

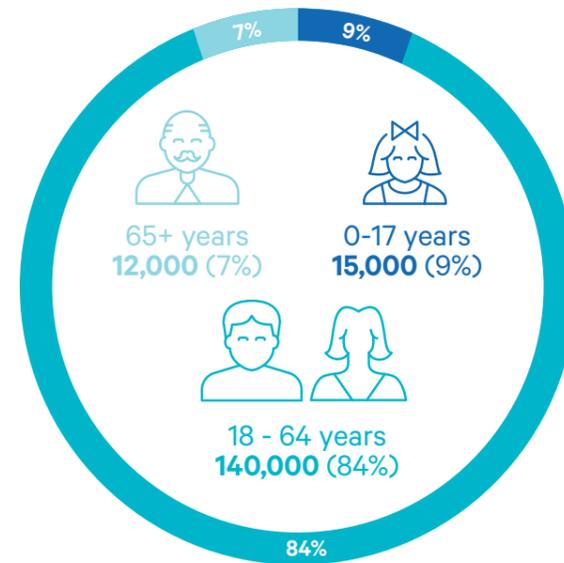


# lifelines children



## lifelines cohort and biobank

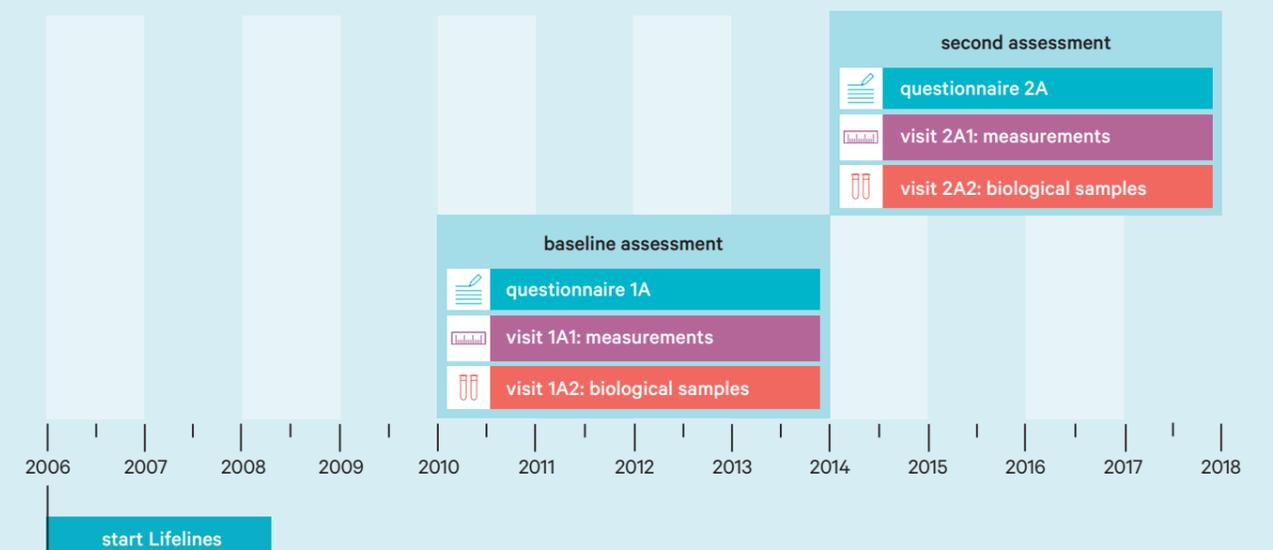
Lifelines is a large, multi-generational cohort study that includes over 167,000 participants from the northern population of the Netherlands. Lifelines works with a combination of questionnaires, measurements and biological samples; thus, providing a unique source for research purposes. Participants from three generations are followed for at least 30 years, to obtain insight into healthy ageing and the main factors relating to the onset and progression of diseases. Every 1.5 years, participants complete a questionnaire, in which they provide a wide variety of data. In addition, once every 5 years, participants are invited to visit a Lifelines location for a physical examination. During this visit, biological samples are collected and several measurements and tests are conducted. Biological samples are stored at -80 °C to ensure high quality and long-term preservation.



total: 167,000 participants

There are many unmet needs to diagnose, prevent and treat disease. Therefore, it is important to understand why some people stay healthy in old age, while others are affected by disease. Many risk factors for disease have their origin in early life. This is why we collect a large selection of data and biological samples from adults as well as from children. This overview provides information about the data that we collected from children up to and including age 17, between 2010 and 2017.

