

Assessment of dietary zinc intake and molecular biomarkers of zinc status in UK women

Submission date 08/08/2013	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered
Registration date 19/09/2013	Overall study status Completed	<input type="checkbox"/> Protocol
Last Edited 13/12/2017	Condition category Nutritional, Metabolic, Endocrine	<input type="checkbox"/> Statistical analysis plan
		<input type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data
		<input type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

Dietary zinc is important for human growth, development and immunity. Minor zinc deficiency is common but difficult to assess. While blood plasma zinc has been successfully used to assess how people respond to zinc supplementation, it is a weak indicator for individual zinc status. In the UK, a lot of young women are not getting the enough zinc through their diet. Unlike many other minerals, the body has no stores of zinc to use when intakes are low. Research has shown that zinc-responsive genes can monitor zinc status. The aim of this study is to assess both the dietary intake of zinc and indicators in the body of zinc status in vegetarian and non-vegetarian women before and after supplementation.

Who can participate?

Women living in the UK aged 19-45

What does the study involve?

The study looks at two dietary groups of women: vegetarian and non-vegetarian. Within their dietary groups, women are randomly allocated to receive either zinc or placebo (dummy). For each visit participants come in without having eaten or drunk anything apart from water and are asked not to brush their teeth. A trained doctor takes two blood samples at the start of the study and on the 7th and 14th days of the study. In addition, participants provide a saliva sample at each visit for further analysis. They are given a food frequency questionnaire to complete on your first visit, and are asked to recall what they ate the day before attending the clinic at each visit.

What are the possible benefits and risks of taking part?

Participants receive information about their current zinc status and when they complete the study they are offered a £10 Starbucks gift voucher. Once all data has been analysed, personalised feedback is provided. There are no risks for supplementation of zinc at this level. Women in many countries have similar intakes of zinc. Participants may suffer from bruising from the blood sampling and embarrassment from giving a saliva sample.

Where is the study run from?

University of Surrey, Guildford, FHMS Clinical Investigation Unit (CIU) (UK)

When is the study starting and how long is it expected to run for?
The study started in November 2011 and recruited up until May 2012

Who is funding the study?
General Authority for Health Services for the Emirate of Abu Dhabi

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
N/A

Study information

Scientific Title
Assessment of dietary zinc intake and molecular biomarkers of zinc status in UK women: a double-blinded randomised case-controlled study

Study objectives

1. Vegetarian women will have lower intakes of dietary zinc than non-vegetarian women
2. There will be no significant difference in serum zinc levels between the two groups in response to supplementation
3. The expression of zinc transports will respond to zinc supplementation

Ethics approval required
Old ethics approval format

Ethics approval(s)

Study design

Double-blinded randomised placebo-controlled trial

Primary study design

Interventional

Study type(s)

Diagnostic

Health condition(s) or problem(s) studied

Zinc deficiency

Interventions

There are two dietary groups: vegetarian and non-vegetarian. There are two treatment-subgroups:

1. 15 mg/day of zinc as zinc gluconate
2. Placebo

Total duration of intervention: 2 weeks

Route of administration: by mouth for both supplement and placebo.

Excess pills were provided and a pill count was completed after the week of supplementation in order to monitor compliance.

Intervention Type

Supplement

Primary outcome(s)

1. Zinc transporter (SLC30A1 and SLC39A3) transcript levels in blood and saliva.
2. Serum concentrations of zinc by blood samples

Key secondary outcome(s)

Dietary intakes of zinc, phytate and other nutrients. Zinc supplementation was measured by blood and saliva.

Completion date

01/12/2013

Eligibility

Key inclusion criteria

1. Healthy females
2. British residents
3. Aged between 19-45 years

Participant type(s)

Healthy volunteer

Healthy volunteers allowed

No

Age group

Adult

Sex

Female

Key exclusion criteria

1. Pregnant or breastfeeding now or in last 6 months
2. History of alcohol abuse
3. Current or recent (last 2 months) use of vitamin, mineral supplements
4. History of eating disorder
5. Consumption of meat, poultry or fish in the last year (for vegetarian group)
6. Recent traumas or surgery

Date of first enrolment

01/05/2011

Date of final enrolment

01/05/2012

Locations**Countries of recruitment**

United Kingdom

England

Study participating centre

University of Surrey

Guildford

United Kingdom

GU2 7XH

Sponsor information**Organisation**

University of Surrey (UK)

ROR

<https://ror.org/00ks66431>

Funder(s)

Funder type
Government

Funder Name
General Authority for Health Services for the Emirate of Abu Dhabi

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration