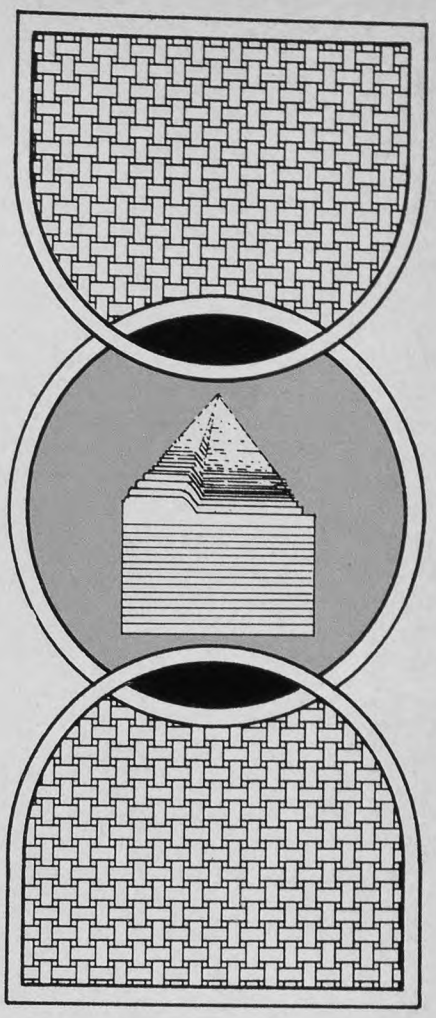
On the Natural History of Some Common Diseases

John Fry, OBE, MD
Beckenham, Kent, England



Our knowledge of the natural history of common diseases seen in the primary care of families is, unfortunately, quite limited. Greater understanding of the natural history of common illnesses will facilitate improved quality of patient care, expanded knowledge of clinical conditions, and enhanced continuing education for the physician. This article summarizes selected studies over a 25-year period by one family physician in England of the natural history of five common conditions: the catarrhal child, emotional disorders, the acute back, hay fever, and hypertension. Five basic patterns of natural history of disease are presented. Family physicians have unlimited opportunities to participate in research on the natural history of common clinical problems. These studies are only a beginning – more research in this area is vitally needed.

By way of introduction, let me state at once that this personal paper presents my apologia for family medicine. I shall try to show the very special nature of our field, and I hope to convince my readers of our great opportunities for simple basic research. Above all, I shall endeavor to demonstrate that good care in family practice must be based on a sound knowledge of the nature, course, and outcome of the diseases that we encounter, that is, a sound knowledge of their natural history.

My thesis is based on more than 25 years of work and recording in my practice in Beckenham, England, a fairly normal middle and working-class area, well representative of the suburbia in which most of us live in Britain. The records have been easy to keep track of and analyze, and they have been described in my book, *Profiles of Disease.*[1] The essence of my records in studying the natural history of the common diseases I encounter has been an internal register of patients diagnosed as suffering from the specific diseases that I am interested in; names of patients and brief notes have been transferred onto small cards which have then been filed in card index boxes, each labelled according to the specific disease. The time, effort, and expense spent on this exercise have been minimal. The results in terms of self-education and better understanding of the clinical conditions and situations I treat have been maximal. I am certain that self-study and self-research in our own practices is by far the best method of continuing education.

The results presented here are derived from some of my studies over 25 years in a practice that now serves over 8,000 persons in the British National Health Service. The care is provided by myself, my partner, a team of two nurses, a public-health nurse, a midwife, and four medical secretaries who all work part time.

The Catarrhal Child

When I first started in my practice in 1947, the initial major problem was to understand the nature of recurring common respiratory infections, or presumable infections, in young children. I was quite uncertain as to precisely what they were or how to manage them. To try to answer some of my

Requests for reprints should be addressed to Dr. John Fry, 138 Croydon Road, Beckenham, Kent, England BR3 4DG.

uncertainties, I collected data on the age and sex prevalence, course, and outcome of these common conditions, and related them to investigations and specific therapy. My original findings were represented in 1961 in *The Catarrhal Child*[2] and updated in 1975 in *Common Diseases.*[3]

Briefly, I found that in any year two thirds of all children under ten will be brought to see me at least once for a variant of the syndrome. The age prevalence showed a most characteristic pattern (Figure 1), namely, a moderately high level in infancy, a peak at three to six years of age, and a dramatic decline after the age of seven. My interpretation was that the infant's and young child's immature respiratory tract was highly susceptible to the common pathogenic viruses and bacteria. The peak at ages three through six coincided with mass social mixing upon starting school. The natural decline after age seven occurred irrespective of any form of therapy.

