

# Regional forskningskonferanse 2017

## Mal for abstracts

*Sammendraget skal ha maksimum 250 ord.*

*Ferdig utfylt mal må lagres før den sendes til [nina.slind@stolav.no](mailto:nina.slind@stolav.no) innen 19. april.*

*Filnavn: Etternavn + tittel på abstract*

**Etternavn: Jensen**

**Fornavn: Christer Andre**

**Arbeidssted: Helse Møre og Romsdal HF**

**Telefon: 9945 9487**

**E-post: [christer.jensen@helse-mr.no](mailto:christer.jensen@helse-mr.no)**

### **Tittel:**

**Intrafractional baseline drift during free breathing breast cancer radiation therapy**

### **Formål:**

Intrafraction motion in breast cancer radiation therapy (BCRT) has not yet been thoroughly described in the literature. It has been observed that baseline drift occurs as part of the intrafraction motion. This study aims to measure baseline drift and its incidence in free-breathing BCRT patients using an in-house developed laser system for tracking the position of the sternum.

### **Metode:**

Baseline drift was monitored in 20 right-sided breast cancer patients receiving free breathing 3D-conformal RT by using an in-house developed laser system which measures one-dimensional distance in the AP direction. A total of 357 patient respiratory traces from treatment sessions were logged and analysed. Baseline drift was compared to patient positioning error measured from in-field portal imaging.

### **Resultat:**

The mean overall baseline drift at end of treatment sessions was -1.3mm for the patient population. Relatively small baseline drift was observed during the first fraction; however it was clearly detected already at the second fraction. Over 90% of the baseline drift occurs during the first 3 min of each treatment session. The baseline drift rate for the population was  $-0.5 \pm 0.2$  mm/min in the posterior direction the first minute after localization. Only 4% of the treatment sessions had a 5mm or larger baseline drift at 5 min, all towards the posterior direction. Mean baseline drift in the posterior direction in free breathing BCRT was observed in 18 of 20 patients over all treatment sessions.

### **Konklusjon:**

This study shows that there is a substantial baseline drift in free breathing BCRT patients. No clear baseline drift was observed during the first treatment session; however, baseline drift was markedly present at the rest of the sessions. Intrafraction motion due to baseline drift should be accounted for in margin calculations.