The effect of carbohydrate mouth-rinsing on time trial performance

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The effect of carbohydrate mouth-rinsing on time trial performance and rates of perceived exertion, compared to a placebo.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Other condition
Study type	Interventional

Summary

ID

NL-OMON31332

Source
ToetsingOnline

Brief title
Carbohydrate mouth-rinsing and performance

Condition

- Other condition

Synonym
exercise physiology, performance

Health condition

geen aandoeningen, gezonde populatie

Research involving
Human

Sponsors and support

Primary sponsor: Universiteit Maastricht
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: Carbohydrate, Mouth-rinse, Performance

Outcome measures

Primary outcome

Difference in time to complete a set amount of work (i.e time-trial), between

the intervention and the placebo trial.

Secondary outcome

Difference in rate of perceived exertion between intervention and placebo

trials.

Study description

Background summary

Muscle and liver glycogens stores can provide sufficient energy for high intensity exercise of approximately 45-60 minutes. Therefore it shouldn't be necessary to ingest extra carbohydrates during exercise.
However, some studies do show an increase in performance when carbohydrates are taken orally during this kind of exercise. But when carbohydrates were provided via intravenous infusion, this effect disappeared. Therefore, the question rose if this performance benefit has a metabolic cause or that a central mechanism via oral receptors plays a role. The latter could lead to an improved central drive or motivation.
One way to investigate the effect of carbohydrates in the mouth on performance is by use of mouth-rinsing.

Study objective

The effect of carbohydrate mouth-rinsing on time trial performance and rates of perceived exertion, compared to a placebo.

Study design

This is a randomized controlled trial with a cross-over design.
Drinks are provided in a double blind order.
Subjects have to visit the university at four occasions, separated by one week.

1. To measure subjects' Wmax and VO2max, a incremental exhaustive exercise test on a bicycle ergometer is performed.
2. Familiarization of the time-trial.
3. First time trial, in which either the intervention solution or the placebo is used for mouth rinsing.
4. Second time trial, in which the second solution is given.

Intervention

Subjects will perform three time-trials.
One to get familiar with the procedure and two for testing the difference between mout-rinsing with a carbohydrate or a placebo solution during exercise.
Subjects will receive a standardized breakfast in the morning of the testday. And after a resting period of 2 hours they will start the time-trial. The only information that they receive during the test is the amount of workload that they completed (on a scale from 0-100%). Every 12.5 % completed they will receive 25 ml of the test solution to rinse their mouth for 5 seconds. And every 25% completed they are asked for their rate of perceived exertion on a 6-20 point scale.
The time-trial will take approximately 1 hour to complete, and time differences between trials are the primary outcome measure.

Study burden and risks

not applicable

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

Age between 18-30
Cycling a minimum of 100 km a week
Maximal oxygen uptake-capacity > 55 ml/kg/min

Exclusion criteria

Use of medication
Changes in trainings intensity during the study period

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Double blinded (masking used)
Control:	Placebo
Primary purpose:	Other

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	25-07-2007
Enrollment:	15
Type:	Actual

Medical products/devices used

Registration:	No

Ethics review

Approved WMO Date:	16-05-2007
Application type:	First submission
Review commission:	METC academisch ziekenhuis Maastricht/Universiteit Maastricht, METC azM/UM (Maastricht)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL16886.068.07