# The WinFood Intervention Study: the effect of improved complementary foods on nutrition and health among infants in Western Kenya

Submission date	Recruitment status  No longer recruiting	<ul><li>Prospectively registered</li></ul>		
30/03/2012		□ Protocol		
Registration date 11/05/2012	Overall study status Completed	Statistical analysis plan		
		[X] Results		
<b>Last Edited</b> 17/02/2023	Condition category Nutritional, Metabolic, Endocrine	[] Individual participant data		

## Plain English summary of protocol

Background and study aims:

The World Health Organization recommends that infants be exclusively breastfed with no other food or liquid given until the age of 6 months. At 6 months, other foods need to be introduced to complement breast milk. In developing countries, including Kenya, such foods introduced at the age of 6 months or earlier mainly comprise thin porridges made exclusively from plant based foodstuffs. It is likely that the sharp growth faltering observed from 6 months onto 2 years and beyond is associated with consumption of foods that provide inadequate energy and suboptimal amounts of essential nutrients such as iron and zinc. The Winfood Project is a collaboration between University of Copenhagen and University of Nairobi aiming to improve the quality of complementary foods fed to infants and young children in Kenya so as to improve growth and health via utilisation of often neglected traditional foodstuffs such as small fish, edible insects and grains and processing them in a way that nutrient and energy density is enhanced.

The trial aims to test the effect of three foods:

Winfood Classic with maize, grain amaranth, edible termites and fish Winfood Lite maize, grain amaranth and premix of vitamins and minerals Corn soy blend plus (CSB+) with mineral and vitamin premix

The effect on growth, lean and body fat composition, gross psychomotor milestones, zinc and iron status of Kenyan infants and young children supplemented for 9 months from 6-15 months of age will be measured.

## Who can participate?

Normal infants living in rural Western Kenya - all non-malnourished, non-severely anaemic 6-month old infants. In total 500 infants will take part for 9 months.

## What does the study involve?

Six-month old infants are randomly allocated to one of the three study foods, listed above. In order to monitor growth, weight, length, head circumference, and mid upper arm circumferences are measured monthly. Haemoglobin, is measured by finger prick and venous blood is drawn to measure iron and zinc status at 6 months and 15 months of age. In order to

determine lean mass and body fat composition in the infants, saliva samples are drawn and analysed.

What are the possible benefits and risks of participating?

The benefits include receiving food rations for 9 months. Additionally, we expect improved growth and health among infants receiving food supplementation. There may be discomfort to children due to pain during drawing of blood. Otherwise there are no direct risks that may be associated with this study.

Where is the study run from?

This study is based in three rural health centres in Mumias District, Western Province, Kenya.

When is study starting and how long is it expected to run for? The study commenced in January 2012 and is expected to run until January 2013.

Who is funding the study? Danish International Development Agency (DANIDA)

Who is the main contact? Prof Henrik Friis hfr@life.ku.dk

# Contact information

## Type(s)

Scientific

#### Contact name

Prof Henrik Friis

#### Contact details

University of Copenhagen Rolighedsvej 30 Frederiksberg Denmark 1958

hfr@life.ku.dk

# Additional identifiers

Protocol serial number N/A

# Study information

## Scientific Title

The WinFood Intervention Study: randomised controlled trial of the effect of improved complementary foods on infant growth, body composition and gross motor development in Western Kenya

## **Acronym**

WinFood

## **Study objectives**

Improved complementary foods based on locally available traditional ingredients will improve the nutritional and health status of Kenyan infants

## Ethics approval required

Old ethics approval format

## Ethics approval(s)

Kenyatta National Hospital and University of Nairobi Ethics Committee, Kenya 07 April 2011

## Study design

Randomised double-blind study

## Primary study design

Interventional

## Study type(s)

Quality of life

## Health condition(s) or problem(s) studied

Infants at risk of undernutrition

#### Interventions

Three different pre-cooked complementary food supplements given as a porridge daily from 6-15 months of age (6-8 months: 50 g, 9-12 months: 75 g, 13-15 months: 125 g)

- 1. WinFood CF: amaranth grain, maize and one highly-nutritious fish and one edible termite species
- 2. WinFood Light: amaranth grain, maize plus vitamin-mineral premix
- 3. Corn-Soy-Blend Plus (CSB+)

Food class (1 & 2) are the experimental and food class (3) is the control intervention

## Intervention Type

Other

#### Phase

Not Applicable

## Primary outcome(s)

Changes in linear growth (stunting), fat-free body mass (deuterium dilution), iron status (serum ferritin and transferrin receptors) from baseline (age 6 months) until the end of the 9 month intervention

## Key secondary outcome(s))

Changes in:

- 1. Physical activity (using an accelerometer, actigraph)
- 2. Motor milestones (questionnaire, clinic visits)

- 3. Morbidity
- 4. Haemoglobin concentration (using Haemocue)
- 5. Serum concentrations of acute phase proteins [C-reactive protein (CRP) and a-acid glycoprotein(AGP)], insulin-like growth factor (IGF)-1 and zinc
- 6. Whole blood fatty acid composition

Measured from baseline (age 6 months) until the end of the 9 month intervention

## Completion date

30/12/2012

# **Eligibility**

## Key inclusion criteria

Children who are 6 months old and have a weight-for-height z-score > -3

## Participant type(s)

Patient

## Healthy volunteers allowed

No

## Age group

Neonate

#### Sex

All

## Total final enrolment

499

## Key exclusion criteria

- 1. Weight-for-height z-score < -3
- 2. Bilateral pitting oedema
- 3. Haemoglobin (Hb) < 80 g/L
- 4. Clinical signs of vitamin A deficiency (xerosis or Bitot spots). These children will be referred for treatment

## Date of first enrolment

15/01/2012

## Date of final enrolment

30/12/2012

## Locations

## Countries of recruitment

Denmark

Kenya

Study participating centre University of Copenhagen Frederiksberg Denmark

# Sponsor information

## Organisation

University of Copenhagen (Denmark)

## **ROR**

1958

https://ror.org/035b05819

# Funder(s)

## Funder type

Government

## **Funder Name**

Danish Ministry of Foreign Affairs - Danish International Development Agency (Denmark) ref: 57-08-LIFE

# **Results and Publications**

# Individual participant data (IPD) sharing plan

Not provided at time of registration

# 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	01/10/2019	07/05/2019	Yes	No
Results article		14/02/2023	17/02/2023	Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes