

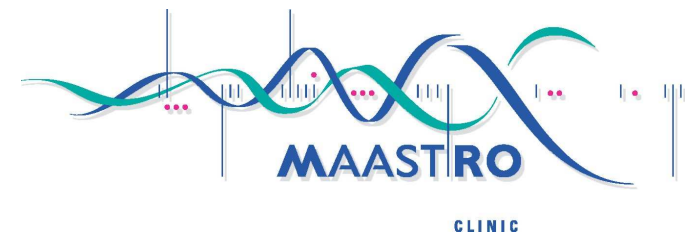
Fingerprint:

Let your fingers do the talking



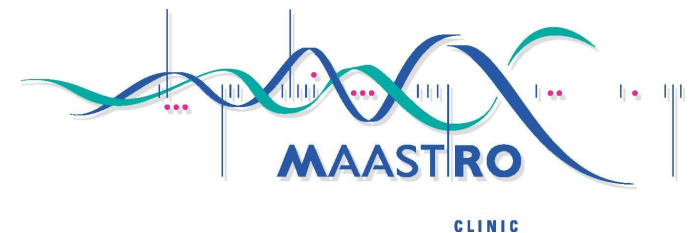
A feasibility study

Kim Poels



Outline

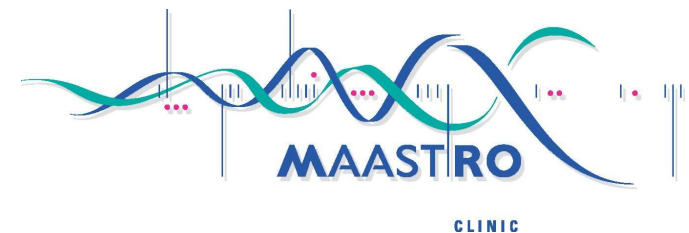
- Introduction and objectives
- Research question
- Method and materials
- Results and conclusions



Method and materials

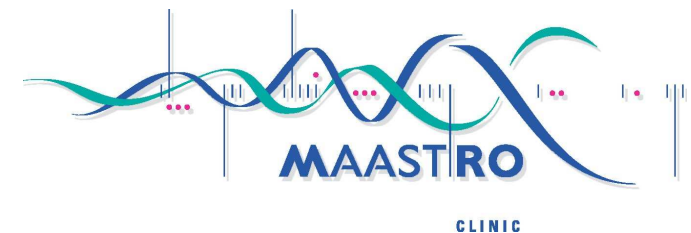
Current method of verification

- Name
- Birth date
- Digital photograph of the face



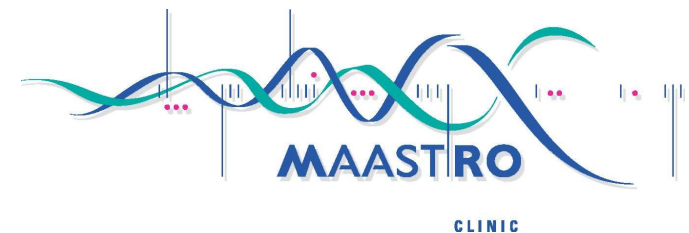
Introduction and objectives

- The long-term objective: to increase safety of radiotherapy by avoiding mistakes related to the recognition of patients
- Short-term objective: to evaluate the reproducibility of fingerprint scans of patients during their treatment in a radiotherapy department.



Research question

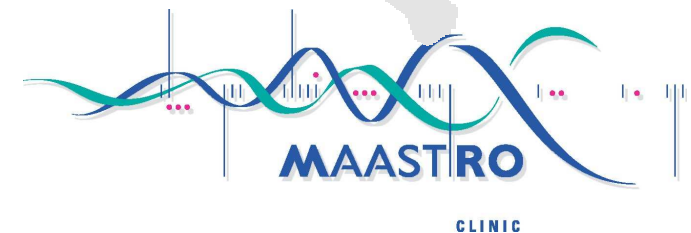
Do side effects, weight loss, hand-foot syndrome and other factors have any effect on the reliability of patient recognition by fingerprint scan?



