Vitamin E deficiency can occur in neonates,[2-4] in malnutrition, or in malabsorption. The low levels in neonates seem unaffected by giving even high (500 mg) daily doses of the vitamin to expectant mothers,[5] a reflection possibly of a high placental threshold to the vitamin. Anaemia may occur in children with vitamin E deficiency and protein malnutrition[6]; protein intake alone does not correct the anaemia, which is improved by vitamin E supplements to a high protein diet. Anaemia with a haemolytic component is associated with vitamin E deficiency in prematurity[4 7]; vitamin E supplements reverse the condition. Treatment with iron worsens the haemolytic process in these cases.

Low serum vitamin E levels in man and animals are associated with abnormal lysis of red cells treated in vitro with hydrogen peroxide (the peroxide lysis test). This abnormal lysis becomes normal after treatment of the test mixture, or the patient, with vitamin E.[8 9] For example, in five cases of acanthocytosis due to β-lipoprotein deficiency serum vitamin E levels were markedly low and the peroxide lysis test gave high values.[10] The quantitative correlation between the serum level of the vitamin and the degree of lysis induced by peroxide is, however, poor—attributable in part to the easy intrusion of artefacts into the tests. Furthermore the test can give abnormal results with normal serum levels of vitamin E; in one study only one of 26 iron-deficient children was vitamin E deficient, yet all were found to have abnormal peroxide lysis values.[11] Apparently during iron-dextran therapy the peroxide test became even more abnormal, returning to pretreatment values as the serum iron fell to normal; but priming with vitamin E before iron therapy was started prevented the iron-induced worsening of peroxide lysis. The values for peroxide lysis eventually became normal after the children had fully recovered from their iron deficiency. One implication of this study is that iron plays a part in provoking the oxidative lysis of red cells which is prevented by the presence of vitamin E.

Another approach has been measurement of the liberation of malonyldialdehyde (MDA) from red cells treated with hydrogen peroxide.[12] MDA is a secondary product of lipid peroxidation, and increased amounts are formed by the action of hydrogen peroxide on the red cells of vitamin E-deficient subjects.[13] Similar results have been reported after oxidant treatment of red cells from vitamin E-deficient rats,[14] older red cells being more susceptible to MDA liberation. A specific site for the action of vitamin E has been delineated by the finding[15] that oxidant treatment of red cells from vitamin E-deficient rats liberates phosphatidylethanolamine, a major membrane phospholipid.

Red cells lyse if oxygen alone is the oxidant; but the degree of lysis in normal adult red cells incubated in vitro with 100% oxygen is diminished by earlier administration of vitamin E. A rapid and substantial loss of circulating red cells can be provoked in vitamin E-deficient mice subjected to hyperbaric oxygen, when lipid peroxidation of unlysed red cells can be shown.[17] Transient haemolytic anaemia has been recorded[18] in a patient undergoing routine hyperbaric oxygen therapy though his red cells seemed unusually vulnerable to oxidation.

Vitamin E deficiency may be an important feature of thalassaemia, for a recent study[19] showed low serum levels in 46% of 56 affected Greek children; all of 21 patients studied gave abnormal peroxide lysis values. Intramuscular vitamin E injections restored the lysis values to normal in the six patients studied. No mechanism was apparent, though poor appetite, low serum β-lipoprotein, and excess transfused iron were considered contributory. Abnormally high MDA values have also been reported[20] in β-thalassaemia major and autoimmune haemolytic anaemia, as well as among neonates and geriatric patients.

Clearly, then, the antioxidant property of vitamin E is important for maintenance of red cell viability, and serum levels below 0·5 mg/100 ml render red cells liable to peroxidation of membrane lipids. This can lead to lysis, in vivo or in vitro, particularly if the red cells are exposed to oxidizing agents.

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Facial Hyperkinesis

Originally "tique" was the name applied to an equine disturbance characterized by sudden stopping of the breath of the running animal. Much later the French 18th century physicians adopted this name to describe several different disorders in man. When the name was applied to trigeminal neuralgia it became necessary to class tics according to whether pain was present or absent.

On the grounds that there cannot be "a hierarchy among medical problems based on the severity of symptoms," Edouard Brissaud (1852-1909) applied himself to an inquiry into tics.[1] Study of the tic characterized by repeated forcible closure of the eyes led him to conclude that "the pathogeny of tic is mental." He argued: "If it were due to stimulation at some point on the reflex arc, other facial muscles ought to be involved; if referable to isolated excitation of the orbicularis filaments of the facial nerve, why is the contraction bilateral?" He claimed that personality studies of these patients disclosed "an insufficiency of inhibition and volitional enfeeblement," and this led him to postulate the sweeping concept that "the sole indication of the presence of an abnormal psychiatric state may be the tic itself." This notion became accepted by the Paris school of medicine and swayed opinion in Britain.[2]

