certain definitions.<sup>14</sup> The contents of each category are given in the appendix.

At age 23 the health of the cohort was characterised by:

- (1) Self rated health. Respondents were asked "How would you describe your health generally? Would you say it is: excellent; good; fair; or poor?"
- (2) Asthma or wheezy bronchitis since age 16: self reported by respondents.
- (3) Allergies: included eczema and hayfever suffered in the preceding year.
- (4) "Malaise" score. This was derived from a 24 item self completion questionnaire which was administered at the end of the 23 year interview. Adapted by Rutter *et al*<sup>15</sup> from the Cornell Medical Index, this was designed as a screening instrument and scores of more than 7 are suggested as indicative of depression.<sup>16 17</sup>
- (5) Emotional or psychological morbidity (excluding mental handicap): self reported data on hospital admissions or specialist consultations between ages 16 and 23 for emotional problems.

#### NON-RESPONSE

A total of 12 537 people were successfully retraced and interviewed at age 23. This represents 76% of all members of the study who were alive and still living in Britain. Those remaining in the study tended to be from more middle class backgrounds and certain disadvantaged groups have become underrepresented, but differences between responders and non-responders were generally small.<sup>13 18</sup>

Analyses of response by health status showed

Morbidity group	Girls		Boys	
	%	(n)	%	(n)
Infectious disease	97.5	(6724)	97.1	(7075)
Ear and throat problems	39.6	(2492)	39.9	(2706)
Acute, likely to recur	6.7	(469)	4.3	(321)
Other acute conditions	12.6	(848)	14.4	(1015)
Asthma, bronchitis and wheezing	16.1	(1137)	20.5	(1528)
Allergies	12.1	(818)	13.1	(942)
Chronic medical	4.4	(291)	4.2	(293)
Chronic physical/mental handicap	7.9	(523)	10.0	(703)
Chronic sensory	3.3	(213)	4.4	(306)
Injuries	16.7	(1175)	22.7	(1684)
Psychosocial	12.9	(876)	16.5	(1183)
Psychosomatic	29.8	(2103)	28.7	(2132)
Other	6.1	(412)	11.5	(823)

Percentages total more than 100 because children are included in more than one morbidity grouping.

Table 1 Prevalence of 13 groups of morbidity in the NCDS at age 7 years.

similar response patterns for most groups of morbidity at age 7. By 23 years, however, underrepresentation of particular groups had occurred, notably among those with a chronic medical condition at 7 who comprised 4.7% of the sample, compared with 4.1% of those who subsequently responded at 23. Those with a chronic sensory condition at 7 were also underrepresented at the latest follow up (4.4% at 7 and 3.7% at 23) but the poorest response was in the psychosocial group (17.3% at 7 and 13.9% at 23) which included children identified as "maladjusted". Biases in response may lead to some underestimation of chronic conditions at age 23, but these are likely to be less relevant to within group comparisons.

#### DATA ANALYSIS

Ratios of observed to expected frequencies were calculated for each morbidity group at age 7 in order to indicate the likelihood of (a) belonging to the other morbidity groups at 7 and (b) having ill health subsequently in early adulthood.

For (a), expected numbers were calculated assuming that within any particular morbidity group, the prevalence of other groups was the same as in the population overall;  $\chi^2$  tests were used to establish whether ratios differed significantly from one, but because of the number of tests performed (66) only values of  $p < 0.01$  were regarded as significant.

For (b), expected numbers were derived from the prevalence of ill health at age 23 applied to the population in each morbidity group at age 7. As fewer tests (35) were performed than for (a), 95% confidence intervals (CI) were calculated to assess the statistical significance of these ratios.

#### Results

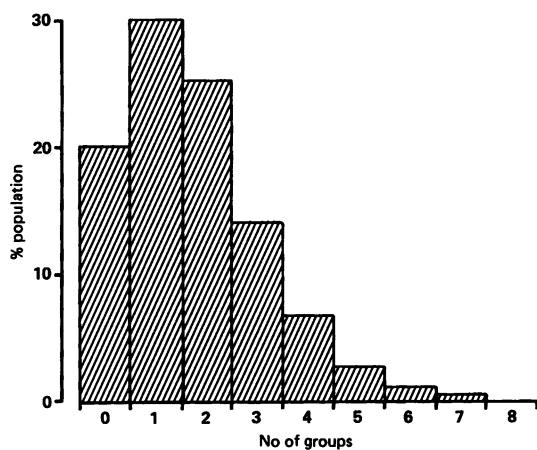
##### MORBIDITY AT 7.

