1. Which treatment beam produces the most neutron contamination?

- a. Protons
- b. 6 MV photons
- c. 18 MV photons
- d. All the same
- e. Don’t know

Responses:
- Protons: 62%
- 6 MV photons: 24%
- 18 MV photons: 13%
- All the same: 0%
- Don’t know: 2%

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Is there long-term clinical evidence that neutron contamination causes an increase risk of secondary malignancies?

- Yes: 41%
- No: 36%
- Don't know: 22%
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Is there evidence that newer proton beam delivery systems produce few neutrons?

- Yes: 75%
- No: 13%
- Don't Know: 12%
In pediatric patients the incidence of radiation induced secondary malignancies has been proven to be greater in proton-treated patients than with IMRT-treated patients.
In pediatric patients the incidence of radiation induced secondary malignancies will eventually prove to be higher with proton therapy than with IMRT.
Excluding any effect from neutron contamination, which treatment modality should have the highest risk of producing secondary malignancies based on integral dose to non-targeted tissues?

- a. Photons: 78%
- b. Protons: 12%
- c. Don’t know: 9%
In pediatric medulloblastoma patients treated with radiotherapy which of the following late effects is the most concerning?

- a. Cardiac complications
- b. Secondary malignancies
- c. Neurocognitive deficits
- d. Hormonal deficits
- e. Hearing loss
- f. Musculoskeletal effects
The treatment of pediatric brain tumors with proton therapy (excluding those treated with whole brain RT) can potentially produce better neurocognitive results than IMRT.

- a. True
- b. False
- c. Don't Know

Responses:
- 81% True
- 3% False
- 15% Don't Know
Modelling studies of late effects in patients treated for medulloblastoma have projected that the risk of radiation induced fatal events during the first 20 years after treatment would be:

- a. 10% for conventional RT, 20% for protons
- b. 30% for conventional RT, 50% for protons
- c. 2% for conventional RT, 0.4% for protons
Modelling studies of late effects in patients treated for medulloblastoma have projected that the risk of radiation induced late events (such as hearing deficiency, neurocognitive deficit, secondary malignancy, hormone deficit) during the first 20 years after treatment would be:

- a. 48% for conventional RT, 7% for protons
- b. 7% for conventional RT, 48% for protons
- c. 25% for both modalities
Do projected improvements in the risk of late effects justify the use of proton therapy in medulloblastoma?

- a. Yes: 79%
- b. No: 3%
- c. Don’t know: 18%
What absolute percentage decrease in the risk of hormonal deficit after radiation therapy for pediatric medulloblastoma would justify the use of proton therapy over conventional radiation therapy?

- a. 1%
- b. 5%
- c. 10%
- d. 20%
- e. 50%

Responses:
- 10% for a.
- 38% for b.
- 35% for c.
- 11% for d.
- 7% for e.
What absolute percentage decrease in the risk of hearing deficit after radiation therapy for pediatric medulloblastoma would justify the use of proton therapy over conventional radiation therapy?

- a. 1%
- b. 5%
- c. 10%
- d. 20%
- e. 50%

Responses:
- 9%
- 41%
- 29%
- 17%
- 4%
What absolute percentage decrease in the risk of late cardiac disease after radiation therapy for pediatric medulloblastoma would justify the use of proton therapy over conventional radiation therapy?

- a. 1%
- b. 5%
- c. 10%
- d. 20%
- e. 50%

Percentage of responses:
- 14%
- 49%
- 24%
- 8%
- 5%
What absolute percentage decrease in the risk of deficit after radiation therapy for pediatric medulloblastoma would justify the use of proton therapy over conventional radiation therapy?

- a. 1%
- b. 5%
- c. 10%
- d. 20%
- e. 50%

Responses:
- a. 11%
- b. 39%
- c. 36%
- d. 8%
- e. 7%
What absolute percentage decrease in IQ loss after radiation therapy for a pediatric suprasellar tumor would justify the use of proton therapy over conventional therapy?

- a. 1%
- b. 5%
- c. 10%
- d. 20%
- e. 50%
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Do you think protons are appropriate for brain tumors in adults?

- Yes: 90%
- No: 3%
- Don’t know: 7%