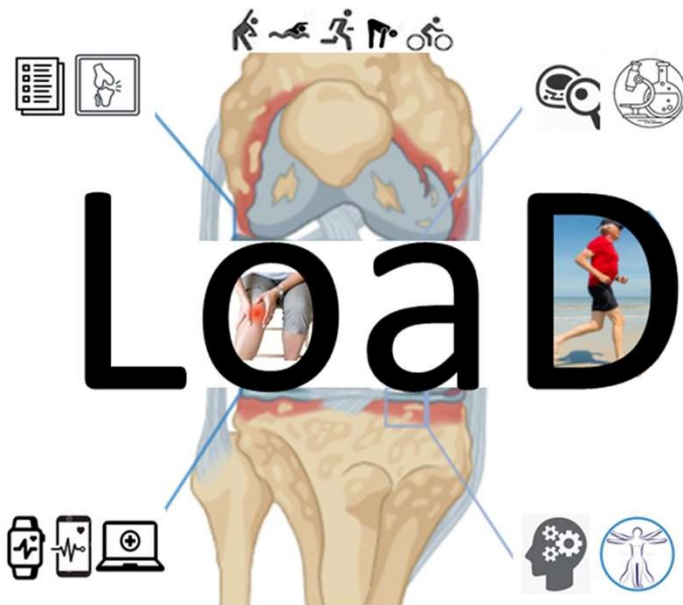


Healthy loading to combat osteoarthritis

Leveraging molecular variations in load bearing capacity for individualized movement advice: **The Load project**

NWA.1389.20.009

2022-2030



Annual meeting, 2-3 October 2023, Rotterdam

Confidential



Welcome to Rotterdam





LoaD 1st Annual Project Meeting, October 2-3, Rotterdam

Day 1:

- 9:30-10:30 – *Registration/Coffee*
- 10:30-10:40 – Welcome and Introduction, Gerjo van Osch
- 10:40-11:10 – Introductions of new LoaD employees
- 11:10-11:40 – Inspiring talk 1: eHealth, Monique Tabak
- 11:40-12:20 – Management Updates
- 12:20-13:15 – *Lunch followed by walk*
- 13:15-13:45 – Inspiring talk 2: Clinical OA, Sita Birma-Zeinstra
- 13:45-15:30 – Presentations of the Associated partners
- 15:30-16:00 – *Coffee Break*
- 16:00-17:30 – Impact Pathway Session 1
- 17:30-18:30 – *Drinks (the mentors get in touch with the mentees)*
- 18:30-21:00 – *Walking Dinner (De Machinist)*

Day 2:

- 8:30-9:30 – Project Management Board Session
- 9:30-10:00 – Inspiring Talk 3: Health technology assessment, Erik Koffijberg
- 10:00-11:00 – Impact Pathway Session 2
- 11:00-11:30 – *Coffee Break*
- 11:30-11:40 – Inspiring Talk 4: "It's all about load, but maybe not what you think it is ...", Jaap Harlaar
- 11:40-12:20 – Workshop Part 1: Joint Load: the Simple Case (Jaap Harlaar & Mariska Wesseling)
- 12:20-13:00 – Workshop Part 2: Joint load: the better case (Ajay Seth & Mariska Wesseling)
- 13:00-13:45 – *Lunch (the mentors get in touch with the mentees)*
- 13:45-14:30 – WP 1/4/5 and WP 2 (two parallel sessions)
- 14:30-14:45 – *Coffee Break*
- 14:45-15:30 – WP 1/4/5 and WP 3 (two parallel sessions)
- 15:30-16:00 – Closing session – getting together for the final discussion

LoaD is about making impact with research



“Doctor, what is the minimal activity to stay healthy?”

“Doctor, how much pressure can I put on my knee?”