Despite the intervening epidemic of encephalitis lethargica, which left many cases of blepharospasm in its wake, the psychogenic nature of tics is still a widely held view. It is significant that in a recently published case report of severe blepharospasm—called "essential" because of the absence of any source

of irritation—the patient was submitted to a psychiatric investigation in order to arrive at the diagnosis.[3] Relief of this condition can often be a matter of urgency because the intermittent involuntary closure of the eyes leads to serious visual handicap. The methods of treatment which have been advocated have ranged from carving a hole in the upper lids opposite the pupils, to neurectomies of either the trigeminal or facial nerves.[4 5] In the case mentioned above[3] a satisfactory result was reported to have been obtained by dividing on both sides the branches of the facial nerves supplying the orbicularis. But facial neurectomies, by alcohol or section, carry some risk of postoperative lagophthalmos, and therefore alternative procedures have been suggested—for example, differential resection of orbicularis of both upper lids, subcorticotomy of the non-dominant cerebral facial motor area, and fashioning of frontalis slings.[6 9] Such a multiplicity of treatments can be taken to indicate that none is satisfactory.

Hyperkinesis can also affect the lower face. In addition to the lips and cheeks the tongue and jaw are affected. The pattern of these repetitive involuntary movements is as a rule very complex. There is persistent activity of the lower face comprising pursing, pouting, smacking, and licking of lips; downward or lateral jaw movements; and thrusting forward and writhing of the tongue. When slight, these movements appear to be purposive. There also may be some grimacing. Even slight movements of this type disturb the fixation of dentures of an edentulous patient. They may even interfere with speech and breathing. Sporadic cases are occasionally seen among the elderly, but nowadays the syndrome is commonly seen after prolonged medication with phenothiazine derivatives.[10 11] Administration in large doses of reserpine and also of levodopa may occasionally be followed by hyperkinesis of exactly similar type.[12 13] Persistence of symptoms after these drugs have been discontinued is fairly common. Usually movements abate after long periods, but occasionally they may fail to do so. They may be increased in severity by intravenous administration of levodopa.[14]

This syndrome may therefore be an expression of excessive dopaminergic activity of the brain. It has been suggested that prolonged blocking of dopamine receptors by phenothiazines results in a hypersensitivity of the receptor sites to dopamine. When, therefore, dopamine is able to reach these receptors, excessive dopaminergic activity occurs, and this engenders the abnormal movements.[15] In monkeys similar involuntary movements can be induced by long-term administration of chlorpromazine, and it has been found that hyperkinesis was related to increased peripheral synthethis of a dopamine.[16] The latter may therefore be a factor in the genesis of this syndrome.

Neuropathological examination of cases with permanent drug-induced facial hyperkinesis has failed to disclose any specific brain lesions.[17] As a rule the lower facial hyperkinesis constitutes the sole abnormality, but it can occur in association with choreiform movements of the limbs. To make the distinction between drug-induced hyperkinesis and that of Huntington's chorea may require the diagnostic "implements" considered essential by Joseph Bell (1837-1911), on whom Sherlock Holmes was modelled—namely, "the precise and intelligent recognition and appreciation of minor differences."

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The Public Must be Told

It was a wedding without the bride. Hospital doctors and general practitioners were obliged to conduct their annual ceremonies at B.M.A. House in the absence of the Review Body's overdue 1974 report. So both the Conference of Hospital Medical Staffs and the Conference of Representatives of Local Medical Committees were frustrated and angry. Hospital doctors, adopting an unfamiliar union-like posture, called on the C.C.H.M.S. to prepare its armoury of sanctions for a siege against the Government. The general practitioners vented their spleen by despatching a brusque telegram of protest about the delay to the Prime Minister.

The G.P.s faced a formidable two-day agenda with nearly 400 items on it while the consultants made do with about a quarter of this for their one-day meeting (reports on the proceedings will be published in forthcoming *Supplements*). But inevitably in the present national climate money—or rather lack of it—dominated many of the debates. It was not, however, just the falling value of their incomes that bothered the doctors: motions condemning the chronic underfinancing of the N.H.S. drew some of the loudest applause and forthright comments. Dr. Clifford Astley, Chairman of the Central Committee for Hospital Medical Services, and Dr. R. B. L. Ridge, acting Chairman of the General Medical Services Committee, both emphasized in their opening addresses the ailing state of the Service. There were some disturbing facts publicized by G.P.s serving on health authorities or district management teams. Their first look at the local financial books had clearly appalled them and they urged that the new community health councils should be alerted as soon as possible. One speaker sombrely forecast that by September the money allocated to the N.H.S. for 1974 would have been spent.

While doctors throughout the N.H.S are unhappy about their pay, the levels of discontent revealed at the two conferences showed hospital doctors to be in front by a short head. Consultants in particular are angry enough to consider militant action soon but the G.P.s adopted a wait-and-see attitude. Demands for new contracts, however, attracted universal support. Hospital junior staff are half way through negotiating a new one. Consultants are just starting discussions on the reform of theirs in the Owen Working Party. Several motions were approved on proposed improvements, with perhaps the most important one, which attracted a unanimous vote, stating bluntly "That no contract should be negotiated unless the established principle of private practice in N.H.S. hospitals is maintained." The platform at the L.M.C. Conference was given a sharp prod when there was overwhelming—and noisy—support for a proposal from Nottingham instructing the G.M.S. Committee to speed up its progress in drafting