



AVOIDING THE HEART

About optimising whole
breast irradiation

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Preclinical and clinical studies reveal that left-sided breast cancer radiotherapy is associated with an increased rate of major coronary events. Consequently, when irradiating women with left-sided breast cancer, specific measures should be taken to decrease the heart dose as much as possible and to avoid radiation-induced coronary artery disease. This thesis focuses on several strategies to optimise the radiation treatment for patients with left-sided breast cancer.

With respect to whole breast irradiation we concluded that:

- the routine use of MR images in addition to the CT scan, when delineating either the glandular breast tissue or the lumpectomy cavity, does not have added value.
- tangential IMRT technique combined with a breath-hold technique should be the treatment technique of choice for left-sided breast cancer.
- a breath-hold technique should and can be used in all left-sided breast cancer patients, regardless of age and breast size.
- breath-hold in left-sided whole breast radiotherapy results in a less pronounced increase of coronary calcium score and, hence, could result in less radiation-induced cardio vascular damage.