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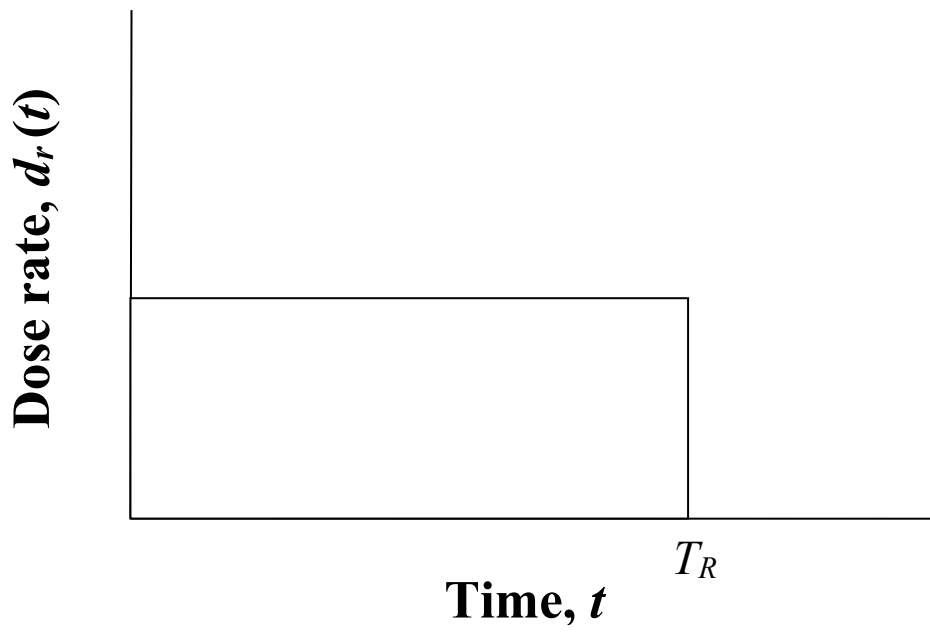
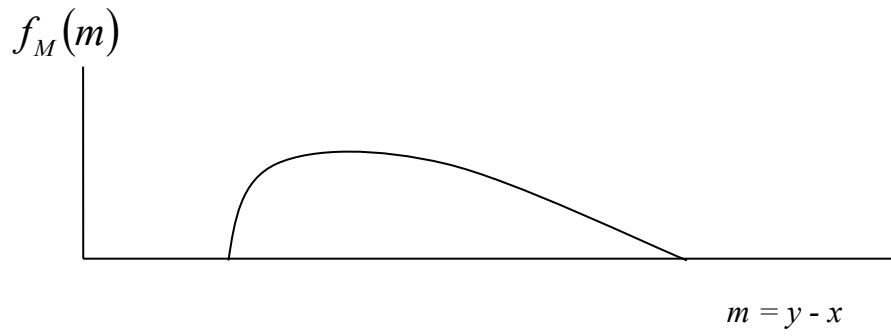
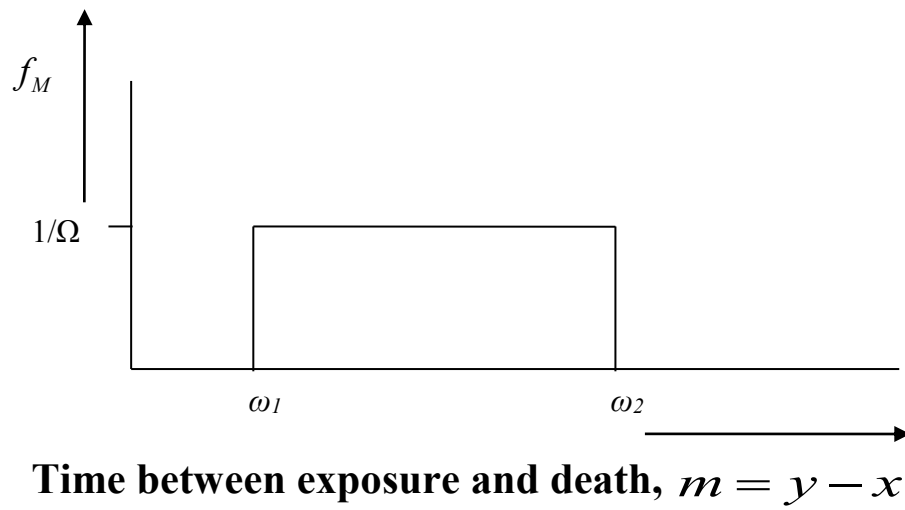


