## Medulloblastoma Follow Up

### 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

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Authors: D. Lawless, F. Howard & K. Goddard: www.pedsoncologyeducation.com
## Testing

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<tr>
<th>Hearing Assessment</th>
<th>Neurocognitive Testing</th>
<th>Blood Work</th>
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| Audiology referral & testing should be organized every 1 - 2 years | Important to demonstrate problems with higher mental function in order to obtain vocational or recreational rehabilitation or to be eligible for a disability pension | - Routine blood work (CBC, ltes, 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:  
  o Fasting serum lipids & glucose |

## Screening

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<tr>
<th>Radiology</th>
<th>Other Screening</th>
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| - 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 | - 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:  
  o 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-opthalmologist
- 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)

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)

Visit the COG guidelines website for more information

http://www.survivorshipguidelines.org

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