Method and materials

Sample size

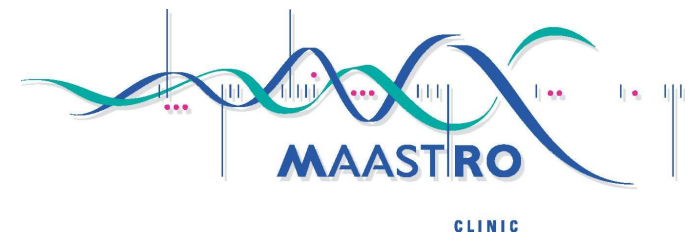
- 51 random patients treated for radiotherapy
- 32 patients received chemotherapy prior or simultaneously to the radiotherapy



Method and materials

Exclusion criteria

- age under 18
- > 8 fingers damaged
- treatment: less than 5 fractions



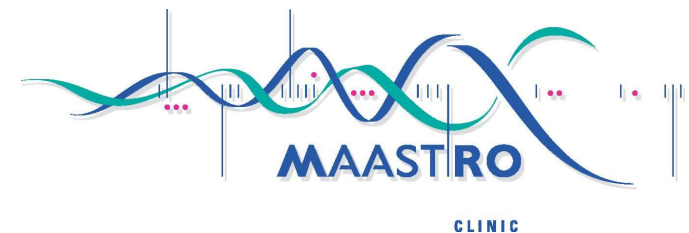
Method and materials



Method and materials

Collecting data

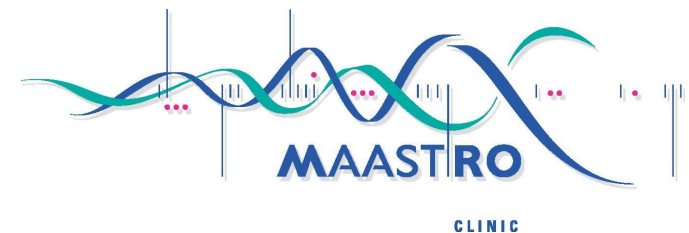
- daily verification at the linear accelerator
- radiation technologist notes if problems occur (e.g. how many times a patient has to place the finger)
- weekly questionnaire



Method and materials

Outline questionnaire:

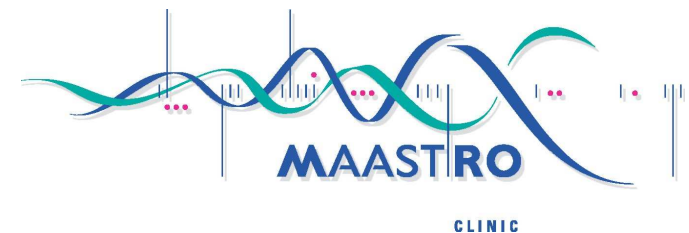
- cold fingers
- numbness or tingling in fingers
- skin rash
- swelling of fingers
- soreness and redness of fingers
- small blisters



