Etools presentation
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Improving vitamin D status and related health in young women

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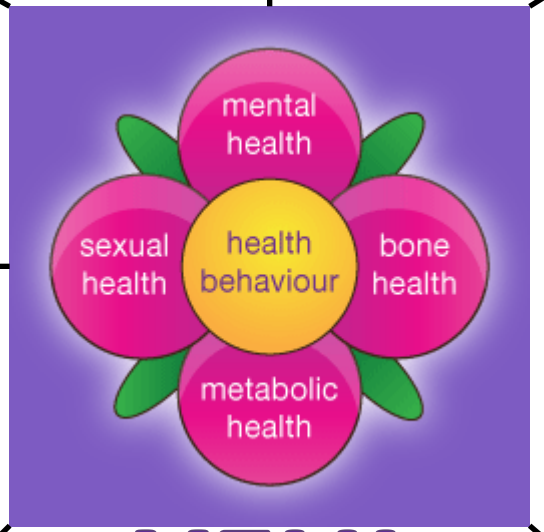
YFHI PILOT

CALCI-APP

PHYSICAL ACTIVITY STUDY

VACCINE



Study involvement:

- *Questionnaire*
- *Site visit (comprehensive health check)*
- *Additional components: smartphone application, physical activity monitor, UV monitor*