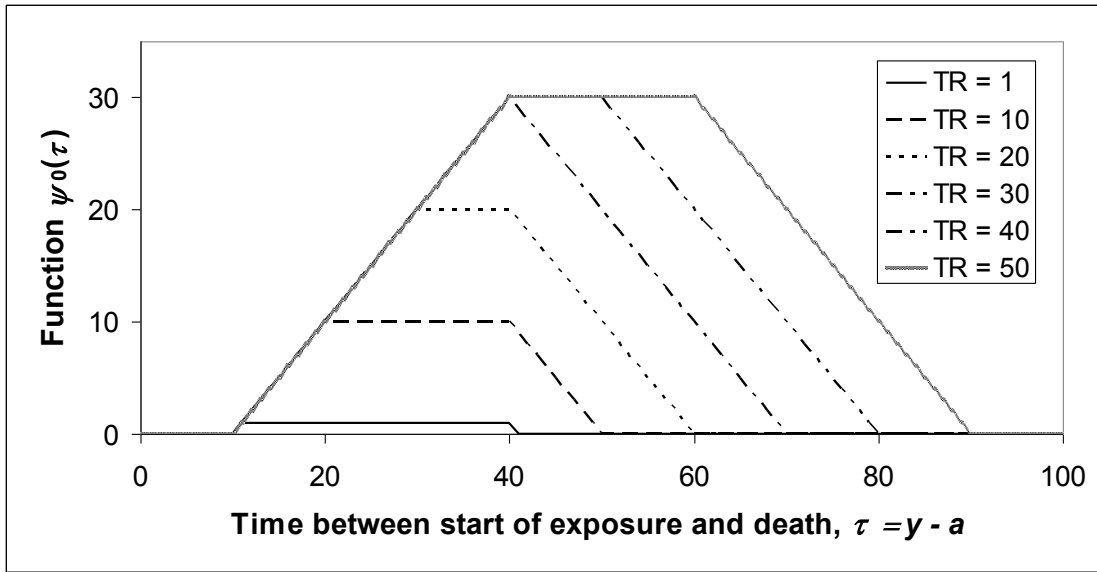
Figure 1 Radiation dose,  $d_r(t)$  vs. time,  $t$



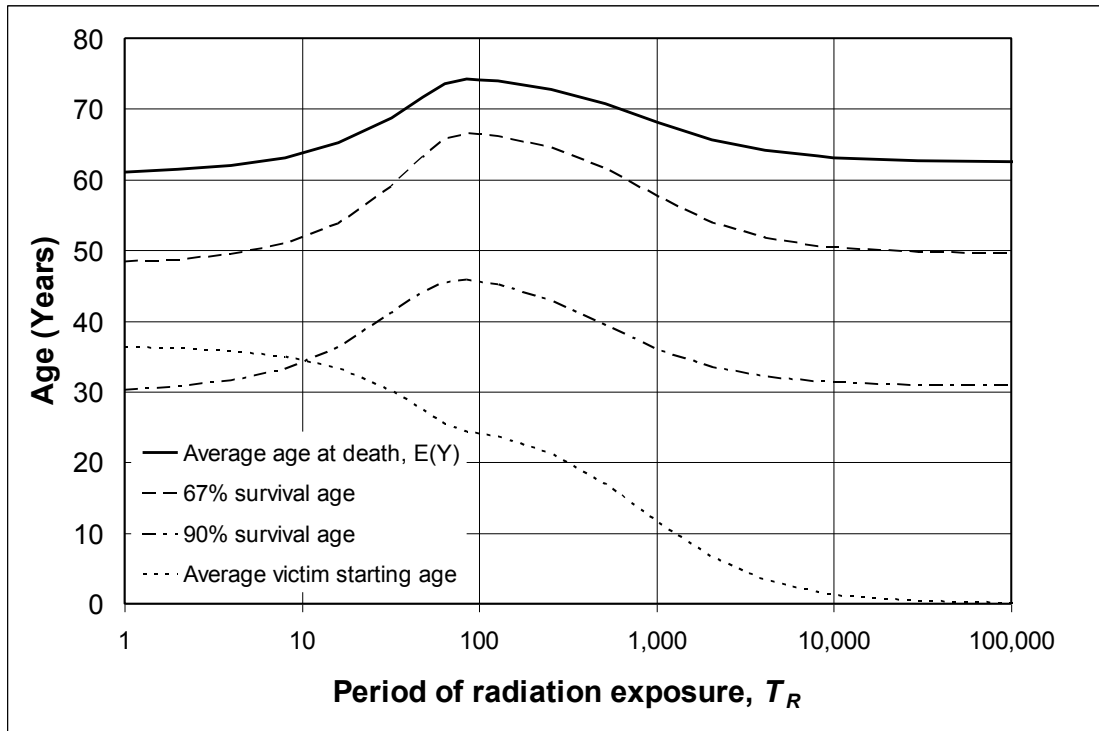
**Figure 2** Generalised probability density for the mortality period,  $m$



**Figure 3** The Marshall probability density for death from a radiation induced cancer at an age,  $y$ , after an exposure at age,  $x$



