ONCOSCREEN

D7.14 MISSION CLUSTER EU – PROJECTS COMMON VIDEO AND BROCHURE

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DOCUMENT SUMMARY INFORMATION

Grant Agreement No	101097036	**Acronym**	ONCOSCREEN
Full Title	A European "shield" against colorectal cancer based on a novel, more precise and affordable risk-based screening methods and viable policy pathways		
Start Date	1 January 2023	**Duration**	48 months
Project URL	https://oncoscreen.health/		
Deliverable	D7.14 Mission Cluster EU Projects Common Video and Brochure		
Work Package	WP7- Dissemination, Communication, Exploitation and Impact Creation		
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Lead Beneficiary	CARRCOMMS		
Contributions	All partners, projects within "Prevention and Early Detection (Screening)" cluster: DIOPTRA, LUCIA, MammoScreen, PANCAID, SANGUINE, THERMOBREAST		
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DOCUMENT HISTORY

Version	Date	Changes	Contributor(s)	Comments
V0.1	30.11.2023	Table of Contents was prepared	CARRCOMMS	Discussed the table of contents with the participating projects
V0.2	06.12.2023	Integrating comments and suggestions from the cluster meeting	Prevention and Early Detection (Screening) cluster	Inputs added after discussing with the participating projects
V.03	14.12.2023	First draft prepared	Prevention and Early Detection (Screening) cluster	Inputs were integrated after discussing the structure and content of the deliverable
V0.4	15.12.2023	The draft submitted for internal review	CARRCOMMS	Feedback received and incorporated
V0.5	18.12.2023	Pre-final version sent to the reviewers; peer review comments addressed	CARRCOMMS	Incorporated comments from the peer reviewers
V1.0	20.12.2023	Final version. Quality Check. Submitted to EC	EXUS	Final quality check

PROJECT PARTNERS

Partner	Acronym
EXUS SOFTWARE MONOPROSOPI ETAIRIA PERIORISMENIS EVTHINIS	EXUS
UNIVERSITAETSMEDIZIN DER JOHANNES GUTENBERG-UNIVERSITAET MAINZ	UMC-Mainz
INSTITUTE OF COMMUNICATION AND COMPUTER SYSTEMS	ICCS
FIRALIS	Firalis
UNIVERSITATSKLINIKUM SCHLESWIG-HOLSTEIN	UKSH
UNIVERSITAET zu LUEBECK	UzL
LIETUVOS SVEIKATOS MOKSLU UNIVERSITETAS	LSMU
MEDIZINISCHE UNIVERSITAT GRAZ	MUG
INSTITUTO PORTUGUES DE ONCOLOGIA DO PORTO FRANCISCO GENTIL, EPE	IPO
INSTITUTUL ONCOLOGIC PROF. DR. ALEXANDRU TRESTIOREANU BUCURESTI	IOB
TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY	TECHNION
UNIVERSIDADE DO MINHO	UMINHO
UNIVERSITEIT VAN TILBURG	TLBG
VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK N.V	VITO
ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	CERTH
INNOVATION SPRINT	iSPRINT
SCIENTIFIC ACADEMY FOR SERVICE TECHNOLOGY EV	SERVTECH
AINIGMA TECHNOLOGIES	AINIGMA
CATALINK LIMITED	CATALINK
KONNEKT ABLE TECHNOLOGIES LIMITED	KT
BEIA CONSULT INTERNATIONAL SRL	BEIA
UNIVERSIDAD DE LA RIOJA	URIOJA
TIME.LEX	time.lex
CARR COMMUNICATIONS LIMITED	CARR
MINISTRY OF HEALTH	MoHGR
PAGALBOS ONKOLOGINIAMS LIGONIAMS ASOCIACIJA	POLA LT
EUROPACOLON PORTUGAL- ASSOCIACAO DE LUTA CONTRA O CANCRO DO INTESTINO	ECPT
ELLINIKI ETAIREIA OGKOLOGIAS PEPTIKOU	HSGO
EUROPEAN SOCIETY OF DIGESTIVE ONCOLOGY	ESDO
FUNDATIA YOUTH CANCER EUROPE	YCE
MEDIZINISCHE UNIVERSITAT INNSBRUCK	MUI
LIETUVOS RESPUBLIKOS SVEIKATOS APSAUGOS MINISTERIJA	MoH-LT
EY ADVISORY SPA	EY
AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	CSIC
UNIVERSITE DE FRANCHE-COMTE	UFC
ROZENBAUM KONSULTING	ROSENBAUM
GIE AXA	GIE AXA
ASSOCIATION GERCOR	GERCOR
LOUWEN ROGIER	CC RL
SANNE VOOGD - CCassured	CC SV

LIST OF ABBREVIATIONS

Abbreviation	Description
D	Deliverable
DoA	Description of Action
EC	European Commission
EU	European Union
GA	Grant Agreement
HaDEA	European Health and Digital Executive Authority
QR	Quick response

Executive Summary

This deliverable aims to report the process of developing and producing a joint video and brochure for the Prevention and Early Detection (Screening) cluster, which includes seven EU-funded projects under the EU Mission on Cancer. The participating projects will use these materials to communicate and inform public debate about the importance of research activities and innovative technology in advancing cancer screening and early detection. Each participating project can use these materials across various communication channels and dissemination events.

The deliverable includes a brief introduction of the concept and an overview of the cluster video and brochure design. The purpose of this document is to provide the partners and reviewers with an outline of the structure, functionality, and rationale behind these communication materials. Screenshots and images are included throughout the document to illustrate the materials described in the deliverable.

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1 Introduction

The European Union (EU) Mission on Cancer has set four interconnected objectives: 1) Understanding of cancer; 2) Prevention and early detection; 3) Diagnosis and treatment; and 4) Quality of life for patients and their families. Following these mission's objectives, seven projects were funded by the European Commission's Horizon Europe Research and Innovation programme to develop and validate new non-invasive, or minimally invasive cancer screening and detection methodologies for everyday medical practice and population-based screening programmes. To enhance public awareness and participation in cancer screening as well as to maximise research impact, the Prevention and Early Detection (Screening) cluster has been established. The structure of the cluster and the common plan for collaboration was established and reported in D7.8.

