

THE LNT-MODEL AND LOW DOSE HYPERSENSITIVITY

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The LNT-model used in radiation protection defines a linear non-threshold relationship between radiation exposure and health risk. However, the model can only be considered reliable at higher doses, we cannot be certain that any small doses increase the risk. Because of this, there are several ideas about the relationship between risk and dose at the low dose range. One of the alternatives is supported by low dose hypersensitivity, which means that the dose dependence of the number of cells capable of division starts to increase at low doses after reaching a local minimum, then at higher doses decreases exponentially. From this, we may conclude that low dose radiation results in a higher risk than what we would expect on the basis of the current LNT-model. If, however, we examine this phenomena not only at cellular level, but also at a higher level of organization, we can draw a different conclusion. We assume that a certain kind of control of the living organism can be observed if hypersensitivity is studied at tissue level. The aim of this control is to minimize the number of mutations generated in the cells, which increases the surviving chances of the organism.

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