HORIZON-HLTH-2021-TOOL-06-01
Smart medical devices and their surgical implantation
for use in resource-constrained settings

NEOLIVER

Automated Generation of Dense, Functional and Perfusable Bioprinted Liver Constructs for Transplantation

Starting date of the project: 01/01/2025
Duration: 48 months

= Deliverable D8.1 =

Initial Communication Kit

Due date of deliverable: 30/04/2025
Actual submission date: 30/04/2025

Work Package: 8
Responsible Work Package Leader: Amelia Dominguez, AMI
Responsible Task Leader: Martina Nesverova, AMI
Version: V1.2

Dissemination level		
PU	Public – fully open (automatically posted online on the Project Results platforms)	X
SE	Sensitive — limited under the conditions of the Grant Agreement	
Classified R-UE/EU-R	EU RESTRICTED under the Commission Decision No2015/444	
Classified C-UE/EU-C	EU CONFIDENTIAL under the Commission Decision No2015/444	
Classified S-UE/EU-S	EU SECRET under the Commission Decision No2015/444	

Co-funded by the European Union

AUTHOR

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DOCUMENT CONTROL

Document version	Date	Change
V1.0	22/04/2025	First draft
V1.1	29/04/2025	Final rollup and leaflet designs included

VALIDATION PROCESS

Reviewers		Validation date
Task Leader	Amelia Dominguez	22/04/2025
Work Package Leader	Martina Nesverova	29/04/2025
Project Manager	Martina Nesverova	29/04/2025
Coordinator	Bart Spee	30/04/2025

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Delivery date	22/04/2025

DISTRIBUTION LIST

Date	Version	Recipients
	1.1	Project Coordinator
	1.1	Project Officer, Project Partners

DISCLAIMER

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Executive Summary

Deliverable *8.1. Initial Communication Kit* is part of task 8.1. *Dissemination and communication events and activities,* which ensures the results of the project will be disseminated to the European research and industrial community and will be communicated to the public, scientific community, technicians, experts, media, policy makers, industries, end-users and other stakeholders. The initial communication kit of NEOLIVER is a set of promotional materials aimed to inform the wider public about NEOLIVER, its objectives and expected impact. The package includes NEOLIVER (1) logo, (2) leaflet, (3) factsheet, (4) first press release (5) and webpage. In addition, the social media accounts of the project are presented.

The communication kit will be updated and expanded over the course of the project, based on the dissemination and communication strategy of the project as well as to reflect the progress and results of the project. The updates will be demonstrated in the three versions of the *Communication & Dissemination Strategy,* submitted as D8.2(*v.1*), D8.3(*v.2*) and D8.4(*v.3*) in M6, M18, M30, respectively.

Table of Contents

1. Introduction

Deliverable D8.1 *Initial Communication Kit* is a result of task T8.1 *Dissemination and communication events and activities*. It is part of the NEOLIVER dissemination and communication strategy and collects the first promotional materials for NEOLIVER. The communication kit materials and tools are targeted to the wider public and aim to establish a common visual identity and messaging for the NEOLIVER consortium. The deliverable presents the NEOLIVER (1) logo, (2) leaflet, (3) rollup, (4) oral and poster templates, (5) first press release, and (6) webpage. All presented materials will be available on the project website as downloadable files.

2. Results and discussion

2.1. NEOLIVER logo

The project logo was prepared by the WP8 leader (AMI) to establish a visual identity for the project and its consortium. The logo is used in all project-related communication materials, website, leaflets, posters, brochures as well as internal document templates and confidential materials. The logo design in two colours is inspired by the project title **NEO** + **LIVER** and the graphic design of letters created by building blocks resembles the NEOLIVER approach to build a liver. The logo was approved by the coordinator and presented to the partners at the project kick-off meeting held on 21-25 January 2025.

Figure 1. NEOLIVER logo

2.2. NEOLIVER leaflet

Project leaflet is a short print material to provide a brief overview of the project overview/goals/impacts/partners at glance to those interested in the topic. The leaflet can be distributed at conferences, events and on the premises of the partners (see Annex 1).