As it was specified in D7.8, The Prevention and Early Detection (Screening) cluster included the following projects: DIOPTRA, LUCIA, MammoScreen, PANCAID, SANGUINE, ThermoBreast and ONCOSCREEN. The initial meeting took place on the 9th of February 2023 and agreed on coordinating project activities around the following focal points:

- Data Management
- Research and Innovation
- Communication and Dissemination
- Citizen Engagement
- Addressing Inequalities
- Research Capacity Building

From the start of the cluster, the projects agreed to establish several working groups addressing each of the defined topics of the joint activities. The Dissemination and Communication working group was established to focus on developing common communication materials and coordinating joint activities designed to maximise impact and promote research results and awareness about cancer screening technology and methods. The Dissemination Manager of ONCOSCREEN attends and contributes to a monthly meeting of the working group.

The first meeting of the Dissemination and Communication working group took place on the 15th of May and set out a working plan for collaborating on dissemination and communication activities. The working group holds recurring monthly meetings to manage the task based on the rotating chairing responsibilities and the agreed distribution of tasks. In particular, the group took full responsibility for developing joint video and brochure as well as managing cluster communication activities via newsletters, social media channels, and a dedicated section on the project websites.

During the first meeting of the Dissemination and Communication working group, the two projects took the initiative for developing joint communication materials. DIOPTRA led the task on preparing a joint video of the cluster. While PANCAID coordinated the efforts and

worked on the design of the common brochure. ONCOSCREEN chaired the first three months of the Dissemination and Communication working group and contributed to the initial planning of this task. Together with the participating projects, ONCOSCREEN provided the description of the technology and expected results, information about ONCOSCREEN channels as well as relevant visual materials, such as logos and stock images. Furthermore, ONCOSCREEN actively contributed to the discussions on the concept and the final design of the cluster communication materials.

1.1 Deliverable objectives

This deliverable aims to document the realisation of the task of preparing the joint video and brochure for the Prevention and Early Detection (Screening) cluster. This deliverable summarises the concept and design of the video and the brochure and presents the final versions of both materials.

Table 1 Description of Action: Task 7.4

ONCOSCREEN DoA requirements	Deliverable addressing the requirements	Brief description
Task 7.4	D7.14 EU Mission Cancer – Projects Common Video and Brochure	It reports on the common video and brochure to be created by the Prevention and Early Detection (Screening) cluster

1.2 Relationship with other deliverables and tasks

Table 2 Linkages between D7.14 and other ONCOSCREEN deliverables

Deliverable	Description of the deliverable	Link to D7.14
D7.8	Initial common work plan for scientific collaboration under the "Prevention and Early Detection (Screening)" cluster	- Establishing the initial strategy and work plan on the joint cluster activities. - Creating working groups dedicated to specialised tasks of the cluster
D7.9	Progress report and updates on the common annual meeting of the Prevention and Early Detection (Screening) cluster (version 1)	- Documenting that the deliverable on the joint video and brochure will be submitted in December 2023 for all cluster projects

1.3 Deliverable structure

The deliverable focuses on showcasing the results: the joint video and brochure of the cluster. The section two presents the concept and the storyboard of the video. It also provides a link to the video. The third part focuses on the cluster brochure. A short overview of the concept and the final design are included in this deliverable.

2 Video for the Prevention and Early Detection (Screening) cluster

2.1 Concept

This task was prepared within the framework of regular meetings and discussions of the Dissemination and Communication working group, which included the Dissemination Manager of ONCOSCREEN.

The production of cluster video took place less than 12 months from the start of the projects. The early phase of the projects guided the decision about the concept of the video for the cluster. The Dissemination and Communication working group agreed to focus on the shared objectives of the cluster on promoting public awareness about cancer screening research and new technologies.

The video presents a general description of each project. The main focus is on strategies for new cancer screening methods, emphasising the complementarity of innovative technology in advancing cancer screening and early detection. The video underlines the importance of the patient-centred approach and collaborative research efforts in making a public health impact. It highlights how EU-funded research projects can create tangible results for improving the quality of life for patients and creating real impact for citizens.

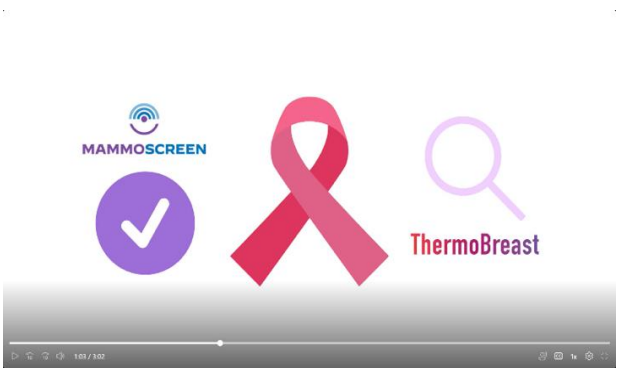
The video was developed and produced by the Martel Innovate team on behalf of the cluster project - DIOPTRA. The initial input from the participating projects was collected using a questionnaire, which is detailed in **Annex 1**. ONCOSCREEN provided the responses to the questionnaire. Based on the input from the participating projects, the production team drafted a storyboard. Two storyboard versions were presented to the Dissemination and Communication working group. The group collectively selected one of the versions, which was extensively discussed and refined. The final storyboard included a series of tables with associated concepts to be further expanded to become the video script.

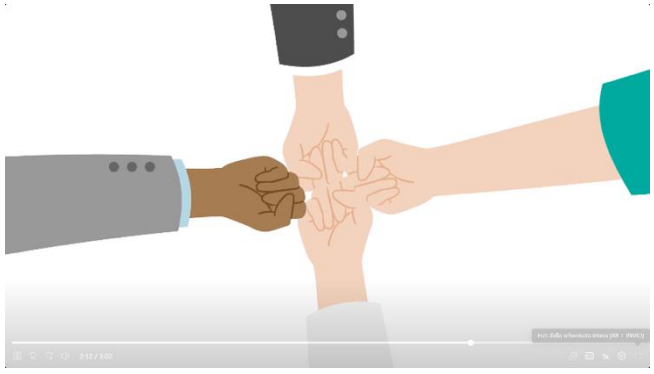
All cluster projects contributed to drafting this script and provided information, insights, and valuable comments to make the video as straightforward and impactful as possible.

Patients' advocates played a pivotal role in this process, in particular Siobhan Freeney from the Patient Advisory Group of MammoScreen, who commented on how the overall message of the video can be more effectively communicated to patients and citizens. The provided recommendations helped to refine the language used in the video.