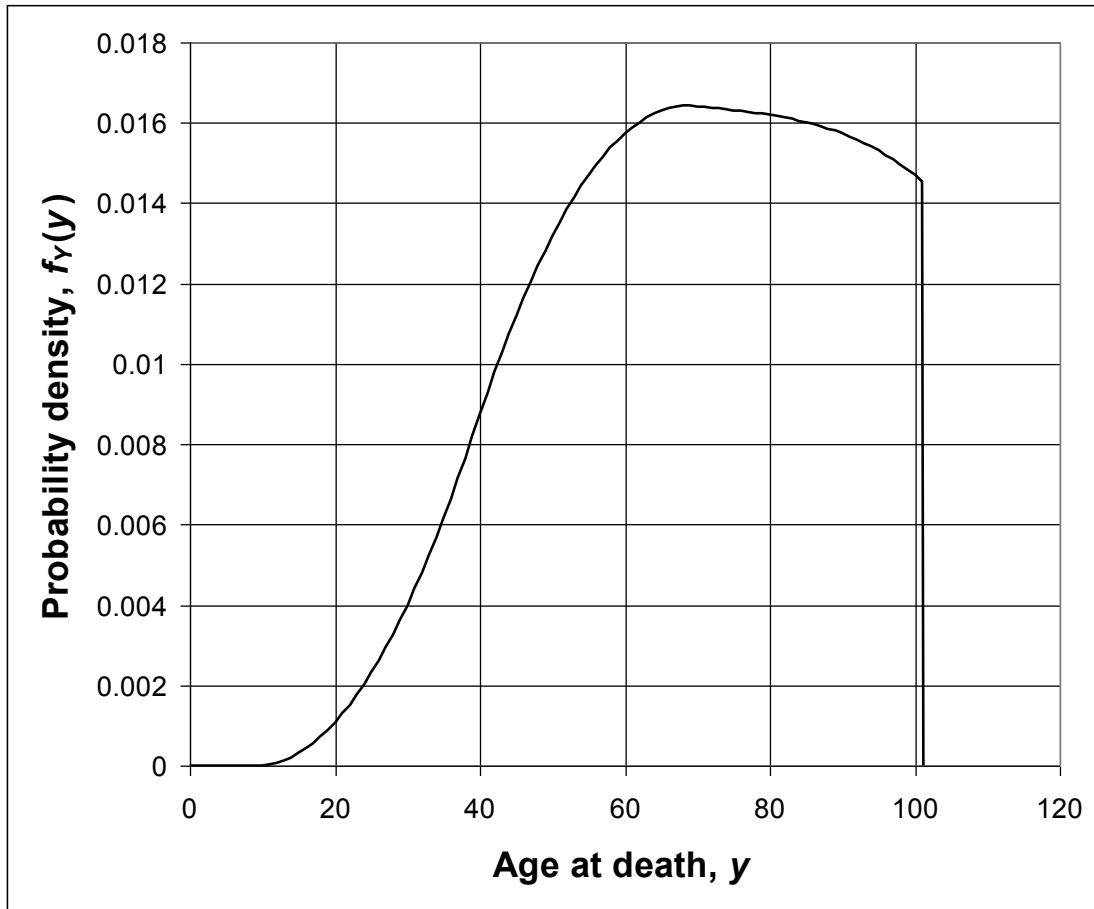
**Figure 4. Function  $\psi_0(\tau)$  versus the time,  $\tau = y - a$ , between start of exposure and death for an individual of starting age,  $a$**



**Figure 5. Mean age at death,  $E(Y)$  vs. period,  $T_R$ , of exposure. 67% and 90% survival ages and the average starting age,  $E(A)$ , for radiation cancer victims**

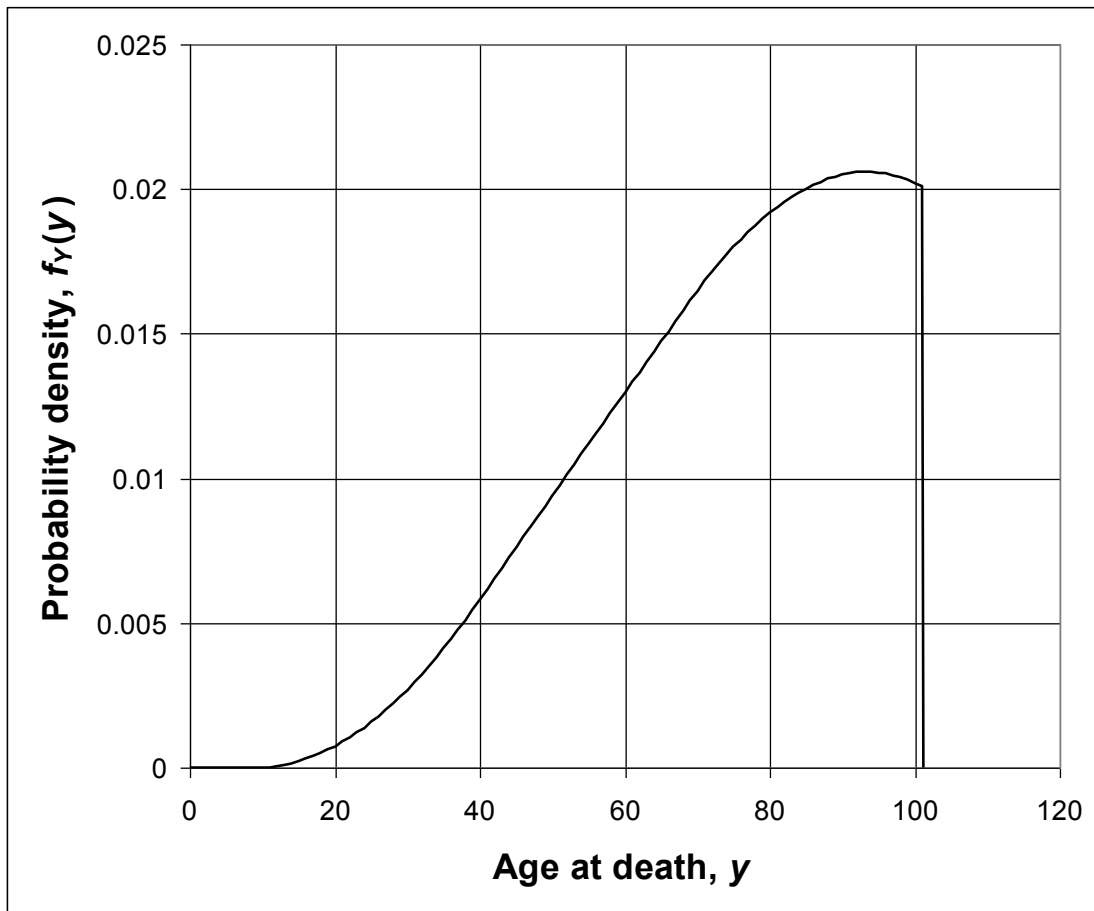


**Figure 6. Probability density,  $f_Y(y)$ , for age at death for radiation cancer victims when the exposure period is one year:  $T_R = 1$**