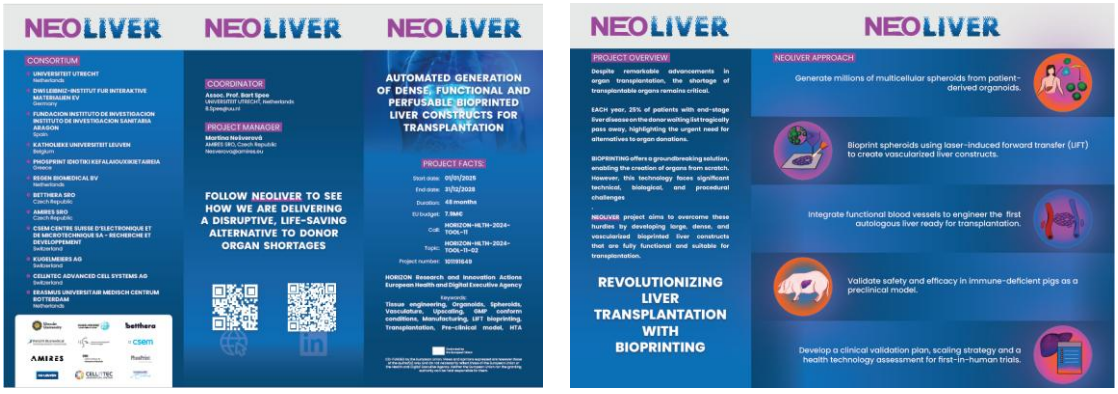

Figure 2. NEOLIVER leaflet

2.3. NEOLIVER rollup

The NEOLIVER rollup is included as Annex 2.