Research is of little use unless it has some practical lessons and applications. The lesson I learned here was that this syndrome had a natural sequence and course with an almost inevitable period of activity followed by a natural build-up of resistance. This pattern made me much more conservative in the use of antibiotics and, in particular, in advocating tonsillectomy and adenoidectomy.

My antibiotic prescription rates have been reduced to use only in one third of all cases of acute otitis media, in one quarter of acute pharyngitis and tonsillitis, and in two thirds of acute bronchitis, bronchiolitis or pneumonia in children. The results have been excellent, and controlled trials showed no differences in antibiotic-treated and non-antibiotic-treated cases.

A follow-up of children with acute otitis media treated by this regime showed that they were suffering no ill effects five to ten years later, as tested by audiograms and specialists' examinations.[4]

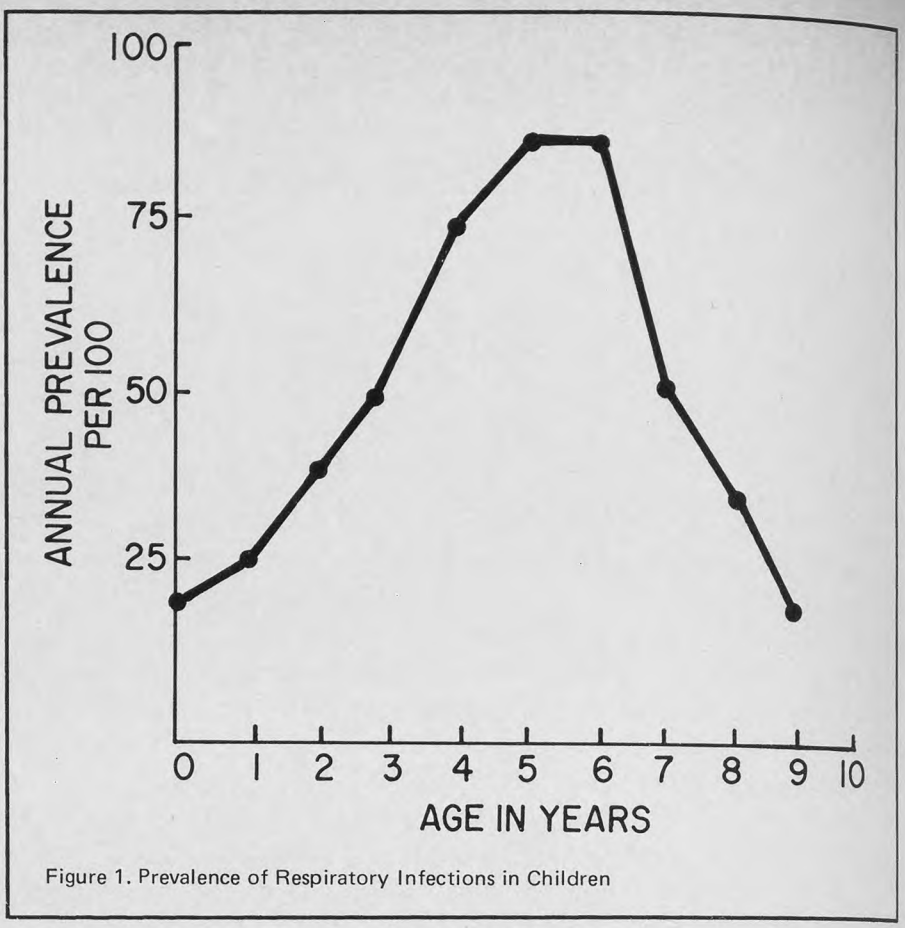


Figure 1. Prevalence of Respiratory Infections in Children

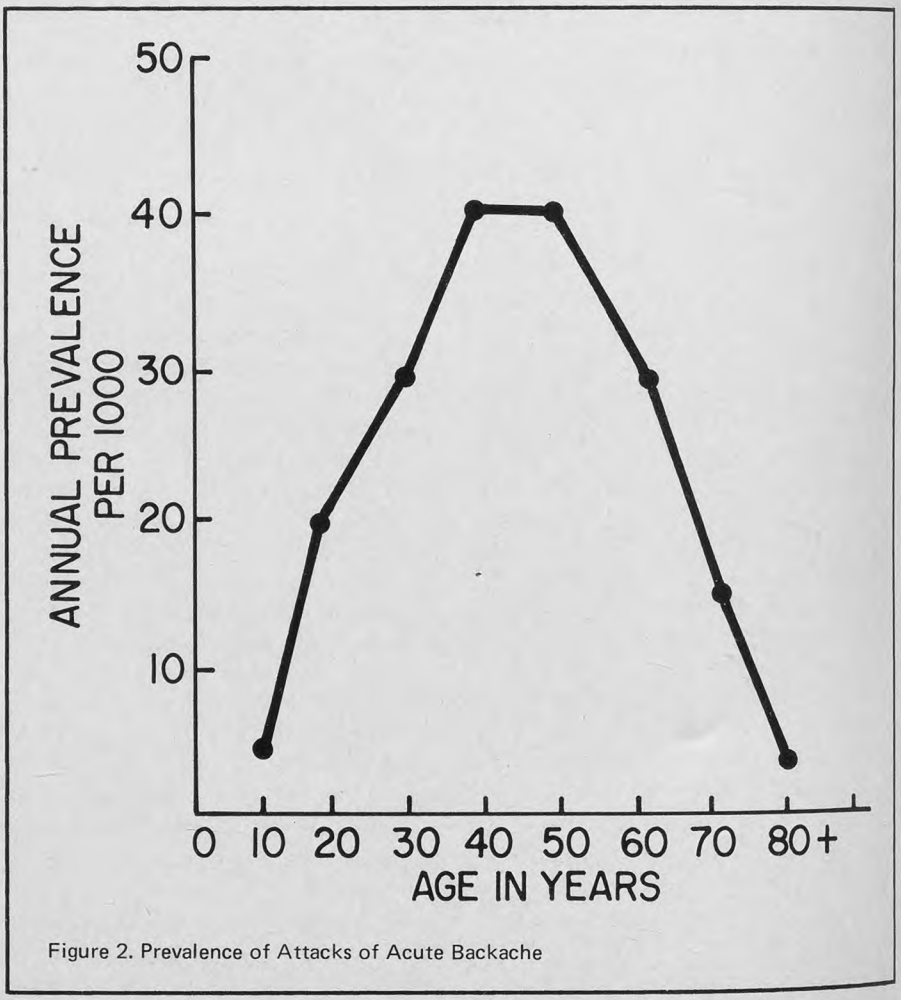


Figure 2. Prevalence of Attacks of Acute Backache

Emotional Disorders

Second only in frequency to respiratory disorders come those of the emotions, a large collection of conditions very familiar to the family physician, including the depressions, anxieties, personality problems, and other conditions. While I was uncertain and

confused by my inability to cope with catarrhal children early in practice, I was even more so with this group. Moreover, while the children grew out of their respiratory problems, my patients with emotional problems seemed to go on forever! My studies into the natural history of emotional conditions appeared to clarify and confirm this supposition.[5,6] I evolved a "rule of three thirds." One third of the patients appear to suffer a single attack with no major recurrences, a third suffer recurrent attacks, and a third are chronic, with almost permanent symptoms and problems. The major revelation to me was that almost all of the latter, chronic group were non-curable and, in fact, most did not want to be "cured" and were happiest living on some terms with their problems and symptoms. Having made this discovery, I felt much more at ease and much less upset and guilty at my non-success. Another of my findings was that I referred very few of these patients to psychiatrists, and that I was able to manage more than 90 percent myself. This figure was confirmed by Shepherd et al in 1969.[7]

There is very much to study and learn in this field. We need to know more of the nature of the conditions, of their relationship to personal, family, and environmental factors, and about the role and efficacy of psychotropic drugs.

The Acute Back

The acute back is a familiar condition. It is benign, yet disabling and painful. If we are honest, we must admit that we do not know the true mechanism or pathology of this syndrome. This is the reason why there are so many therapies and why there is little to guide choice among them.

