Guidelines for Adjuvant Radiotherapy for Early Breast Cancer

1) Radiotherapy for invasive breast cancer after breast conserving surgery (BCS)

Radiotherapy to whole breast
Recommended:
- All patients after BCS outside of a clinical trial

Omission of radiotherapy can be considered for:
- Patients aged 70 years or older with T1 G1/2 N0, ER positive tumours, clear surgical margins and on endocrine therapy
- This should be carefully discussed at MDT and recorded in the MDT outcome, as well as the patient. Compliance with endocrine therapy should be assured

Nodal radiotherapy
- Treat SCF / Level III nodes if:
  i. 4 or more positive nodes
  ii. Apical node involvement
  iii. 3 nodes and also Grade III and / or ER negative

- Treat SCF + Axilla if:
  i. Positive SNB where further local treatment is considered necessary by MDT, as an alternative to surgery
  ii. After axillary clearance, when surgical resection not thought to be complete. This will be discussed at MDT and recorded in the MDT outcome

- * Treat IMN if:
  Recommended:
  i. Patients with IMN positive disease on CT / MRI
  ii. Inflammatory breast cancer
  iii. pN3 disease (10 or more nodes)

  Consider:
pN2 disease with other risk factors such as:
  i. pT3
  ii. Triple negative
  iii. Medial tumours
  iv. Age 40 years or younger

*This is currently an area of active development and will be clinically implemented at the earliest opportunity

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**Phase 2 boost**
Recommended:
- Age 40 years or younger
- Positive margin

Consider:
- Women 60 years or younger with 1 or 2 additional risk factors such as:
  i. Triple negative disease
  ii. Grade III disease
  iii. Extensive LVI

**Partial breast radiotherapy**
Recommended where all the following are met:
- Age 60 years or above
- pT1 - early pT2 (≤=3 cms) N0
- ER positive PR positive HER negative and undergoing at least 5 years of adjuvant endocrine therapy
- No LVI
- Radial margins at least 1mm clear of tumour
- Non-lobular carcinoma

Consider:
- Age 50 years or above where cardiac/ lung sparing is required or if large breasts make dose distribution unsatisfactory

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**2) Radiotherapy for invasive breast cancer after mastectomy**

**Radiotherapy to chest wall**
Recommended:
- Any T4 tumour
- 4 or more positive nodes
- Loco-regional relapse after previous mastectomy with no previous radiotherapy

Consider:
- 1 - 3 positive nodes + other risk factors such as:
  i. Age 40 years or younger
  ii. Triple negative tumours
  iii. Grade III disease
  iv. Increasing tumour size (3cms or more)
  v. Extensive LVI
• Tumour size of 5cms or more with no nodal involvement
• Large volume multi focal disease

Chest wall bolus should be considered for any patient with T4 disease and local recurrence.

**Nodal radiotherapy**

• Treat SCF / Level III nodes if:
  i. 4 or more positive nodes
  ii. Apical node involvement
  iii. 3 nodes and also Grade III and / or ER negative

• Treat SCF + Axilla if:
  i. Positive SNB where further local treatment is considered necessary by MDT, as an alternative to surgery. This should only be given if there are indications for chest wall radiotherapy
  ii. After axillary clearance, when surgical resection not thought to be complete. This will be discussed at MDT and recorded in the MDT outcome

• * Treat IMN if:
  Recommended:
  i. Patients with IMN positive disease on CT / MRI
  ii. Inflammatory breast cancer
  iii. pN3 disease (10 or more nodes)

  Consider:
pN2 disease with other risk factors such as:
  i. pT3
  ii. Triple negative
  iii. Medial tumours
  iv. Age 40 years or younger

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3) Radiotherapy following neoadjuvant chemotherapy (NACT)

**Radiotherapy to whole breast**
Recommended:
- All patients after BCS

**Phase 2 boost**
Recommended:
- All patients after BCS

**Radiotherapy to chest wall**
Recommended:
- Positive axillary nodes after neoadjuvant treatment – ypT any and yp N+
- MDT considers resection to be incomplete
- Inadequate response in breast for ER negative and/or Her2 positive
- High risk disease at presentation, regardless of response obtained to NACT or NECT (Stage 3b) including:
  i. Any T4 disease
  ii. Multiple abnormal loco-regional nodes on imaging with positive cytology at presentation (N2/N3)

Consider:
- Node positive at presentation and becomes ypN0 but residual disease in breast and the presence of high risk features such as:
  i. Age 40 years or younger
  ii. ER negative / PR negative
  iii. Inadequate response in T3 N0 ER positive tumours

Omission of radiotherapy:
- T1 / T2 N0 at presentation, with final pathology ypT0 ypN0
- T3 N0 (and no adverse features) at presentation, with final pathology ypT0 ypN0

Chest wall bolus should be considered for any patient with T4 disease at diagnosis

**Nodal radiotherapy**
- Treat SCF / Level III nodes if:
  i. yp N+
  ii. Stage N2 / N3 at presentation
- Treat SCF + Axilla if:
  i. After axillary clearance, when surgical resection not thought to be complete. This will be discussed at MDT and recorded in MDT outcome.

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• * Treat IMN if:
  Recommended:
  i. Patients with IMN positive disease on CT / MRI
  ii. Inflammatory breast cancer
  iii. ypN2 or higher

Consider:
ypN1 medial tumours

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