YFHI

BONE HEALTH INTERVENTION STUDY

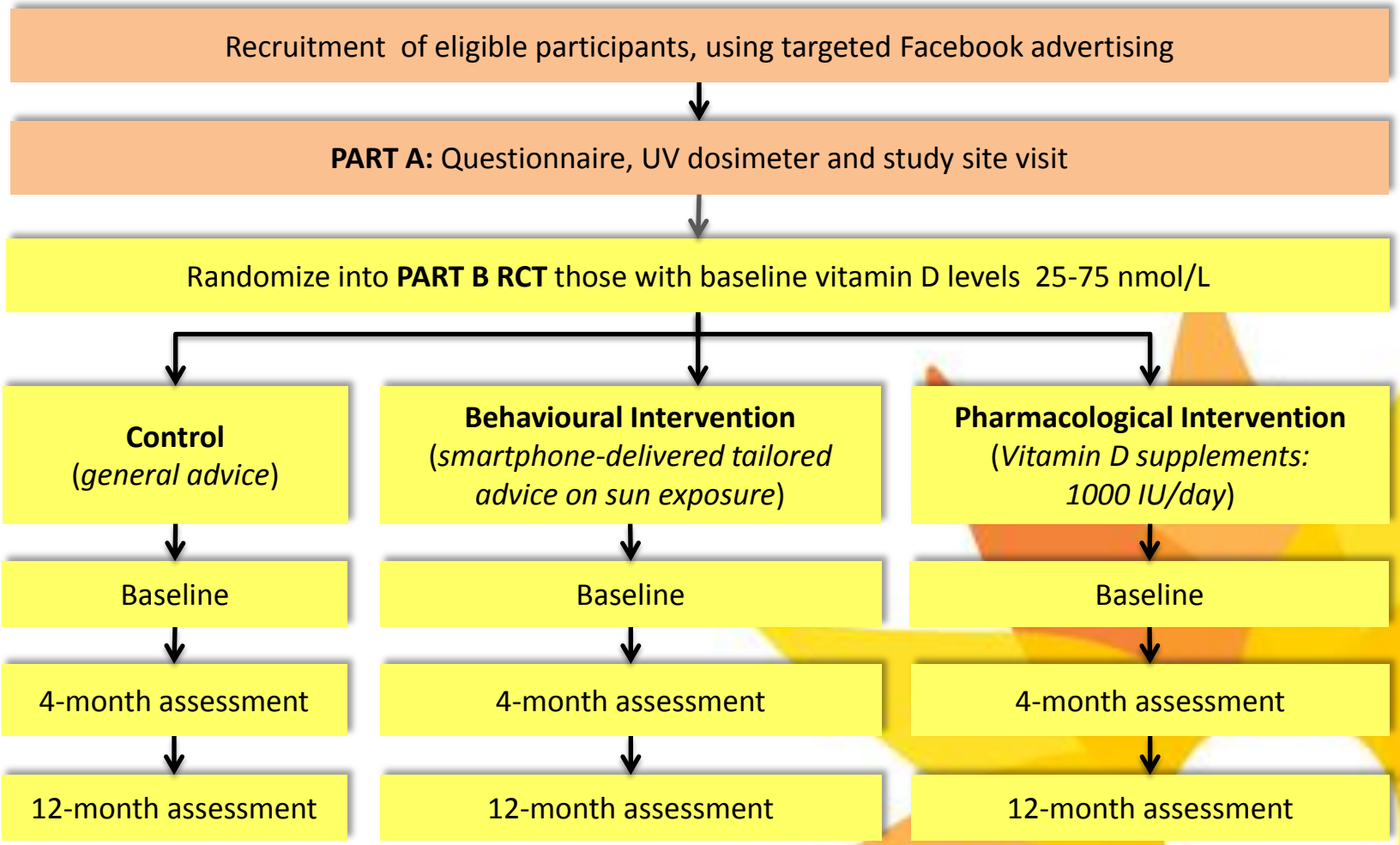
YFHI LAUNCH

SAFE-D STUDY

Background

- Vitamin D deficiency:
  - Looming as a major public health issue
  - Potentially associated with risk of many chronic health conditions affecting millions of Australians, leading to considerable suffering, economic loss and premature death.
  - Important health risk for young women: up to 50% of Australian women are below currently-defined optimal vitamin D levels.

Study design and analysis



Part A: Baseline study

Study Design: cross-sectional study

Study population: ***N=*** 468+ 16-25 year-old women

***Primary aim*:**

- Investigate the association of 25 OHD levels with clinical health indices and related laboratory measures: **musculoskeletal health** (bone density, bone turnover markers, muscle function); **mood/mental health**; **body composition and weight**; and **atopic/allergic symptoms**.

***Secondary aim*:**

- Measure the **relationship between 25 OHD levels and UV exposure under Australian conditions**, examining both the overall dose and timing of sun exposure.

***Exploratory aims*:**

- Define the statistical **determinants of vitamin D status** (e.g., sun exposure, weight/body mass index (BMI), skin colour, smoking, nutrition, physical activity, other lifestyle factors)
- Measure the **relationship between UV exposure and actinic skin damage**
- Assess **young women's knowledge about safe sun exposure**

Online questionnaire

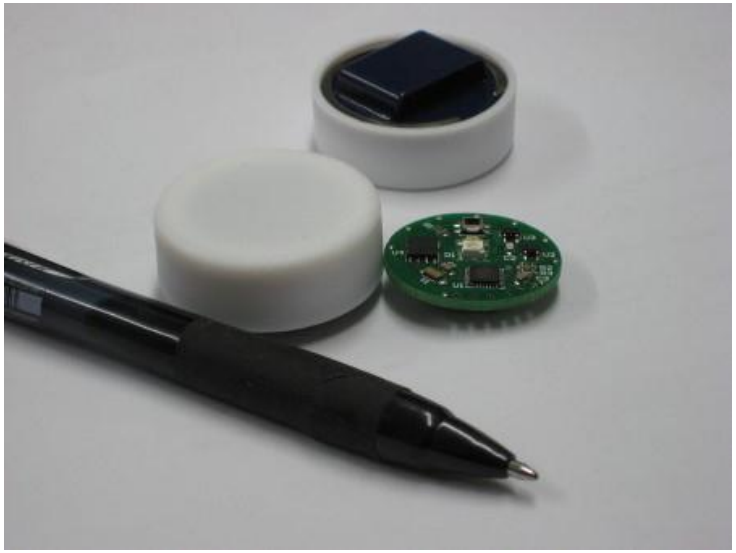
- 2 hour online questionnaire successfully tested and completed in 160 YFHI launch study participants
- Covers: participant demographics, medical history (incl. sexual history), lifestyle choices, SunSmart behaviour

Individually validated questionnaires:

- Diet: Cancer Council Victoria dietary questionnaire
- Mental health: GAD-7 and PHQ-9

UV dosimeter

- NIWA - National Institute of Water and Atmospheric Research, New Zealand
- NIWA has developed personal UV dosimeter badges
- Small and lightweight
- Robust & water resistant
- Sampling interval of 4 seconds to 4 minutes



SenseWear (SWA) – Activity Monitor

- Measures:
  (1) Skin temperature,
  (2) Heat flux
  (3) Galvanic skin response,
  (4) Body movements
  (5) Steps
  (6) Sleep amount and pattern

- Well validated in other populations but not in young Australians

Calci-App

Expectations of the application:

- Colour scheme and graphic tailored for young women
- User-friendly and simple
- Possibility to include search functions and saved selections for ease of entry on multiple uses
- Includes pictures for easy visualization
- Aim for application to be acceptable to young women and easy for them to comply with

Screenshot 1:

Welcome to Calci-App, [name of participant]!