To try to clarify the issues and to get some base lines, we reviewed 605 attacks of acute backache in our practice in 1966.[8] We found that the annual prevalence was 25 per 1,000. Most attacks occur in the 20 to 60 age period, and they become increasingly less frequent after age 60 (Figure 2).

Most attacks (80 percent) were confined to the back; in 15 percent sciatica was a feature, and in only five percent was there evidence of nerve damage. With simple treatment, rest, and analgesics, 75 percent resolved in four weeks. Less than ten percent were referred for orthopedic or physiotherapeutic management, and in fewer than one per 1,000 was surgery carried out.

Hay Fever

This annual visitor brings a collection of troubles and discomforts to its victims. Its management is unsatisfactory, to say the least.

When the season came around, I was intrigued to find that I hardly ever saw anyone over 40 years of age coming for treatment. In looking further, I discovered that the most characteristic pattern was for an onset in late childhood or early teens, often with a family history of allergy, for symptoms to occur annually for ten to 20 years and then, in the thirties, for the attacks to become less severe and less frequent, and finally to cease altogether (Figure 3).[9]

The explanation for this pattern appears to be that certain unfortunate individuals develop a hypersensitive state of their respiratory tract to grass pollens. Once developed, this hypersensitivity is not permanent but persists for some years, and then a natural desensitization occurs. The applications of this observation to management are that we can be more optimistic in our forecasts to the patient, and we can tailor our therapies to meet the severity and needs of the victim. Personally, I try to relieve symptoms rather than embark on elaborate desensitization.

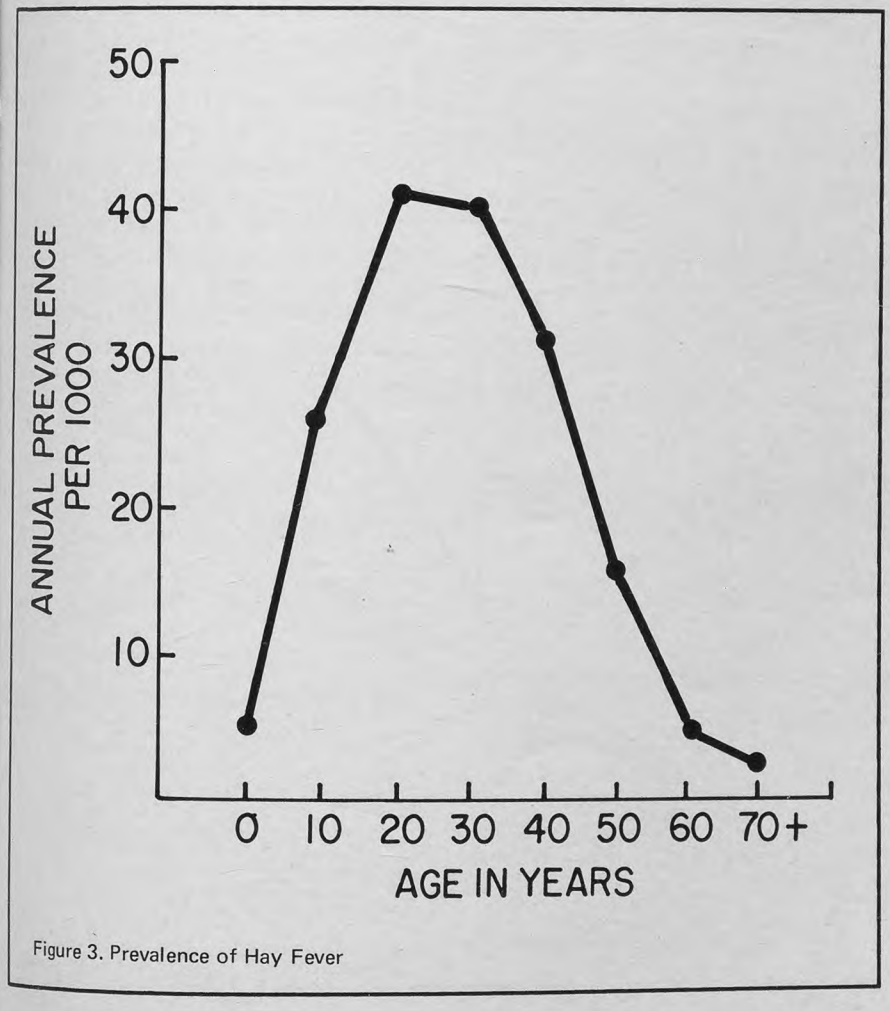


Figure 3. Prevalence of Hay Fever

Hypertension

Hypertension is a good condition to examine as an example of the importance of the knowledge of natural history in the management of a disease associated with aging (Figure 4).

