

Competence Centre on Health Technologies



Company overview
Andres Salumets



Investing
in your future

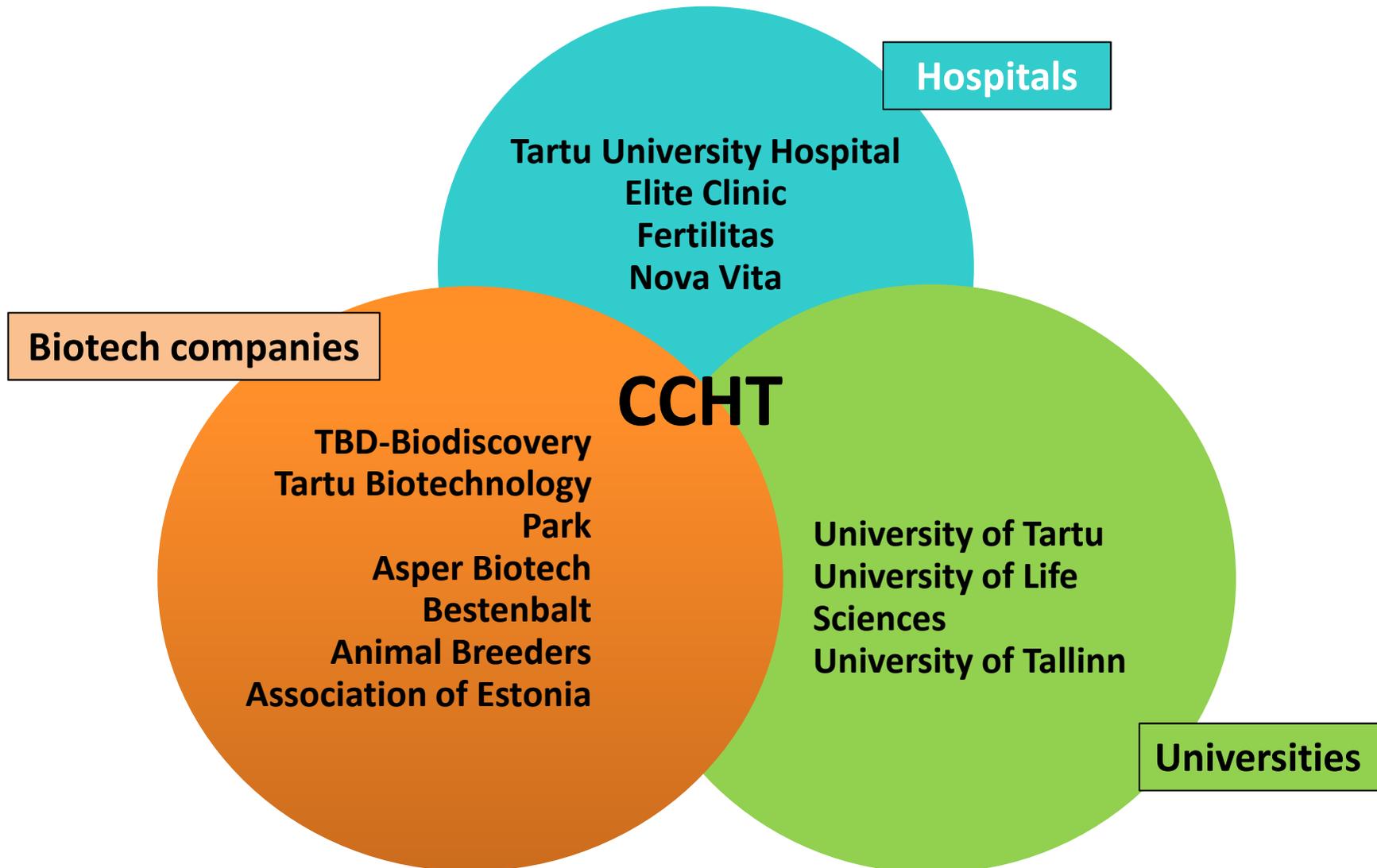


European Union
European Regional
Development Fund

CCHT in nutshell

- **Tervisetehnoloogiate Arenduskeskus AS**, established in **2009**
- Competence Centre on Health Technologies, CCHT
- CC on Reproductive Medicine and Biology (CCRMB) until 2014
- **CCHT is a research and technology organization (RTO)** that invents and develops **products and technologies for molecular medicine**, including identifying disease biomarkers and elaborating diagnostic and therapeutic technologies
- Specific areas of expertise:
 - Reproductive medicine
 - Personalised medicine
 - Drug Development