“I feel better when I am more active”

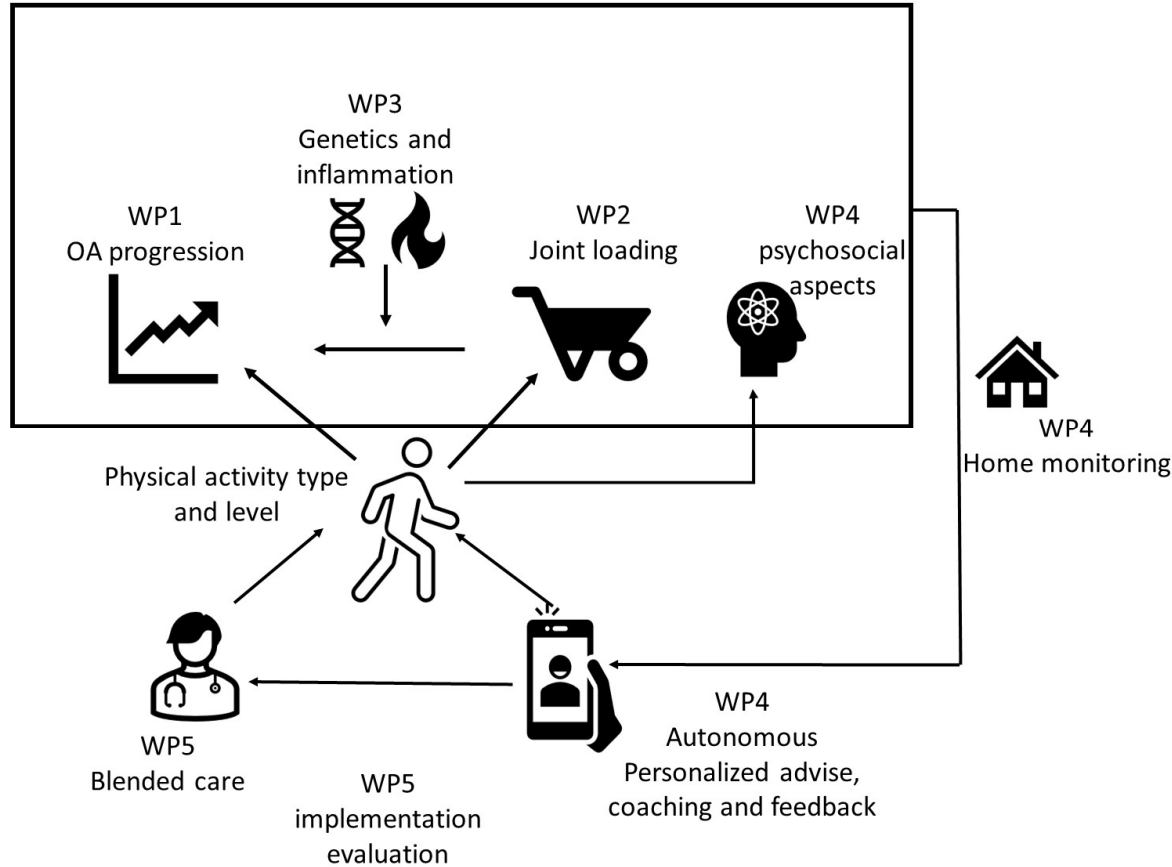
“My physiotherapist recommended me to cycle as much as possible, but I would rather go running”

“I had to stop playing football and now I never see my teammates of the past 30 years”

“I can not play with my grandchild”

31 partners

Load is



12 PhD students
8 postdocs
1 PDeng
5 junior researchers
3 research assistants



LoaD is getting ready for the job



LoaD welcomes our new team members



WP1

Joris van de Voort, Young Researcher, HR
Lya Euser, Research Assistant, Erasmus MC
Femke Muskens, Research Assistant, Erasmus MC

WP2

Famke Janssen, PhD student, Radboud UMC
Nicole Kops, Technician, Erasmus MC
Wouter Schalling, postdoc, Erasmus MC (*1 febr 2024*)

WP3

Anne Flier, PhD student, Erasmus MC
Nicole Kops, Technician, Erasmus MC
Margo Tuerlings, postdoc, LUMC

WP4

Emmanuel Chimezie Chukwu,
PhD Student, TUE
(expected to start Nov, 2023)

Bo Cui, PhD Student, UTwente
(expected to start Feb 2024)

