

The Sex Hormones And Physical Exercise study

Submission date 26/09/2006	Recruitment status No longer recruiting	☐ Prospectively registered ☒ Protocol
Registration date 26/09/2006	Overall study status Completed	☐ Statistical analysis plan ☒ Results
Last Edited 25/08/2009	Condition category Cancer	☐ Individual participant data

Plain English summary of protocol

Not provided at time of registration

Contact information

Type(s)

Scientific

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Additional identifiers

Study information

Scientific Title

Acronym

SHAPE: Sex Hormones and Physical Exercise

Study objectives

We hypothesise that exercise may reduce risk of breast cancer, either directly or indirectly through a reduction in abdominal fat mass, by favouring the sex hormone profile and decreased insulin. Because the association between breast cancer and endogenous estrogens is rather convincing, we designed the Sex Hormones and Physical Exercise (SHAPE) study on the effects of physical activity on these hormones.

Furthermore, since androgens and insulin are suspicious risk factors for breast cancer, the effects of physical activity on these hormone levels are also investigated. Since the intervention programme is aimed at maximising fat loss, we can also investigate whether a potential relation between physical activity and endogenous hormones is mediated by the amount of total body fat or abdominal fat. If change in exercise level has a beneficial effect on the sex hormone and metabolic profile of postmenopausal women, increasing exercise is a possible breast cancer protective intervention.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Ethics approval received from the local medical ethics committee

Primary study design

Interventional

Study design

Randomised controlled trial

Study type(s)

Prevention

Health condition(s) or problem(s) studied

Reducing the risk of breast cancer

Interventions

1. Intervention group: participants in this group will participate in an one year moderate intensity exercise programme
2. Control group: participants in this group will receive care as usual

Intervention Type

Other

Phase

Not Specified

Primary outcome(s)

Endogenous hormone levels (sex steroid hormones, insulin).

Key secondary outcome(s)

1. Physical fitness, weight and the amount of total and intra-abdominal fat
2. Lifestyle factors: habitual physical activity, diet, alcohol consumption and medication use

Completion date

01/09/2006

Eligibility

Key inclusion criteria

1. Women aged 50 to 69 years
2. More than 12 months since last menses
3. Non-smokers (at least 12 months)
4. Sedentary: less than two hours per week of moderate sport activity (e.g. tennis, swimming, running, aerobics, fitness, volleyball) and not adherent to the international physical activity guideline. The international physical activity guideline states that every adult should accumulate 30 minutes or more of at least moderately intense physical activity for at least five days per week
4. Knowledge of the Dutch language
5. Agreement to be randomly assigned to either the exercise intervention or control group
6. Informed consent to participate in all screening and study activities

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Senior

Sex

Female

Key exclusion criteria

1. Use of hormone replacement or oral contraceptives in past six months
2. Morbidly obese (Body Mass Index [BMI] more than 40)
3. BMI less than 22
4. Currently on or planning to go on a strict diet
5. Ever diagnosed with breast cancer
6. Diagnosis of other types of cancer in the past five years
7. Diabetes mellitus or other endocrine related diseases
8. Disorders or diseases (locomotor, optical, neurological, mental) that might impede the participation in the exercise programme
9. Alcohol or drug abuse
10. Maintenance use of corticosteroids
11. Use of beta blockers

Date of first enrolment

01/01/2005

Date of final enrolment

01/09/2006

Locations

Countries of recruitment

Netherlands

Study participating centre

University Medical Center Utrecht (UMCU)

Utrecht

Netherlands

3508 GA

Sponsor information

Organisation

The National Cancer Fund (Koningin Wilhelmina Fonds [KWF]) (The Netherlands)

ROR

<https://ror.org/0368jnd28>

Funder(s)

Funder type

Charity

Funder Name

Dutch Cancer Society (Netherlands)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	20/09/2009		Yes	No
Protocol article	protocol	04/09/2007		Yes	No