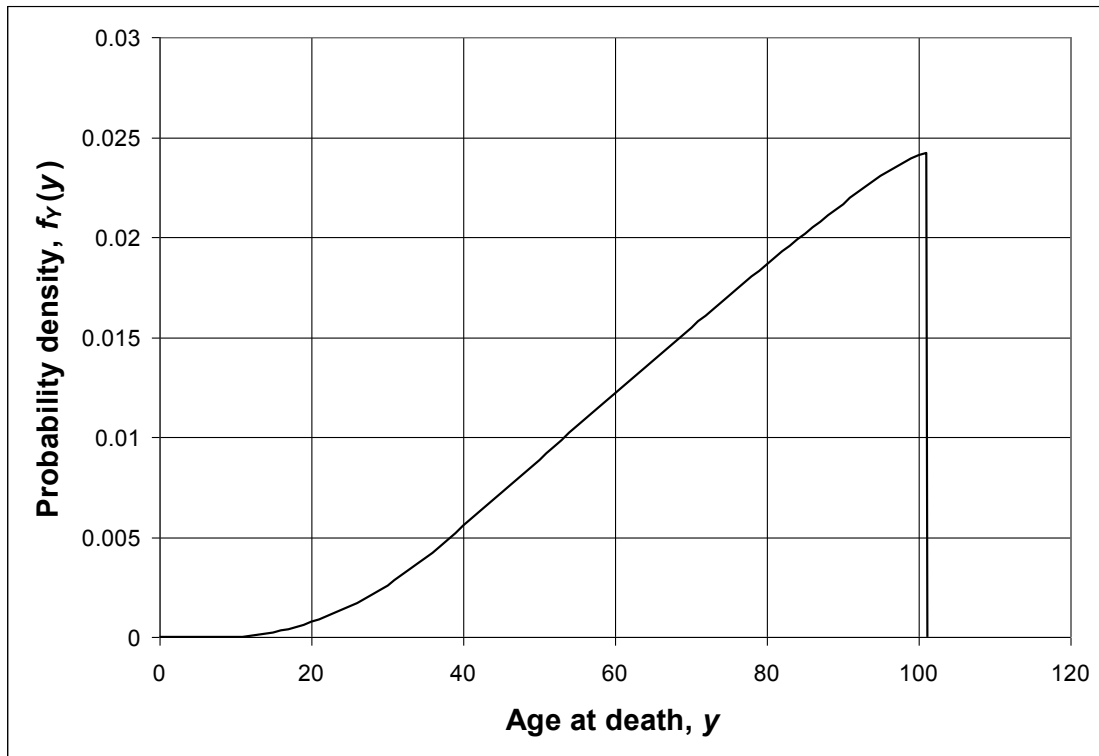


**Figure 7. Probability density,  $f_Y(y)$ , for age at death for radiation cancer victims when the exposure period is 30 years:  $T_R = 30$**





**Figure 8. Probability density,  $f_Y(y)$ , for age at death for radiation cancer victims when the exposure period is 60 years:  $T_R = 60$**



**Figure 9. Probability density,  $f_Y(y)$ , for age at death for radiation cancer victims when the exposure period is 85 years:  $T_R = 85$**



Figure 10. Conditional probability densities,  $f_{Y|A}(y|a)$ , for starting ages,  $a$ , of 0, 20, 40 and 60 years. Period of exposure,  $T_R$ , is 85 years.