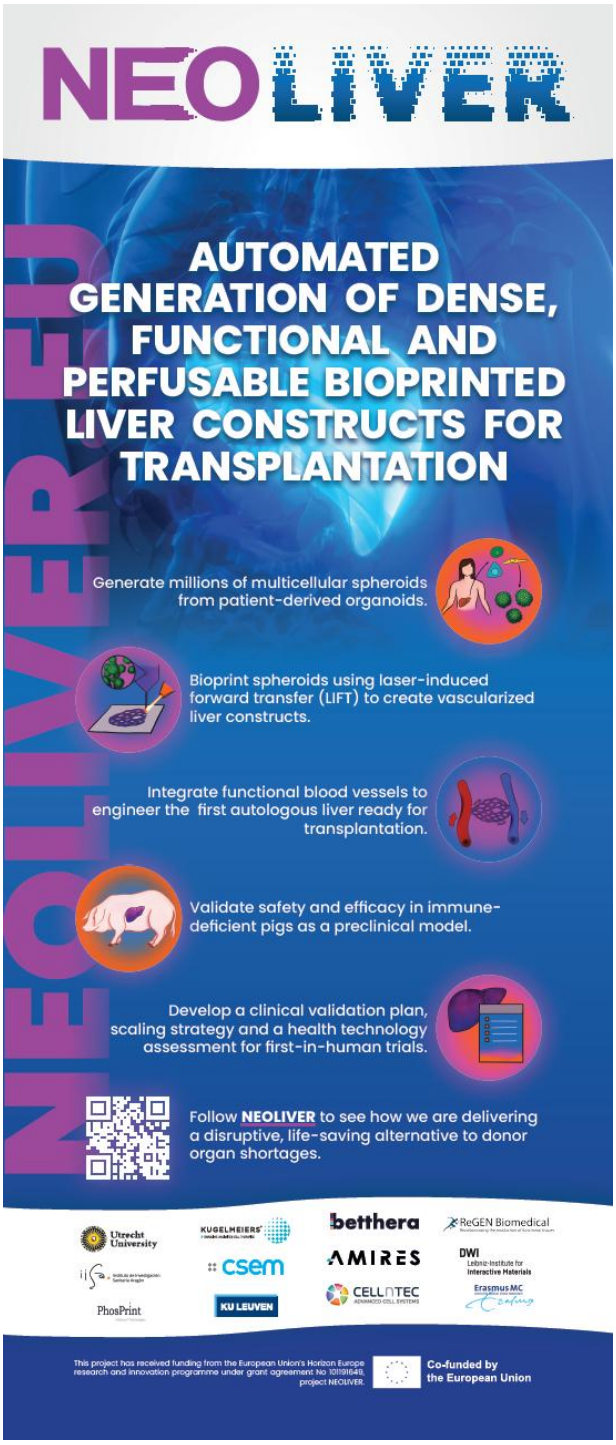

Figure 3. NEOLIVER rollup

2.4. NEOLIVER poster and oral contribution templates

The templates for oral and poster contributions have been prepared by WP8 leader (AMI) and shared with all the partners for their use in dissemination activities. The templates will help unifying the branding of NEOLIVER project in dissemination activities.