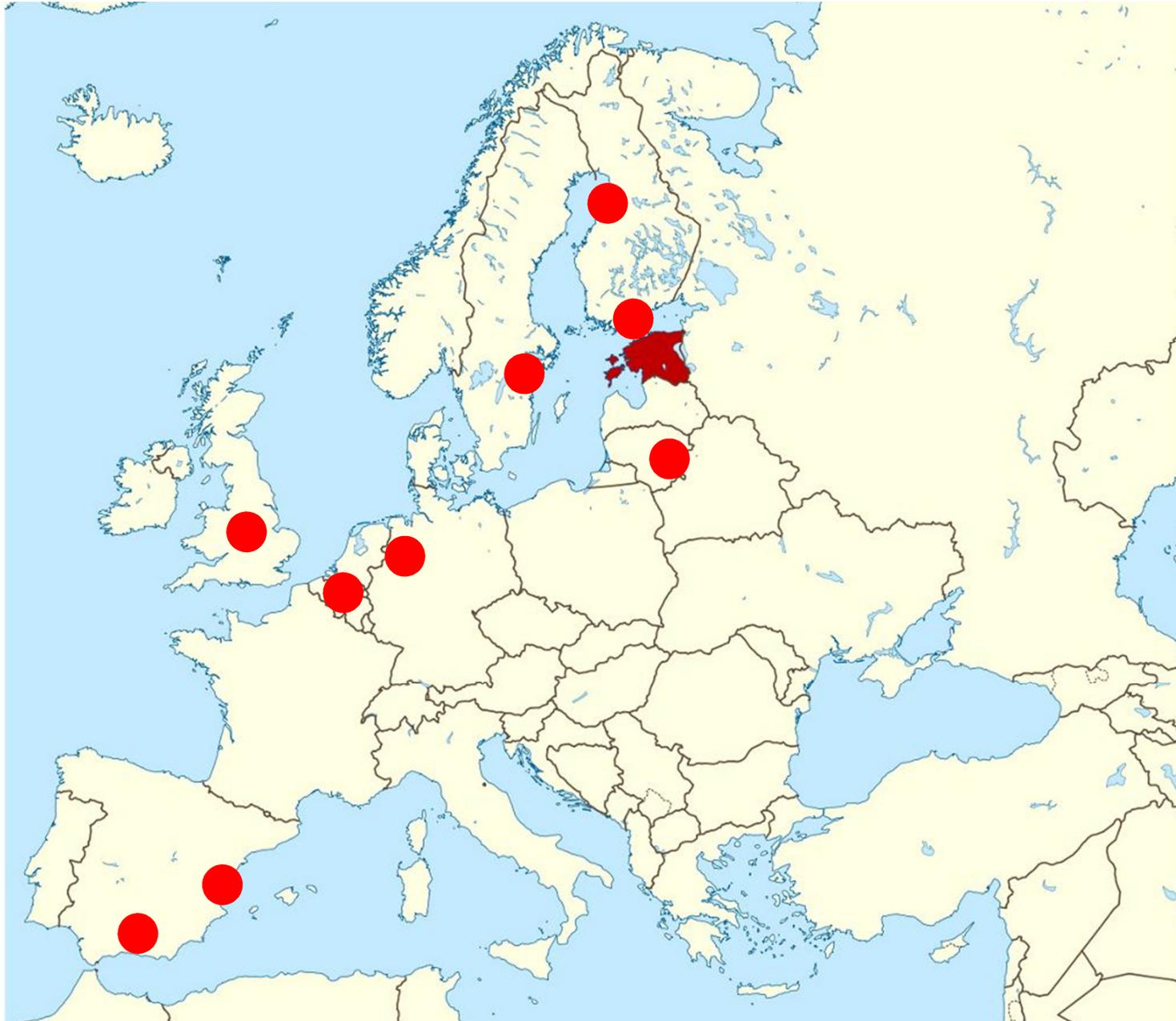
12 equal shareholders of CCHT



Research & Technology Organization, 2009-2017

- Key facts:
 - Personnel of 40 researchers, mostly PhD
 - 180 articles published, including in *Nature* and *Nature Genetics*
 - >10 PhD and >25 MSc defended
 - 5 European patent applications
 - Well-equipped laboratory of 400 m²
 - Enterprise Estonia investment: 2015-2022, 6.9 M €
 - 30-40% of the budget comes from international RTD projects
 - Several FP7&H2020 grants for >3 M €, including principal investigator experience
 - Evaluated RTO by Estonian Ministry of Education and Research

International Collaboration



CCHT's focus

Global challenges:

- Demographic changes → postponed family formation
→ increased incidence of infertility and need for prenatal genetic testing
- Infertility exists in 10-15% of reproductive-age couples
- *In vitro* fertilization (IVF) babies represent 5% of births
- Cancers account for 15% of deaths

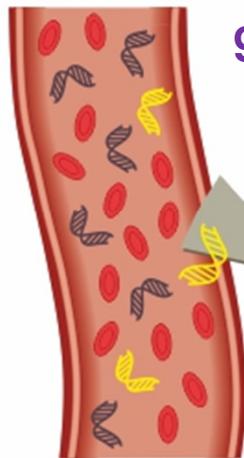
CCHT will develop reliable, safe, and cost-effective technologies to tackle infertility, cancers & complex diseases

Proprietary technologies

- **GlobinLock[®]** - patented technology for removing globin RNA from clinical and research samples for sequencing
 - Swedish Business Award 2016. **Innovation of the year**In comparison with available other technologies:
 - more robust, requires less sample material
 - 10 times faster & 30 times cheaper
- **TAC-Seq technology** - patented technology for unbiased detection of RNA and DNA molecules for next generation sequencing
 - Applications: non invasive prenatal testing (NIPT), uterine lining (endometrium) quality testing, cancer diagnosis for possible relapse

Proprietary technology: Non-Invasive Prenatal Testing (NIPT)

- CCHT's NIPTmer technology - rapid fetal genetic testing
- Clinical study of 600 samples & 40 fetal chromosomal (severe) diseases

