and expert it will not be strong enough to challenge and alter radically the deep-rooted habits that have made supplies purchasing so inefficient for the past 30 years.

6 Welsh Office. *Buying for the National Health Service*. HBSS 93/13/2.
7 Cardiff: Welsh Office, 1976. (Collier Report.)

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**Exercise-induced asthma**

Asthmatic patients rarely blame exercise for bringing on their asthma, and most clinicians ask about other trigger factors first. For example, the highly reactive airways of asthmatic patients are known to respond vigorously to common allergens such as grass pollen and the house-dust mite as well as to such everyday activities as laughing. Inhaling substances such as histamine and acetylcholine may be used to detect over-reactive airways, and exercise has become used as a diagnostic test. If, then, exercise is a known cause for asthma, why are so few patients aware of the association? Partly the answer must be that the asthma usually follows exercise rather than arises during muscular exertion—about four or five minutes’ continuous exercise is needed to precipitate wheeze and dyspnoea. Few patients exercise that long and in those who do the asthma appears after exercise has ceased so that they may not link the two events.

Even if exercise-induced asthma is rarely important clinically, it has provoked intense research interest, largely concentrated on the potential stimuli for its onset. The latest and most convincing theory has been posed by McCadden and Ingram, who postulate that cooling of the airway is the primary stimulus. The onset of physical exertion produces an increase in minute ventilation to provide sufficient oxygen for the metabolic needs of working muscles. Herzheimer first incriminated hyperventilation as the prime stimulus, and McCadden and Ingram have now shown that this results in large volumes of incompletely conditioned air being repeatedly inspired, drying and cooling the upper airways as heat and water are transferred from their surface. The total quantity of heat exchanged varies directly with minute ventilation and inversely with the temperature and water content of the inspired air. This attractive concept of respiratory heat loss as the initiating event unifies many divergent views, but it does not explain how heat loss generates airways obstruction. A vagal reflex seems likely, but this does not exclude the possibility that histamine or other mediators are released.

The practical aspects of exercise-induced asthma are straightforward. The condition is seen largely in children, probably because they exercise more than adults, and usually responds rapidly to inhaled bronchodilators. Often the attacks can be prevented by prior treatment with bronchodilators or sodium cromoglycate. If an asthmatic patient has occasional asthmatic episodes treated with inhaled bronchodilators, the simplest and best recommendation is that bronchodilator should be inhaled before sustained exercise, instead of adding a new treatment. If this advice does not suffice and attacks are important—if, for example, the patient is actively engaged in sport—then cromoglycate inhalations can be used prophylactically. More rarely, the occurrence of exercise-induced asthma may indicate inadequate control, though other features such as nocturnal attacks are usually more prominent. In such cases regular additional treatment may be required, such as inhaled steroids. The part played by steroids in preventing exercise-induced asthma itself is uncertain. Treatment with atropine may not always be successful and large doses may be required.

The type of exercise may have some bearing on the generation of asthma: swimming has been thought least likely to produce it. This observation can be explained on the heat flux theory: the air being inhaled by a swimmer is usually well saturated with water and is warmer than the ambient air during running out of doors. Children may therefore be warned to expect that exercise-induced asthma is more likely when playing games required sustained running but less likely if they swim or engage only in sprint activities.

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**Schizophrenia in different cultures**

In 1973 the World Health Organisation published the results of a remarkable investigation, its *International Pilot Study of Schizophrenia*, in which research workers from nine countries collaborated to study 1200 patients. They used a special psychiatric interview (the Present State Examination) to elicit symptoms in a standard way which led to a uniform and reliable clinical diagnosis—as well as the possibility of diagnosis by a computer program called CATEG0. The investigators established that patients with an identical pattern of symptoms could be recognised in Colombia, Czechoslovakia, Denmark, India, Nigeria, Taiwan, the USSR, Britain, and the United States. The finding of a closely similar clinical picture in such diverse places supports the view that schizophrenia is a disease or a group of diseases and not merely a label applied to social deviants, as some writers have suggested.

Now the WHO group has published the results of a logical extension of this first investigation: a two-year follow-