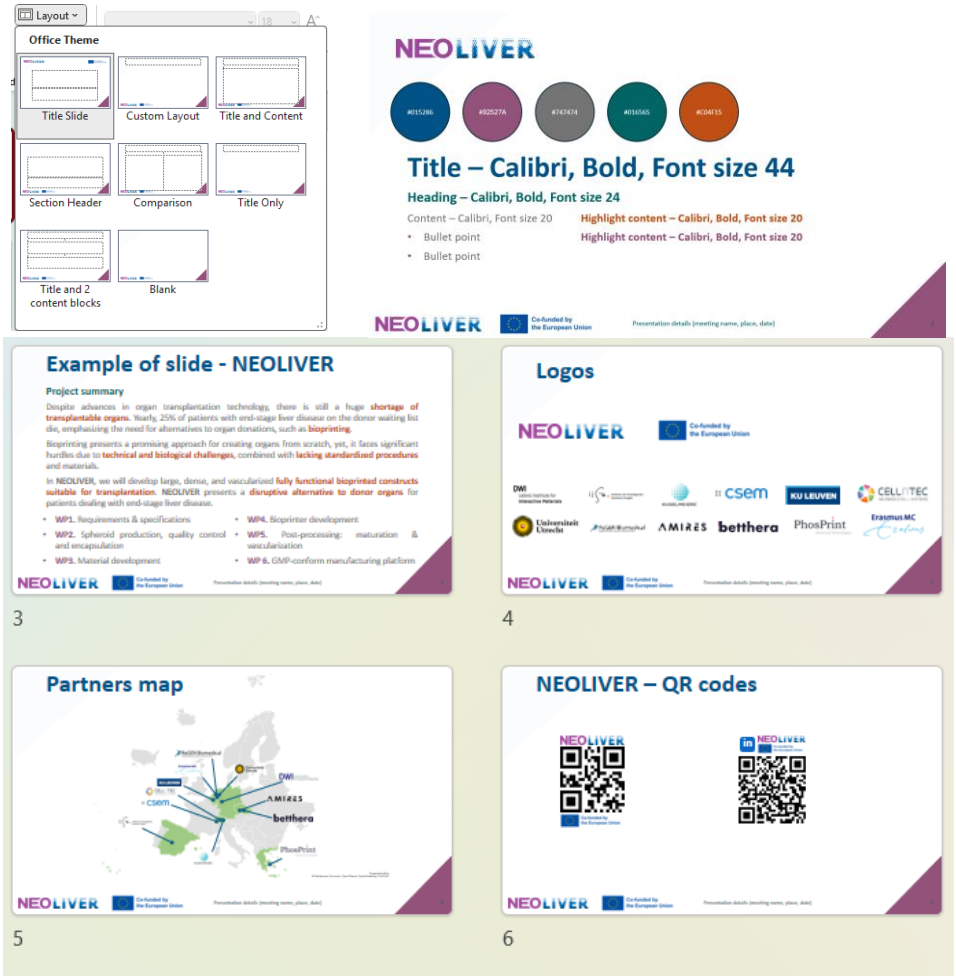

Figure 4. NEOLIVER oral contribution template

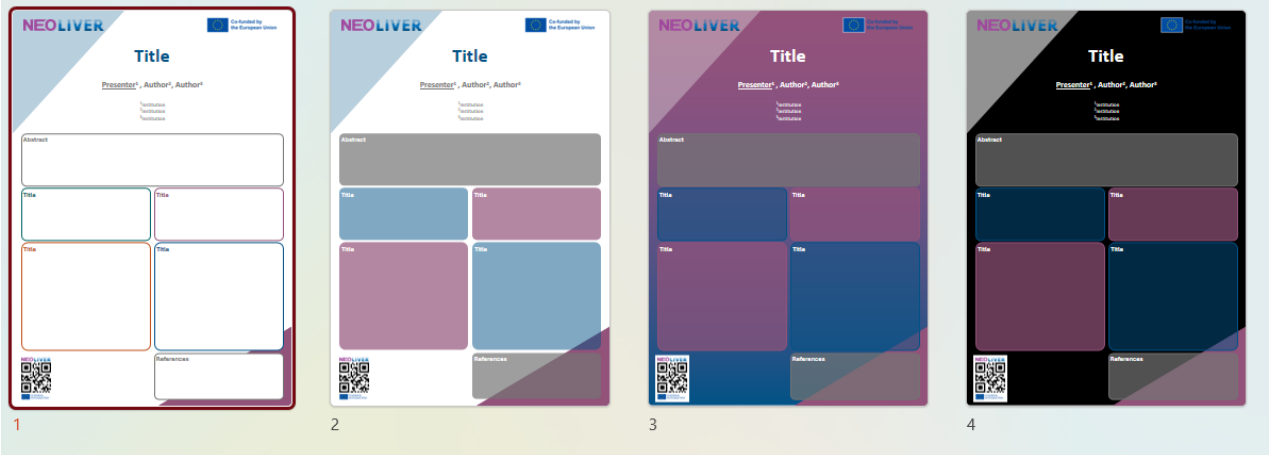

Figure 5. NEOLIVER poster contribution templates

2.5. NEOLIVER first press release

In the first month of the project, a press release announcing the launch of NEOLIVER was published. The press release introduced the topic, current challenges in liver disease diagnostics and therapy and showcased how NEOLIVER consortium aims to address these issues (see annex 3 for the complete document). The press release was shared in the websites and social media channels of the project and project partners (e.g. Betthera, CELLnTEC, IISA).

Other press releases will be produced during the project in connection to important results/milestones achieved. All the press releases will be made available on the project website and will be circulated in the social media channels of NEOLIVER.

NEOLIVER

Press release

Towards 3D bioprinted liver tissue constructs: NEOLIVER

European consortium to develop Automated Generation of Dense, Functional and Perfusable Bioprinted Liver Constructs for Transplantation

European Union (EU) Horizon Europe and Swiss State Secretariat for Education, Research, and Innovation co-funded NEOLIVER Consortium (total €10M award) is set to develop world's first autologous bioprinted liver designed for clinical use. Coordinated by University of Utrecht, twelve consortium members will develop technologies to establish an automated manufacturing line, vascularize the bioprinted liver constructs by a novel strategy and validate them pre-clinically.

Liver disease is a major global health challenge, responsible for approximately 2 million deaths annually. NEOLIVER's innovative approach aims to alleviate the burden of liver disease by providing a scalable and personalized solution which could in the future be utilized for liver transplantation. The consortium combines two bioprinting approaches to create dense, functional, and vascularized liver constructs using patient-derived organoids and supporting cells.

NEOLIVER will tackle key technological challenges and barriers in whole organ engineering by merging two bioprinting technologies and exploring five innovation routes:

1. Cell Sources: NEOLIVER expands and standardizes the production of organoids and supporting cells from multiple donors.
2. Bioprinting Tools: NEOLIVER utilizes LIFT technology for precise and high-speed bioprinting of liver constructs.
3. Vascularization: The consortium integrates bioprinted vessels and native donor vessels to create fully vascularized liver constructs.
4. Automated Manufacturing: NEOLIVER implements a GMP-conform automated manufacturing capability for large-scale production.
5. Clinical Validation: Functionality of bioprinted liver constructs will be validated preclinically and plan for first-in-human trials will be prepared.

Figure 6. Extract from the first press release of NEOLIVER

2.6. NEOLIVER webpage

NEOLIVER project website (https://neoliver.eu/) has been set up to increase public awareness about project aims and to reach potential end users. The NEOLIVER website has been operational since January 2025 in a provisional version and the full version will be release in May 2025.