## children in cohort (baseline assessment)





## second assessment (2014 - 2017)



### children (4-12)

- activities (physical activity, screen time, sleep)
- behaviour
- demographics
- learning and education
- family relations
- fatigue
- health status
- respiratory health
- eczema
- allergies
- health perception
- medication use
- nutrition
- physical development (also specific for boys and girls in puberty)
- living environment
- stress
- (passive) smoking
- alcohol and drug use
- vision and hearing

### adolescents (13-17)

- activities (physical activity, screen time, internet use, sleep)
- behaviour
- demographics
- education and work
- family relations
- fatigue
- health status
- respiratory health
- allergies
- health perception
- medication use
- nutrition
- physical development
- living environment
- stress
- smoking
- alcohol and drug use
- parents
- vision and hearing

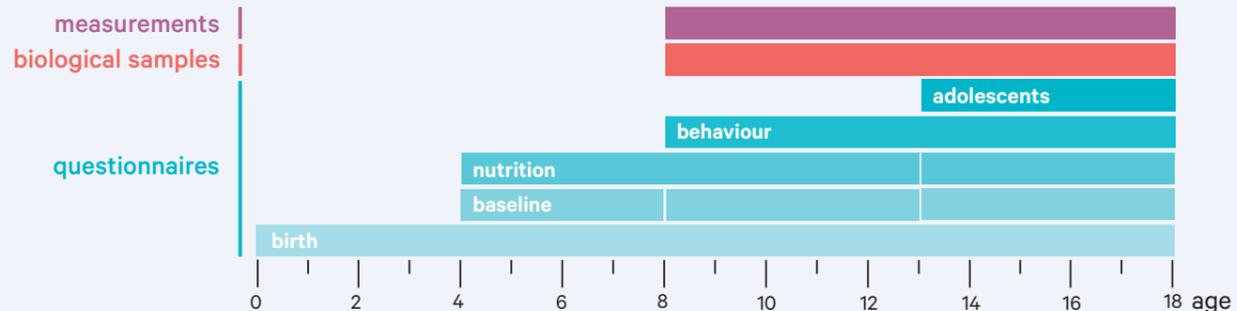
### biological samples (8-17)

- blood (fasting sample)
- 'timed overnight' urine
- faeces
- scalp hair

### measurements (8-17)

- anthropometry
- blood pressure
- jump test
- Cogstate cognitive tests (13-17)

## baseline assessment (2007 - 2013)



### questionnaire birth (0-17)

- delivery
- gestational age
- anthropometry
- birth defects
- hospital admission
- surgery
- infant feeding
- health status first 6 months
- crying
- medication use
- living environment
- Well Baby Clinic data
- vaccination
- pregnancy
- during pregnancy (smoking and alcohol use, health, hospital admission, living environment, medication use, work)

### questionnaire baseline (4-7, 8-12, 13-17)

- activities (computer use, physical activity, playing outdoors)
- behaviour
- childcare
- demographics
- living environment
- learning and education
- development
- family relations
- health status
- healthcare
- medication use
- nutrition
- physical development (also specific for boys and girls in puberty)
- (passive) smoking
- alcohol and drug use
- surgery
- vaccination
- vision and hearing
- Well Baby Clinic data
- work

### biological samples (8-17)

- blood (fasting sample)
- 'timed overnight' urine
- DNA

### measurements (8-17)

- anthropometry
- blood pressure
- ECG (13-17)
- lung function

### questionnaire adolescents (13-17)

- activities (chores and housework, physical activities)
- demographics
- daytime spending
- living environment
- education and work
- health status
- respiratory health
- medication use
- physical development
- behaviour
- nutrition
- smoking
- alcohol and drug use
- parents

### questionnaire behaviour (8-17)

- behaviour
- stress situations
- mood

### questionnaire nutrition (4-12, 13-17)

- drinks
- food
- diet
- regimen

## biological samples in storage



### blood

serum (septum separated tube, tube with clot activator), plasma (K2-EDTA tube, citrate tube), buffy coat (K2-EDTA tube), -80°C storage



### urine

'timed overnight' (native, mixed with ascorbic acid), -80°C storage



### DNA

-80°C and 4°C storage



### scalp hair

room temperature



### faeces

-80°C storage



### blood

- ASAT
- ALAT
- Albumin
- Alkaline phosphatase
- Apolipo A1
- Apolipo B100
- Calcium
- Free T3
- Free T4
- Gamma-GT
- High-sensitivity CRP
- Phosphate
- TSH
- Ureum
- Uric Acid
- Monocytes
- Mononuclear Cells
- Thrombocytes



### urine

- albumin
- creatinine

- Leukocytes
- Lymphocytes
- Erythrocytes
- Neutrophil Granulocytes
- Basophilic Granulocytes
- Eosinophil Granulocytes
- Cholesterol
- HDL Cholesterol
- LDL cholesterol
- Creatinine
- Glucose
- HbA1c
- Hematocrit
- Hemoglobin
- Potassium
- Sodium
- Triglycerides