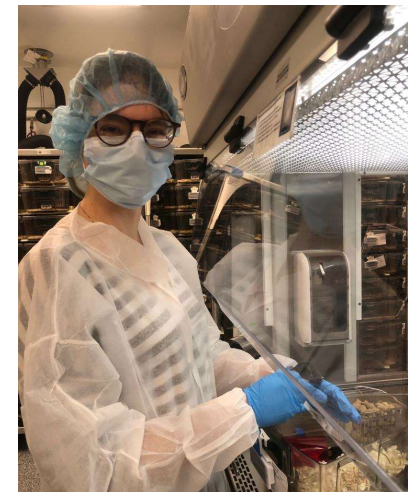
WP5

Gitte Kloek, Lector, Saxion



ANNE FLIER

LoaD 1st Annual Meeting
October 2-3, Rotterdam



Supervisors:
prof. Gerjo van Osch
prof. Joyce van Meurs
dr. Roberto Narcisi

Erasmus MC
Universitair Medisch Centrum Rotterdam



PERSONAL DETAILS

- Bachelor: Biology (Leiden)
- Master: Infection and Immunity (Utrecht)

- **Academic interests:**
 - *In vitro* model development
 - Bio-informatics
 - Genetics and gene editing

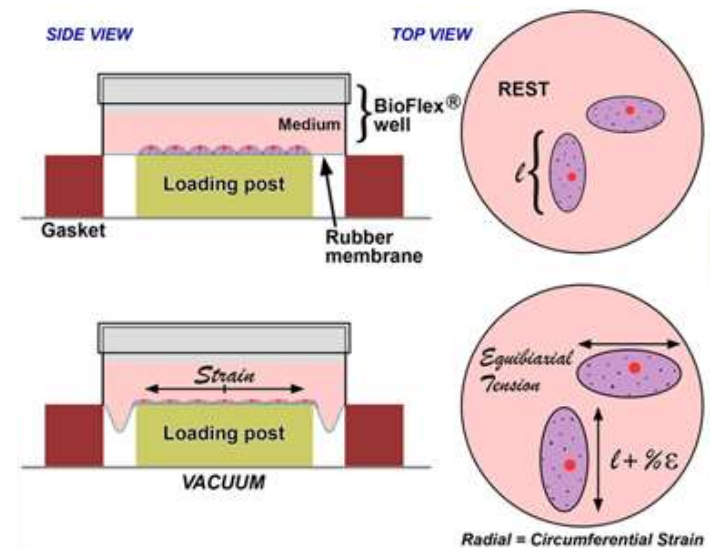
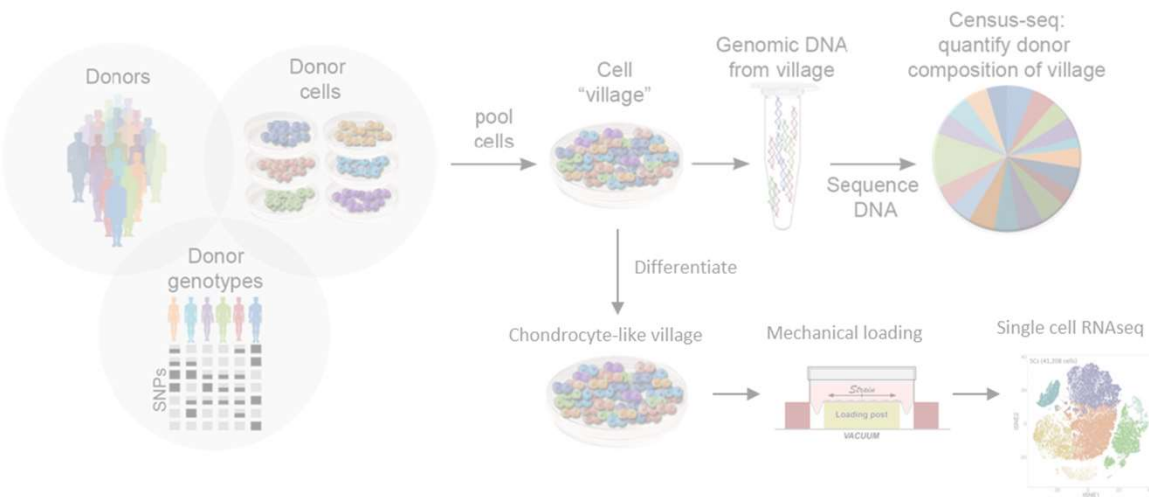
PROJECT DETAILS

Work package 3: how genetics and/or joint inflammation in an individual can impact the effect of mechanical loading.