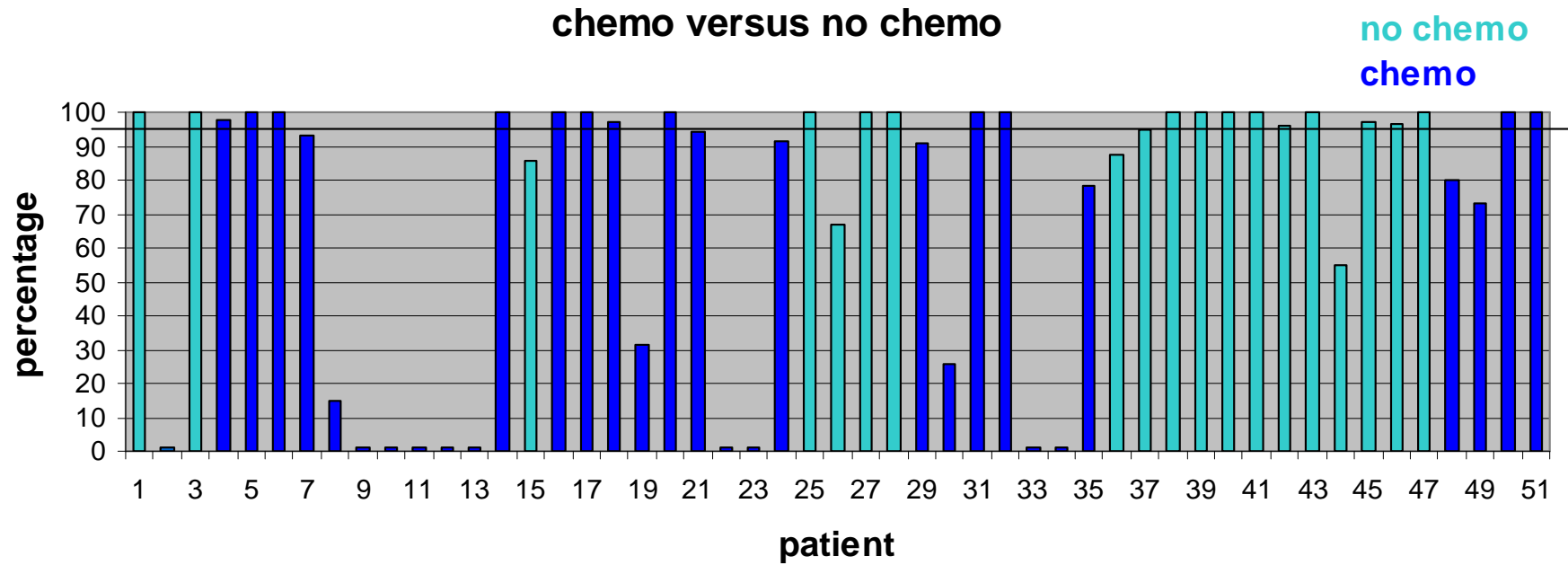
Method and materials

Data analysis:

- not-successful: > 3 times repeat verification per participant
- if 5% of all measurement not-successful the system is not usefully for implementing in our radiotherapy department