The outcome is a narrative-driven animation with an explainer approach. It is a three-minute video targeting the general public. The final look of the video is visually appealing, easy to understand, and able to maintain high interest throughout the entire video. The three-minute duration of the video and the inclusion of subtitles enable the projects to share it across social media platforms and channels.

2.2 Storyboard of the final video

1. 	Cancer knows no boundaries. It affects us all, indiscriminately.
2. 	As cancer has not a single form, but many. Tackling it requires unity, understanding, and innovation. Across Europe, a unified effort is taking shape to support society in this endeavour.
3. 	The European Union, through its Mission Cancer programme, is funding seven innovative projects in the Prevention, including screening cluster. They all have a singular goal: to improve early cancer detection and save millions of lives. Let's take a closer look!
4. 	First, as a cluster of pioneering projects, we embrace the power of innovation. Europe's scientists and healthcare experts are taking technologies beyond state-of-the-art to detect cancer before the first signs appear. In breast cancer research, MAMMOSCREEN and THERMOBREAST projects will provide comfortable and accurate detection methods.

5. 	Early detection saves lives. By identifying those at risk, we will be able to act swiftly, increasing survival rates and giving patients a better chance against cancer's different forms. LUCIA is dedicated to understanding risk factors to enhance early lung cancer detection.
6. 	Meanwhile, using AI tools, DIOPTRA and ONCOSCREEN collaboratively optimize early colorectal cancer screening, considering individual risk indicators.
7. 	Patients' comfort and well-being are paramount. By leveraging minimally invasive testing techniques, PANCAID and SANGUINE are at the forefront of early detection for pancreatic and blood cancers, respectively. These methods not only will reduce discomfort but also encourage more individuals to commit to regular screenings, enhancing the accuracy and accessibility of early cancer detection.
8. 	Together, we are stronger. Scientists, doctors, policymakers are working hand in hand, sharing knowledge and insights. This united front ensures a harmonised, patient-focused approach to defeating cancer.

9. 	Understanding cancer goes beyond the laboratory. The discoveries made and the technologies developed will shape public health policies. They are guiding the way we prevent, diagnose, and, ultimately, treat cancer.
10. 	Together, these seven projects forge a new path in cancer prevention and treatment. A path guided by innovation, collaboration and a relentless pursuit of beating cancer. Join us in embracing this united vision, because every single life count.

2.3 Result and next steps

The final video was uploaded to the social media channels of the participating projects and embedded in the dedicated section of the project website, please see the examples presented in *Figure 1* and *Figure 2*.

Figure 1 Cluster video presented on the ThermoBreast website

Figure 2 Cluster video uploaded to DIOPTRA's YouTube channel

The video was uploaded to the ONCOSCREEN's YouTube channel, as displayed in *Figure 3*. The ONCOSCREEN website will add a new section on the synergies and cooperation with other projects, where the cluster video will be uploaded. Shorter clips and the full video will be used for social media posts. The video is available here: https://youtu.be/Ekibtfh6v2o?si=f4ztDuBlBSq89Nay.

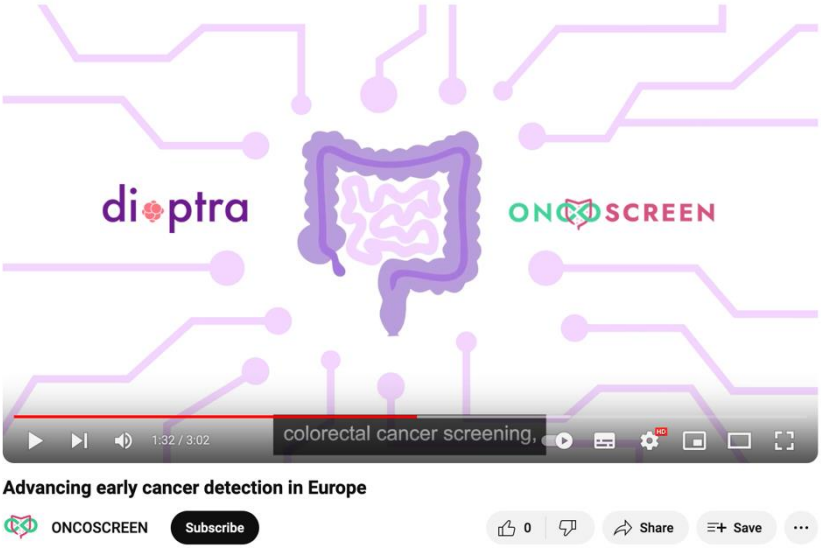


Figure 3 Cluster video on ONCOSCREEN's YouTube channel

3 Brochure for the Prevention and Early Detection (Screening) Cluster

3.1 Concept

The cluster brochure was developed in conjunction with the video, following a similar approach to requesting inputs and discussing different concepts and versions with the Dissemination and Communication working group. The brochure was developed and designed by Concentris Research Management GmbH, the leader of the Dissemination and Communication work package of the PANCAID project.

ONCOSCREEN provided the information about the project using the questionnaire detailed in **Annex 1**. After the initial discussion of the concept, the ONCOSCREEN project submitted the needed content for the brochure and made final revisions to align with the description of the other participating projects.

The brochure showcases the seven EU-funded research projects, which form the Prevention and Early Detection (Screening) cluster, describing their scientific goals and giving insights into the development of technologies and expected outcomes.

The brochure consists of 18 pages. The front cover and the first spread (page 2-3) represent the essence of the cluster with a captivating image and graphic, capturing the cluster's identity, as it is shown in *Figure 4*. It also provides concise information on the EU Mission on Cancer and the cluster. Each subsequent spread features the projects with an overview of the technologies and expected outcomes. The back cover includes the appropriate funding acknowledgements, a disclaimer, photo credits and relevant hashtags.

The document was meticulously crafted with the support of all the representatives from the other projects, who provided PANCAID with the necessary content.

Figure 4 The first double page of the brochure

3.1 Disclaimer and acknowledgement of EU funding

Acknowledging EU funding in communication dissemination activities is a legal obligation of every beneficiary under Article 17.2 of GA. Therefore, the involved projects consulted the European Health and Digital Executive Agency and the Directorate-General for Research and Innovation on the type of disclaimer and acknowledgement of EU funding that needed to be included in the cluster's communication materials.

The final version of the materials includes the EU emblem and funding statement according to the detailed graphics guide to the European emblem, which stipulates geometrical descriptions and the regulation colours.[1]

Furthermore, the communication materials acknowledge other funding agencies that co-fund the projects participating in the cluster. As it is shown in *Figure 5*, the logos of other funding agencies are displayed next to the EU emblem, respecting the principle of proportionality.