Table I shows the prevalence of the 13 morbidity groups for boys and girls in the National Child Development Study. By 7 years virtually all children had experienced one or more of the common infectious diseases such as measles, German measles, whooping cough, chicken pox, mumps or scarlet fever. Forty per cent had also suffered with ear and throat infections and related problems, often repeatedly. In contrast 4% of children had a chronic medical condition such as heart disease, epilepsy or a urogenital disorder (appendix).

Overall the prevalence of morbidity by age 7 was higher for boys than girls but sex differences were generally small. Exceptions to this included injuries and "other" morbidity; the latter resulted largely from the inclusion of hernia in this group.

Some children were included within a group for more than one condition. For example, one in 10 children identified as having suffered from an allergy had had both eczema and hayfever in the first 7 years of childhood, and one in 16 of those with a chronic physical or mental handicap had both.

As the common childhood infectious diseases affected such a large proportion of the sample (97%) they have been omitted from subsequent tables and from the figure. The figure is based, therefore, on the remaining 12 groups which are



Distribution of number of morbidity groups for individual children in the National Child Development Study.

not mutually exclusive. It shows that the majority of children (70%) were included in one but no more than three morbidity groups while 10% were in four or more. A substantial percentage, 20%, was not included in any group. Differences between boys (18%) and girls (22%) were small.

Table II demonstrates the overlap between the 12 morbidity groups, as shown by the ratio of observed to expected frequencies. Results did not differ substantially for boys and girls, and therefore both sexes have been combined. Children included in one category were likely to be included in another; that is, most ratios were greater than one. However, additional ill health was not equally distributed across all morbidity categories. For example, children who had suffered an injury generally had no further problems although they did display more psychosocial morbidity than expected, with a ratio of 1.21 (95% CI 1.11-1.31).

In contrast, children with chronic medical conditions were included in a significantly greater number of morbidity groups than expected. The highest ratio, 4.44 (95% CI 4.09-4.79) was between chronic medical and acute recurring conditions. This was largely accounted for by children with urogenital abnormalities being especially prone to recurring urinary tract infections, whereas the high ratio of 1.60 (95% CI 1.37-1.83) between chronic medical and other acute conditions could not be explained by associations between particular illnesses within the two groups. Children with chronic medical conditions also had significantly higher ratios for chronic sensory or physical or mental handicap, asthma and/or bronchitis and wheezing,

psychosocial, psychosomatic and "other" conditions (table II).

The chronic sensory and physical and mental handicap groups were also associated (ratio = 2.34, 95% CI 2.05-2.63). However this was largely explained by children with mental handicaps having speech impairments.

A significant excess of observed to expected cases occurred between the asthma, bronchitis and wheezing group and the allergies group (ratio = 1.84, 95% CI 1.73-1.95). Both groups also suffered more "other" acute conditions than expected, with ratios of 1.69 (95% CI 1.58-1.80) and 1.21 (95% CI 1.08-1.34) respectively. Further investigation revealed that the high ratios for asthma and allergy groups was accounted for by an excess prevalence of pneumonia in these children.

SUBSEQUENT ILL-HEALTH FOR MORBIDITY GROUPS AT AGE 7.

Tables III and IV show morbidity at 7 in relation to self reported health at age 23. As previously described, measures used to define morbidity were different for the two ages. Indices for age 23 are not yet as comprehensive as for 7, but some measures do indicate broadly similar aspects of ill health. As the number of morbidity groups at 7 increased, there was a consistent pattern of increasingly poorer health at age 23 than expected from the population prevalence at this age (p < 0.001, table III). Children with no reported ill health at 7 had less subsequent ill health than expected. This was also the case for 7 year olds included in one morbidity group only, of whom 40% had had acute illness(es). Conversely, those included in four or more morbidity groups at age 7 had raised levels of morbidity for each of the 23 year health indicators.

Patterns of subsequent ill health are also presented for the specific morbidity groups at 7. Table IV shows this, using groups similar to those in table I, although the three groups of acute conditions (ear and throat, recurring and "other") have been combined, as have chronic conditions (medical, sensory, physical and mental handicap). Infectious diseases and "other" morbidity, have been omitted. Only two groups, acute illness and injuries, had morbidity ratios at age 23 consistently close to one. Further analyses performed for the subgroup of children who had had acute illness(es) but no other conditions before age 7 (table V) showed ratios comparable with those for children with no reported

Table II Ratio of observed to expected<sup>a</sup> ill health for 12 groups of morbidity for children aged 7 years in the National Child Development Study.

