

## **NCRP Releases Report No. 159, *Risk to the Thyroid from Ionizing Radiation***

NCRP Report No. 159, *Risk to the Thyroid from Ionizing Radiation*, is an update of NCRP Report No. 80, *Induction of Thyroid Cancer by Ionizing Radiation*, first published in 1985 and reprinted in 1987. The NCRP scientific committee which produced Report No. 159 was chaired by Dr. Henry Royal from Washington University in St. Louis.

The causal relationship between thyroid cancer and external radiation exposure has been studied for over 50 y, and this Report summarizes what is now known. In the 23 y since NCRP Report No. 80 was published, interest in the thyroid effects of internal exposure, especially from  $^{131}\text{I}$ , has increased and data are beginning to emerge. NCRP Report No. 159 includes data and analyses of  $^{131}\text{I}$  exposures from atmospheric testing of nuclear weapons, releases at Hanford nuclear reactors in Washington State, and the Chernobyl nuclear reactor accident. Studies of these populations have been published and, in the case of the Chernobyl nuclear reactor accident, these data can be used to better quantify the risks of thyroid cancer and other health effects from  $^{131}\text{I}$  exposure. Ongoing studies should further refine current risk estimates.

The incidence of thyroid cancer in the United States has increased in recent years, likely due to an increased ability to detect thyroid cancer with the use of diagnostic ultrasound. Improved follow-up of patients and populations exposed (and controls) has improved the understanding of short- and long-term consequences for radiation-induced thyroid cancers and increased the overall database for risk assessment. Improved risk models, surveillance procedures, and statistical approaches have been developed and employed. These collective factors provide the rationale for Report No. 159.

This Report is intended to be comprehensive and to serve as an authoritative reference on risks to the thyroid from ionizing radiation and other relevant topics. The conclusions of NCRP Report No. 159 differ significantly from those of the earlier NCRP Report No. 80. Major sources of new data have been published since 1985 that have resulted in a reevaluation of the risk models for thyroid cancer following radiation exposure. In addition, studies of the large population who were exposed when they were children and adolescents to radioiodines released as a result of the Chernobyl nuclear reactor accident have begun to provide further insight into the effectiveness of radioiodines in causing thyroid cancer. For the population at greatest risk (ages 0 to 14 y), NCRP Report No. 159 preferred model predicts a lifetime risk that is up to 1.5 times greater than that in NCRP Report No. 80. For the entire population, the risk is less in the new Report.

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