I am somewhat of a skeptic towards new medical treatments, and I always want to be certain that the medication I prescribe really is necessary, and that

it is effective and safe. Therefore, I have tended to be slow and resistant to treating my patients with elevated blood pressure with hypotensive drugs. I believe that the skills of medical care require art as well as science. Certainly, I agree that hypotensive drugs are effective in reducing blood pressure, but I wanted to know for which special groups of hypertensives they were really necessary.

Therefore, I reviewed 704 hypertensives seen and followed up in my practice over 20 years.[10] Few received hypotensive drugs, and I sought to relate the observed life expectancy of these non-treated hypertensives with that expected for normal persons of comparable age and sex.

My findings were that, in the whole group of hypertensives, the excess of observed/expected (O/E) mortality was 3.01 in males and 1.62 in females. Most of the excessive mortality affected those hypertensives who were under 60 years of age at first diagnosis. The O/E mortality rates were related inversely to age. The initial height of the diastolic blood pressure was a prognostic factor in patients under 60 years of age; mortality increased with rising diastolic pressure. However – and this is important – there was no excess O/E mortality in the over 60's with rising diastolic pressure, nor were the overall observed mortality rates greater than expected in the over 60's.

My conclusions are that specific anti-hypertensive therapy certainly is indicated for those hypertensives who are under 60 years of age, in males more than in females, but that there is no strong case for hypertensives first diagnosed over the age of 60 to be treated with specific hypotensives, and such therapy is far less necessary in females than in males. Since half of all diagnosed hypertensives are over the age of 60, a policy of selective non-treatment would result in considerable saving of medical manpower and drugs.

A Bird's-Eye View

My intention has been to make a case for the study of the nature, course, and outcome of disease in the context of primary medical care – of family practice. It is only we family physicians who have the opportunities and access to data and information on what happens to our patients over years and generations. It requires no great effort, expense, or time to organize and carry out such research. Naturally, it is not enough to accept the findings of one practitioner from one practice. We need reports from a variety of practices in a variety of places and situations. I look on my own studies as merely the beginnings.

I can summarize my observations in Figure 5, which represents five possible patterns of natural history of disease. It is very much a bird's-eye view, a visual representation, but it does begin to help us to understand some of the aspects of this fascinating subject.

Type 1 is the once and always situation. If a leg is amputated, it will never grow again. It is most likely that congenital conditions such as coeliac disease, phenylketonuria, and mongolism have to be accepted as incurable and be lived with in the best way possible, although much can be done to relieve, support, and comfort.

Type 2 is exemplified by the catarrhal child syndrome. The condition is most prevalent in childhood, and it will be outgrown given time and non-interference. Other examples are conditions of children that resolve naturally, including strawberry naevi, umbilical herniae, and various other "normal abnormalities" such as apparent knock-knees and bowlegs.

Type 3 represents the diseases of aging and degeneration. They make their appearance as the person ages and tend to become increasingly frequent and more troublesome with time, a course of gradual deterioration. In this category are the arthritides, coronary artery disease, hypertension, stroke, cancer, chronic bronchitis, and loss of sight and hearing.

Type 4 is an interesting group where the course tends to be one of onset in early adult life, a peak in middle age, and then eventually a natural and spontaneous improvement. I have found this type of course in hay fever, migraine, asthma, duodenal ulcer, the acute back syndrome, anxiety,

