Title:

Calculating the risks associated with ionizing radiation exposure

Abstract:

Ionizing radiation is an unavoidable risk throughout our daily lives. Quantifying the risk associated with ionizing radiation exposure can improve current policies surrounding radiation safety to improve human health and potentially conserve resources. Calculating this risk is typically done through statistical modeling with data from atomic bomb survivors and animal studies. Because the effect of low dose exposures is small, there is not enough statistical power in most epidemiologic studies to determine the precise risk associated with low dose/low dose rate exposure conditions. There is a great deal of debate over which type of model best represents the physiological consequences of radiation exposure; Herein, methods for determining proper estimates of radiation risk will be discussed along with the impact these changes will have on the field of radiation protection.