Results: 60% of patients reported non presence of fatigue before the start of RT Fatigue intensity as assessed with the VAS increased gradually during radiotherapy, 14 days after the end of radiotherapy, the fatigue intensity was still higher than before treatment, but 3 months later, fatigue was lower than at the pre-treatment level. Fatigue measured with the FAQ did not increase significantly during treatment, but the subscores on physical and cognitive fatigue were elevated during treatment weeks 4 and 5. IL-1b, IL-6, and TNF-α, and hemoglobin levels did not change during therapy. Peripheral blood cell levels declined significantly during therapy and were still low 3 months after treatment. Until treatment week 5, lymphocytes were reduced to almost 50% of their initial value. Patients that introduce fatigue had significantly lower serum levels of cortisol than the nonfatigued patients as well as differences in two lymphocyte populations, at 3-6 and 12 months after the end of radiotherapy

Conclusion: This study has shown that significant fatigue is common in patients receiving breast irradiation and is precipitated during radiotherapy in some patients but not other. In the patients that show an increase of the fatigue during adjuvant RT, fatigue returned to pre-treatment levels 3 months after treatment. In our study, no evidence was found that anxiety, depression, serum levels of IL1-b, IL6, TNF-α and hemoglobin levels were correlate with treatment induced fatigue. The results of our observation suggest the existence of a mechanism among activation of the immune system and alteration in cortisol and lymphocyte subsets.

Purpose or Objective: There has been recent move within the U.K. to contour the nodal CTV for patients receiving adjuvant radiotherapy for breast cancer. Axillary radiotherapy (ART) following a positive sentinel lymph node biopsy is becoming more common for certain groups of patients. Organs at risk (OAR) should be delineated and considered during the planning process. Body mass index (BMI) has been shown to impact upon spinal cord and brachial plexus doses in irradiation of the supraclavicular fossa. The impact upon the OAR in the axilla has not yet been well documented.

Material and Methods: Patients undergoing ART between 01/04/15-01/10/15 were identified. Non - contrast radiotherapy planning CT scans were taken. External beam radiotherapy was planned with extended tangents using a field in field approach with a matched direct anterior field. A low weighted posterior field was added if deemed appropriate for adequate dose coverage. Dose delivered was 40.05 Gy in 15 fractions. BMI was calculated by: weight(kg)/height (m)2. CTV’s were contoured in accordance with the RTOG contouring atlas.OAR including ipsilateral lung, humeral head and brachial plexus were delineated.

Results: Fifteen patients were identified. Six patients had a BMI between 20-25, 3 between 25-30, 5 between 30-40 and 1 BMI>40. Mean ipsilateral lung V12 was 10.44% (range 2.3%-14.33%). Mean V12 did not vary with BMI (BMI 20-25;mean V12=9.33%, BMI 25-30; mean V12=6.52%, BMI 30-40;mean V12=9.51%, BMI>40 mean V12=6.38%, p=0.55 Chi-Squared). The mean humeral head maximum dose was 35.2 Gy (range 1.2-41.5 Gy). Mean humeral head maximum dose did not vary with BMI (BMI 20-25; mean=34.2Gy, BMI 25-30;mean=27.8Gy, BMI 30-40;mean=40.3Gy, BMI>40;mean=38.2Gy,p=0.49 t-test). The ipsilateral brachial plexus D2 mean was15.6Gy (range 1.2-37.4 Gy). Mean ipsilateral brachial plexus D2 dose did not vary with BMI(p=0.21 t-test).