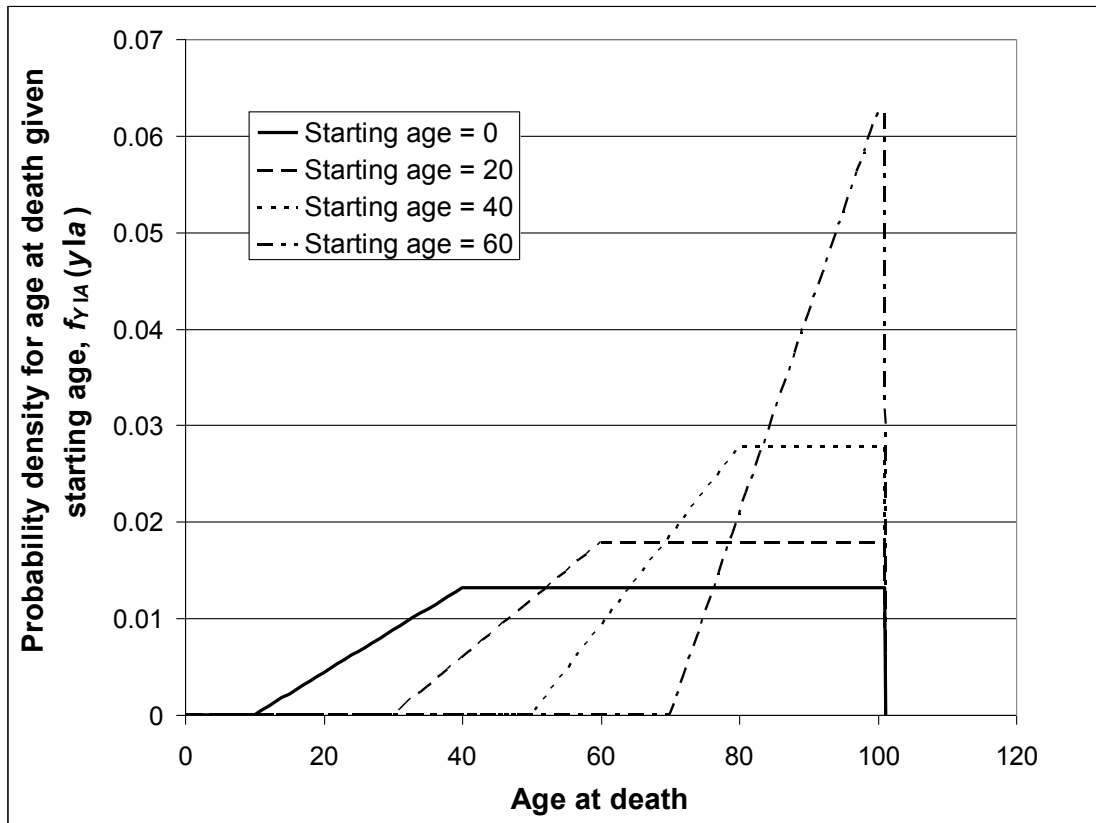
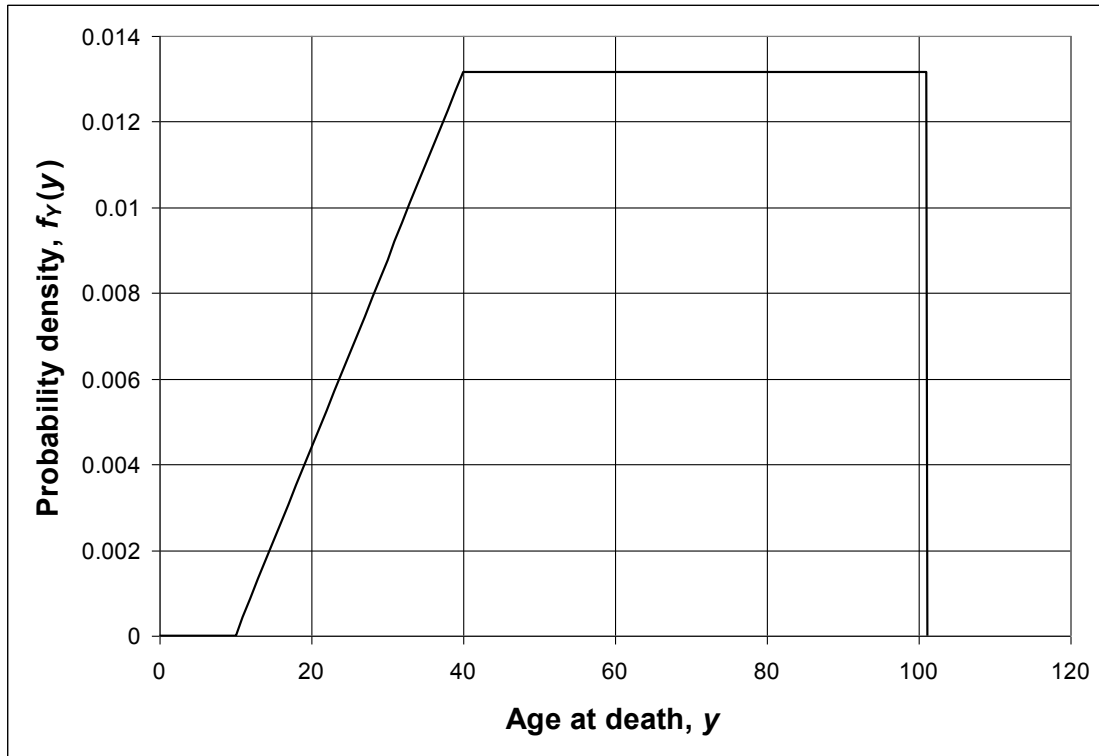
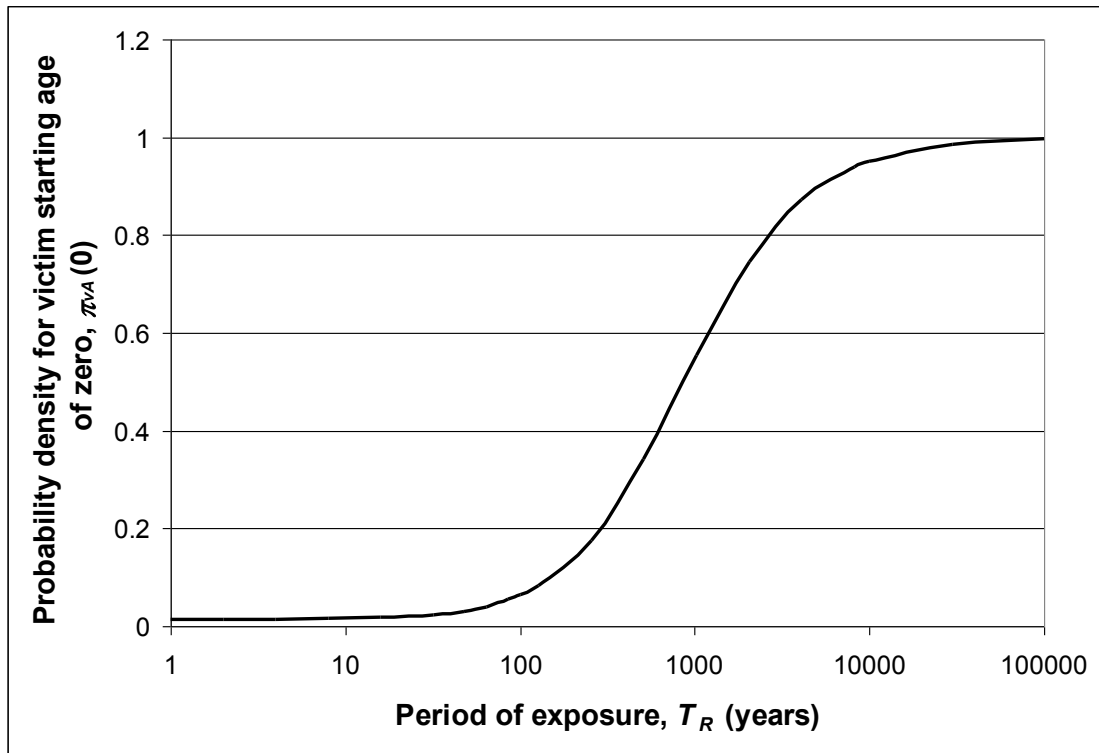