Figure 5 Disclaimer and funding acknowledgement

3.1 Result and next steps

The final version of the brochure is visually captivating, impactful, and informative. The full brochure is included in **Annex 2** of this deliverable. The brochure is available to the partners use via the ONCOSCREEN SharePoint. It will be actively distributed to stakeholders during future dissemination events and joint activities with the cluster projects. As we would like to minimise the environmental footprint of printed materials, the cluster brochure can be displayed electronically during dissemination events. The inclusion of QR (quick response) codes to the website and social media channels can lead to more detailed information published on the ONCOSCREEN website and the website of the participating projects. The cluster brochure will be uploaded to the ONCOSCREEN website.

[1] European Commission. Download Centre for Visual Elements: Programming Period 2021-2027, available at https://ec.europa.eu/regional_policy/information-sources/logo-download-center_en (Accessed 18/12/2023).

Conclusions

This deliverable presented the concept, the development process, and the final versions of the joint video and brochure for the Prevention and Early Detection (Screening) cluster. This deliverable summarises the content and visual look of the cluster communication materials. The video and brochure were a result of successful cooperation and ongoing work of the Dissemination and Communication working group. The final communication materials have also benefited from the active involvement and contribution of experts and representatives of cancer patient organisations.

The video and brochure have been published on each project's website and social media channels. The projects will continuously use these materials to communicate the importance of knowledge-sharing initiatives and closer cooperation among EU-funded projects to external stakeholders and the general public.

The video and brochure presented in this deliverable are part of the initial pack of communication materials for the cluster. The communication materials can be expanded and modified as the participating projects progress and research results and technical solutions become available.

Annex 1: Questionnaire for each project

The section presents the questionnaire that was used to collect the information on each project in preparation of the joint video and brochure for the Prevention and Early Detection (Screening) cluster.

ONCOSCREEN

1. What inspired the development of ONCOSCREEN?
2. How does ONCOSCREEN improve the current screening process for colorectal cancer?
3. Can you share a success story or a theoretical case where ONCOSCREEN could have made a difference?
4. How does ONCOSCREEN make the screening process more affordable and precise?
5. What is the potential impact of ONCOSCREEN on the future of colorectal cancer prevention and treatment?

MAMMOSCREEN

1. What challenges in breast cancer screening does MAMMOSCREEN aim to address?
2. How does MAMMOSCREEN's technology improve accuracy and inclusivity in breast cancer screening?
3. Could you explain how the technology makes the process more female-friendly?
4. Can you provide a success story or a potential scenario where MAMMOSCREEN could have provided earlier detection?
5. What do you envision for the future of breast cancer screening with the help of MAMMOSCREEN?

LUCIA

1. What is the main focus of LUCIA in terms of understanding lung cancer-related risk factors?
2. How does LUCIA aim to impact the current understanding and management of lung cancer?
3. Can you share an example of how LUCIA's research might benefit a patient?
4. What is the significance of understanding the impact of lung cancer-related risk factors?
5. How do you see LUCIA's work changing the future landscape of lung cancer prevention?

PANCAID

1. How does PANCAID improve the detection of pancreatic cancer?
2. Can you explain how the liquid biopsy works and why it's a breakthrough in pancreatic cancer detection?
3. Could you share a success story or a potential scenario where PANCAID could have provided earlier detection and better patient outcomes?
4. What are the potential benefits of PANCAID for patients and healthcare providers?
5. How do you envision the future of pancreatic cancer screening and treatment with the help of PANCAID?

DIOPTRA

1. What motivated the creation of DIOPTRA?
2. How does DIOPTRA's approach to early screening for colorectal cancer differ from traditional methods?
3. How do novel protein biomarkers play a role in the early detection of colorectal cancer?
4. Can you provide a theoretical case or a real-life example where DIOPTRA's technology could have made a difference?
5. What is the potential impact of DIOPTRA on the future of colorectal cancer screening?

THERMOBREAST

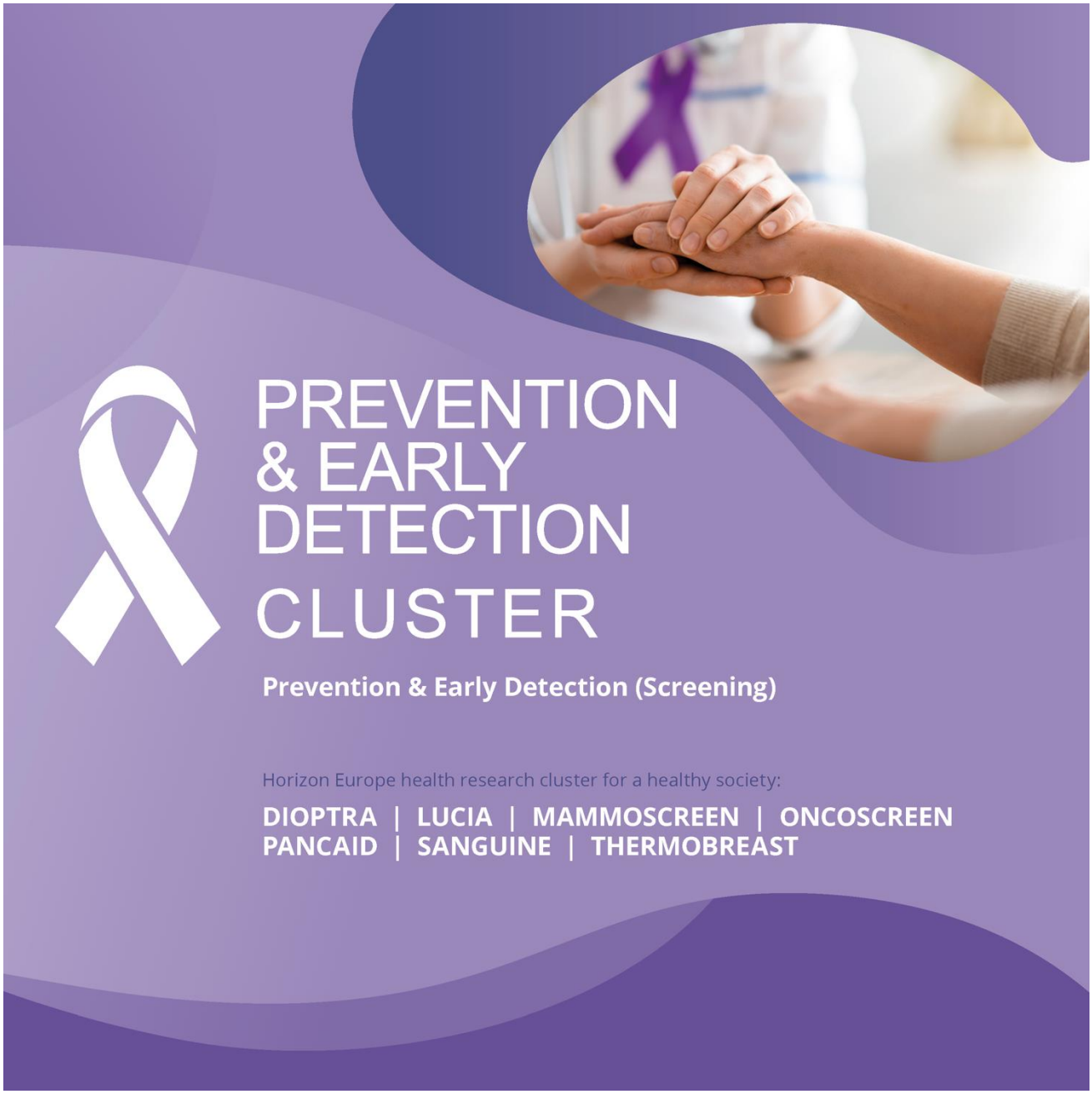
1. What challenges in breast cancer screening does ThermoBreast aim to overcome?
2. How does ThermoBreast's non-contact screening modality work, and why is it a game-changer?
3. How does ThermoBreast improve patient comfort during the screening process?
4. Could you share a success story or a potential scenario where ThermoBreast could have improved early detection or patient monitoring?
5. What is the potential impact of ThermoBreast on the future of breast cancer detection?