	Acute, likely to recur	Other acute conditions	Asthma bronchitis /wheezing	Allergies	Chronic medical	Chronic physical/mental handicap	Chronic sensory	Injuries	Psycho-social	Psycho-somatic	Other
Ear/throat problems	1.18*	1.20†	1.16†	1.08	1.06	1.05	0.95	1.07	1.09	1.19†	1.05
Acute, likely to recur		1.36†	1.30†	1.31*	4.44†	1.19	1.12	1.02	1.48†	1.41†	1.12
Other acute conditions			1.69†	1.21*	1.60†	1.24*	1.03	1.09	1.18*	1.23†	1.27†
Asthma, bronchitis and wheezing				1.84†	1.34†	1.19*	1.25	1.14*	1.18†	1.28†	1.07
Allergies					1.10	1.03	0.90	1.02	1.03	1.20†	0.97
Chronic medical						1.84†	1.91†	0.97	1.53†	1.36†	1.49†
Chronic physical/mental handicap							2.34†	1.11	1.59†	1.03	1.33†
Chronic sensory								0.98	1.53†	1.10	1.30†
Injuries									1.21†	1.14†	0.58†
Psychosocial										1.17†	1.12
Psychosomatic											1.07

<sup>a</sup>expected numbers are calculated on the assumption that within any particular group the prevalence of other morbidity groups is the same as that in the population overall, ie, as in table I.

\*p < 0.01; †p < 0.001

Number of morbidity groups at age 7. <sup>c</sup> (% at age 23):	Indices of ill health, ages 16-23				
	Self rated health "poor" or "fair" (9.4)	Asthma/wheezy bronchitis (9.4)	Allergies (20.2)	Emotional health	
				"Depressed" (7.3)	"Treatment" (5.3)
0	0.81	0.63	0.79	0.85	0.75
1	0.86	0.84	0.89	0.91	0.99
2	1.09	1.08	1.12	1.01	1.02
3	1.22	1.34	1.21	1.21	1.28
4+	1.55	2.11	1.35	1.50	1.24
$\chi^2$ test for trend	p < 0.001	p < 0.001	p < 0.001	p < 0.001	p < 0.001

Table III Ratio of observed to expected<sup>a</sup> ill health at age 23 years for morbidity groups at age 7 years (based on sample of approximately 10 900<sup>b</sup> subjects).

<sup>a</sup>Expected numbers were derived from the population prevalence of ill health in the full National Child Development Study sample at age 23.  
<sup>b</sup>Numbers vary slightly for each comparison due to small variations in the amount of missing information for each question. Figures in brackets give prevalence of ill health at age 23.  
<sup>c</sup>Based on collapsed groups in table IV.

morbidity before age 7 (table III); the increases in morbidity at 23 for children with three or more reported acute conditions were not statistically significant.

In comparison with the acute and injuries groups, all other specific childhood morbidity groups were associated with greater ill health than expected at age 23. The asthma group, in particular, had significantly poorer health, not just in relation to later asthma but also in relation to allergies, emotional problems and self rated health. Children with a chronic condition before age 7 more often experienced emotional problems in early adulthood than expected, with a significantly raised level of "depression" identified from the Malaise Score (ratio = 1.29, 95% CI 1.11-1.47) and a non-significant excess of "medical treatment" for psychological problems (ratio = 1.20, 95% CI 0.98-1.44). This group also rated their health as "poor" or "fair" more frequently than the population as a whole (ratio = 1.38, 95% CI 1.22-1.54). The childhood psychosocial group had the greatest ratios for later depression and "treatment" for a psychological or emotional problem (1.38, 95% CI 1.19-1.57, and 1.31, 95% CI 1.09-1.53 respectively) compared with other morbidity groups, although the psychosomatic groups had ratios of 1.20 (95% CI 1.07-1.33) and 1.22 (95% CI 1.07-1.37) for the

two measures of emotional health in early adulthood.

#### PREVIOUS MORBIDITY FOR THOSE WITH ILL HEALTH IN EARLY ADULTHOOD.

Tables III and IV show that morbidity before age 7 was associated with excess ill health problems in early adulthood. Ill health at 23 was not, conversely, associated with specific morbidity in childhood. This finding reflects the prevalence of the morbidity groups at age 7 (table I and figure) as well as the magnitude of ratios in table IV. So, for example, children with chronic conditions had the highest ratio of observed to expected "poor" rating of health at age 23 yet the majority (80%) of those rating their health as "poor" or "fair" at 23 had not had a chronic condition before age 7. Even in the 7 year group where the subsequent excess of observed cases was greatest, as for example in children with asthma and bronchitis and later asthma/bronchitis, the majority of young adults who reported this complaint had not experienced this in early childhood. The group with psychosocial morbidity at 7 had higher ratios of "depression" and "treatment" for psychological problems at age 23 than the asthma/bronchitis group but their later contribution towards psychological ill health in young adults did not differ markedly.

