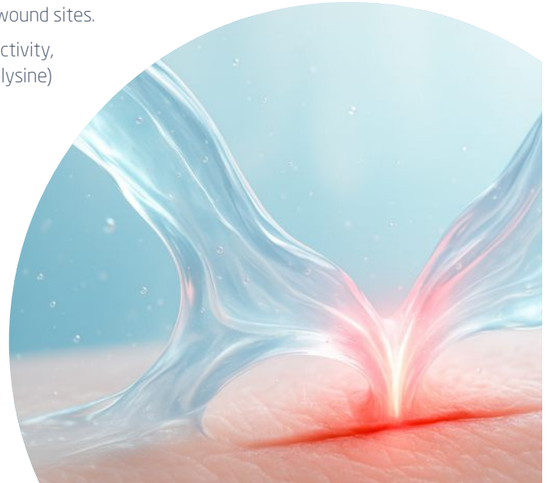
OVERVIEW

INJECTHEAL is a **Horizon Europe project** focused on the development of a **multifunctional self-healing injectable hydrogel** designed to treat deep cavity chronic wounds and for supporting tissue regeneration.

This novel hydrogel, based on functionalized pectin and gelatin, serves both as a therapeutic delivery vehicle and as a biomimetic matrix. It integrates **antibacterial**, **anti-inflammatory**, **and pro-angiogenic agents**, offering a solution that can be injected directly into deep wounds – an approach currently unavailable with existing treatments. By doing so, it reduces the physical and mental burden associated with frequent bandage changes while ensuring effective action at otherwise hard-to-reach wound sites.

To enable customizable bioactivity, INJECTHEAL employs poly(ε-lysine) dendrons and incorporates polymeric microcapsules for controlled, targeted drug release.

The project also addresses preclinical validation, industrial scalability, and the groundwork for clinical trials, paving the way toward real-world application.



PROJECT CONSORTIUM

The INJECTHEAL consortium is composed of **12 partners from 8 European countries** (Italy, Austria, Germany, Ireland, Spain, Switzerland, and the United Kingdom). This partnership includes academic institutions, research centers, small and medium-sized enterprises, and industry organizations, united by the goal of advancing knowledge and applications in the field of **chronic wound healing**.



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CSIC/UPV
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The Lindsay Leg Club Foundation
United Kingdom

SUPSI
Switzerland

INJECTHEAL

INJECTABLE GEL FOR CHRONIC WOUNDS

Self-healing injectable hydrogel for chronic wound care and tissue regeneration

www.injectheal.eu

INJECTHEAL is funded by the European Union, through the Horizon Europe research and innovation programme under the Grant Agreement no 101177924. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Health and Digital Executive Agency (HADEA). Neither the European Union nor the granting authority can be held responsible for them.

WHY IT MATTERS

Chronic wounds pose an increasing health challenge worldwide, particularly for older adults and individuals with comorbidity, diabetes or obesity. These wounds can lead to serious consequences such as pain, infection and, in some cases, amputation. They can also have a significant impact on an individual's daily life, independence and overall well-being.

Current treatments, such as fibre dressings or hydrocolloid gels, often cannot reach the deeper parts of complex wounds like diabetic foot ulcers or pressure ulcers. These wounds may develop narrow tunnels and cavities that limit oxygen and nutrient supply, slowing the healing process.

INJECTHEAL is developing an innovative injectable hydrogel designed to work where traditional dressings cannot: deep inside the wound. This innovative technology targets the underlying causes of chronic wounds — helping reduce inflammation, combat infection, and stimulate natural tissue repair.

The hydrogel is smoothly injected directly into the wound, where it gently fills its unique shape and depth. This allows for precise delivery of therapeutic agents, improved blood-vessel formation, and faster, more complete healing. **It offers new hope for patients who have not responded to standard care**.

INJECTHEAL matters because people living with chronic wounds deserve more than temporary relief.

Individuals requiring treatment deserve care that supports healing, restores comfort, and helps individuals to reclaim their quality of life.

ADVANTAGES FOR PATIENT

1. **Reduction of dressing changes**: Caring for chronic ulcers becomes easier with INJECTHEAL. Specifically, it uses a 'smart' hydrogel that releases medication slowly over 7 days. This sustained-release capability allows the dressing to remain in place for much longer than standard treatments, avoiding the discomfort and disruption of daily changes.
2. **Direct treatment of deep wounds**: This technology delivers treatment directly into deep wounds, reaching the areas that need help most. INJECTHEAL achieves this by being injected as a fluid which flows into the narrow tunnels and irregular shapes of deep wounds before setting into a gel. This ensures that the healing medication physically touches and treats every part of the wound cavity.
3. **Support for tissue regeneration**: This treatment reduces infection and inflammation inside the wound, creating a healthier healing environment. INJECTHEAL achieves this by delivering advanced active ingredients directly to the wound site to calm chronic inflammation and actively stimulate repair by promoting the growth of new blood vessels and the regeneration and recovery of skin tissue.
4. **Improvement of overall well-being**: By reducing pain, infection, and the frequency of dressing changes, this treatment aims to improve daily comfort and stabilize the recovery process. Importantly, INJECTHEAL addresses the psychological and operational burden of chronic care: extended treatment intervals mean less anxiety and disruption for the patient, while significantly reducing the workload and stress for patients, caregivers and nursing staff.

LINDSAY LEG CLUB FOUNDATION's work within the INJECTHEAL project

The Lindsay Leg Club Foundation brings a truly compassionate, person-centred voice to the project. With many years of experience supporting people living with lower-limb conditions, the Foundation is deeply committed to listening to and learning from those affected by leg ulcers. By honouring their stories, priorities, and lived experiences, the Foundation helps ensure that the project is shaped not just by innovation, but by genuine understanding, dignity, and care for the people at its heart.