SANGUINE

1. What was the inspiration behind the SANGUINE project, and why focus specifically on hematological malignancies?
2. Can you explain how SANGUINE's approach to early detection and screening of hematological malignancies differs from existing methods?
3. Could you share an example of how SANGUINE's technology might benefit a patient with a hematological malignancy?
4. How does SANGUINE's work contribute to making the screening process more accurate and potentially more accessible?
5. Looking towards the future, how do you envision the impact of SANGUINE on the early detection and treatment of hematological malignancies?

Annex 2 Cluster Brochure

This section presents the full content of the Prevention and Early Detection (Screening) brochure. The final version is available for print and digital distribution.




UNIFIED EFFORT
TO TACKLE CANCER
The overarching goal of the Mission on Cancer is to improve the lives of more than 3 million people by 2030 through prevention, cures, and for those affected by cancer and their families. A colloboration cluster of seven EU-funded research projects sets focus on unlocking the potential of new tools and digital solutions for a healthy society.
Over 2.7 million people in the EU-27 are diagnosed with cancer every year, with 1.3 million dying from the disease annually.
The Mission will achieve this by addressing four key objectives:
understand cancer and its risk factors
prevent what is preventable
optimise diagnostics and treatments
support the quality of life of people living with and after cancer, while ensuring equitable access for all
These objectives fit together holistically under the Mission on Cancer to improve the lives and prospects of millions of Europeans by 2030.


The EU Mission on Cancer makes sure that research and innovation go hand in hand with the policy actions covered by Europe's Beating Cancer Plan. Enabling and accelerating **new approaches to research and policymaking** in the field will ensure that the actions proposed under the Plan can be successfully implemented in an **integrated approach** to increase their impact.
This brochure showcases the seven **EU-funded research projects**, which form the EU Mission on Cancer's Prevention and Early Detection (Screening) cluster, describes their scientific goals and gives insights into the development of technologies and expected outcomes.
dioptra
LUCIA
MAMMOSCREEN
ONCOSCREEN
PANCAID
SANGUINE
ThermoBreast
3

PROJECT 01

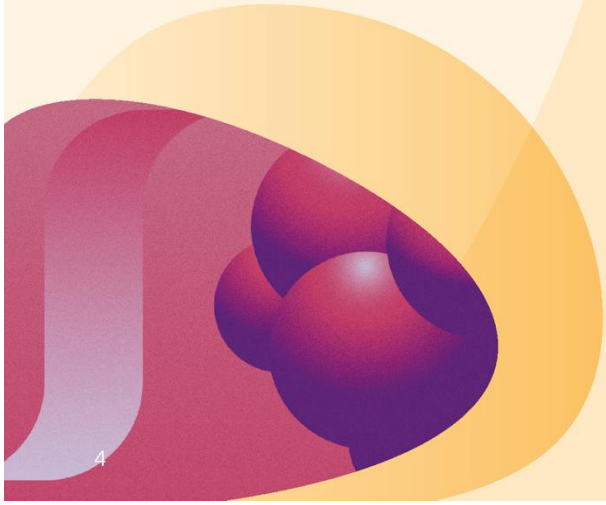
DIOPTRA

Acronym meaning:
Early dynamic screening for colorectal cancer via novel protein biomarkers reflecting biological initiation mechanisms

Disease:
Colorectal cancer

28 partners from 15 countries

Colorectal cancer is the third most diagnosed cancer in men (after prostate and lung cancers) and the second one in women (after breast cancer)