Morbidity groups at age 7. <sup>c</sup> (% at age 23):	Indices of ill health, ages 16-23				
	Self rated health "poor" or "fair" (9.4)	Asthma/wheezy bronchitis (9.4)	Allergies (20.2)	Emotional health	
				"Depressed" (7.3)	"Treatment" (5.3)
Acute	1.07	1.04	1.02	1.01	1.08
Asthma/bronchitis	1.35*	2.14*	1.30*	1.22*	1.09
Allergies	1.15	2.14*	2.22*	0.96	0.99
Chronic	1.38*	1.00	0.98	1.29*	1.20
Injuries	1.04	1.03	0.95	1.11	1.11
Psychosocial	1.33*	1.07	0.89	1.38*	1.31*
Psychosomatic	1.13*	1.15*	1.05	1.20*	1.22*

Table IV Ratio of observed to expected<sup>a</sup> ill health at age 23 years for morbidity groups at age 7 years (based on sample of approximately 10 900<sup>b</sup> subjects).

<sup>a</sup>Expected numbers were derived from the population prevalence of ill health in the full National Child Development Study sample at age 23.  
<sup>b</sup>Numbers vary slightly for each comparison due to small variations in the amount of missing information for each question. Figures in brackets give prevalence of ill health at age 23.  
<sup>c</sup>95% confidence intervals do not include one.

Acute condition before age 7.	Indices of ill health, ages 16-23				
	Self rated health "poor" or "fair"	Asthma/wheezy bronchitis	Allergies	Emotional health	
				"Depressed"	"Treatment"
Number reported					
1	0.82	0.72	0.82	0.76	0.94
2	0.87	0.73	0.82	0.92	1.32
3+	1.06	1.24	1.07	0.91	0.94

Table V Acute illness only before age 7 and subsequent ill health at age 23 years. (ratios of observed to expected<sup>a</sup>).

<sup>a</sup>Excludes common infectious illnesses such as chicken pox (refer to appendix for conditions included), and children with other morbidity.  
<sup>b</sup>Expected numbers were derived from the population prevalence of ill health in the full National Child Development Study sample at age 23.  
Numbers vary slightly for each comparison due to small variations in the amount of missing information for each question.

### Discussion

The purpose of this paper was to provide an overall assessment of the relationship between ill health early in life and that experienced later on. In doing so it was necessary to consolidate the wide amount of information available in the 1958 cohort study into meaningful categories. The large number of questions asked of parents and doctors identified both trivial and severe conditions, acute and chronic, making an overall assessment of the child's health status a difficult task. As a result research from this cohort has concentrated on specific medical conditions, such as respiratory illness,<sup>7</sup> migraine,<sup>19</sup> epilepsy,<sup>8</sup> and obesity<sup>9 10</sup> to study the extent to which childhood ill health influences that in adult life. Few attempts to construct comprehensive indicators of health status have been made, even though these could be more representative of the total burden of ill health and allow for interaction between conditions. Such a picture will not necessarily emerge when the focus is restricted to specific diagnoses.

One previous study, conducted in the USA, attempted to characterise childhood health status<sup>4</sup> and the categorisation used formed the basis for the groupings in the present study. Subsequent analysis of the National Child Development Study data was reassuring in respect of the classification scheme adopted since well known relationships emerged. There was, for example, an association between asthma, bronchitis, wheezing and allergies in early childhood which has been shown in numerous studies<sup>20</sup> and children identified as having chronic conditions up to age 7 were more likely to have an ascertained handicap at age 11.<sup>14</sup> These findings lend credence to the classification scheme used.

In other respects the health status of these children may be less adequately described. This applies especially to the ascertainment of short term common illnesses, in contrast to the prospective study conducted in the USA<sup>4</sup> in which more accurate recording of acute illness was possible. The American study was also able to establish consistency in definitions for particular conditions, while in the 1958 cohort study variability in reporting was inevitable due to the large number of doctors and parents providing information. Given these differences it is not surprising that marked variations exist between the two studies in percentages of children in the morbidity groups. For almost all groups prevalence percentages are notably higher in America, with the exception of asthma and psychosomatic conditions.

