

cancer were significant for pediatric patients. In contrast, leukemia was the leading risk for an adult. Most lifetime risks were <1% (70-Gy treatment). The only exceptions were breast, thyroid, and lung cancer for females. For female thyroid cancer, the treatment risk can exceed the baseline risk.

Conclusion

The risk of developing a second malignancy from neutrons from proton beam therapy of a brain lesion is small (*i.e.*, presumably outweighed by the therapeutic benefit) but not negligible (*i.e.*, potentially greater than the baseline risk). The patient's age at treatment plays a major role.

Author Keywords: Proton therapy; Neutron dose; Secondary cancer risk; Whole-body phantoms; Pediatric radiation oncology

Article Outline

Introduction

Methods and Materials

Dose calculations in adult and pediatric whole-body phantoms

Cancer risk estimations

Results


Risk dependence on age, gender, and field parameters

Organ-specific LAR

Uncertainties in risk estimates

Conclusion

References

 Not yet shared with any groups

Be the first to add this article in  **collab**

Sponsored Links

[International MBA Online](#)

The University of Liverpool offers International MBAs online. Get info www.Online-Education.net

[The Mad Science Franchise](#)

Explore fun-to-own kids franchise! Great brand profitable fast startup www.madscience.org

[Inspec Direct](#)

Scientific technical research data Physic,Electronics,Engineering data www.theiet.org/inspecdirect

International Journal of Radiation Oncology*Biology*Physics

Volume 72, Issue 1, 1 September 2008, Pages 228-235

[Home](#)

[Browse](#)

[My Settings](#)

[Alerts](#)

[Help](#)



[About ScienceDirect](#) | [Contact Us](#) | [Information for Advertisers](#) | [Terms & Conditions](#) | [Privacy Policy](#)

Copyright © 2008 Elsevier B.V. All rights reserved. ScienceDirect® is a registered trademark of Elsevier B.V.