

Nutrition information in population and other cohorts of THL Biobank

THL Biobank administrates population collections and other research collections which contain high-quality samples and data. One remarkable part of the data is the nutrition information. In FINRISK, Health 2000/2011, FinHealth 2017 and ATBC surveys nutrition information was collected from the participants. This data can be classified into three different categories:

- Basic questions about nutrition
- Food frequency questionnaire (FFQ)
- FinDiet data: 24- and 48-hour dietary recalls, food propensity questionnaire (FPQ)

This nutrition information can be combined with extensive lifestyle, clinical, biomarker, genomics and other omics data as well as samples available for all cohort participants. Follow-up health data from national health registers can be combined to participant data with separate permission.

More detailed information about the nutrition data available for cohort participants is provided in Table 1.

Table 1. Details of participants with nutrition data in THL Biobank

Survey	Age of participants	Number of participants		
		Basic questionnaire	FFQ-form	FINDIET study
FINRISK 1992	25–64 years	6023	-	2148
FINRISK 1997	25–74 years	8386	-	3233
FINRISK 2002	25–74 years	8773	-	2007
FINRISK 2007	25–74 years	6219	-	2038
FINRISK 2012	25–74 years	5813	4860	1708
DILGOM 2007	25–74 years	4977	~4900	-
DILGOM 2014	32–81 years	1294	~1200	-
Health 2000	30– years	7705	5998	-
Health 2011	18– years	5138	4109	-
FinHealth 2017	18– years	6665	5176	1655*
ATBC Study	50–69 years	-	26944	-

*Also FPQ is available for these participants

Basic nutrition data available for biobank research

In all population cohorts, participants filled out a questionnaire which included questions about nutrition. The basic nutrition information includes details about diet and nutrition habits.

Questionnaires of the surveys can be found at different websites:

FINRISK 1992-2012: <https://thl.fi/en/web/thlfi-en/research-and-development/research-and-projects/the-national-finrisk-study/questionnaires>

Health 2000 and 2011: <https://thl.fi/en/web/thlfi-en/research-and-expertwork/projects-and-programmes/health-2000-2011/forms>

FinHealth 2017: <https://thl.fi/en/web/thlfi-en/research-and-expertwork/population-studies/national-finhealth-study/questionnaires/finhealth2017>

Specific nutrition data available for biobank research: FFQ questionnaire

In addition to basic questions about diet and nutrition habits, participants of FINRISK 2007 and 2012, Health 2000 and 2011, FinHealth 2017 as well as ATBC Study filled a food frequency questionnaire (FFQ).

The information on habitual diet was collected by a food frequency questionnaire developed and validated at THL. The FFQ is the primary method in epidemiological studies concerned with the association of diet and the risk of diseases, as it provides information on diet over a long period. The main aim of FFQ is to rank participants according to their food or nutrient intakes, not to measure the absolute intakes. The average daily intakes of ingredient groups (e.g. wheat, fish and berries) and nutrients (e.g. energy-yielding nutrients, fibre and vitamin C) were calculated using the National Food Composition Database (FINELI®) of THL. The final dietary dataset comprises around 80 ingredient groups and 100 nutrients that can be used for research purposes.

FFQ-questionnaires of the surveys can be found at different websites:

FINRISK 2007 and 2012: <https://thl.fi/en/web/thlfi-en/research-and-development/research-and-projects/the-national-finrisk-study/questionnaires>

Health 2000 and 2011: <http://www.terveys2011.info/aineisto/t2000/ravinto.html> and <https://thl.fi/en/web/thlfi-en/research-and-development/research-and-projects/health-2000-2011/forms/health-2011-forms>

FinHealth 2017: <https://thl.fi/en/web/thlfi-en/research-and-development/research-and-projects/national-finhealth-study/questionnaires/finhealth2017>

ATBC Study: <https://atbcstudy.cancer.gov/documentation/>

Specific nutrition data available for biobank research: FinDiet

The National FinDiet Survey has followed the dietary habits and nutrient intake of the adult Finnish population since 1982. The FINDIET Surveys have been carried out as sub-studies of the National FINRISK Surveys and FinHealth 2017 Survey. Cohort data from survey year 1992 onwards is available through THL Biobank. About a third (30-33 %) of FINRISK 1992-2012 and FinHealth 2017 participants was invited to the FINDIET Survey in each year.

Participants of FINDIET 1992 filled out food diary and blood and nail samples were also taken.

In FINDIET 1997 participants filled out food questionnaire and had a dietary interview about the previous day food intake. Laboratory samples were also taken.

Participants of FINDIET 2002, FINDIET 2007 and FINDIET 2012 were interviewed and their 48-hour dietary recall data was recorded by dietary interviewers. The use of food supplements was also studied in FINDIET 2007 and FINDIET 2012. In FINDIET 2007, every second respondent was also asked to fill in a food record for the following three days. Those who returned a completed food record were sent another food record to fill in at the end of the year.

In FINDIET 2017 diet was assessed by two non-consecutive 24-hour dietary recalls. At first, participants were interviewed during the health examination and second time they were interviewed later by telephone. Participants also filled out food propensity questionnaire (FPQ), which can be found at [FinHealth](#)

[2017 website](#). FPQ-questionnaire was compiled to include consumption information of less commonly eaten foods (for more details see *FinHealth 2017 Study – Methods*).

Information of the FinDiet Surveys as classified data can also be found in EFSA database. See more in <https://www.efsa.europa.eu/en/data/food-consumption-data>

More information about the FinDiet Survey (*in Finnish*) can be found at <https://thl.fi/fi/tutkimus-ja-kehittaminen/tutkimukset-ja-hankkeet/finravinto-tutkimus>

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