Figure 11. Conditional probability densities,  $f_{Y|A}(y|a)$ , for starting ages,  $a$ , of 0, 20, 40 and 60 years. Period of exposure,  $T_R$ , is 100 years.



**Figure 12. Probability density,  $f_Y(y)$ . Period of exposure,  $T_R$ , is one million years.**



**Figure 13. Probability density for a zero starting age amongst the total cohort of radiation cancer victims**



**Figure 14. Mean age at death and standard deviation for age at death: the figures for a one-off dose have been added in at  $T_R = 0.01$  years**

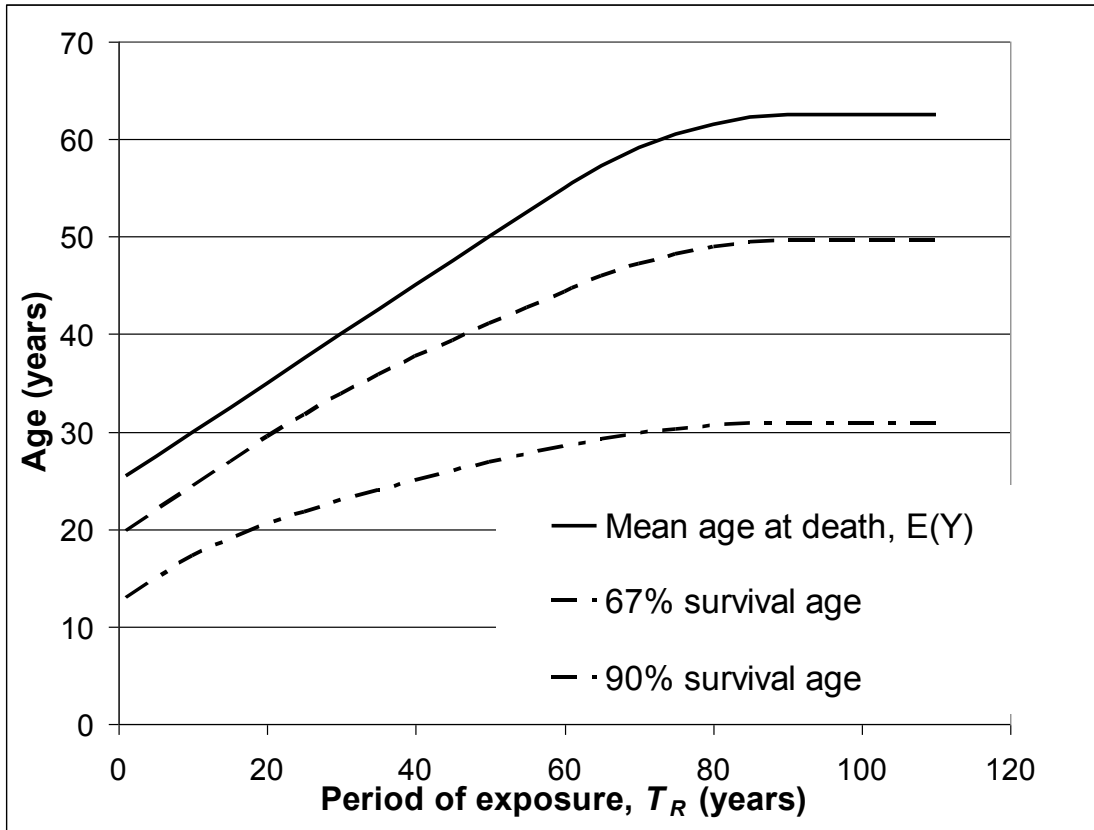
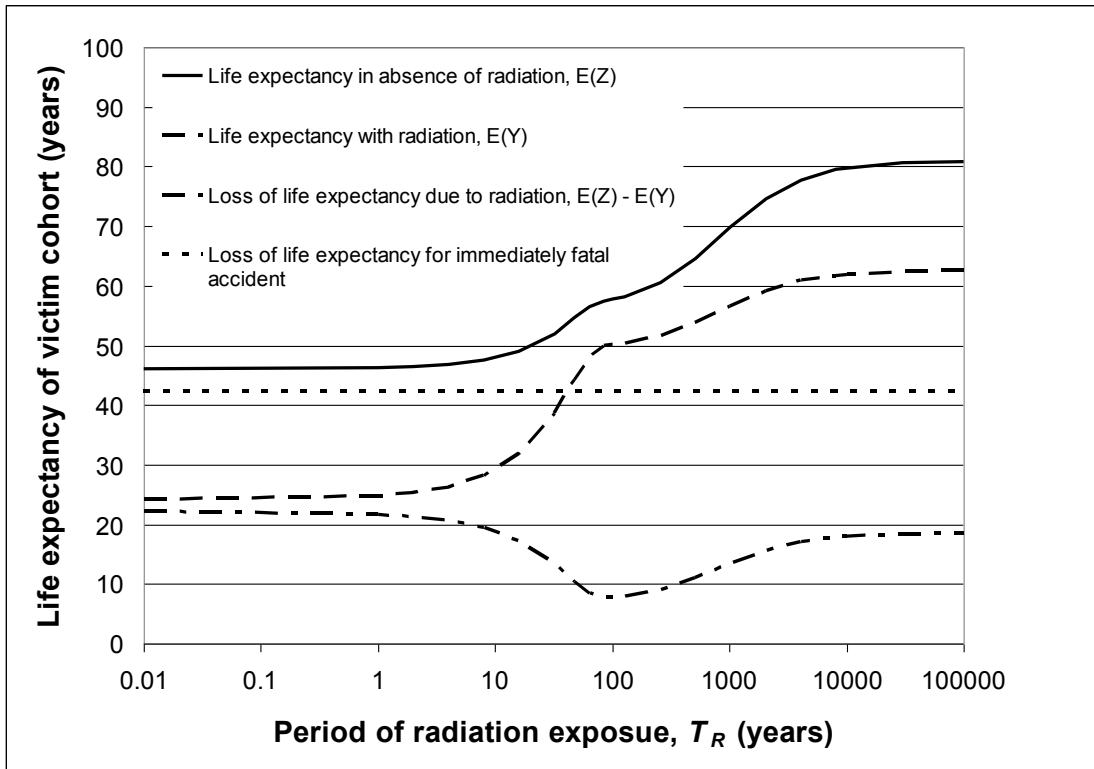
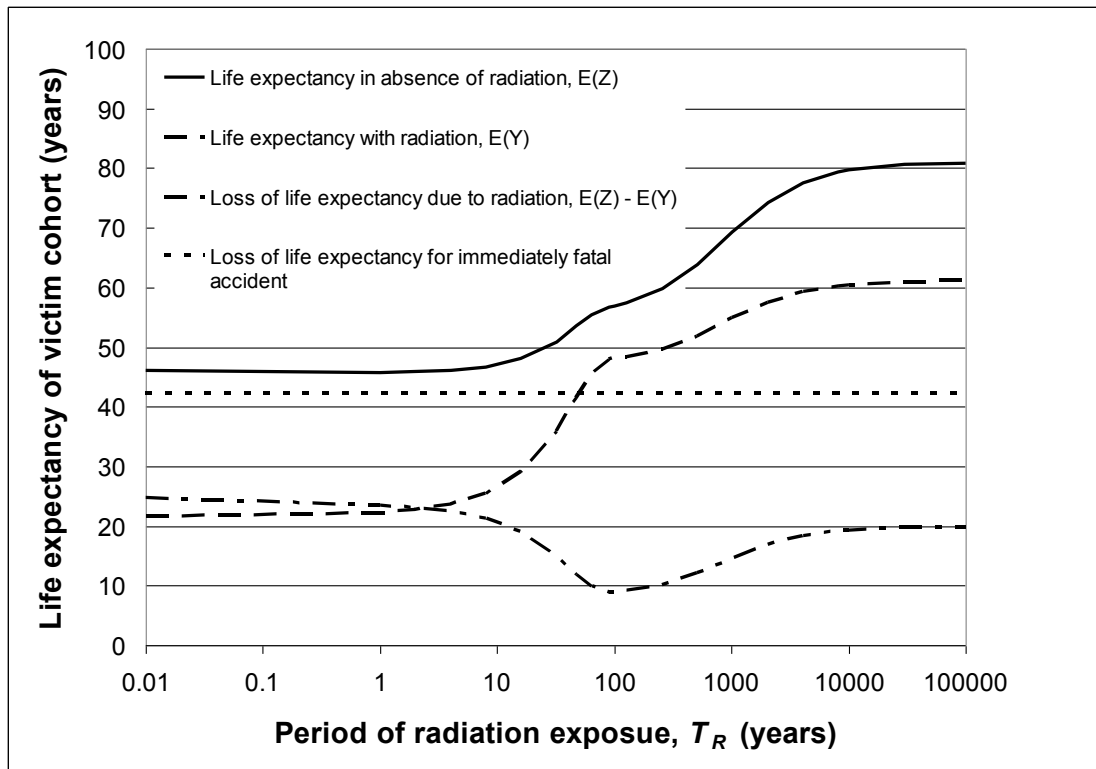