Figure 5. NEOLIVER provisional website

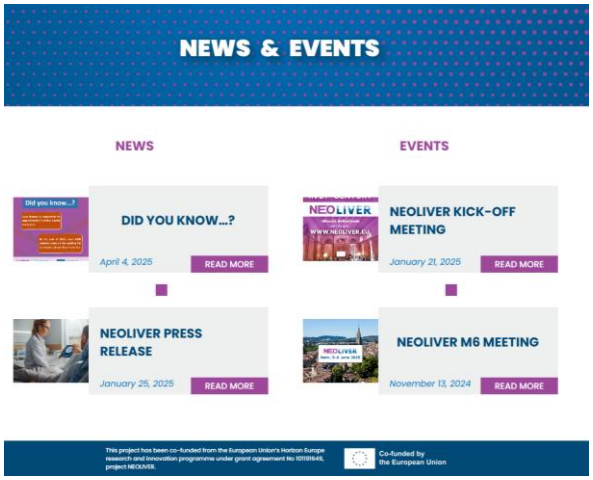

Figure 6. Extracts from NEOLIVER full-version website

The website has been created in Open-Source software called WordPress. WordPress started as a blogging system but has evolved to be used as full content management system that is completely customisable and can be used for almost anything within the field of web design. It allows fast and reliable customisation and has a user-friendly back-office environment which is a key for the website updates and file uploads. The website is available for public access and will be actively maintained during the project.

The project website integrates sections on NEOLIVER project details (funding details, abstract, objectives, expected impact, public deliverables), consortium partners (role in the project, team members), news & events, and contacts (with a message section and e-mail addresses of the Project Coordinator and Project Manager). The website provides acknowledgement of EU funding and includes the EU emblem.

The project will also be promoted through websites of NEOLIVER partners (e.g. News sections, projects sections).

2.7. NEOLIVER social media

In addition to the webpage and print materials, a LinkedIn account has been set up for the NEOLIVER Project to allow more dynamic updates of project progress, engage a wider audience (especially the younger generation) and enable feedback from various audiences. The need to use additional social media partners will be assessed over the course of the project.

Short news stories and activities about the NEOLIVER project and its development will be prepared and shared on the identified tools, especially during events, conferences, and symposiums. Social media will also be used as a communication channel to disseminate potential clustering activities.