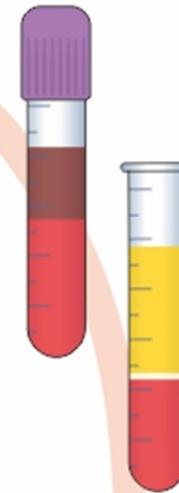


90% maternal DNA
10% fetal DNA

9-10 week
of pregnancy



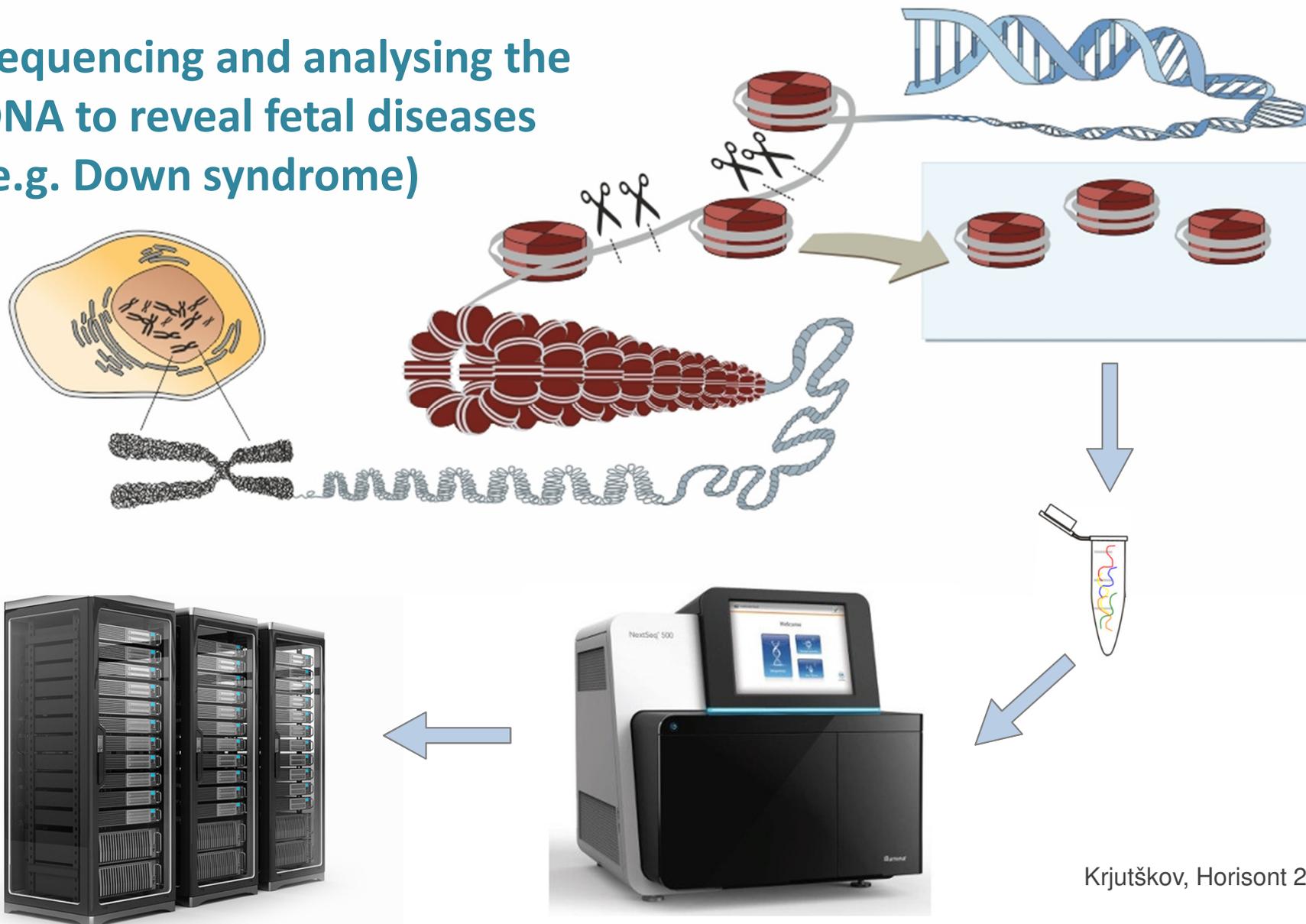
Transport



Cell free DNA
for analysis

Non-Invasive Prenatal Testing - NIPT

Sequencing and analysing the DNA to reveal fetal diseases (e.g. Down syndrome)



Proprietary technology: FERTIFY

FERTIFY®

personalised
reproductive
medicine test to
predict the risk
for age-related
female infertility