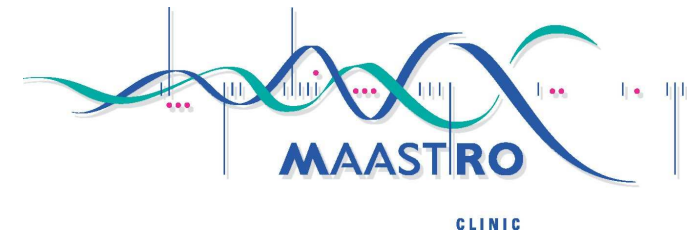
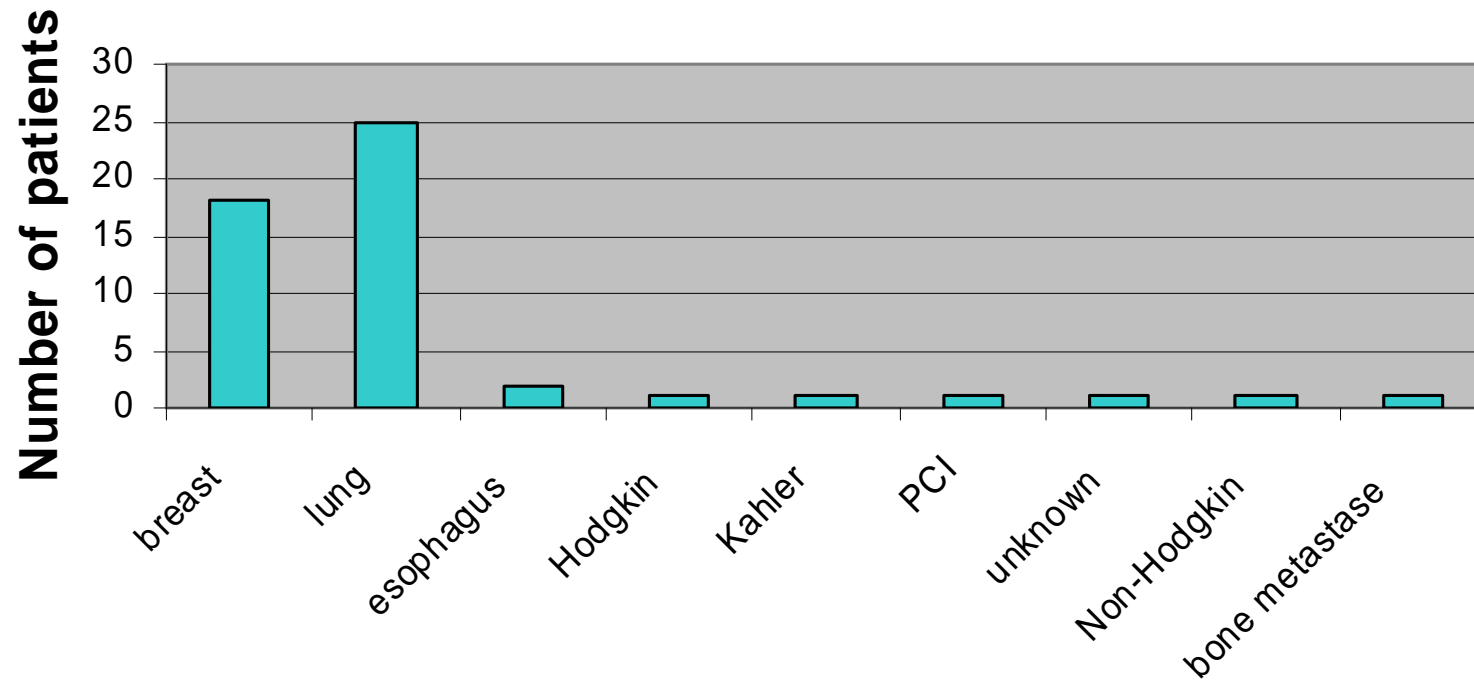


