HEALTH RISKS FROM EXPOSURE TO LOW LEVELS OF IONIZING RADIATION

BEIR VII PHASE 2

Committee to Assess Health Risks from Exposure to Low Levels of Ionizing Radiation

Board on Radiation Effects Research

Division on Earth and Life Studies

NATIONAL RESEARCH COUNCIL OF THE NATIONAL ACADEMIES

THE NATIONAL ACADEMIES PRESS

Washington, D.C.

www.nap.edu
Below are the first 10 and last 10 pages of uncorrected machine-read text (when available) of this chapter, followed by the top 30 algorithmically extracted key phrases from the chapter as a whole. Intended to provide our own search engines and external engines with highly rich, chapter-representative searchable text on the opening pages of each chapter. Because it is UNCORRECTED material, please consider the following text as a useful but insufficient proxy for the authoritative book pages.

Do not use for reproduction, copying, pasting, or reading; exclusively for search engines.
primary objective of the study is to estimate the potential risk exposure to low-dose, low linear energy transfer (LET) radiation in human subjects. In order to do this, the committee will (1) conduct a comprehensive review of all relevant literature on the risks from low-energy X-rays and γ-rays, (2) examine all available data from basic experimental and epidemiologic studies, and (3) consider relevant biological factors (such as the dose and dose-rate effectiveness factor, relative biological effectiveness, genomic instability, and adaptive responses) and appropriate methods to develop the risk models (such as computer models) and estimate population distribution; (4) assess the current status and future needs of the basic biological data and model development; (5) develop appropriate, relevant, and sensitive markers for assessing radiation exposure and disease; (6) develop appropriate methods to estimate disease rates in exposed populations; (7) develop appropriate methods to estimate the attributable risk and effect of radiation exposure; (8) develop appropriate methods to estimate the attributable risk and effect of radiation exposure; (9) develop appropriate methods to estimate the attributable risk and effect of radiation exposure; (10) develop appropriate methods to estimate the attributable risk and effect of radiation exposure; and (11) develop appropriate methods to estimate the attributable risk and effect of radiation exposure. After the review data to support a quantitative estimate of risk, (12) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (13) describe and define the terminology used in the report; (14) discuss the role of epidemiological studies of the risk-effect relationship; (15) provide guidelines for future research; (16) provide evidence and data to support the quantitative estimate of risk, (17) compare and contrast different risk assessment methods; (18) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (19) discuss the role of epidemiological studies of the risk-effect relationship; (20) provide guidelines for future research; (21) provide evidence and data to support the quantitative estimate of risk, (22) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (23) discuss the role of epidemiological studies of the risk-effect relationship; (24) provide guidelines for future research; (25) provide evidence and data to support the quantitative estimate of risk, (26) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (27) discuss the role of epidemiological studies of the risk-effect relationship; (28) provide guidelines for future research; (29) provide evidence and data to support the quantitative estimate of risk, (30) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (31) discuss the role of epidemiological studies of the risk-effect relationship; (32) provide guidelines for future research; (33) provide evidence and data to support the quantitative estimate of risk, (34) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (35) discuss the role of epidemiological studies of the risk-effect relationship; (36) provide guidelines for future research; (37) provide evidence and data to support the quantitative estimate of risk, (38) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (39) discuss the role of epidemiological studies of the risk-effect relationship; (40) provide guidelines for future research; (41) provide evidence and data to support the quantitative estimate of risk, (42) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (43) discuss the role of epidemiological studies of the risk-effect relationship; (44) provide guidelines for future research; (45) provide evidence and data to support the quantitative estimate of risk, (46) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (47) discuss the role of epidemiological studies of the risk-effect relationship; (48) provide guidelines for future research; (49) provide evidence and data to support the quantitative estimate of risk, (50) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (51) discuss the role of epidemiological studies of the risk-effect relationship; (52) provide guidelines for future research; (53) provide evidence and data to support the quantitative estimate of risk, (54) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (55) discuss the role of epidemiological studies of the risk-effect relationship; (56) provide guidelines for future research; (57) provide evidence and data to support the quantitative estimate of risk, (58) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (59) discuss the role of epidemiological studies of the risk-effect relationship; (60) provide guidelines for future research; (61) provide evidence and data to support the quantitative estimate of risk, (62) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (63) discuss the role of epidemiological studies of the risk-effect relationship; (64) provide guidelines for future research; (65) provide evidence and data to support the quantitative estimate of risk, (66) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (67) discuss the role of epidemiological studies of the risk-effect relationship; (68) provide guidelines for future research; (69) provide evidence and data to support the quantitative estimate of risk, (70) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (71) discuss the role of epidemiological studies of the risk-effect relationship; (72) provide guidelines for future research; (73) provide evidence and data to support the quantitative estimate of risk, (74) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (75) discuss the role of epidemiological studies of the risk-effect relationship; (76) provide guidelines for future research; (77) provide evidence and data to support the quantitative estimate of risk, (78) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (79) discuss the role of epidemiological studies of the risk-effect relationship; (80) provide guidelines for future research; (81) provide evidence and data to support the quantitative estimate of risk, (82) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (83) discuss the role of epidemiological studies of the risk-effect relationship; (84) provide guidelines for future research; (85) provide evidence and data to support the quantitative estimate of risk, (86) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (87) discuss the role of epidemiological studies of the risk-effect relationship; (88) provide guidelines for future research; (89) provide evidence and data to support the quantitative estimate of risk, (90) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (91) discuss the role of epidemiological studies of the risk-effect relationship; (92) provide guidelines for future research; (93) provide evidence and data to support the quantitative estimate of risk, (94) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (95) discuss the role of epidemiological studies of the risk-effect relationship; (96) provide guidelines for future research; (97) provide evidence and data to support the quantitative estimate of risk, (98) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (99) discuss the role of epidemiological studies of the risk-effect relationship; (100) provide guidelines for future research; (101) provide evidence and data to support the quantitative estimate of risk, (102) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (103) discuss the role of epidemiological studies of the risk-effect relationship; (104) provide guidelines for future research; (105) provide evidence and data to support the quantitative estimate of risk, (106) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (107) discuss the role of epidemiological studies of the risk-effect relationship; (108) provide guidelines for future research; (109) provide evidence and data to support the quantitative estimate of risk, (110) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (111) discuss the role of epidemiological studies of the risk-effect relationship; (112) provide guidelines for future research; (113) provide evidence and data to support the quantitative estimate of risk, (114) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (115) discuss the role of epidemiological studies of the risk-effect relationship; (116) provide guidelines for future research; (117) provide evidence and data to support the quantitative estimate of risk, (118) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (119) discuss the role of epidemiological studies of the risk-effect relationship; (120) provide guidelines for future research; (121) provide evidence and data to support the quantitative estimate of risk, (122) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (123) discuss the role of epidemiological studies of the risk-effect relationship; (124) provide guidelines for future research; (125) provide evidence and data to support the quantitative estimate of risk, (126) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (127) discuss the role of epidemiological studies of the risk-effect relationship; (128) provide guidelines for future research; (129) provide evidence and data to support the quantitative estimate of risk, (130) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (131) discuss the role of epidemiological studies of the risk-effect relationship; (132) provide guidelines for future research; (133) provide evidence and data to support the quantitative estimate of risk, (134) provide examples of specific risk calculations based on the models and explain the appropriate use of the risk models; (135) discuss the role of epidemiological studies of the risk-effect relationship; (136) provide guidelines for future research;