

**tilda**

Staidéar Fadaimseartha na  
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The Irish Longitudinal  
Study on Ageing



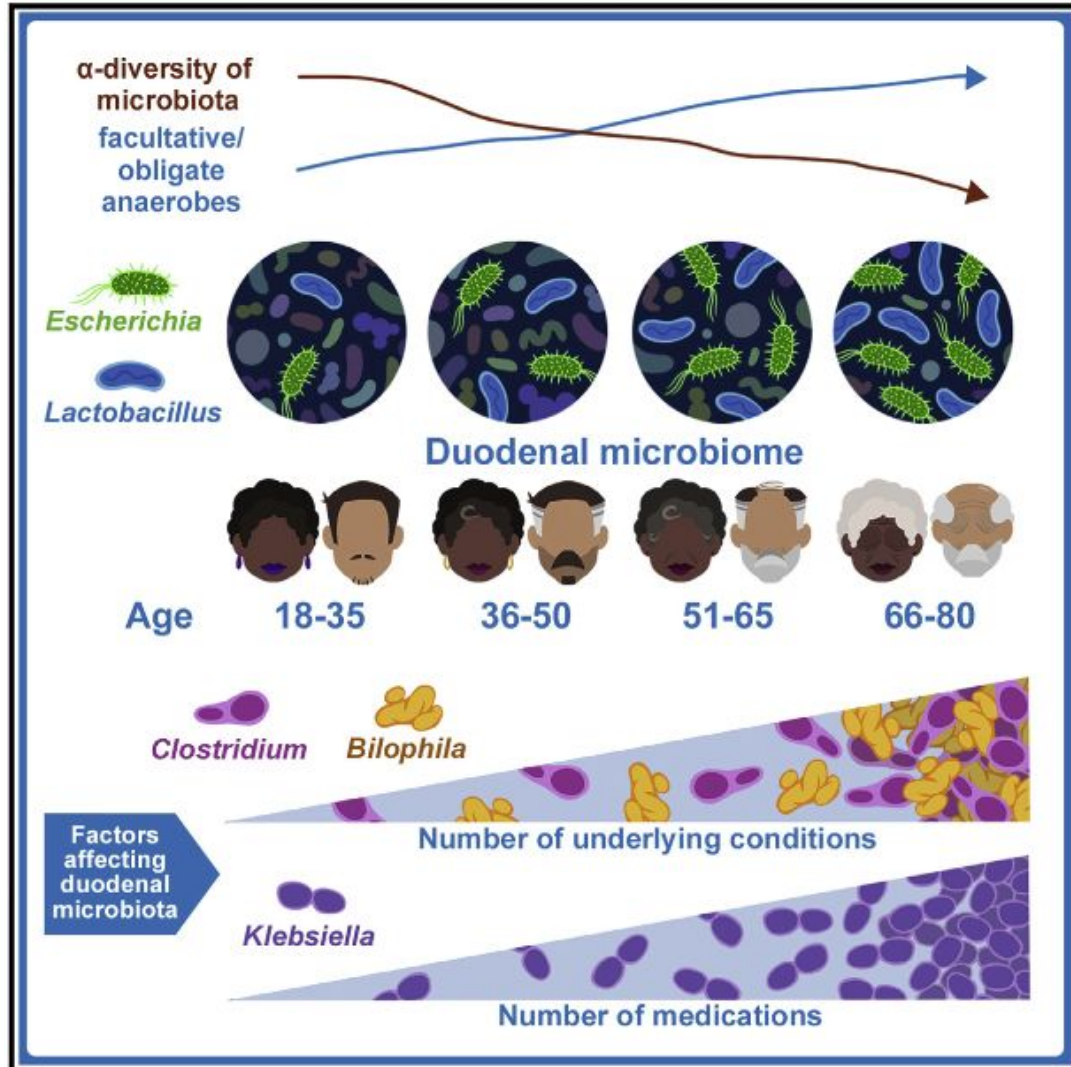
**Trinity College Dublin**  
Coláiste na Tríonóide, Baile Átha Cliath  
The University of Dublin

# Collection of fecal samples to investigate the role of the gut microbiome in older adults from TILDA

Aisling O'Halloran, Mary O'Shea, Ann Hever & Rose Anne Kenny.

