



### Radiation Exposure and the Treatment of Infantile Scoliosis

The average person is at more risk from naturally-occurring radiation in the environment than from medical x-rays. However, there is still a potential risk of cancer caused by exposure to x-rays. The more x-rays you have, the higher the cumulative risk. Continual exposure to radiation is a major concern for individuals that require repeated x-rays, and to the parents of children who need them. Unfortunately, kids with infantile scoliosis have lots of films taken. We are aware that children are more sensitive to radiation than adults because of their rapid growth and cell division. The medical community also is aware of the risks of radiation exposure. They now focus on a risk-benefit ratio when considering the frequency of taking films on a patient. The Society for Pediatric Radiology has championed the ALARA principle (As Low As Reasonably Achievable) and even does an annual ALARA conference on what radiation does and how to limit it.

The greatest risk with radiation exposure is the risk of inducing cancers and increasing the number of cancers in the population of children with scoliosis once they reach adulthood. Low doses of radiation could cause cancers 5 to 30 years or longer, after exposure. Assumptions are that the risk of cancer is proportional to the absorbed dose. During an x-ray radiation passes through the body to create the image. Some of this radiation is scattered and absorbed by the body. This is the radiation that does the long term harm. Good radiologists will repeat films only when necessary and use very fast film that can capture the image with the smallest amount of radiation necessary.

If your child is under treatment with a series of POP jackets, you must remember that the method of treatment is not a "quick fix" for progressive infantile scoliosis. There will not be significant results with every cast/jacket application; a young spine requires time and patience while it learns how to grow straight. The learning period depends on each child's individual rate of growth, scoliotic curve, and degree of rotation. X-rays should be performed when his/her doctor believes it is medically necessary. Because each child's rate of growth varies, the number and frequency of films required will be different for each little patient. X-rays are not intended to be used like a household weight scale, where we as parents and doctors are judging the child's progress frequently by numbers gained or lost. While zero curvature is ideally desired, we as parents should concentrate on our child's overall health and well-being, not just measurements of degrees on x-rays. Bottom line: use x-rays conservatively, when they are really needed. Don't take films unnecessarily just because you are anxious about your child's progress. Learn to watch for changes in your child's body in a more holistic way, and trust the healing process!

#### **Some resources for additional information about x-rays:**

[http://www.radiologyinfo.org/content/safety/xray\\_safety.htm](http://www.radiologyinfo.org/content/safety/xray_safety.htm)

[http://bupa.co.uk/health\\_information/html/health\\_news/300104xray.html](http://bupa.co.uk/health_information/html/health_news/300104xray.html)