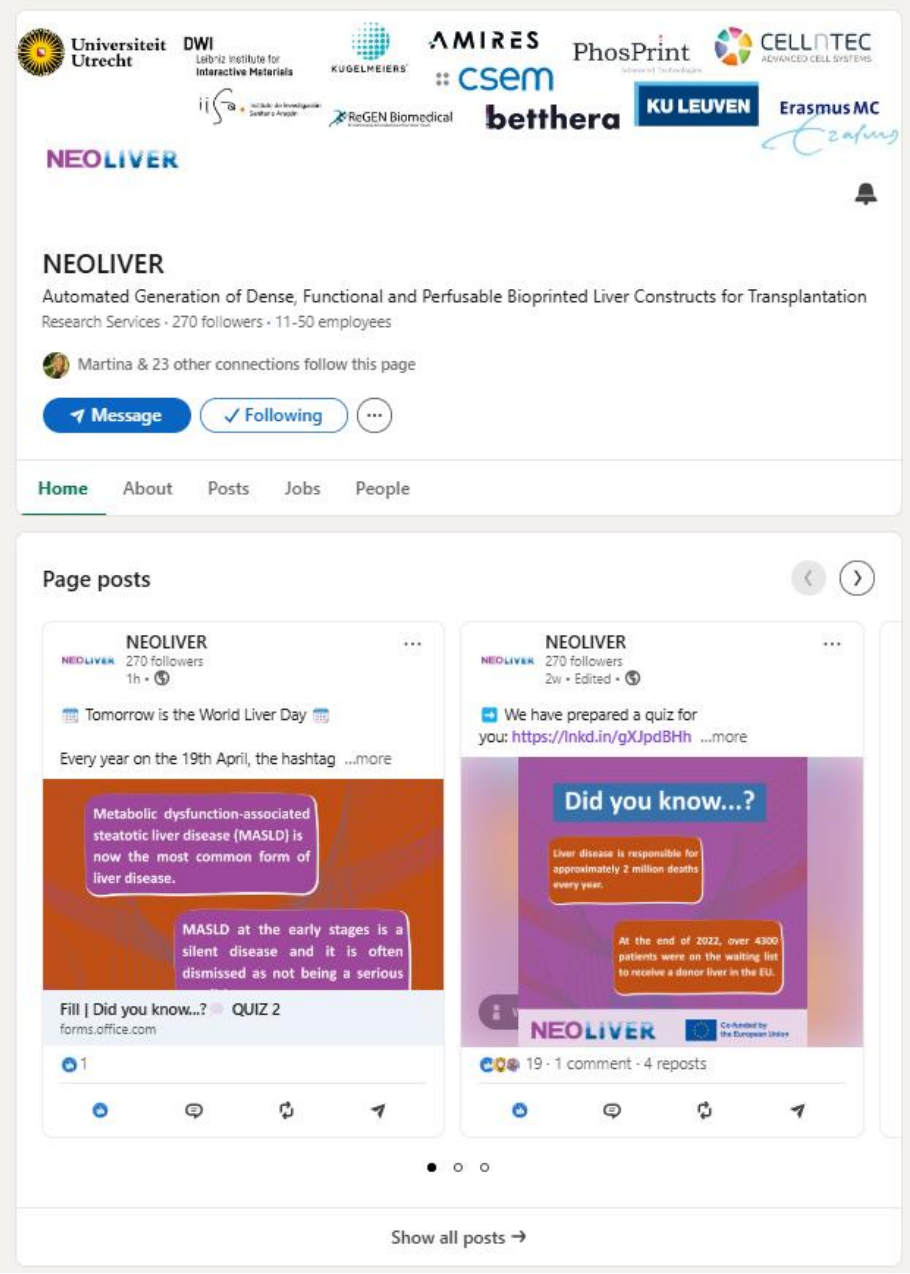

Figure 7. NEOLIVER LinkedIn page

3. Conclusions

This document represents the Deliverable D8.1 *Initial Communication Kit.* It includes the first promotional materials for NEOLIVER project to create awareness and inform the wide and various target audiences about the NEOLIVER project and its development. These materials will be extensively used by NEOLIVER partners whenever they present at conferences, publish in journals and magazines, establish contacts with media, attend exhibitions, organize workshops, etc. The materials will be revised over the course of the project to integrate the project results as they are produced. Moreover, the communication kit will be expanded to include project presentation and video, with additional communication means considered on a running basis.

When disseminating the results of the NEOLIVER project, the following sentence, alongside the EU emblem, will always be included: ''Co-Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the Health and Digital Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.''

The dissemination of the project's achievements should never jeopardize the potential protection of generated intellectual property and further industrial application. Therefore, before any dissemination activity (publication, presentation) strict rules of prior notice to all partners will be applied, according to EC guidelines and NEOLIVER Consortium Agreement: prior notice of any planned publication should be given to other consortium members at least 45 calendar days before the publication. The Dissemination Manager in cooperation with the Exploitation Manager will follow the approval processes and will act as an internal executive approval body for any dissemination action organized by different partners.

The full communication and dissemination strategy for NEOLIVER project is under development and will be submitted as part of DEL 8.2 *Communication & dissemination strategy V1* at M6.

4. Degree of progress

The deliverable is 100% fulfilled.

5. Dissemination level

The deliverable 8.1. *Initial Communication Kit* is Public – fully open (automatically posted online on the Project Results platforms).