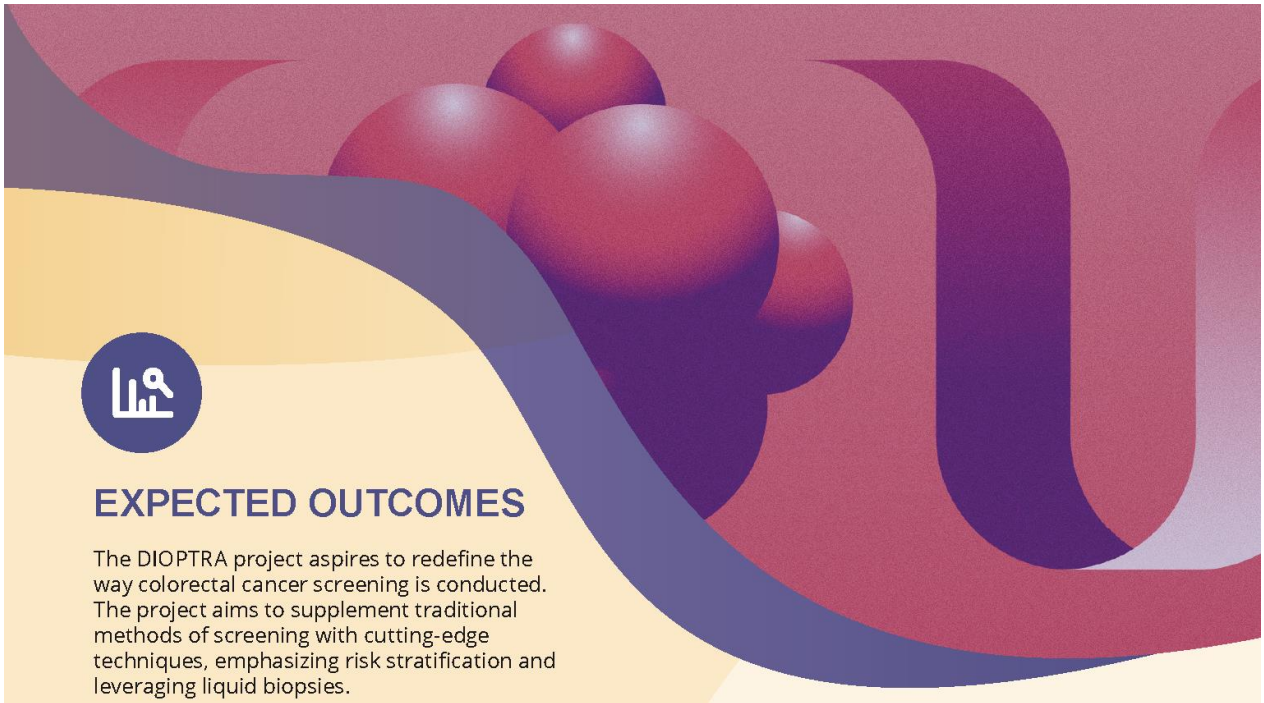


4

TECHNOLOGY

DIOPTRA aims to revolutionise CRC screening via cutting-edge research towards a holistic, personalised and accessible method for early detection:

- Utilising liquid biopsies, blood samples from patients are analysed for novel protein biomarkers, offering a less invasive and potentially more sensitive detection method than traditional tests.
- A mobile application will provide risk assessment through questionnaires on individual factors, promoting patient engagement and awareness.
- These screening results will be processed using advanced AI models that undergo continuous refinement with incoming data, ensuring dynamic and precise evaluation.
- The project emphasizes transparency, trustworthiness, and bias-free algorithmic operations.
- Overall, DIOPTRA integrates modern technological advancements to offer a comprehensive, patientcentric, and efficient colorectal cancer screening system.



EXPECTED OUTCOMES

The DIOPTRA project aspires to redefine the way colorectal cancer screening is conducted. The project aims to supplement traditional methods of screening with cutting-edge techniques, emphasizing risk stratification and leveraging liquid biopsies.

1. Risk-based approaches will allow patients to be assessed based on individual susceptibility, ensuring that those most at risk receive prioritized attention.
2. Liquid biopsies will provide a less invasive method of detecting potential cancer markers in the blood, which may lead to earlier diagnoses.
3. Upon completion, the DIOPTRA initiative will offer a refined, comprehensive solution that combines these methodologies.

By demonstrating its efficacy and advantages over conventional procedures, the aim is to have the DIOPTRA protocol endorsed in official healthcare guidelines, setting a new gold standard for colorectal cancer screening in the future.

Project website
www.dioptra-project.eu

DIOPTRA on social media

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PROJECT 02

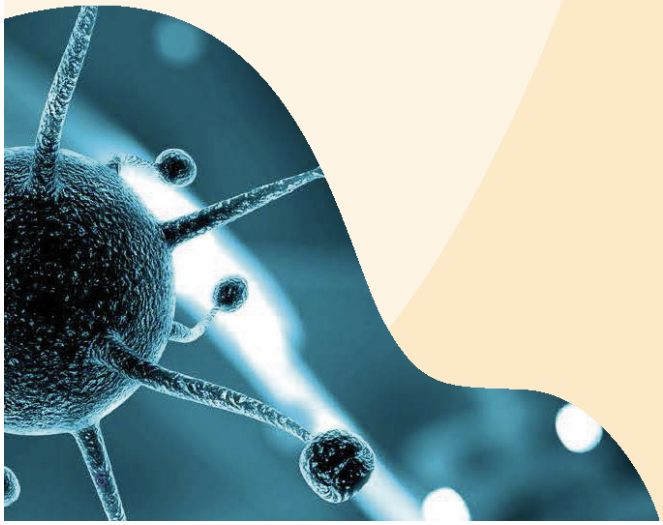
LUCIA

Acronym meaning:
Lung Cancer-related risk factors and their Impact Assessment

Disease:
Lung cancer

20 partners from 9 countries

Coordinator:
Professor Hossam Haick
Technion University, Israel



TECHNOLOGY

LUCIA will implement innovative miniaturised wearable and point-of-care sensing and analytical tools and enhanced CT analysis methods, to achieve swift, cost-effective, minimal-harm LCS (Lung cancer screening) and identification of risk factors. The sensing technologies to be applied within LUCIA are listed below:

- Breath Analyser: LUCIA will use a break-through breath analyser being developed
- Wide-biomarker-spectrum Multi-Use Sensing Patch (WBSP): LUCIA will use an innovative AI-driven non-invasive wearable sensing patch that enable continuous, real-time, and personalised monitoring of volatile biomar-kers towards LC (Lung cancer) detection.
- Spectrometry-on-Card (SPOC): develop a spatio-temporal nano/micro-structural arrangement that enable real-time monitoring of wide spectrum of chemicals and complex mixtures for blood biomarker sampling.
- Develop AI tools for medical image analysis (CT, pathology ...)
- Applying Multi-omics polygenic risk scores for determining LC risk using Oxford Nanopore low coverage genome sequencing technology.

According to the WHO, LC is the leading cause of cancer-related deaths worldwide, accounting for the highest mortality rates among both men and woman. LC is also often diagnosed at advanced stages when treatment options are limited.

EXPECTED OUTCOMES

LUCIA aims to develop a toolbox for discovering and understanding new risk factors that contribute to LC development via **three domains**:

1. The personal risk factors, which include a person's exposure to chemical pollutants behavioural and lifestyle factors
2. The external risk factors, which include urban, built and transport settings, natural and green spaces, social aspects and climate
3. The cellular process, which occur during the transition from a healthy state to LC initiation and progression, including metabolism, epigenetics, ageing, genetics ...

