Towards an optimal clinical protocol for the treatment of moving targets with pencil beam scanned proton therapy

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DOI:
10.33612/diss.126443635

Stellingen behorend bij het proefschrift

TOWARDS AN OPTIMAL CLINICAL PROTOCOL FOR THE TREATMENT OF MOVING TARGETS WITH PENCIL BEAM SCANNED PROTON THERAPY

1. The use of multiple deformable image registration algorithms is a valuable strategy to reduce the uncertainty for inter-fractional dosimetric evaluation during lung cancer proton treatment. (This thesis)

2. Dosimetric errors induced by deformable image registration indicate the necessity to interpret individual 4D dose distributions for pencil beam scanned proton plans ideally with an error bar. (This thesis)

3. The establishment of optimal clinical protocols requires comprehensive 4D evaluations of pencil beam scanned proton therapy for moving targets. (This thesis)

4. Although 3D robust optimised proton planning proved to be sufficient for most thoracic indications, accurate patient positioning and adapting to anatomical variations over the course of treatment remain compulsory. (This thesis)

5. Clinically acceptable robust plans can be achieved for moving targets treated with Proteus®Plus, as well as with Proteus®One proton scanning technologies. (This thesis)

6. Uncertainties in treating moving targets with protons are inevitable. We need to know how to deal with them.

7. Intelligence is the ability to adapt to change. (Stephen Hawking)

8. A man is a success if he gets up in the morning and goes to bed at night, and in between he does what he wants to do. (Bob Dylan)

9. It's not the years in your life that count. It's the life in your years. (Abraham Lincoln)

10. Happiness is not something readymade. It comes from your own actions. (Dalai Lama)