6. Annexes

6.1. Annex 1: NEOLIVER leaflet

6.2. Annex2: NEOLIVER rollup

6.3. Annex 3: NEOLIVER first press release

NEOLIVER

CONSORTIUM

- **UNIVERSITEIT UTRECHT**
  Netherlands
- **DWI LEIBNIZ-INSTITUT FUR INTERAKTIVE MATERIALIEN EV**
  Germany
- **FUNDACION INSTITUTO DE INVESTIGACION INSTITUTO DE INVESTIGACION SANITARIA ARAGON**
  Spain
- **KATHOLIEKE UNIVERSITEIT LEUVEN**
  Belgium
- **PHOSPRINT IDIOTIKI KEFALAIOUXIKIETAIREIA**
  Greece
- **REGEN BIOMEDICAL BV**
  Netherlands
- **BETTHERA SRO**
  Czech Republic
- **AMIRES SRO**
  Czech Republic
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  Switzerland
- **KUGELMEIERS AG**
  Switzerland
- **CELLNTEC ADVANCED CELL SYSTEMS AG**
  Switzerland
- **ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM**
  Netherlands

Utrecht University · KUGELMEIERS · betthera · ReGEN Biomedical · iiSA Instituto de Investigación Sanitaria Aragón · csem · AMIRES · DWI Leibniz-Institute for Interactive Materials · PhosPrint · KU LEUVEN · CELLNTEC ADVANCED CELL SYSTEMS · Erasmus MC

NEOLIVER

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PROJECT MANAGER

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FOLLOW NEOLIVER TO SEE HOW WE ARE DELIVERING A DISRUPTIVE, LIFE-SAVING ALTERNATIVE TO DONOR ORGAN SHORTAGES

NEOLIVER

AUTOMATED GENERATION OF DENSE, FUNCTIONAL AND PERFUSABLE BIOPRINTED LIVER CONSTRUCTS FOR TRANSPLANTATION

PROJECT FACTS:

Start date:	**01/01/2025**
End date:	**31/12/2028**
Duration:	**48 months**
EU budget:	**7.9M€**
Call:	**HORIZON-HLTH-2024-TOOL-11**
Topic:	**HORIZON-HLTH-2024-TOOL-11-02**
Project number:	**101191649**

HORIZON Research and Innovation Actions
European Health and Digital Executive Agency

Keywords:
Tissue engineering, Organoids, Spheroids, Vasculature, Upscaling, GMP conform conditions, Manufacturing, LIFT bioprinting, Transplantation, Pre-clinical model, HTA

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NEOLIVER

PROJECT OVERVIEW

Despite remarkable advancements in organ transplantation, the shortage of transplantable organs remains critical.

EACH year, 25% of patients with end-stage liver disease on the donor waiting list tragically pass away, highlighting the urgent need for alternatives to organ donations.

BIOPRINTING offers a groundbreaking solution, enabling the creation of organs from scratch. However, this technology faces significant technical, biological, and procedural challenges.

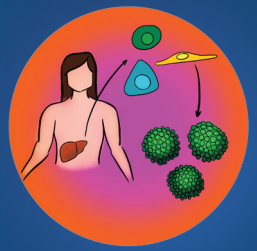
NEOLIVER project aims to overcome these hurdles by developing large, dense, and vascularized bioprinted liver constructs that are fully functional and suitable for transplantation.

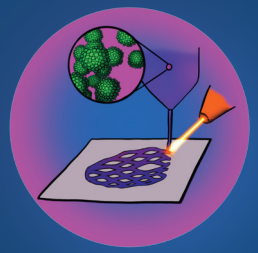
REVOLUTIONIZING LIVER TRANSPLANTATION WITH BIOPRINTING

NEOLIVER

NEOLIVER APPROACH

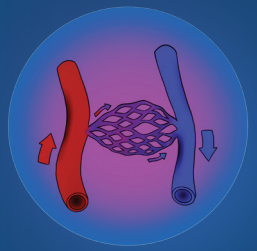
Generate millions of multicellular spheroids from patient-derived organoids.

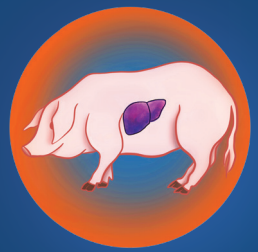




Bioprint spheroids using laser-induced forward transfer (LIFT) to create vascularized liver constructs.

Integrate functional blood vessels to engineer the first autologous liver ready for transplantation.





Validate safety and efficacy in immune-deficient pigs as a preclinical model.

