Malignant hyperthermia is a disorder of skeletal muscle that may present as a life threatening hypermetabolic process in susceptible patients exposed to inhalation anaesthetics and depolarising muscle relaxants. Mutations in the gene that involve skeletal muscle ryanodine receptor (RYR1) are considered a common cause of this disorder. A recent report from the University of Health Sciences in Washington DC demonstrates that the frequency and distribution of RYR1 mutations in the North American population were markedly different from those previously identified in Europe. Although more than 20 RYR1 mutations have been identified further studies are necessary to clarify the type and frequency of mutations associated with malignant hyperthermia in different populations. (Anesthesiology 2001;95:594–9)

Candida albicans is a yeast that often harmlessly colonises patients. However, it is also the leading cause of invasive fungal disease in premature infants and others with weakened immune systems. It has been known for some time that the leading risk factor for candidaemia is a central venous catheter in place for infusions of antibiotics, blood products, and other drugs. Researchers at Yale University have now suggested that it is the routine use of heparin in these catheters that turns C albicans deadly. They have suggested that heparin facilitates the cleavage of an amino acid peptide INT1P1, a protein found on the surface of C albicans, which may be important in introducing the toxic reactions of candidal sepsis. (JAMA 2002;286:2531–2)

Many studies of the health benefits of wine have suggested that moderate wine drinkers are healthier than those who drink other alcoholic beverages or those who abstain. Now a study from Denmark suggest that the wine consumption itself is not the reason for this apparent improved health but rather that wine drinking is associated with higher IQ, higher parental education levels, and higher socioeconomic status—factors that are all known to be associated with better health in many populations. Undoubtedly, we have not heard the last about the purported health benefits of wine. (Archives of Internal Medicine 2001;161:1844–8)

Hypertension is a major human health problem. Its cause is largely unknown. In a study of pseudohyopaldosteronism type II, a Mendelian trait featuring hypertension, abnormalities in the gene for the enzyme aldosterone synthase have been identified. This enzyme produces the aldosterone and may be associated with the risk of hypertension. This finding may help to explain why some people are more susceptible to hypertension than others. (Science 2001;293:1107–12)

Although Botox (injectable botulinum toxin) was developed for the treatment of certain forms of strabismus it is now primarily being used for non-strabismic disorders including the treatment of facial wrinkles. In a randomised prospective trial in New York botulinum toxin pretreatment of facial lines and wrinkles was associated with better outcomes following laser resurfacing than laser resurfacing alone. These results were most significant in the crow’s feet region. (Archives of Facial Plastic Surgery 2001;3:165–9)

Age related macular degeneration (AMD) remains a leading cause of visual impairment of blindness in developed countries. Effective treatment of AMD for most patients is not yet available. Now a study coordinated by the Age Related Eye Disease Study (an 11 centre double masked clinical trial) suggests that high doses of vitamin C, E, β-carotene, and zinc supplements reduce the odds of developing advanced AMD in a high risk population. This study was not constructed in such a way as to be certain whether antioxidants and zinc supplements are any benefit for those with early AMD or with no signs of AMD. This same study demonstrated that there was no effect on the risk of progressing lens opacity when supplements of antioxidants were given. (Archives of Ophthalmology 2001;119:1417–36)

Substances that block glutamate receptors have neuroprotective properties in animal stroke models. This appears to be because ischaemia promotes release of excitatory neurotransmitters, such as glutamate, which in turn precipitate the influx of sodium and calcium into neurons that promote secondary damage in addition to the initial ischaemic damage. Nevertheless, to date, none of the putative neuroprotective agents has proved efficacious in humans. Now a randomised controlled study in the United States, Canada, South Africa, and Scotland has been suspended by the sponsor and the Independent Safety and Monitoring Board because of the lack of efficacy and potential imbalance in mortality associated with the use of aptiganel hydrochloride. Aptiganel hydrochloride is a selective ligand for the ion channel site of the N-methyl-D-aspartate subtype of glutamate receptor. In rat models of ischaemic stroke it reduced the amount of brain damage by 40% and 70%. The failure of neuroprotective agents in the treatment of acute ischaemic stroke is disappointing for those interested in their potential use in ischaemic disorders of the optic nerve and neural retina. (JAMA 2001;286:2673–82)

Elevated amounts of αE, adrenoreceptors and tyrosine hydroxylase have been observed post mortem in the locus coeruleus in the brains of subjects with major depression or those who committed suicide. Moreover, in experimental animals long term administration of antidepressant drugs downregulates these same proteins in the locus coeruleus. Now a postmortem study from the University of Mississippi demonstrates that tyrosine hydroxylase immunoreactivity and radioligand binding to αE adrenoreceptors were significantly lower in the locus coeruleus of long term smokers compared with non-smokers. This suggests that cigarette smoking may have an antidepressant effect and may be one of the factors in its addictiveness. (Archives of General Psychiatry 2001;58:821–7)

Until very recently smallpox was thought to be all but eradicated. As a result, World Health Organization guidelines recommended that only individuals who are at risk of exposure, such as laboratory workers in smallpox research, should be vaccinated. Now the WHO director general, Gro Harlem Brundtland, has asked the agency’s smallpox advisory group to review guidelines on vaccinations to take into account the potential malicious use of smallpox virus. (JAMA 2001;286:18)

“It was mama also, a year later, who hustled him off to Kansas City for expensive eyeglasses. Though he had been badly handicapped by poor eyesight a long time—‘blind as a mole,’ in his words—no one seems to have noticed until the night of July 4th fireworks when Matt saw him responding more to the sound of the skyrockets than to the spectacle overhead. The Kansas City ophthalmologist diagnosed a rare malformation called ‘flat eyeballs’ (hypermetropia, which means the boy was farsighted) and Matt agreed to a pair of double strength wire rimmed spectacles. (David McCullough. Truman. New York: Simon and Schuster, 1992:41)