NIA Biomarker Network – Annual Meeting  
New Orleans  
12<sup>th</sup> April 2023

# Background: Importance of the Gut Microbiome



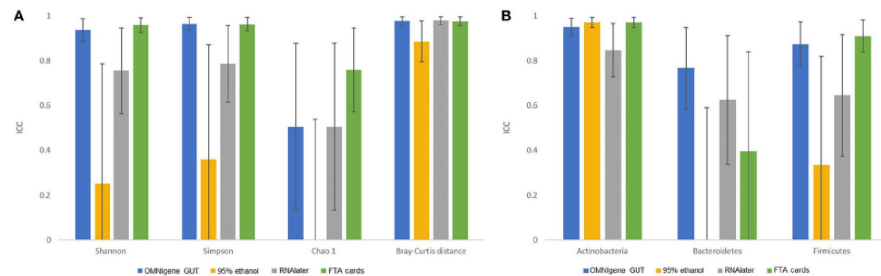
- Key roles:
  - releasing energy and nutrients
  - breaking down meds
  - supporting immune system
- ↓ diversity and ↑ coliforms with age
- ↑ risk of age-related disease.
- Composition linked to obesity, atherosclerosis, diabetes, GI disorders and brain health (gut-brain axis)

# Background: DNA Genotek OMNIgene GUT Sample Collection Kit



## Comparison of Fecal Collection Methods for Microbiome and Metabolomics Studies

Zheng Wang<sup>1</sup>, Christine P. Zolnik<sup>2,3</sup>, Yunping Qiu<sup>4</sup>, Mykhaylo Usyk<sup>2</sup>, Tao Wang<sup>1</sup>, Howard D. Strickler<sup>1</sup>, Carmen R. Isasi<sup>1</sup>, Robert C. Kaplan<sup>1,5</sup>, Irwin J. Kurland<sup>4</sup>, Qibin Qi<sup>1\*</sup>



OMNIgene GUT kit had high ICCs :

- $\alpha$ -diversity and  $\beta$ -diversity metrics.
- top three phyla.
- metabolomics analysis of SCFAs

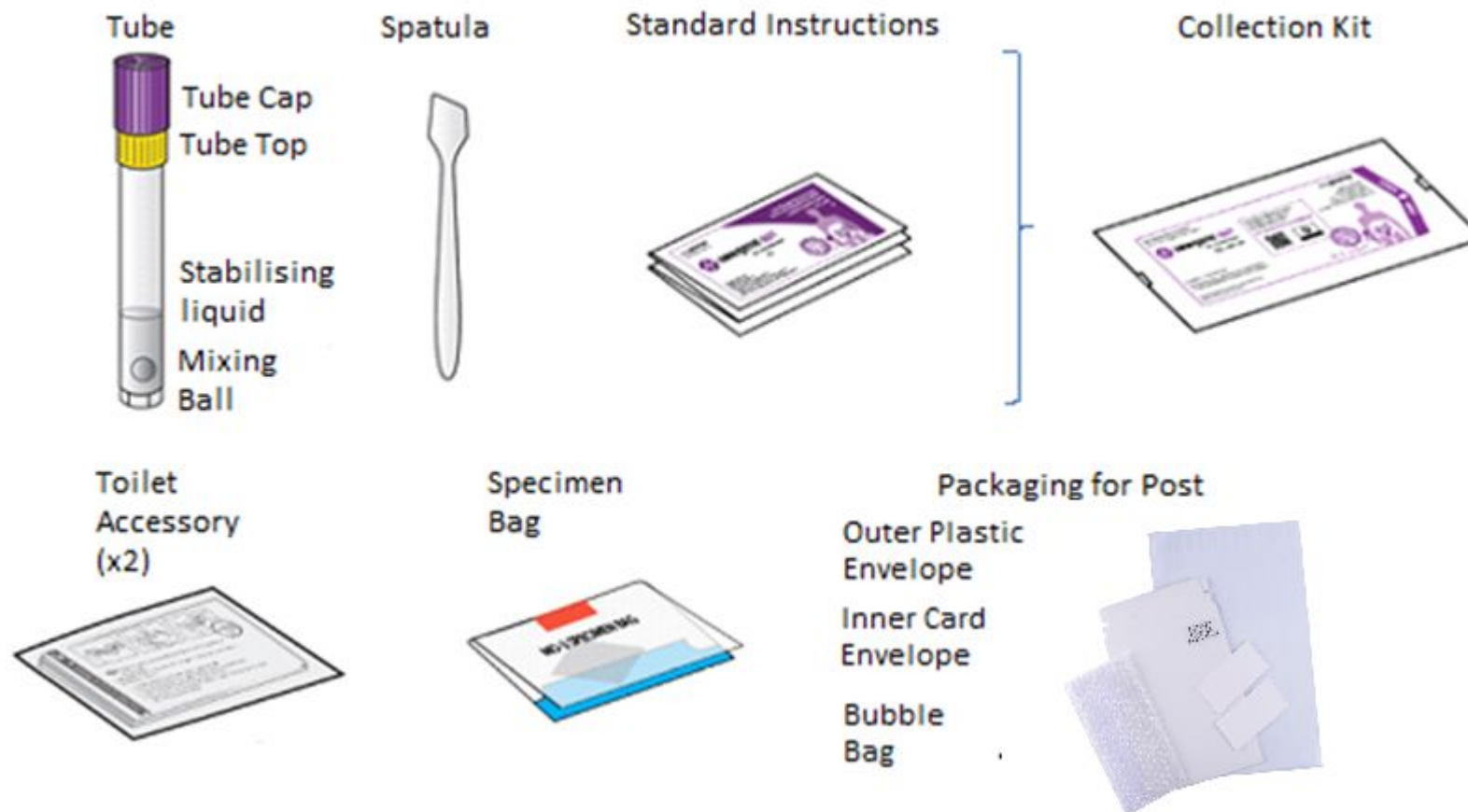
## Other benefits of OMNIgene GUT kit:

