

SESSION V

GENETIC AND CANCER HAZARDS

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INTRODUCTION TO SESSION V

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Both in cancer induction and in genetic effects we are dealing with effects which are delayed for a long period. You have heard discussion of the increased anxiety that this involves and the obviously increased difficulty in making assessments of the level of risk accurately. Quite clearly, it is particularly important in both of these fields to be able to give a definite estimate of the size of the risk. Very often anxieties arise not so much because of what people know of the size of the risk, but because they have no impression of the size of the risk. It has been very difficult to give a proper perspective until recently when it has become clearer in the somatic field what is the level of hazard, not only from the whole-body exposure to radiation at moderate doses, but also, what is obviously important, from irradiation of single organs in which radio-nuclides may be concentrated. There are reasonably valid estimates for as many as twelve or fifteen body organs -- not precise estimates, certainly, but I am not sure that any estimate of risk needs to be made with great precision. One needs an order of magnitude, or a factor of two or three, and not high precision to a few percent. I think it was striking when Dr. Land put up the figure showing the concordance between the estimates of risk of breast cancer from three quite different kinds of exposure. Ten years ago it would have been pretty startling to find any such precision of agreement, and now one is worrying because estimates from one source differ by a factor of two or three from estimates from another source.

In both genetic and somatic risks, the better one can estimate and state objectively the size of the risk, the more, in the long run, it will help in putting the perceived risk into perspective.