

NCRP Releases Report No. 156, *Development of a Biokinetic Model for Radionuclide-Contaminated Wounds and Procedures for Their Assessment, Dosimetry and Treatment*

Although numerous biokinetic and dosimetric models for intakes of radionuclides by inhalation and ingestion have been published, a comparable consensus model for intake *via* contaminated wounds has not, even though the total amount of activity associated with a contaminated wound is typically much larger than that associated with worker exposures *via* inhalation or ingestion. Thus, in the mid-1990s the National Council on Radiation Protection and Measurements (NCRP) in collaboration with the International Commission on Radiological Protection established a scientific committee tasked with developing such a wound model.

NCRP Report No. 156, *Development of a Biokinetic Model for Radionuclide-Contaminated Wounds and Procedures for Their Assessment, Dosimetry and Treatment*, presents a comprehensive review and in some cases, reanalysis of animal data relating to the biokinetic behavior of radionuclides in wounds. The data have been used to derive the parameters of a comprehensive compartmental model for contaminated wounds, while the structure of the model itself is grounded in the biochemical and physiological response of the body to a wound. Information is also presented on the etiology of radionuclide-contaminated wounds, and the biological processes of wound healing, including foreign-body responses and carcinogenesis. Human data from occupational, military and medical exposures are provided to relate the animal data to human experience. Dose coefficients for local doses are presented, as is a summary of wound monitoring methodology. The development of systemic dose coefficients based on the wound model for all commonly encountered radionuclides is beyond the scope of this Report, but should be undertaken in the future. Finally, current procedures for the medical management of contaminated wounds are discussed.

The wound model developed in this Report comprises seven compartments, of which five describe radionuclide behavior at the wound site, and two can receive radionuclides transported from the wound site. The seven compartments are: fragment; soluble; colloid and intermediate state; particles, aggregates and bound state; trapped particles and aggregates; blood; and lymph nodes.

The Report is available from the NCRP website, <http://NCRPpublications.org>, in both soft- and hardcopy formats. For additional information contact David A. Schauer, ScD, CHP at schauer@NCRPonline.org, 301.657.2652 (x20) or 301.907.8768 (fax).