- Easy self-collect sample at home
- Sample returned by post
- Samples are stable at RT for 60 days.
- Freeze at -20/-80°C on receipt and process within 12 months.
- Obtain high quality DNA suitable for 16S profiling, shotgun sequencing, qPCR and arrays
- Price per participant: €19.75/\$21.62 ex VAT

# Aims: TILDA Fecal Sample Collection Studies

- Conduct PPI group (n=7) to test feasibility of the fecal collection method in TILDA – November 2019
- Pilot fecal collection study of 566 TILDA W6 participants. Consented at W6 CATI. March-October 2021
- Main fecal sample collection study of 1500-2000 participants at W6 Health Assessment: July 2021 – present

# Method: DNA Genotek OMNIgene GUT Sample Collection Kit



# Results: TILDA Personal and Public Involvement (PPI).

To assess feasibility of fecal sample collection, we first ran a TILDA participant and public involvement (PPI, n=7) group

6. Fecal Sample Feedback Questionnaire

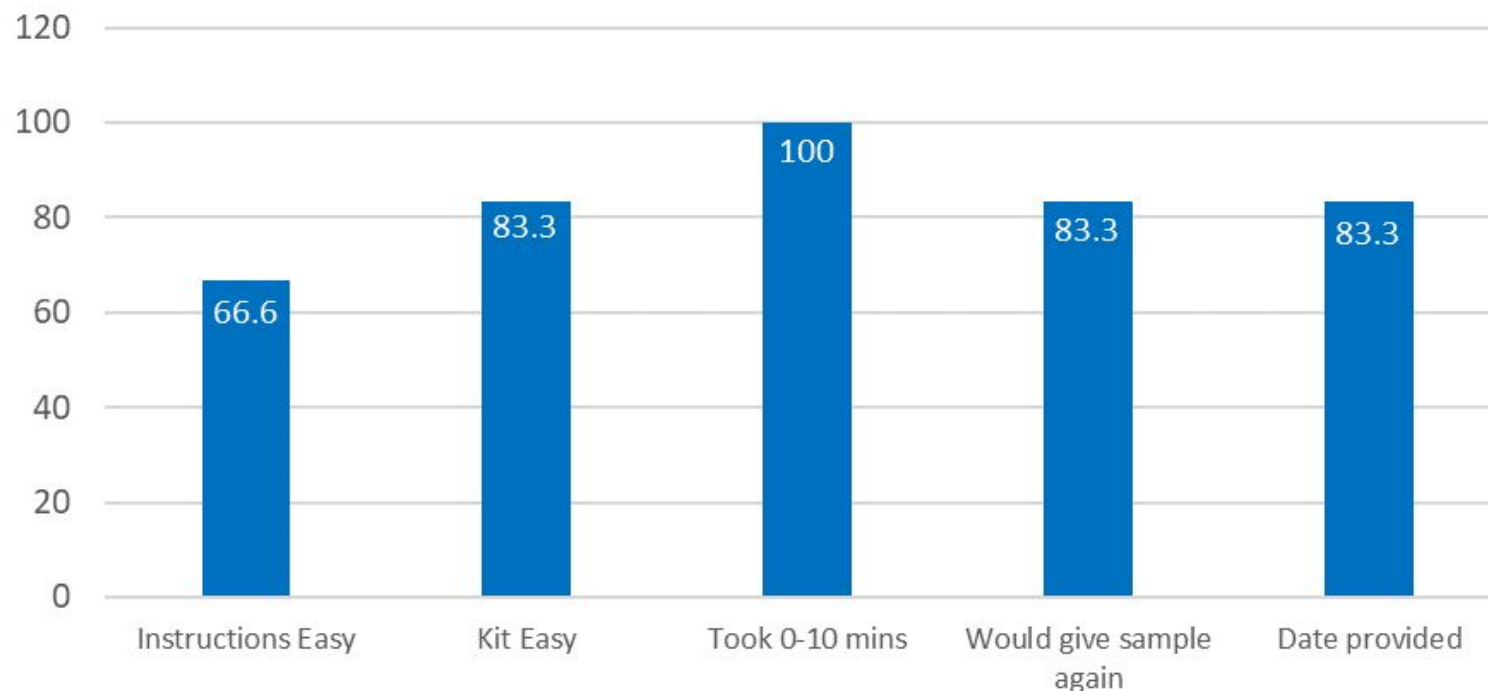
A lot of reading. The TILDA instruction sheet was easier to follow.

It might have been better if I had read all the instructions prior to collection

6. Please provide any additional comments in the box below.

The toilet accessory also tore

PPI Feasibility Study Questionnaire



# Methods: TILDA Wave 6 CATI Pilot and W6 HA

## Pilot W6 CATI Study

- N=566 Collection kits
- Large print A4 TILDA instruction sheet
- TLDA questionnaire
- TILDA Descriptive Kit Protocol

**TILDA WAVE 6 PARTICIPANT INSTRUCTIONS FOR COLLECTION OF STOOL SAMPLE**

**Kit Items Provided:**

If possible, please arrange to post back your sample and the completed questionnaire on the same day that the sample is taken!  
