

**SUMMARY**

Thyroid Shielding During Diagnostic Medical and Dental X-Ray Procedures

The American Thyroid Association has released a policy statement aiming to inform the public and healthcare practitioners about how to minimize risks to the thyroid gland associated with radiation exposure from diagnostic medical and dental x-ray procedures. Radiation exposure to the thyroid among both children and adults, such as occurs after radiation therapy for other cancers or exposure to radioactive fallout after nuclear reactor accidents (ie Chernobyl), is currently the strongest known risk factor for thyroid cancer. Until recently, the small amount of radiation exposure that occurs during routine x-ray procedures was discounted as a cause of thyroid cancer. This is indeed true when looking at a one-time exposure. However, repeated exposure to diagnostic x-rays may result in higher total doses to the thyroid.

With more than 56,000 cases of thyroid cancer likely to be diagnosed in the United States in 2012 alone, the incidence of thyroid cancer is increasing faster than any other cancer. Although it is unlikely that radiation exposure is the predominant contributor to this trend, an increase in the use of diagnostic x-rays, particularly computed tomography (CT), is widespread and necessitates the protection of the thyroid gland where possible to diminish thyroid cancer risk.

The first section of the ATA's policy statement is written for a general audience, while the second section reviews the medical literature supporting the policy. The chief conclusions and recommendations are as follows:

1. The risk of thyroid cancer arising from radiation exposure is very strongly dependent on age at exposure. Indeed, the thyroid cancer risk is very low for exposure after age 15.
2. The risks for thyroid cancer are reduced proportionately with reduction of the dose of radiation.
3. The necessity of all diagnostic x-rays should be evaluated before they are performed. This must include the potential risks as well as the potential benefits to the patient. This must also include a consideration of the alternative methods for obtaining the same or related clinical information.
4. Thyroid-protective collars **should be used** for all dental x-rays when they do not interfere with the examination.
5. Thyroid-protective collars are **not needed** for screening mammograms because the radiation dose to the thyroid during mammography is extremely low.
6. The patient or the patient's decision maker should be made aware of the potential risks and benefits of x-rays that result in radiation exposure.
7. Clinicians should be adequately informed about the potential risks of radiation exposure from x-rays, especially as they relate to children and to the thyroid.

To read the full report, click here: [Policy Statement on Thyroid Shielding During Diagnostic Medical and Dental Radiology](#).