Figure 15. Age at death for radiation cancer victims with a starting age of zero

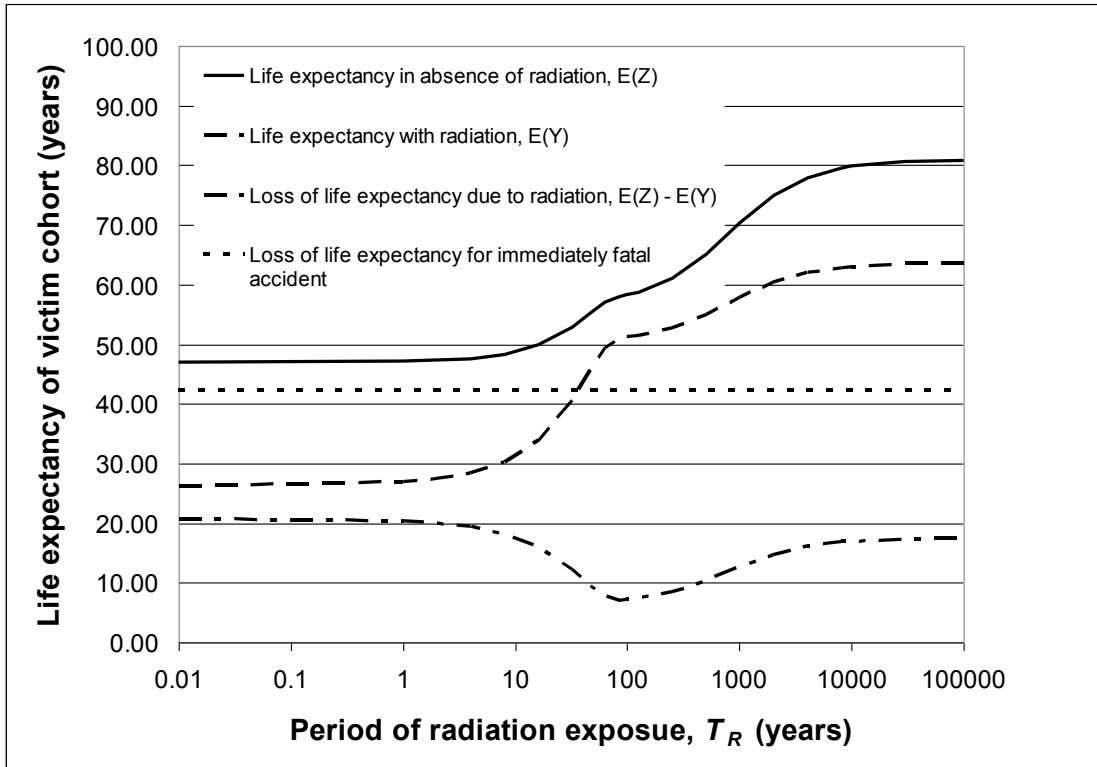




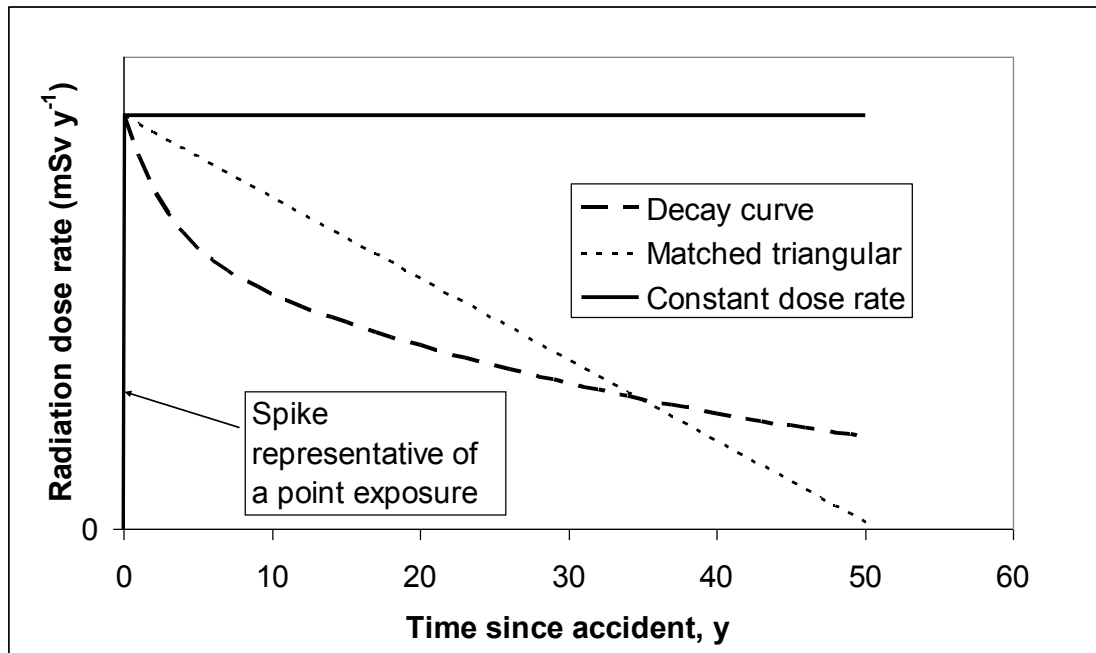
**Figure 16. Life expectancy for cohort of radiation cancer victims exposed to radiation for a period,  $T_R$  years and what the life expectancy for this cohort would have been in the absence of radiation. Also the resultant loss of life expectancy due to radiation compared with the life expectancy from an immediately fatal accident.**



**Figure 17. Sensitivity Study 1:  $\omega_1$  reduced from 10 years to 5 years. Life expectancy for cohort of radiation cancer victims exposed to radiation for a period,  $T_R$  years; life expectancy for this cohort in the absence of radiation. Resultant loss of life expectancy due to radiation compared with the life expectancy from an immediately fatal accident.**



**Figure 18. Sensitivity Study 2:  $\omega_2$  increased from 40 years to 45 years. Life expectancy for cohort of radiation cancer victims exposed to radiation for a period,  $T_R$  years; life expectancy for this cohort in the absence of radiation. Resultant loss of life expectancy due to radiation compared with the life expectancy from an immediately fatal accident.**



**Figure 19. Radiation dose profiles: a point dose, a constant dose rate, a decaying dose rate and a matched triangular dose rate**