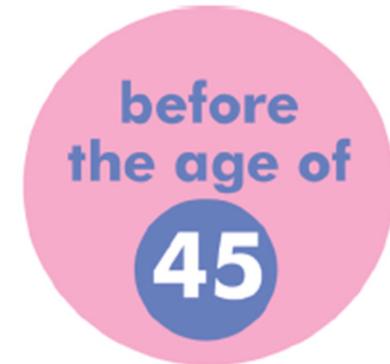


Fertify

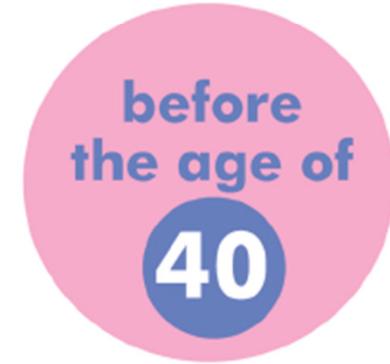
EARLY MENOPAUSE



early
menopause

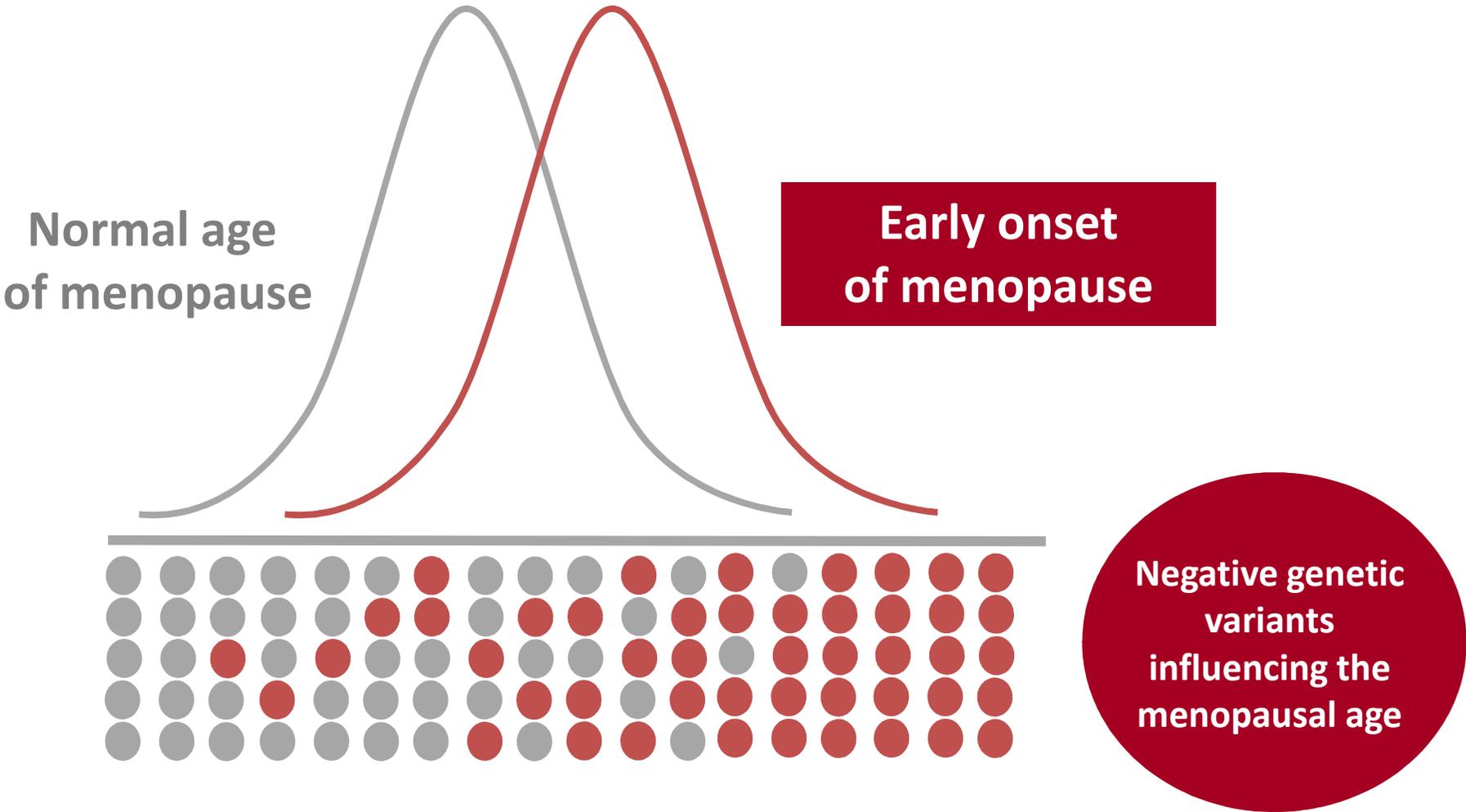


premature
menopause

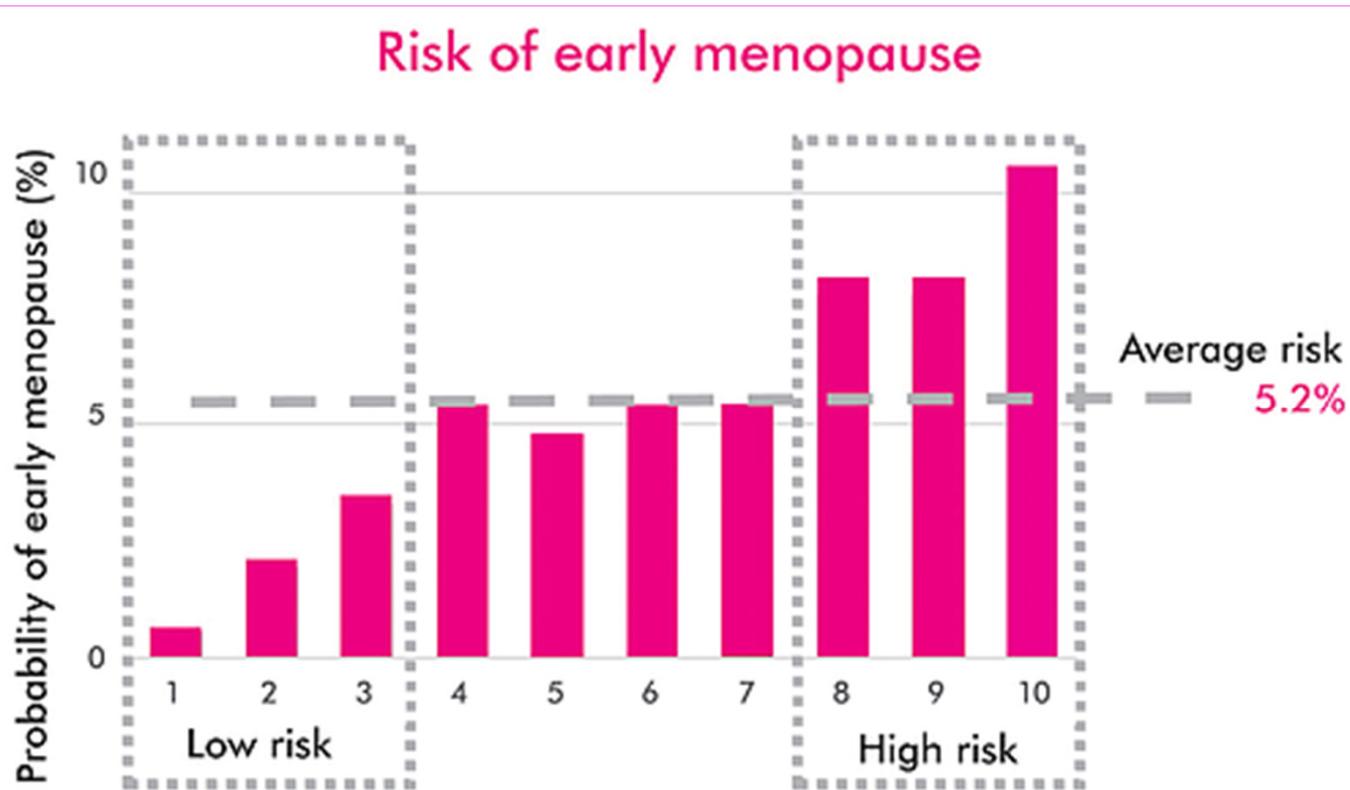


PREMATURE OVARIAN FAILURE

Polygenic risk scores for early menopause and infertility

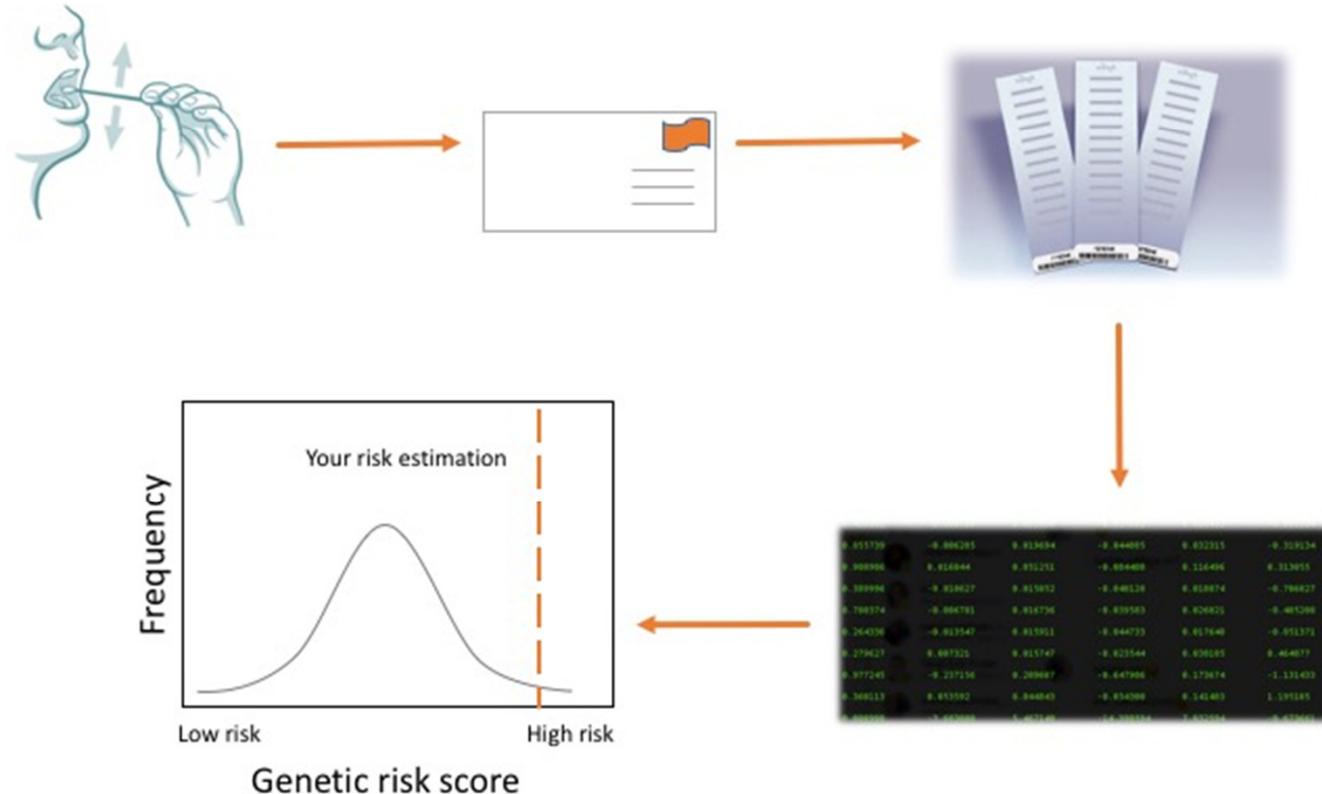


Polygenic risk scores for early menopause and infertility



10 X DIFFERENCE

How FERTIFY works?



- Predicting fertility potential
- Combination with ultrasound & hormones
- Family planning recommendations (including oocyte freezing & IVF)

Development pipeline

- Research on **probiotic strains** & product development
 - Collection of hundreds specific characterised lactobacilli;
 - Strains for bacterial vaginosis & candidiasis infections; safety trials completed and **clinical trials ongoing**
 - Input to new probiotic product development in 2018

CCHT Management

- **Andres Salumets (CEO and CSO)** is responsible for daily management and coordinates all research and innovation projects

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- **Hardi Tamm (Development Manager)** is responsible for organizational development, quality management, and commercialization

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Health Technologies



Thank you!

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