Results

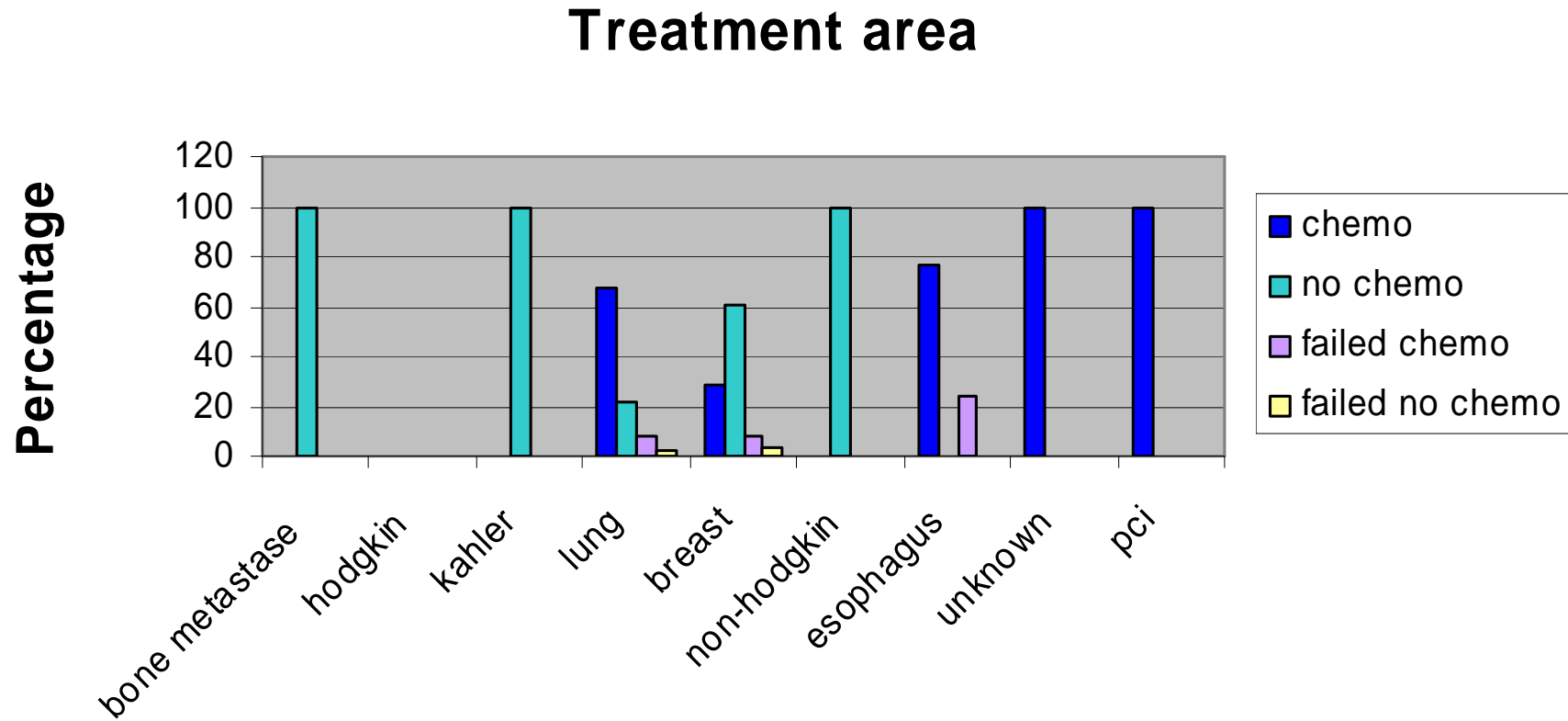


Results

Treatment areas

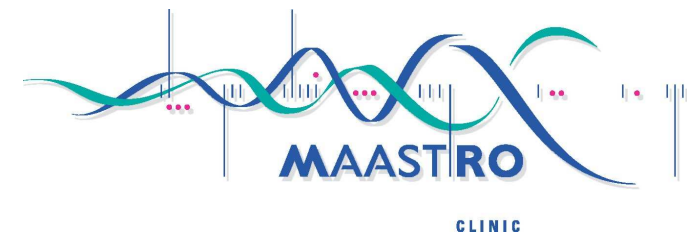


Results



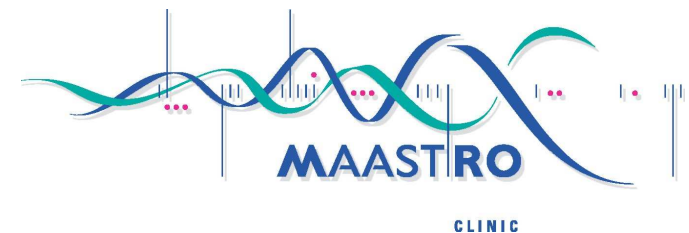
Results

- 51 patients included which resulted in 726 measurements
- patients only receiving radiotherapy: 92.8% was successful
- patients receiving radiotherapy and chemotherapy : 85.9% was successful
- 10 patients receiving chemotherapy and radiotherapy : not possible to enroll



conclusions

- chemotherapy seems to influence the accuracy of fingerprint technology
- no chemotherapy: 92.8%
- system is not useful for a radiotherapy department
- Other system



Thank you for your attention

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