

## History

### After cranial radiation therapy (RT), check for:

- Level of energy, general health
- Any new & ongoing symptoms including:
  - Visual problems
  - Hearing loss & tinnitus
  - Neurological symptoms (headaches, seizures, strokes & TIA type episodes)
  - Short term memory changes
  - Depression
- Alcohol, tobacco & illicit drug use
- List of physicians/ HCPs following patient
- Social & employment
- Current medications

### After chemotherapy, check for:

- Hearing loss
- Numbness of hands & or feet or pain (peripheral neuropathy)
- Renal problems urinary symptoms
- Infertility

### After spinal RT, also check for:

- Level of energy (hypothyroidism)
- Back pain secondary to degenerative disease & osteoporosis
- Infertility

## Examination

### After spinal RT, check for:

- Spine for kyphosis/scoliosis & short sitting height

### Always Check:

- Blood pressure.
- Weight and height (BMI)
- Skin in previous RT field (e.g. basal cell carcinomas)
- Look for hair thinning/loss in occipital region
- Examine neck to exclude thyroid nodules
- Neurological examination; Look for signs of cerebellar dysfunction (ataxia, nystagmus and incoordination)
- Visual acuity, visual fields & fundoscopy
- General examination of respiratory, cardiovascular & GI systems

**DISCLAIMER:** This document gives examples of the way in which patients previously treated for medulloblastoma might be followed for educational purposes only. These examples are NOT guidelines for patient care.

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## Testing

### Hearing Assessment

Audiology referral & testing should be organized every 1 - 2 years

### Neurocognitive Testing

Important to demonstrate problems with higher mental function in order to obtain vocational or recreational rehabilitation or to be eligible for a disability pension

### Blood Work

- Routine blood work (CBC, lytes, creatinine, BUN & LFTs)
- Hep C testing if blood transfusion prior to 1994
- Pituitary function should be supervised by an endocrinologist (e.g. GH deficiency is very common, but other problems such as ACTH deficiency may develop many years after therapy)
- Thyroid function tests (at least free T4 & TSH)
- For metabolic syndrome:
  - Fasting serum lipids & glucose

## Screening

### Radiology

- MR of the head every 3 years or so in long term follow up to exclude RT induced meningiomas
- Ultrasound scan of the thyroid every 3 years after cranial and craniospinal RT to exclude thyroid carcinoma

### Other Screening

- After spinal RT there is an increased risk of secondary malignancy
- Check skin in previous RT field for skin cancers
- Early screening for colon cancer:
  - COG recommends that colonoscopy should be performed beginning at age 35 years or 10 years following RT (whichever occurs last)
- Early screening for osteoporosis (bone density and specialist referral)

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## Specialist Follow-up

Patient should be assessed every 1 - 2 years by:

- Endocrinologist
- Ophthalmologist or neuro-ophthalmologist
- Likely to benefit from family counseling, psychology and psychiatry consultations

### Advice

#### **ACTH deficiency:**

- Medulloblastoma survivors with hypopituitarism & ACTH deficiency need support with extra steroid medication during infections, surgery and illness
- Medic Alert bracelets are advised to warn about ACTH deficiency

#### **Second Malignant Neoplasms (SMNs):**

The patient should be advised to seek immediate medical help if:

- A new swelling (painless or painful) appears within the previous RT field as this may be due to a SMN
- Severe, persistent headaches develop associated with possible nausea and vomiting (may be associated with a new intracranial mass lesion)

Visit the COG guidelines website for more information

<http://www.survivorshipguidelines.org>

### Lifestyle

- Advise about diet, exercise & lifestyle choices (such as smoking)
- Diet should contain adequate number of dairy servings, Vitamin D & calcium to help prevent osteoporosis
- Previous spinal RT may be associated with spinal underdevelopment, scoliosis, increased risk of degenerative arthritis & osteoporosis. Survivors who had this therapy should avoid work which involves lifting heavy weights
- Avoid sun burn & wear a hat in bright sunlight (skin previously exposed to RT will be more vulnerable to sun related damage)

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