

From the library

Remembrance of things past

There is in Mr Stravinsky's aspect and manner, in his extraordinarily rapid, almost mechanical motions, in his slight body and his eyes that seemed just to have left off peering in a microscope, more to suggest the entomologist than the musician. That he is an intellect, an enormously developed mental machine, seems the most obvious conclusion.

"A slight, nervous, baldescent, goggled, pleasantly homely figure," Gillman had thought, "looking somewhat like Mr Wells' great-orbed Martians": in more modern language, an alien disguised as a human being, or even—could it be?—the devil with a butterfly net. (Stephen Walsh. *Stravinsky, A Creative Spring: Russia and France 1882–1934*. New York: Knopf, 1999:408.)

Euthanasia and physician assisted suicide

There is a growing consensus that the public in many developed nations wish medical practitioners to be more available for assisting them in terminal illnesses. In a study of over 3000 oncologists from the American Society of Clinical Oncology, it would appear that there is general resistance among physicians to participate in physician assisted suicide. In this survey 10% of oncologists admitted that they had performed physician assisted suicide. Only less than 4% admitted to having performed euthanasia. Those who had received adequate training in end of life care were less likely to have performed euthanasia or physician assisted suicide. In contrast, oncologists who reported not being able to obtain all the care that a dying patient needed were more likely to have performed euthanasia. (*Annals of Internal Medicine* 2000; 133:527–32.)

Butter or margarine?

Cholesterol lowering diets are generally recommended for the population at large to reduce the incidence of coronary heart disease. Controversy, however, has surrounded the question of whether butter or soft margarine is more heart friendly. In recent years the pendulum has swung away from margarine as a result of several studies suggesting that it may actually be harmful in its effects on serum cholesterol and lipids. In a study from Dallas-Ft Worth, Texas, multiple family members were studied for two 5 week dietary periods during which one group used butter only and the other used margarine. In this study margarine intake compared with butter lowered the low density lipoprotein (LDL-c) by levels 11% in adults and 9% in children. Considerable variation in response was noted even among members of the same family. Individuals who were least likely to

respond to a low saturated fat diet were likely to be overweight and with higher initial LDL-c levels. It is unclear why these individuals are less responsive to fat intake. (*JAMA* 2000;284:2740–7.)

Inhibiting matrix metalloproteinases reduces proliferative vitreoretinopathy

Cellular proliferation and collagen production following retinal reattachment surgery frequently results in contraction and subsequent recurrent detachment of the retina in a process known as proliferative vitreoretinopathy. This remains the most common cause of failed surgical procedures for the correction of rhegmatogenous retinal detachment despite improved surgical techniques and equipment. Recent studies suggest that matrix metalloproteinases seem to be an important component in the cell mediated collagen contraction and thus play an essential part in the pathobiology of proliferative vitreoretinopathy. In a study from San Diego, California, the use of a potent matrix metalloproteinases inhibitor (Prinomastat) significantly reduced proliferative vitreoretinopathy in an experimental rabbit model. This is apparently the first report of the use of a synthetic inhibitor of matrix metalloproteinases for the treatment of experimental proliferative vitreoretinopathy in vivo. (*Current Eye Research* 2000;20:447–53.)

Wearing glasses: do you become dependent on them?

Recent studies in experimental animals have suggested that correction of hyperopia in infant animals may inhibit the normal emmetropisation process. That is to say the correction of the hyperopic error early in life might prevent the shift from hyperopia towards emmetropia that is the normal process. In a short term study from Canada and England, children with significant hyperopia were identified and assigned to either spectacle correction or no treatment for their hyperopia. Over a follow up period of less than 3 years, refraction measurements were repeatedly undertaken. In this study the shift from hyperopia towards emmetropia did not appear to be altered in the group who were fitted with early spectacle correction. In children in whom hyperopic correction is required, especially for the treatment of accommodative esotropia, it would appear that one can still anticipate that (emmetropisation) will occur as usual. (*Investigative Ophthalmology & Visual Science* 2000;41:3726–31.)

Lens protection of the ganglion cells during injury

Recent investigations have identified a number of substances that influence the

survival of retinal ganglion cells after traumatic injury. In a recent experiment in Germany, investigators documented in rats, that the crystalline lens contains high neuroprotective and neurotogenic substances. In this experiment, injury to the crystalline lens at the same time as optic nerve crush injury resulted in a highly significant rescue of retinal ganglion cells compared with controls without lens injury. This neuroprotective effect appears to be independent of neurotrophins. (*Investigative Ophthalmology & Visual Science* 2000;41:3943–54.)

Recommended reading

Oxidants, oxidative stress and biology of ageing. Toren Finkel, Nikki J Holbrook. *Nature* 2000;408:239–47

Understanding the ageing process has become a high priority among many disciplines in biological research. Although ageing is likely to be a multifactorial process, there is now strong evidence to implicate the generation of reactive oxygen species and the corresponding response to oxidative stress as essential factors to determining longevity. In this review article the authors describe the various experimental models that have investigated these phenomena. They detailed the biochemical alterations that result as well as the apparent genes responsible for controlling these responses. They state that while dietary supplementation to enhance antioxidant defences would appear to be a reasonable and practical approach to reduce a level of oxidative stress and its effect on general health, these strategies have proved to have little or no effect in most human studies. Indeed, in the case of ophthalmology, there is no evidence that a significant reduction in cataracts or macular degeneration occurs as a result of the use of supplements of vitamin E and/or multivitamins. The problem is clearly more complicated than simply supplementing the diet to promote free radical scavengers. However, the authors suggest that the development of new synthetic compounds that act as mimetics of superoxide dismutase and catalase may provide an alternative approach that is more promising. Use of these compounds in mouse models has been effective in attenuating the oxidant stress associated disease processes. Of note is the evidence which suggests that perhaps one of the best strategies to boost an animal's defence mechanisms against oxidative stress is chronic stress itself. That is, a sublethal or conditioning stress can lead to enhanced survival and reduce tissue damage following a subsequent bout of more severe stress. This may be why routine exercise is believed to have an anti-ageing benefit in humans.