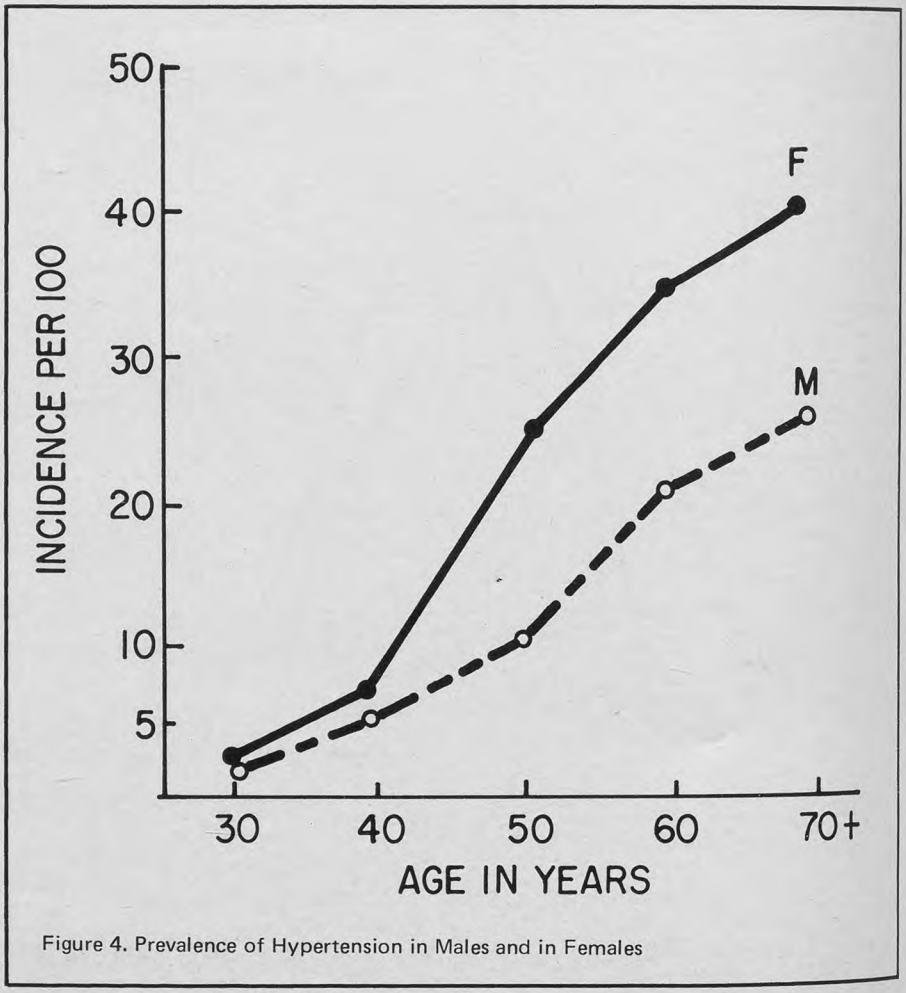


Figure 4. Prevalence of Hypertension in Males and in Females

depression, and acute urinary tract infections in women. Understanding of this pattern will allow us to give our patients hope and avoid unnecessary and drastic therapy.

Type 5 I have found in only one syndrome: the "acute wheezy chest." It is essentially a combination of two syndromes, the acute wheezy chest associated with infections in childhood, and the more chronic wheezy chest in adults associated with many years of tobacco smoking and inhaling polluted air.

In this paper, I have selected only a few examples of the natural history of diseases as I have observed them in my practice. I am continuing my studies, and I hope eventually to produce a 50-year follow-up!

I am convinced of the importance of such knowledge in assisting us in better, safer, and more rational management of our patients. I am further convinced that such knowledge is not available to our colleagues working in hospitals and to most teachers in medical schools and colleges. It is for this reason that I have recently set out my experiences.[3] It is hoped that additional long-term studies will be undertaken so that we can develop improved understanding for managing common disease, and so that we can offer an extra dimension of knowledge, the dimension of time, to enable students and young physicians to consider more than the instant snapshot picture of disease that their patients present to them in the hospital setting. All diseases have a beginning, a middle, and an end, and we need to know these stages better in order to become better physicians.