LUCIA will send study how these three domains interact to develop individual and population risk scores.

Project website
www.luciaeuproject.technion.ac.il

LUCIA on social media

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PROJECT 03

MAMMOSCREEN

Acronym meaning:
Innovative and safe microwave-based imaging technology to make breast cancer screening more accurate, inclusive and female-friendly

Disease:
Breast cancer

International consortium of 7 partners

Coordination:
Fondazione Toscana Life Sciences

MammoScreen is co-funded by the European Commission and the United Kingdom, with a total budget of € 7 millions in four years.

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TECHNOLOGY

MammoWave technology uses safe and non-invasive microwave radiofrequencies and has already proven to be able to effectively detect all types of breast cancer. Besides, it is not affected by the density of the breast, unlike conventional mammography, whose assessment is limited in the case of dense breasts.

- MammoWave could therefore detect cancers that result invisible to a standard mammography.
- MammoWave is female-friendly, as it makes examination fast and easy and the shape of the device allows for total discretion for the patient.
- No pressure is applied on the breast, avoiding any discomfort or pain in sensitive women.
- MammoWave makes the screening process safe, accurate for women with dense breast tissue, reliable, comfortable for patients, and affordable.

Breast cancer is the most common cancer in women worldwide, affecting 1 in 8 women. The World Health Organisation estimates that in 2020, worldwide cases of breast cancer accounted for 24% of all cancers in women, with 2.26 million women diagnosed with breast cancer and 685,000 deaths globally.

EXPECTED OUTCOMES

MAMMOSCREEN project will generate evidence of:

1. MammoWave's performance in breast cancer detection in a clinical study involving 10,000 women already included in regular screening programs. The clinical research centers involved in the study are located in Italy, Spain, Switzerland, Portugal and Poland.
2. MammoWave's safety and efficacy in spotting cancer also in dense breasts might pave the way for reviewing current population-based breast cancer screening programs, with the inclusion of younger women who are often left out from screening programs, but nevertheless account for the 30% of all breast cancers detected in Europe.

Project website
www.mammoscreenproject.eu

MAMMOSCREEN on social media

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PROJECT 04

ONCOSCREEN

Acronym meaning:
A European shield against colorectal cancer based on novel, more precise and affordable risk-based screening methods, and viable policy pathways.

Disease:
Colorectal cancer

Coordinator:
EXUS AI Labs

International consortium of 38 partners from 15 countries

11 technical solutions and
4 novel diagnostic solutions

TECHNOLOGY

- ONCOSCREEN integrates heterogeneous healthcare data with novel AI-assisted screening methods to design risk-based colorectal cancer screening approaches and provide tailored and evidence-based recommendations to high-risk patients, clinicians, and policymakers.
- In developing new technologies, ONCOSCREEN follows a modular approach that enables transferring and replicating the suggested solutions in different healthcare systems.
- ONCOSCREEN introduces novel diagnostic methods and tools based on breath and liquid biopsy. The project invests in improving existing screening methods with AI algorithms, advancing polyp detection and classification and providing personalised risk-based assessment.
- ONCOSCREEN innovative solutions will help to design an alternative colorectal cancer screening pathway that is less invasive, more cost-effective, and more accurate in colorectal cancer diagnosis.

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Colorectal cancer accounted for 12.7% of all new cancer diagnoses in the European Union
EXPECTED OUTCOMES
Modern healthcare systems need to offer new non-invasive methods for colorectal cancer screening. Screening programmes need to be affordable, accessible, and applicable to large parts of the population to effectively prevent the development of colorectal cancer. ONCOSCREEN addresses this challenge by developing groundbreaking technologies for colorectal cancer screening.
1. ONCOSCREEN will advance colorectal cancer screening technologies and offer solutions for risk-stratified cancer screening programmes for citizens, a diagnostic support system for clinicians, and monitoring tools for policymakers.
2. ONCOSCREEN solutions will undergo extensive validation through clinical studies involving 4100 participants from 10 European countries.
3. Citizen and patient perspectives will be integrated through participatory co-design and open innovation initiatives, ensuring a comprehensive and inclusive approach.
Project website
www.oncoscreen.health
ONCOSCREEN on social media
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PROJECT 05

PANCAID

Europe has the highest burden of PDAC in the world, with 150,000 new cases in 2018 and 95,000 deaths/year and worldwide half a million deaths. PDAC has the lowest survival of all cancers in Europe (median survival time 4.6 months, with patients losing 98% of their healthy life expectancy). The biggest challenge in the management of PDAC is the inability to diagnose it in time

Acronym meaning:
PANcreatic CAncer Initial Detection via liquid biopsy

Disease:
Pancreatic cancer

International consortium of 18 partners from 8 countries

Coordinator:
University Medical Center Hamburg-Eppendorf

Co-coordinator:
Karolinska Institutet

TECHNOLOGY

Pancreatic cancer is a highly aggressive and often late-diagnosed malignant neoplasm originating in the pancreas. Pancreatic cancer is often difficult to detect in its early stages, as it tends to show minimal or no symptoms until it reaches advanced stages.

PANCAID aims to develop a minimally invasive blood test using liquid biopsy to detect pancreatic cancer to facilitate early detection of the cancer and its precursors. The project utilizes a comprehensive panel of liquid biopsy diagnostics, which involves analyzing genetic mutations, circulating tumor cells, and other biomarkers in blood samples, to detect pancreatic cancer at an early stage. This innovative approach has the potential to revolutionize the current methods of pancreatic cancer diagnosis, which often occur at later stages of the disease.

