

# Childhood Head & Neck Irradiation **FAQ**

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## WHAT IS THE THYROID GLAND?

The thyroid gland located in the neck produces thyroid hormones which help the body use energy, stay warm and keep the brain, heart, muscles, and other organs working normally.

### What is the concern about the thyroid gland and radiation?

The thyroid glands of children are especially sensitive to radiation. Radiation exposure appears to cause a number of different thyroid problems including an underactive thyroid (hypothyroidism), thyroid nodules, and thyroid cancer. The younger the child is when the radiation exposure occurs, the greater the risk is of these problems occurring.

### How can a child's thyroid be exposed to radiation?

Radiation exposure can be accidental, or it can be part of medical treatment. Exposure could occur during a nuclear accident (as has previously occurred with the Russian Chernobyl nuclear power plant accident). Radiation treatment was given for medical conditions such as enlargement of the tonsils in the 1940-1960s; however, this is no longer done. Radiation treatment is an essential part of the treatment of some cancers that affect children. With these cancers, the cancer cannot be completely treated without causing some radiation exposure to the thyroid gland.

### How long after radiation exposure do thyroid problems occur?

Thyroid problems may occur as soon as a few years (2-3 years for hypothyroidism) or as long as many years (8-50 years for thyroid nodules and thyroid cancer) after the radiation exposure.

### Can adults be affected by radiation exposure?

While the adult thyroid gland is much less sensitive to radiation, it too may be affected, especially during radiation therapy for head and neck cancers. Hypothyroidism, thyroid nodules and thyroid cancer all can occur after radiation exposure in adults.

### If a child has been exposed to radiation, what should be done?

It is very important for anyone who has received radiation exposure to the thyroid gland to have regular visits with a physician. There is excellent medical treatment for hypothyroidism and thyroid cancer. Physicians also have good ways of monitoring or checking on thyroid nodules.

### Is thyroid cancer harder to treat in someone that has been treated with radiation?

There is some evidence that thyroid cancer may have spread more by the time it is detected in patients who have had radiation treatment. However, the usual treatment for thyroid cancer is still very effective and survival rates are similar to patients that have not received radiation treatment.

### How long should a physician follow someone who has had radiation treatment?

Because thyroid problems can occur many years after the radiation therapy was given, life-long monitoring is recommended. If a patient develops hypothyroidism after radiation treatment they will need life-long treatment with thyroid hormone.

#### FURTHER READING

Further details on this and other thyroid-related topics are available in the patient information section on the American Thyroid Association® website at [www.thyroid.org](http://www.thyroid.org).