About Calci-App

Instructions

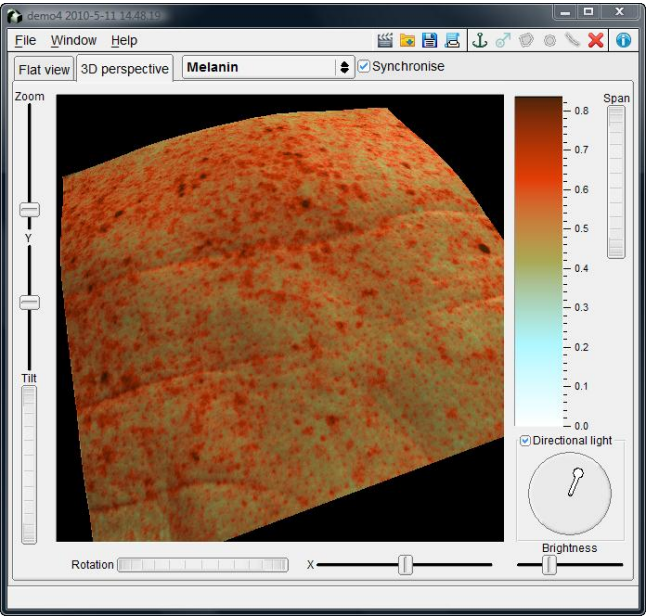
Start

To contact the YFHI Study Team, click here.

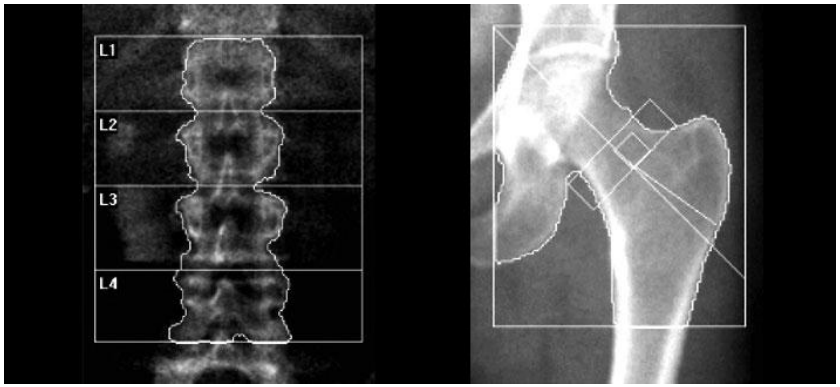
Site visit: Skin reflectance and casting

- Silicone skin cast

- Skin photographs
  - melanin
  - texture (wrinkles)

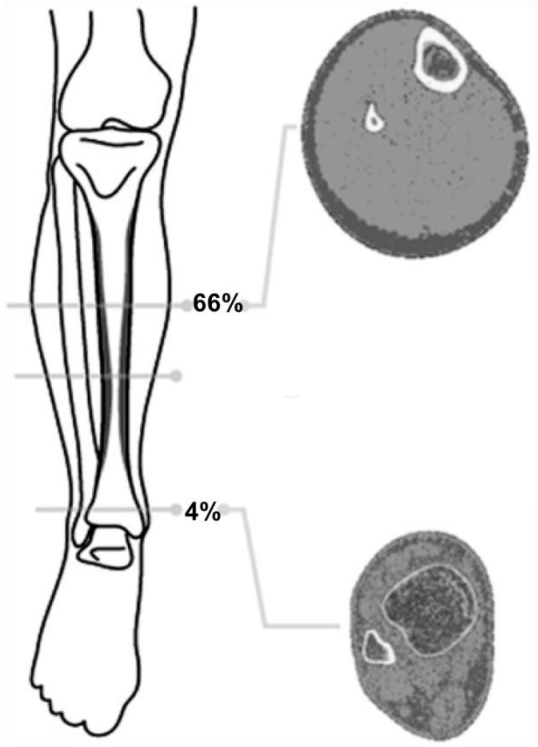


Site visit: Musculoskeletal Health



Bone densitometry:
- DXA
- pQCT

Muscle health and balance:
- Leonardo mechanography



Safe-D study significance

1. First comprehensive study of vitamin D and related health in young women
2. Use of state-of-the-art LC-MS/MS method to measure vitamin D metabolites
3. Incorporates powerful and novel ICT for recruitment, data collection and interventions
4. By using ICT we are able to recruit subjects who may not seek medical care and are therefore not picked by the healthcare system
5. Behavioural interventions to (safely) improve vitamin D status have not been evaluated previously

Acknowledgements

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the women's
the royal women's hospital
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NICTA

Melbourne EpiCentre
Melbourne Physiology Department – Centre for Health, Exercise and Sports Medicine


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Thank You
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