If required, additional instructions are provided with the collection tube.

<p>1. Remove the 3 barcode labels from the specimen bag</p> <ul style="list-style-type: none"> <li>Place 1 barcode label on the side of the sample collection tube.</li> <li>Place 1 barcode label on the blank card envelope.</li> <li>Place 1 barcode label on the Questionnaire</li> </ul>	
<p>2. Wash and dry hands thoroughly. Please use gloves provided if desired</p>	
<p>3. Two toilet accessories are provided in case you are unable to collect a sample at the first attempt. <b>CAUTION:</b> Do not allow toilet water, urine, detergent or other liquid to come in contact with the toilet accessory.</p>	
<p>4. Please empty your bladder before beginning the collection of your sample. Collect sample free of toilet water or urine.</p>	
<p>5. Carefully and gently peel open the edges of the toilet accessory, see ▲ and ■ symbols at each edge.</p>	
<p>6. Attach the adhesive surface of the toilet accessory to the <u>back of the toilet seat</u>. Put the adhesive side close to the outer edge of the seat and press down firmly. Deposit a stool sample into the toilet accessory.</p>	
<p>7. Hold the yellow part of the tube top, only unscrew the purple cap and set aside for later use. <b>DO NOT</b> remove the yellow tube top. <b>DO NOT</b> spill the liquid in the tube. The collection tube does not stand upright. Place the tube upright in a small drinking glass to prevent the liquid from spilling.</p>	
<p>8. Use the white spatula to collect a small amount of the stool sample.</p>	