PhD7: my job is to clarify how chondrocytes with **different genetic backgrounds** (e.g. from different donors) respond **to mechanical loading**.

GENETIC VARIATION IN AN *IN VITRO* MODEL OF MECHANICAL LOADING

Village in a dish technology \longrightarrow Mechanical load in FlexCell



JORIS VAN DER VOORT

LoaD 1st Annual Meeting
October 2-3, Rotterdam

Dr. Marienke van Middelkoop
Dr. Lennard Voogt
Dr. Sita Bierma-Zeinstra



Rotterdam University
of Applied Sciences



2015 BSc. Physiotherapy

2020 MSc. Rehabilitation Sciences and Physiotherapy

2021 MSc. Manual therapy



Rotterdam University
of Applied Sciences



VRIJE
UNIVERSITEIT
BRUSSEL

2018 Physiotherapist



PMC in Balans - Ridderkerk



Erasmus
University
Sciences
Erasmus MC



“The effects of physical activity pattern on disease progression in patients with knee osteoarthritis”



- j.w.vandervoort@erasmusmc.nl
- +31 6 48608191

FAMKE JANSSEN

LoaD 1st Annual Meeting
October 2-3, Rotterdam

Supervisors:

Prof.dr.ir. Nico Verdonschot

Dr.ir. Dennis Janssen

Dr.ir. Thom Bitter

Radboudumc
university medical center

ABOUT ME

- **Background:** BSc & MSc (Bio)Medical Engineering obtained at Technical University of Eindhoven with a specialization track in cardiovascular biomechanics in which I mainly focused on Finite Element models and AI.
- **Project Title:** Computational modeling of in vivo cartilage loading
- **Supervisors:**
 - prof.dr.ir. Nico Verdonschot
 - dr.ir. Dennis Janssen
 - dr.ir. Thom Bitter
- **Involvement in the Project:** WP2

PROJECT GOALS

- **Goals**
 - Determine stresses in cartilage during physical activities using FEA models
 - Assess the effect of local heterogeneities in the cartilage matrix on the stresses computed with FEA models
 - Determine stresses in cartilage for patients with knee distraction using FEA models
- **Contact Information**
 - **Mail:** Famke.Janssen1@radboudumc.nl

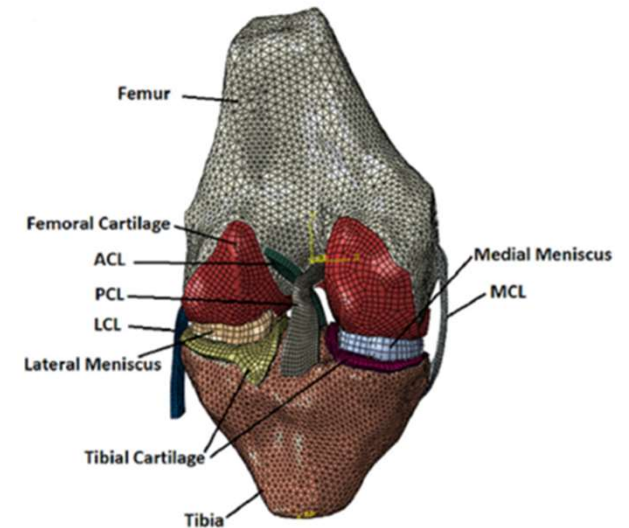


Fig 1 - FEA model of knee joint¹

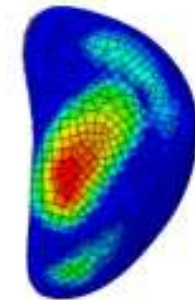


Fig 2 – Medial tibial cartilage stress²