

## Management of common side effects of radiotherapy

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### Introduction

External Beam Radiotherapy is the use of exact, carefully measured doses of radiation to treat a variety of diseases – cancer, thyroid disorders and some blood disorders i.e. leukaemias. Most patients have x-ray therapy where a controlled beam of high energy x-rays is delivered at the treatment site. This kills the cancer cells while the nearby normal tissue is able to recover from the treatment.

Radiotherapy does not distinguish between normal or abnormal cells. A cancer cell can be described as abnormal as it has moved away from its normal cellular activities. However, once bombarded with high energy x-rays an abnormal cell or “cancer” finds it difficult to recover as its DNA is affected and reproductive capabilities are diminished. Normal cells are affected by radiotherapy hence the associated side effects but they do have the capability to recover.

Radiotherapy dose and fractionation is site and very much patient specific. It can range from 1,4,8,15,16,20 or 25 treatments depending on intent tissue tolerance and historical doses used at certain centres. Radical treatment is aiming to cure the cancer and palliative treatment is to help relieve symptoms and improve quality of life.

Radiotherapy treatment causes some side effects, which vary depending on the site being treated, the use of other treatment modalities concurrently e.g. chemotherapy, and the sensitivity of the individual patient. Side effects usually start after more than half way through a course of treatment and reach a peak after it has finished.

What follows is an overview of the most common sites treated and side effects together with suggested management.

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### Head and neck cancer

- If possible patients should be encouraged to give up smoking as evidence has suggested that it could possibly make the reaction worse. Drinking alcohol can also exacerbate side effects – spirits need to be avoided however the occasional glass of wine or beer is acceptable.
- Inflammation and soreness of the mouth and throat often require analgesia e.g. paracetamol mixture (Christie hospital formula). Advise patients to avoid spicy or hard food that can irritate or damage the mucosa. Encourage [oral hygiene](#) and avoid temperature extremes e.g. too hot or too cold.
- Loss of taste can take several months to return.
- Patients often experience fatigue throughout treatment –encourage rest.
- Patients who have had treatment to the larynx may need to rest their voice in order to reduce soreness. Patients may also lose their voice this normally returns. Occasionally, referral to speech therapist may be required.
- Some patients may experience a troublesome cough – simple linctus might help.
- Treatment affecting the salivary glands can result in a dry mouth. Inability to produce



saliva can be a permanent problem if salivary glands are included in treatment volume

Some Clinicians suggest chewing gum. Sometimes patients may expectorate thick clear or white sticky saliva – this is normal and should settle after a few weeks.

- Radiotherapy to the head for primary brain cancer or metastatic disease may lead to nausea, vomiting, balance problems, memory issues, headaches and dizziness due to raised intracranial pressure & may require steroids. **Seek specialist advice**.
- Skin reactions – see below.

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## Lung cancer

- Mild pain in chest area in the first 24 hours after treatment is normal – reassurance and simple analgesia e.g. paracetamol.
- Depending on the site of tumour the oesophagus might be irradiated. It will feel as if food is stuck in the oesophagus. Pain arising from this often occurs towards the end of treatment. Advise avoid eating hot and spicy foods & patients may need to take a soft diet. Again systemic analgesia may be required for indigestion.
- Encourage patients to give up smoking as this can exacerbate reactions and recovery.



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## Breast cancer

- Treatment to the axilla will result in localised epilation of hair & sweat glands will temporarily stop working.
- Lymphoedema may occur during or after treatment. If still undergoing treatment the hospital treating the patient may refer to a physiotherapist experienced in managing lymphoedema. Post treatment liaise with breast care nurses for advice.
- Avoid trauma or injections in the arm on the treated side to lessen chance of lymphoedema.
- Mastectomy patients may experience some swelling along the scar – lumpectomy patients may notice a change to the size or shape of breast. On completion of treatment this should settle, however, women with larger breasts often experience greater discomfort that may take months to settle.
- Several months after treatment patients may notice that the treated breast is slightly smaller or firmer – this change can be permanent.
- Skin reactions – see below.
- Some patients also describe pains in chest and ribs.

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## Colorectal cancer

- Diarrhoea, constipation, bleeding, pain, passage of mucous, tenesmus, increase frequency of urine, dysuria and nocturia.
- Diarrhoea is a common side effect. Associated problems may include flatulence, abdominal cramps, dehydration and malnutrition/malabsorbtion. Management may include:
  - Encourage patients to have a low fibre diet. Refer to dietician if necessary or requested.
  - Encourage adequate fluid intake – minimum 8 glasses a day is recommended. Patients experiencing severe diarrhoea will require more.

- Consider asking patients/carers to keep a stool chart to record frequency, amount and consistency.
- If diarrhoea is persistent then an anti-motility agent such as loperamide 2mg- 4mg can be very effective
- Skin reactions – see below.

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## Gynaecological cancer

The treatments that are available include external beam radiotherapy, internal beam (Selectron) or a combination of both. Acute side effects normally develop during the second half of treatment & may last for several weeks. Overall side effects should settle over 3 – 4 months. Severe long-term side effects may require surgical intervention.

- Diarrhoea – treat as per colorectal cancer above.
- Frequency of micturition. Encourage fluids and consider obtaining MSU to eliminate infection.
- Epilation of pubic hair – will grow back after treatment, although often much thinner.
- Light vaginal bleeding or discharge which should settle down without intervention. If discharge becomes offensive or bleeding becomes heavier patient needs to be referred back to hospital for assessment.
- Avoid sexual intercourse for 6 weeks. Sexuality issues may need referral to specialist centre.
- Atrophy of the vagina can occur following Selectron treatment. Women are encouraged to use dilator daily for the first 6 weeks then 2-3 times week, although this may vary. Depending on treatment centre protocol.
- Onset of menopause should be discussed in pre-menopausal women having pelvic treatments.
- Skin reactions – see below.

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## Skin reactions

Patients receiving external beam radiotherapy may develop skin reactions. Radiotherapy can affect the skin at the entry site as well as the exit site. This often reaches a peak 3-4 weeks after treatment and the severity of reaction depends upon the site of treatment and type of skin. The following is general advice regarding the do's and don'ts.

### Do.....

- Wash the treated area gently with warm water and pat dry with soft towel.
- Use unperfumed toiletries.
- Encourage patients to wear cotton loose fitting clothes to avoid chafing of skin.
- In severe cases suggest that skin can be cooled with a electric fan.
- Use a gentle moisturiser e.g. aqueous cream
- 1% hydrocortisone cream can be used if area is unbroken, very red and painful.
- Use total protection sun creams or cover up the treated area.
- Head and neck patients should use an electric razor.
- Analgesia if required



### Do not...

- Expose the area to direct heat ie hairdryers, sun etc. Use of high sun protection or cover up treated area.
- Use creams, moisturisers, make-up, perfumed soap, talcum powder, perfume or deodorants on the treated area.
- Head and neck patients should not wet shave or use pre-shave or aftershave. Electric shaving is ok.
- Wear tight clothing including collars, bra straps etc.



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## General advice

Tiredness is a very common problem – patients need to be reassured that this is normal and should settle down after a few weeks. Encourage patients to listen to their body and take time out to rest, take naps in the afternoon and spread out chores over the week.

When possible encourage patients to eat a healthy diet, drink plenty of fluids and generally take care of themselves.

Any queries, concerns & advice please contact Radiotherapy Department at Christie or Macmillan specialist palliative care team

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## References

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- [www.cancerhelp.org.uk](http://www.cancerhelp.org.uk)
- [www.christie.man.ac.uk/patientinfo](http://www.christie.man.ac.uk/patientinfo)