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# Methods: TILDA Wave 6 CATI Pilot and W6 HA

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THE IRISH LONGITUDINAL  
STUDY ON AGEING

WAVE 6 HEALTH ASSESSMENT STOOL  
SAMPLE STUDY QUESTIONNAIRE  
2022

## Microbiome SCQ Questions

- GI conditions?
- GI surgery?
- Infectious GI illness (vomiting diarrhoea)?
- Antibiotic medications?
- Laxative medications?
- Short FFQ?
- Milk and Yogurt consumption?
- Prebiotics or pro-biotics consumed?
- Date/Time sample collected?
- free text box.

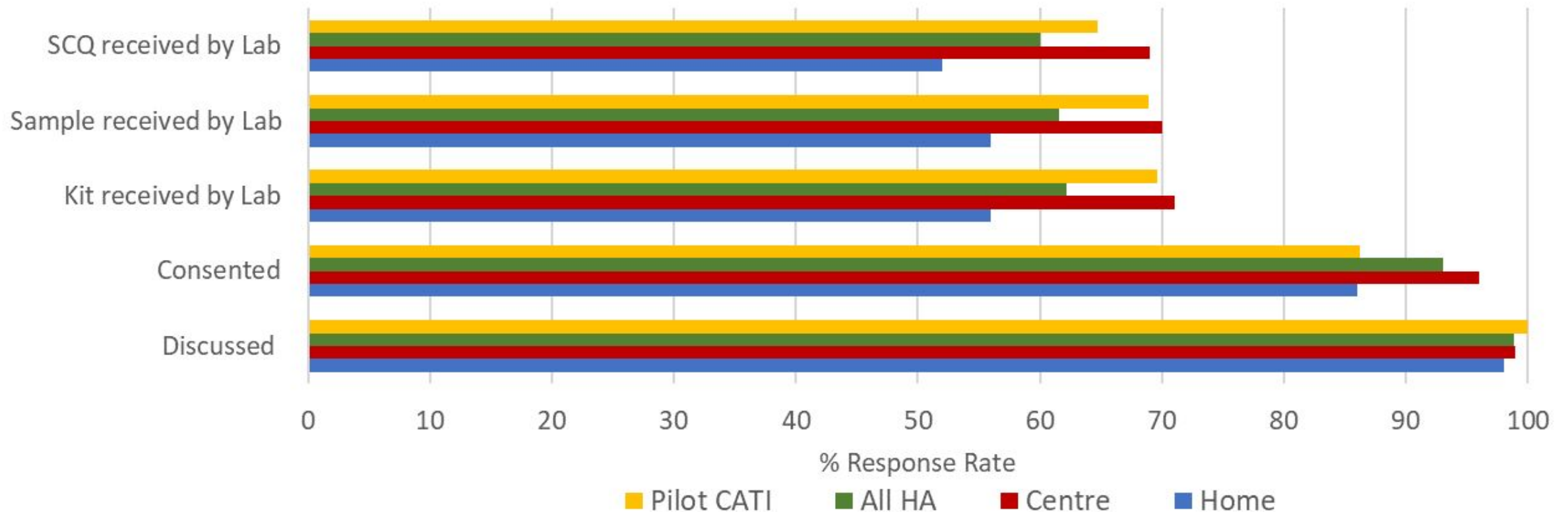


# Results: TILDA Wave 6 CATI Pilot and W6 HA

Pilot CATI Target: N=566

W6 HA Target: N=1556

Response Rates TILDA W6



## Fecal Sample Collection in TILDA

- OMNIgene GUT kit is flexible and moderately expensive
- Fecal sample collection is tolerated well by TILDA participants.
- Fecal sample response rates are generally good:
  - 69% response rate in Pilot W6 CAPI study
  - 70% response rate in W6 HA Centre
  - 56% in W6 HA Home

# Funders



An Roinn Sláinte  
Department of Health



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Irish Life



# Questions please?

