Does wetting hair during scalp cooling decrease scalp skin temperature?

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Background

- Hair is frequently wetted before scalp cooling
- Hypothesis:
  - wetting reduces scalp skin temperature
  - lower scalp skin temperature improves hair preservation by scalp cooling
- If and to what extent temperature is lowered by wetting is unknown
- Study questions: - Does wetting reduce scalp skin temperature?
  - How is wetting during scalp cooling tolerated?

Methods

- 29 healthy volunteers
- Scalp cooling with Paxman cooling device
- Hair wetting with a hair sprayer
- Scalp skin temperature measurements (30 min.):
  1. with dry hair
  2. one side of the scalp dry, other side wetted
- Graded tolerance measurement: 10= no discomfort, 0= very uncomfortable
- Statistics: paired t-test and Wilcoxon signed ranks test

Results

- After 30 min. scalp cooling mean temperature difference between dry & wet hair= 2.8ºC (95% C.I. 1.8-3.7, p<0.001) (Fig 1)
- Considerable inter-individual differences in scalp skin temperature both in:
  1. dry hair: range 11.2-25.6ºC
  2. wet hair: range 9.3-20.8ºC

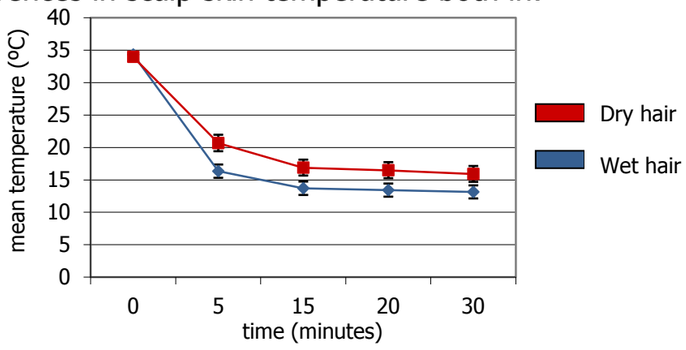

Fig 1 Mean temperature (+sd) during 30 minutes scalp cooling in dry & wet hair

- Tolerance is only reduced during the first minutes:

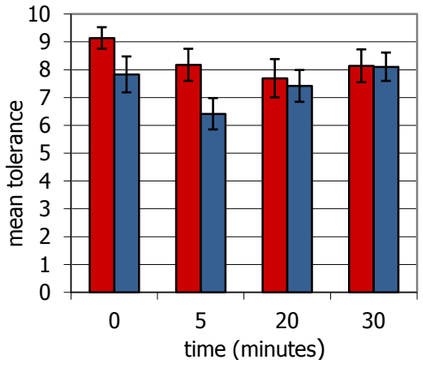

Fig 2 Scalp cooling tolerance (+sd) in dry & wet hair

Discussion

- Wetting of hair before scalp cooling substantially decreases scalp skin temperature
- As to whether wetting leads to less chemotherapy-induced hair loss remains to be studied
- Initially increased discomfort due to wetting is no longer present after 20 minutes scalp cooling
- More rapid decrease of scalp skin temperature by wetting may reduce pré-infusion cooling time

www.hoofdhuidkoeling.nl/ www.scalpcooling.nl/ www.geefhaareenkans.nl

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