It appears that a subgroup of children are more prone than others to a variety of apparently unrelated types of morbidity. Ten percent of children in the 1958 cohort were represented in four or more morbidity groups at age 7, while 20% had experienced no ill health other than the common infectious diseases. This clustering of problems in a group of children could arise from the operation of factors affecting general susceptibility.<sup>21 22</sup> Environmental circumstances such as quality of housing, level of pollution and access to play areas and other facilities might increase the risks simultaneously for a variety of conditions. Alternatively, inherited

predispositions might account for the greater proneness of some children to a larger burden of ill health, and the occurrence of one illness might lead to reduced resistance to further ill health.<sup>4</sup>

The influence of such circumstances and/or inherited susceptibilities may extend beyond childhood, as well as the circumstances themselves continuing into latter life. If this were the case, it could be postulated that those who experienced multiple ill health during childhood would have poorer health in adulthood. Data in the 1958 cohort study allowed us to investigate this and our results suggest that children with multiple problems do indeed have relatively poorer health as young adults. Since children with multiple problems included a disproportionate number with serious conditions likely to persist, this finding was not so surprising. It has been shown previously that serious illness in childhood was associated with similar ill health in early adulthood.<sup>23</sup> Correspondingly, the present study found that children with no reported ill health up to age 7 appeared to maintain their health advantage into early adulthood. However, since most children were relatively healthy (as measured by the number of morbidity groups) ill health in early adulthood did not appear to be strongly influenced by earlier problems.

Using a number of morbidity groups as a measure of health status in childhood has several obvious limitations. Most importantly, this approach does not take account of the severity of conditions, the frequency with which episodes of illness recur, or other aspects necessary to fully represent an individual's state of health.<sup>24</sup> Even so, it utilises diverse data collected longitudinally and provides an indication, albeit crude, of cumulative ill health during childhood.

Grouping separate conditions into morbidity categories also enabled more comprehensive coverage of health status in childhood. By doing so it was possible to include data relating to a variety of health problems rather than just those reflecting a few selected diagnoses. Among the morbidity groups only acute conditions and injuries had expected levels of ill health in early adulthood. Other morbidity groups at age 7 showed subsequent excess of ill health problems later on. In some instances, for example asthma, these findings have been well documented but this is not the case for all the morbidity groups under consideration. In particular, evidence for the poorer subsequent emotional health of children with a chronic physical condition<sup>24</sup> gains support from these results. It was not the case, however, that ill health in young adults was associated with particular morbidity groups in childhood, even for the groups with the highest ratios. This is consistent with previous investigations of chest illness in young adulthood, which was more closely associated with asthma at age 16 than asthma in early childhood.<sup>7</sup>

Comparisons have been limited, however, by the scarcity of measures of ill health in adulthood. Indices used here tended to differentiate primarily on the basis of emotional health, while underrepresenting acute illness and chronic conditions. More complete assessment of the legacy of ill health in childhood therefore awaits development of better indices, both in later

childhood and at age 23, and ultimately of further follow up of the cohort into middle age. Meanwhile, the findings reported here suggest that although health status in childhood has long term implications, this does not form a substantial contribution to ill health in early adult life.

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## Appendix

Percentages of children with specific diagnoses by each category of morbidity.

Morbidity group	%	(Number of children)
Ear and throat problems		
Tonsils/adenoids	18.6	(2355)
Repeated ear and throat infections	14.5	(1836)
Running ears and/or otitis	14.9	(1890)
Acute, likely to recur		
Urinary infection	3.7	(533)
Fit or convulsion*	1.9	(270)
Other acute		
TB, glandular fever etc.	7.6	(1088)
Pneumonia	4.8	(706)
Abdominal operation	1.6	(236)
Asthma, bronchitis and wheezing	18.3	(2665)
Allergy		
Hayfever and sneezing	8.1	(1131)
Eczema	5.7	(801)
Chronic medical		
Cardiovascular	1.7	(229)
Urogenital	1.4	(209)
Epilepsy	0.7	(91)
Other chronic	0.6	(79)
Chronic handicap		
Physical handicap	7.7	(1049)
Mental handicap	1.8	(252)
Chronic sensory deficit		
Speech	1.6	(218)
Vision	2.1	(293)
Hearing	0.2	(22)
Injuries	19.7	(2859)
Psychosocial		
Enuresis and/or soiling	14.0	(1951)
Maladjusted	1.4	(189)
Psychosomatic		
Digestive	24.9	(3610)
Headaches or migraine	8.3	(1206)
Other		
Hernia	3.7	(493)
Operations for unspecified conditions	4.8	(654)

\*Excludes confirmed epilepsy

The base figures differ for each group due to small variations in the amount of data missing for each question.

Percentages do not total those shown in table I since the most common diagnoses only are presented here and no allowance has been made for overlap within categories.