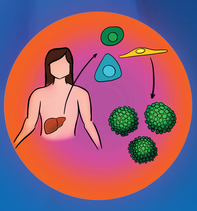
Develop a clinical validation plan, scaling strategy and a health technology assessment for first-in-human trials.

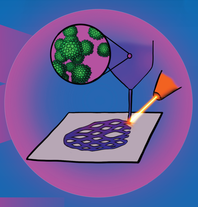
NEOLIVER

AUTOMATED GENERATION OF DENSE, FUNCTIONAL AND PERFUSABLE BIOPRINTED LIVER CONSTRUCTS FOR TRANSPLANTATION

NEOLIVER

Generate millions of multicellular spheroids from patient-derived organoids.





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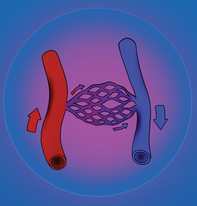

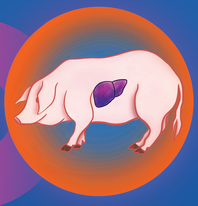

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Follow **NEOLIVER** to see how we are delivering a disruptive, life-saving alternative to donor organ shortages.

Utrecht University

Instituto de Investigación Sanitaria Aragón

PhosPrint Advanced Technologies

KUGELMEIERS ENABLING UNLIMITED CELL THERAPIES

csem

KU LEUVEN

betthera

AMIRES

CELLNTEC ADVANCED CELL SYSTEMS

ReGEN Biomedical Revolutionizing the production of functional tissues

DWI Leibniz-Institute for Interactive Materials

Erasmus MC University Medical Center Rotterdam

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101191649, project NEOLIVER.

Co-funded by the European Union

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4. Automated Manufacturing: NEOLIVER implements a GMP-conform automated manufacturing capability for large-scale production.
5. Clinical Validation: Functionality of bioprinted liver constructs will be validated preclinically and plan for first-in-human trials will be prepared.

NEOLIVER is built upon excellent results of ORGANTRANS EU-funded project, which developed the key technologies and concepts, and which successfully transplanted small liver constructs into mice. NEOLIVER pushes the boundaries of tissue engineering further by automating the bioprinting process and producing a larger functional tissue. According to Professor Spee:

"The combined NEOLIVER consortium expertise will enable us to develop and deploy a larger tissue to demonstrate its potential for future clinical use in addressing the donor organs shortage in the future. If successful, the NEOLIVER approach will be scalable to other organ systems, leveraging organoid technology—a cornerstone of regenerative medicine".

Additional information

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NEOLIVER consortium

About NEOLIVER

Despite advances in organ transplantation technology, there is still a huge shortage of transplantable organs. Yearly, 25% of patients with end-stage liver disease on the donor waiting list die, emphasizing the need for alternatives to organ donations, such as bioprinting. Bioprinting presents a promising approach for creating organs from scratch, yet, it faces significant hurdles due to technical and biological challenges, combined with lacking standardized procedures and materials. In NEOLIVER, we will develop large, dense, and vascularized fully functional bioprinted constructs suitable for transplantation. We will achieve this by establishing a GMP-conform manufacturing line for standardized production, ensuring unparalleled quality and safety for future patients. More specifically, by using patient-derived organoids and supporting cells including endothelial cells, we will generate millions of multicellular spheroids as building blocks for bioprinting. Through laser induced forward transfer (LIFT) bioprinting techniques we will create a vascularized liver construct via precise spatial deposition of spheroids and vessels at high density. By integrating this technology with extrusion-based bioprinted vessels for blood supply, we will generate the world's first autologous bioprinted liver, ready for transplantation. To show the safety and efficacy, we will transplant the bioprinted liver constructs in immune-deficient pigs. This, combined with a clinical validation plan, upscaling strategy and Health Technology Assessment (including patient acceptance), will prepare the bioprinted liver constructs for first-in-human trials. Thus, NEOLIVER presents a disruptive alternative to donor organs for patients dealing with end-stage liver disease.

This project has received funding from the European Union's Horizon Europe Research and Innovation programme under grant agreement No 101191649, project **NEOLIVER**.

The project website is under preparation (www.neoliver.eu).

Project duration: 1 January 2025 – 31 December 2028.

Co-funded by the European Union