

BIRTH ORDER AND AGE AS FACTORS IN  
EMOTIONALLY-TRIGGERED ASTHMA<sup>1</sup>

by

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It has been observed by Gibson (1966) that the incidence of bronchial asthma is 7% to 9% of the total population of school children in Tasmania.

Bronchial asthma in the present study is defined as recurrent paroxysmal attacks of dyspnoea (shortness of breath) with wheezing and expiratory difficulty. Asthma is frequently a complex disorder of allergic, infective, climatic, endocrinal and emotional factors. The relative strength of emotional factors varies considerably.

Emotional situations precipitating attacks have been categorised by French (1939) to include:

1. Sudden intense emotion, such as anger or fear.
2. Crying, which may precipitate an attack.
3. Sexual conflicts.
4. Disturbance of a dependent relationship, for example, an emotional upset involving two closely related persons such as mother and child.
5. Danger to a near relative.
6. Identification with dyspnoeic attacks of others.
7. Making use of the attack for the purpose of "gain" in its psychological sense.

A study by Aaron (1967) yielded 2 first-born and 13 youngest-born amongst a group of 20 asthmatic American children.

The purpose of the present study is to extend the previous survey and to determine whether there is any significance in the birth order of a group of Tasmanian children whose symptoms have been demonstrated as being primarily emotionally-triggered. Concurrently, this study investigates the ages of onset of asthmatic symptoms in these children and the periods during which symptoms have been particularly acute.

Children whose symptoms have been demonstrated as being of allergic, infective or climatic origin have been excluded from the study.

All subjects (or their mothers) in this study spontaneously described feelings in the child of anger, fear, conflict, hostility, danger or the desire for "gain" in precipitating asthma attacks.

## METHOD

*Subjects:* The subjects were 45 children referred for medical treatment and further referred for Physiotherapy at the Royal Hobart Hospital during the years 1965-1970.

33 boys and 12 girls were studied, the ages ranging from 4 to 16 years. Children under 4 years were rarely referred to this department. The upper limit was set at 16, the school-leaving age. Beyond this age, parents rarely attended with children and it was felt that the parents would give more comprehensive details of family structure and details of the most acute periods of the children's asthma.

The mean age of the male subjects was 126.6 months and of the female subjects 152.0 months.

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*Procedure:* A study was made of the birth order of these children — the families ranged from 2 to 8 children and no “only child” was included in the study.

Separate classes were taken for first born, second born and for third and subsequent children. It was noted if the second born was of the same or opposite sex to the first born.

The number of last born of the family was noted.

The age of onset of symptoms was taken.

The ages during which the symptoms were particularly severe were also considered.

RESULTS

The birth order of the group studied is presented in Table 1.

TABLE 1

The birth order of a group of emotionally-triggered asthmatic children. (n = 45.)

Position in family	Frequency
1st born	6
2nd born	24
3rd born (and subsequent)	15

A significant relationship is demonstrated in this sample between birth order and emotionally-triggered asthma ( $\chi^2 = 9.66$ , d.f. = 2,  $0.01 > P > 0.001$ ).

With numbers available, these second born children were not significantly of the same or the opposite sex to the first born of their family (Table 2).

TABLE 2.

Comparison of the sex of second born asthmatic children with the sex of the normal first born of their family. (n = 24.)

Sex	Same Sex as 1st Born	Opposite Sex to 1st Born
Males	9	8
Females	2	5

Again, with the numbers available, it was felt that significance was not obtained concerning trends to the youngest born (Table 3).

TABLE 3.

The youngest born in the family of a group of asthmatic children. (n = 45.)

Sex	Youngest	Not youngest
Males	10	23
Females	4	8

Figure 1 presents a histogram showing the age of onset of symptoms in male subjects. Determination of the median shows that 50% had developed symptoms by the age of 18.9 months.

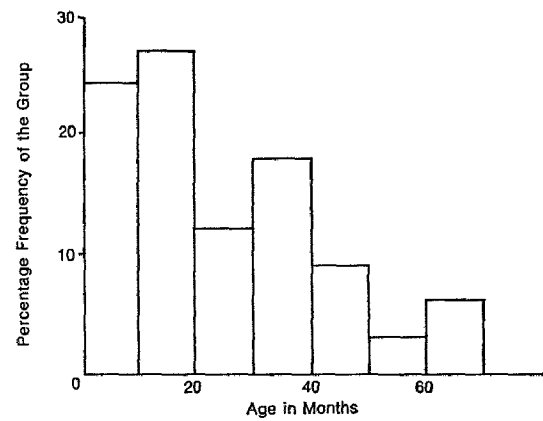


FIGURE 1

Histogram showing age of onset of asthma for group of boys studied.

Figure 2 presents a histogram showing the age of onset of symptoms in female subjects. The median in this case is located at 39.5 months.

