primary studies - published RCT

Voluntary dehydration and heat intolerance in cystic fibrosis.

Code: PM1347582 **Year:** 1992 **Date:** 1992 **Author:** Bar-Or O

Study design (if review, criteria of inclusion for studies)

randomized trial

Participants

8 children with CF (four boys, four girls; aged 9.5-14.1 years) and 8 controls, matched for age and sex

Interventions

sessions of exercise (cycling) in a chamber at 31-33 degrees C, relative humidity 43-47%. 20 min bouts of exercise (at 45% of predetermined maximum oxygen uptake) were interspersed with 25 min rest periods. At one session, chilled water was given every 15-20 min to replace fluid lost; at the other, drinking was guided by the child's thirst.

Outcome measures

lfuid drunk, fluid lost, heart rate, heat strain.

Main results

At the thirst-guided session, CF patients drank much less than the controls did (0.80% vs 1.73% initial body weight) and lost twice as much fluid (1.57% vs 0.78% initial body weight). The recovery of heart rate after exercise was slower in CF patients, but there were no other signs of heat strain. The groups did not differ in any variable during the forced drinking session.

Authors' conclusions

children with CF underestimate their fluid needs and undergo excessive dehydration during extended exposure to hot conditions.

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See also

Lancet YR: 1992 VL: 339 NO: 8795

Keywords

Adolescent; Child; Dehydration; Dehydration-fluid and electrolyte imbalance; exercise; non pharmacological intervention - devices OR physiotherapy; diagnostic procedures; non pharmacological intervention - diagn; Chest physiotherapy;