

Melanoma increase in radiation labs?

Livermore data may be significant

Washington

US Department of Energy officials remain baffled about the cause of an abnormally high incidence of malignant melanoma among employees of the University of California's Lawrence Livermore Laboratory, one of the nation's centres for nuclear weapons research.

An advisory board report released in Washington last week confirmed findings suspected since 1976, and substantiated earlier this year by California's Department of Health Services, that the incidence of skin cancer among laboratory employees was three to four times the national average.

The California study showed that between 1972 and 1977, 19 white workers at the laboratory had developed malignant melanoma, compared with between 4.6 and 6.4 cases expected using national statistics, a result which it said was "very unlikely to have occurred by chance".

At the request of the Department of Energy, the data were reviewed by an advisory board chaired by Dr Arthur Upton, then director of the National Cancer Institute. The board found no flaws in the Californian study and revealed that the increased incidence seems to have continued, with eight more cases of melanoma being reported up to June 1980.

However, the advisory board reports that preliminary efforts to explain the excess have not succeeded in implicating any specific cause. It says that the occupational safety, industrial hygiene and medical programmes of the laboratory appear to be well conceived and well conducted, and that additional protective health measures "appear to be unwarranted".

It also lists a range of possible environmental causes, from occupational exposure to chemicals to details of individual lifestyles, which it says should be studied in more detail to get to the root of the problem.

"Part of the difficulty is that there may be no problem at all. We still don't really know if this thing is real; it may be just a statistical fluke" stated one member of the board last week, pointing out that the continued high incidence could be the result of people looking for — and finding — melanomas many years earlier than they would otherwise be detected.

Although a relatively rare form of cancer, the incidence of malignant melanoma has been increasing faster than almost any other cancer in recent years. In

San Francisco, for example, the number of cases rose from 5.8 to 11.2 per 100,000 between 1970 and 1975, and similar figures have been reported for other parts of the country.

One fashionable explanation is that, because the greatest increase has been found among fair-skinned professionals, whose work tends to keep them indoors, it may be caused by intermittent exposure to ultraviolet radiation, for example as a result of excessive sunbathing or other outdoor activity.

Preliminary examination of the occupational histories of those contracting skin cancer has failed to reveal any obvious common pattern of exposure to particular chemicals or forms of radiation, and the board's report points out that although malignant melanomas have been found in an irradiated person, epidemiological studies have failed to produce convincing evidence that tumours may be induced in the skin by ionizing radiation.

However, the possibility that occupational exposure to, for example, internal emitters and ultraviolet radiation may contribute to the aetiology of melanoma is one of several avenues that the laboratory intends to explore further. "It is just possible, because of changes in lifestyle such as improved nutrition, that we have managed to increase our risk of cutaneous melanoma to the point where, although radiation was not a cause in the past, it might have become one today", says Professor John A.H. Lee of the

Department of Epidemiology at the University of Washington in Seattle.

In a memorandum submitting the board's report to Energy Secretary Charles Duncan, the Department of Energy's Assistant Secretary for the Environment, Dr Ruth Clusen, suggests that further studies by both the laboratory and the state Department of Health Services should be supported.

The latter has already proposed a major follow-up programme, which is being reviewed by the department that will take a detailed look at the particular social characteristics of the Lawrence Livermore workforce. A parallel study may also be carried out at another Department of Energy site.

The Lawrence Livermore Laboratory is operated by the University of California under contract from the Department of Energy. Its involvement in weapons research — and the resulting need to keep much of the research programme secret — has been the source of sharp controversy over whether its links with the university should be maintained.

Last year the university's board of regents rejected a call from California Governor Jerry Brown that all weapons-related research be moved to the Los Alamos Laboratory, and last month the regents agreed to start negotiations with the Department of Energy for a new management contract for the laboratory. The current contract expires in 1982.

David Dickson

EEC worries about veal and hormones

The massive veal market in Europe, consuming eight million calves a year, was on the verge of collapse this week following scares in France and Italy over the levels of an artificial growth hormone — diethylstilboestrol — in the meat. Diethylstilboestrol (DES) is a synthetic oestrogen which caused vaginal cancers in the daughters of mothers who were prescribed it (in large doses) as a protection against spontaneous abortion in the 1940s and 1950s. Its use is banned in the United States and in most countries of Europe, but a black market has sprung up because this chemical can add 5–15 kg to the weight of a calf and thus double a farmer's profits.

In Italy, the trouble began on 4 September, when the Ministry of Health placed a temporary ban on twenty-two brands of baby foods containing veal. A fairly crude bioassay had shown samples to contain an active oestrogen, probably DES. On 22 September a local magistrate in Latina, south of Rome, used the wide powers of Italian magistrates to impose a nationwide ban on the sale of veal. The Rome laboratory of the Istituto Superiore

di Sanita, the technical arm of the Ministry of Health, is now making mass spectroscopic measurements of the hormones isolated from the baby foods to check for DES. In the view of a British scientist, the levels are probably "quite high" or they would be undetectable by the original method.

In France, pressure began independently from the left-wing trades union group, Paysans Travailleurs, whose members had accumulated evidence that French veal producers were using the synthetic hormone. Paysans Travailleurs then recruited help from the consumer group, the Union Fédérale des Consommateurs, which called for a boycott of veal in the September issue of its magazine, *Que Choisir*. Subsequently, in a rare enforcement of French law on the matter, a 29-year-old pharmacist and veal producer was jailed.

Pressure from farmers and other interests has forced the Italian magistrate to relax his ban somewhat, but sales of veal have still fallen by 50–60 per cent in both France and Italy, and the export of calves