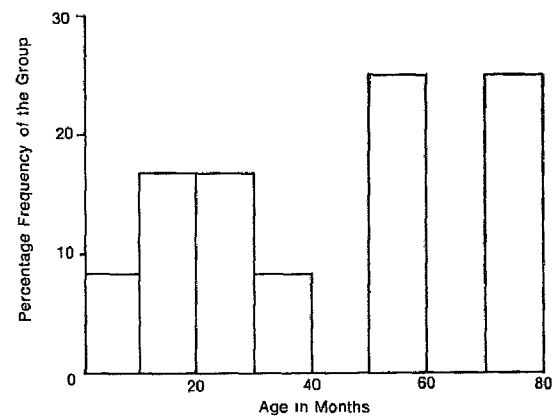


FIGURE 2

Histogram showing age of onset of asthma for group of girls studied.

A histogram of the most severe periods of asthma with male subjects is shown in Figure 3. A bimodal distribution demonstrates severe periods at 40-60 months and again at 120-150 months.

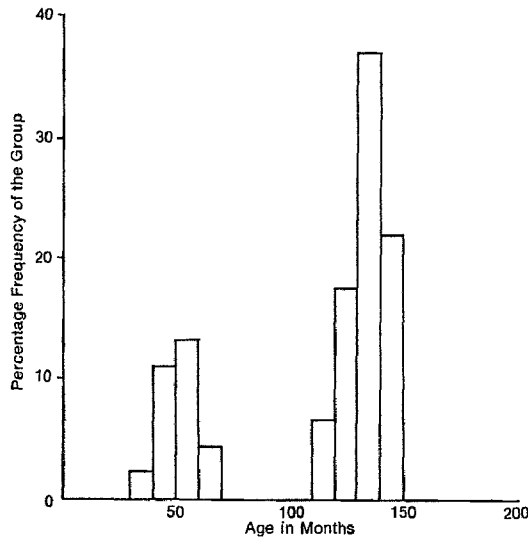


FIGURE 3

Histogram showing most severe periods of asthma for group of boys studied.

In Figure 4, a histogram of the most severe periods of asthma with female subjects, peaks are demonstrated at 120-130 months and again at 160-180 months.

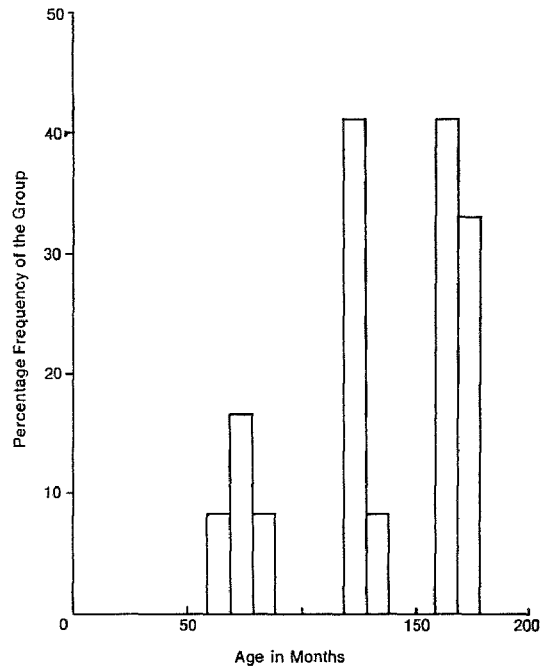


FIGURE 4

Histogram showing most severe periods of asthma for group of girls studied.

DISCUSSION

The children were from a wide cross-section of the community, from varying socio-economic classes.

A problem in sample selection was a scarcity of asthmatic girls in comparison with the number of boys. Of the 45 children, 6 were first-born, 24 were second-born and 15 were the last-born. These figures are in contrast to the study by Aaron (1967) who quoted 2 first-born and 13 youngest-born amongst a group of 20 asthmatic children.

It was concluded that there was a significant association between birth order and the emotionally-triggered asthmatic child in the given sample of population. With the numbers available, there appeared to be no significance concerning the sex of the second-born asthmatic in comparison with the sex of the first-born normal in the family structure.

It was felt that significance was not obtained concerning trends in this study to the youngest in the family because N was as low as 4 for females.

It was felt that the onset of symptoms occurred significantly earlier in life with male subjects in the group studied, despite the small sample size of female subjects.

Following onset of asthma, male subjects demonstrated two distinct periods when symptoms were particularly severe. These correspond with the immediate pre-school/early school period and with the age of puberty. In contrast, female subjects showed two distinct peaks occurring at about 10 years and again in early adolescence.

SUMMARY

Forty-five school children with emotionally-precipitated asthma were studied for their birth order. Of the 33 male subjects and 12 female subjects in the sample, a significant number were second-born ( $0.01 > P > 0.001$ ).

With the numbers available, no significant trend was apparent as to whether these second-born asthmatics were of the same or the opposite sex to the first-born normals of their family.

A study was made of the ages of the onset of symptoms. Male subjects showed a significantly earlier onset than female subjects.

Severe periods of asthma were demonstrated in male subjects, at the immediate pre-school age and at puberty. Female subjects exhibited acute symptoms at about the age of 10 and again in early adolescence.

#### ACKNOWLEDGEMENTS

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