

What is SmILE?

What if your hip replacement or fracture plate could “talk” to your doctor? Or to you as a patient?

The SmILE project (Smart Implants for Life Enrichment) is a large European research initiative focused on developing innovative, patient-centred solutions to improve bone and joint health and the treatment of so-called musculoskeletal diseases, particularly in an ageing population. In Luxembourg it is led by the Luxembourg Institute of Health, at the Human Motion, Orthopaedics, Sports Medicine and Digital Methods (HOSD).

SmILE develops smart implants such as artificial hip or knee replacements and bone fracture plates with embedded sensors and intelligent analytics towards better, faster and personalized rehabilitation. These smart implants shall help doctors and patients to keep track of how well your body is healing and recovering and for instance, in case of any problems, may warn without the need for extra scans. These technologies aim to support recovery, detect possible complications at an early stage, and help people maintain their mobility and independence.

To ensure these technologies and our research truly meets real patient needs, we are creating a Patient Advisory Board (PAB) — and we are looking for volunteers to join us.

Why is SmILE important?

Musculoskeletal diseases, such as osteoarthritis, osteoporosis, bone fractures, rheumatoid arthritis and chronic back pain, are among the leading causes of pain, reduced mobility, and loss of independence, especially as we age. Although these conditions are very common and require long treatments, current care pathways often rely on a few medical assessments and limited monitoring after an intervention such as surgery.

SmILE addresses these challenges by:

- Enabling continuous, real-time health monitoring via smart implants
- Supporting earlier detection of complications
- Improving and personalising long-term care leading to better outcomes
- Integrating patient perspectives into technology development

By combining advanced technology with real-world needs from patients and doctors, SmILE aims to transform how musculoskeletal conditions are managed.

What is the Patient Advisory Board (PAB)?

The Patient Advisory Board (PAB) brings together individuals with lived experience of musculoskeletal conditions to collaborate directly with researchers. As a PAB member you join a team of scientists and become a researcher yourself. You will be an active contributor collaborating with researchers to integrate the patient needs into the development of future smart implants.

As a PAB member you help to ensure that:

- Patient needs and expectations are reflected in the research and design of smart implant technologies
- Ethical, social and practical considerations are addressed
- Research outputs remain relevant, accessible and impactful for patients

No scientific or technical background is required. Participants contribute through their experiences, insights and perspectives.

Who can join the PAB?

- Open to adults aged 18+ who are residents or citizens of Luxembourg
- Especially welcoming individuals with experience of: joint replacements (e.g. hip or knee), bone fractures, osteoarthritis, osteoporosis, chronic pain, or similar conditions
- Participation is voluntary, and you may withdraw at any time
- Senior adults (60+) are particularly encouraged to apply

Why join?

By taking part, you will:

- Influence real European research on next-generation health technologies
- Ensure that patient voices are heard from the very beginning
- Collaborate closely with a multidisciplinary research team at the Luxembourg Institute of Health
- Help make future care safer, more effective, and more meaningful for people living with musculoskeletal conditions
- Experience the meaningful and rewarding role of making your voice heard in a relevant research project. Many PAB members enjoy the social engagement, exchange and mental stimulation.

Workshops and activities

Members of the Patient Advisory Board will take part in:

- Up to four workshops per year in person or online
- Interactive sessions with researchers and project partners
- Collaborative discussions to:
 - Share personal experiences
 - Provide feedback on technologies and research directions
 - Contribute to patient targeted materials
- Opportunity to participate in publications at congresses and/or scientific journals.
- These workshops are designed to be accessible and inclusive, ensuring that all participants can contribute meaningfully.

How to get in touch:

If you are interested in taking part or would like more information, you can contact us:

Patient Advisory Board: getinvolved@lih.lu

After you contact us, we will share more information, answer any questions you may have, and invite all interested people to an initial information meeting. Contacting us does not commit you to participation.

We look forward to welcoming you to the SMILE Patient Advisory Board!



Funded by
the European Union



Liège Université de Luxembourg
Luxembourg
LIH