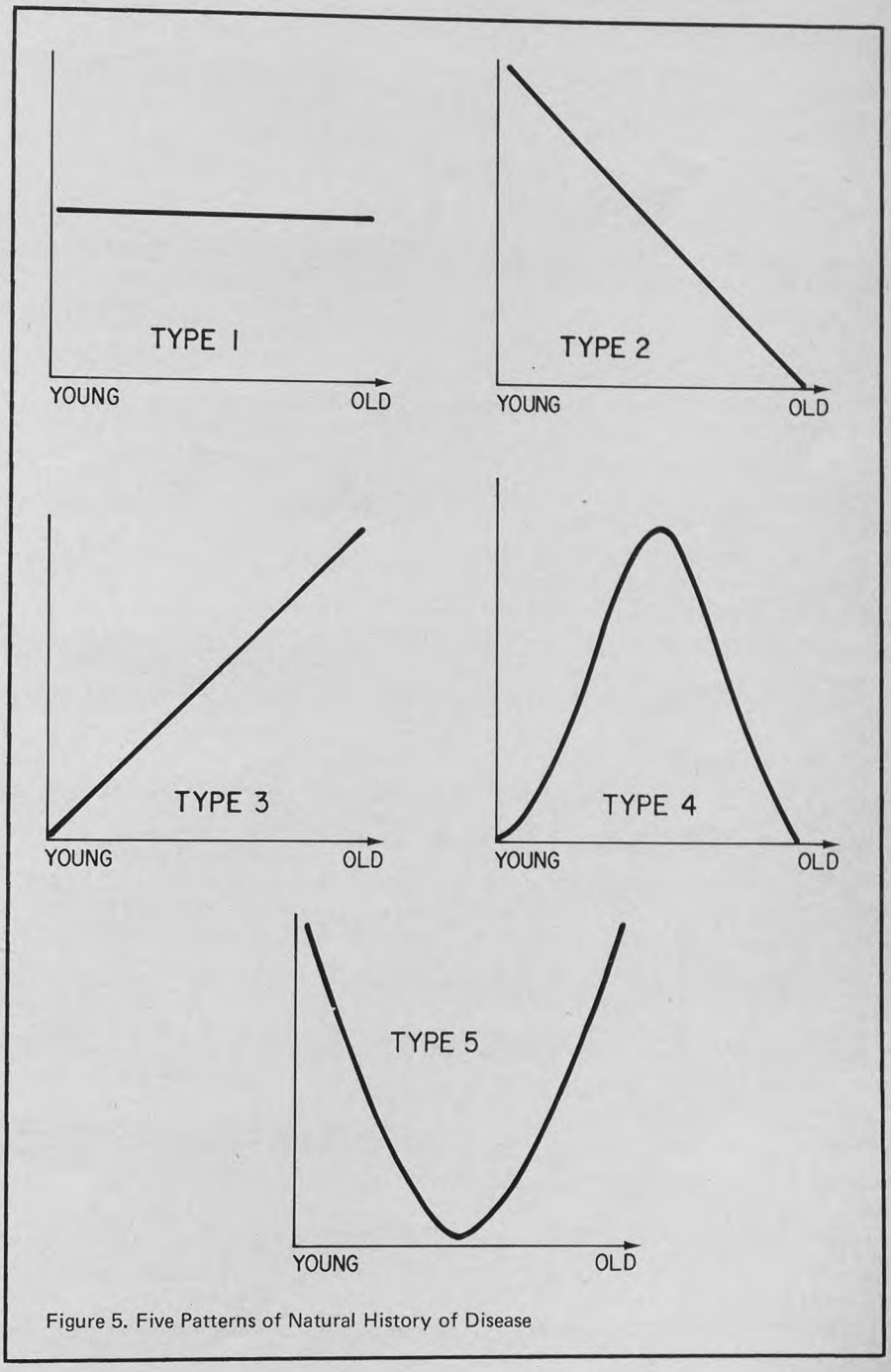


Figure 5. Five Patterns of Natural History of Disease

References

1. Fry J: Profiles of Disease. London, E & S Livingstone, 1966
2. Fry J: The Catarrhal Child. London, Butterworth & Co, 1961
3. Fry J: Common Diseases. Philadelphia, J B Lippincott, 1975
4. Fry J, et al: The outcome of acute otitis media. Br J Prev Soc Med 23:205-209, 1969
5. Fry J: General practitioners' forum: What happens to our neurotic patients? Practitioner 185:85-89, 1960
6. Cooper B, Fry J, Kalton G: A longitudinal study of psychiatric morbidity in a general practice population. Br J Prev Soc Med 23:210-217, 1969
7. Shepherd M, et al: Psychiatric Illness in General Practice. London, Oxford University Press, 1969
8. Dillane JB, Fry J, Kalton G: Acute back syndrome: A study from general practice. Br Med J 2:82-86, 1966
9. Fry J: The natural history of hay fever. J Coll Gen Prac 6:260-264, 1963
10. Fry J: Natural history of hypertension: A case for selective non-treatment. Lancet 2:431-433, 1974