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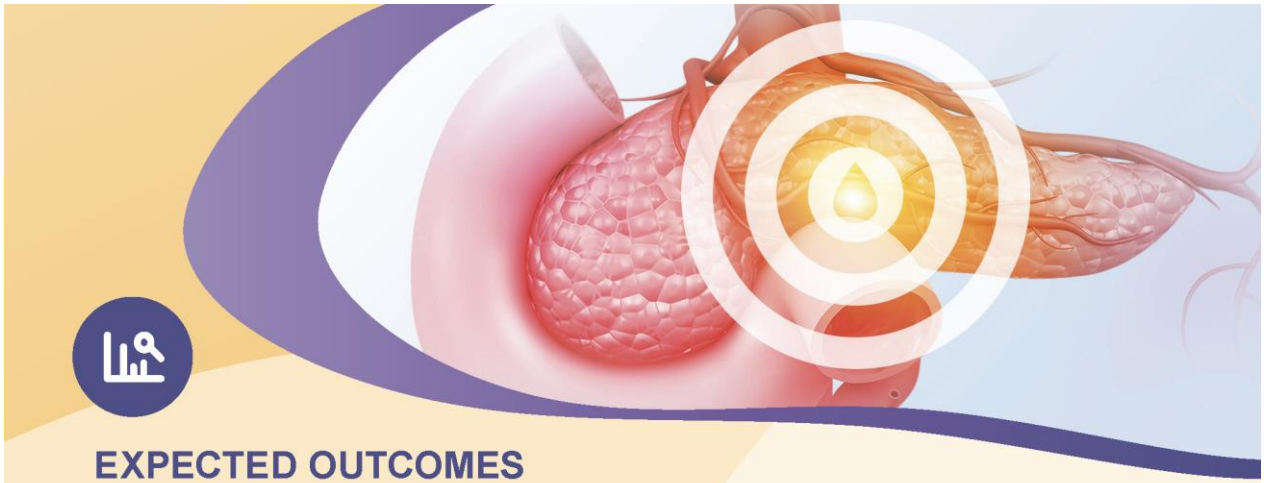

EXPECTED OUTCOMES

The PANCAID project has the potential to impact various aspects of scientific, technological, medical, and societal domains. From generating new scientific insights to developing a composite biomarker blood test for early detection, and improving treatment options for pancreatic cancer, PANCAID could contribute to significant advancements in the field, leading to improved patient outcomes and societal benefits:

- **Scientific:** New breakthrough scientific discovery on biology of PDAC development
- **Technological:** A new cancer screening blood test for pancreatic cancer may open new market for Liquid biopsy diagnostics.
- **Medical:** The project's findings may serve as a foundation for prospective clinical trials.
- **Societal:** Early detection could reduce mortality and improve patients' quality of life. Additionally, early detection may open up possibilities for curative measures, shifting the focus from palliative care to potentially curative interventions.

Project website
www.pancaid-project.eu

PANCAID on social media

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PROJECT 06

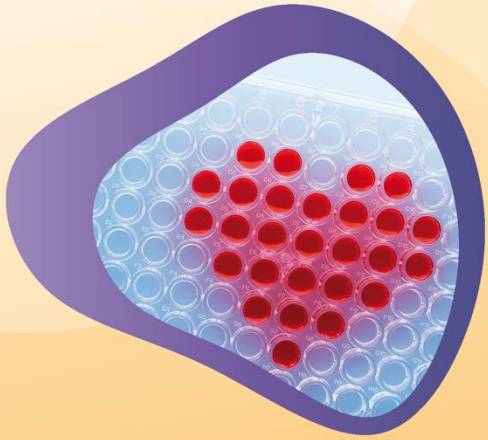
SANGUINE

Acronym meaning:
Early detection and screening of hematological malignancies.

Disease:
Blood cancers

International consortium of 11 partners from 7 countries

Coordinator:
Tel-Aviv University



- SANGUINE is a pioneering project dedicated to advancing early detection of hematological malignancies through the development of a state-of-the-art blood test. It addresses the objectives raised by the Cancer Mission Call, which emerged from the growing societal challenge faced by European citizens.
- According to the European Cancer Information System (ECIS), each year, 2.7 million people in the EU are diagnosed with cancer. The SANGUINE project focuses on hematological malignancies, which account for 10% of those cases.

TECHNOLOGY

The SANGUINE project employs the innovative HemaChip technology for the early detection and screening of hematological malignancies. The HemaChip technology involves a minimally invasive approach that analyses peripheral blood samples for specific epigenetic biomarkers, such as 5-methylcytosine (5mC) and 5-hydroxymethylcytosine (5hmC), associated with early disease states. This novel detection method enhances sensitivity and reduces testing costs. Moreover, the technology enables regular monitoring of disease status, including the detection of minimal residual disease (MRD) after treatment. By revolutionizing the screening process, the HemaChip contributes to accurate and patient-centric cancer detection, potentially transforming the landscape of hematological malignancy management.

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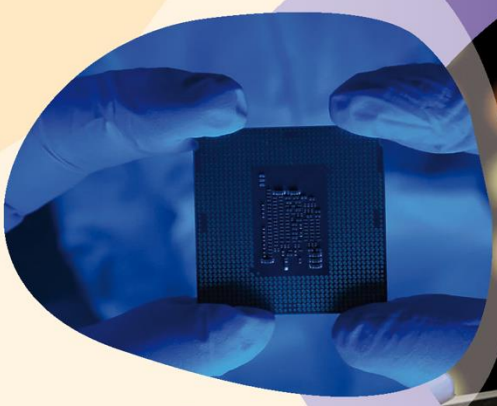

EXPECTED OUTCOMES

1. The project aims to develop a minimally invasive, fast, cost-effective, and highly sensitive screening and monitoring tool for blood cancers, using the HemaChip technology for early detection of hematological malignancies. This can lead to timely interventions and improved patient outcomes.

2. By identifying and monitoring epigenetic biomarkers, the project could enhance treatment selection and therapy response assessment, potentially revolutionising personalised medicine approaches.

3. SANGUINE's collaborative and holistic strategy involving various stakeholders, including hospitals, research institutes, SMEs, and policymakers, is expected to drive scientific advancements and provide a comprehensive framework for hematological malignancy management.

4. The project's success could contribute to reducing the global burden of hematological malignancies and advancing broader cancer research efforts.

Project website
www.sanguine-project.eu

SANGUINE on social media

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PROJECT 07

THERMOBREAST

Acronym meaning:
Safe and patient-centered breast cancer screening by next-generation dynamic thermal imaging and Artificial Intelligence

Disease:
Breast cancer

International consortium of 18 partners from 11 countries

Coordinator:
ThermoMind Ltd.

According to the American Cancer Society (ACS) 1 in 8 women has a chance of developing breast cancer in her lifetime.

TECHNOLOGY

ThermoBreast introduces a new, safe vertical in breast cancer screening using AI-based dynamic thermal imaging. The screening is performed with a next-generation device, developed by ThermoMind Ltd. It includes highly sensitive infrared sensors that can detect temperature differences up to 0.02°C. The device screens the entire chest area without any contact with a patient. An important component of the screening, which makes the system truly innovative, is advanced artificial intelligence. The AI analysis interprets captured thermal patterns and detect potential cancerous activity. Thus, the system offers an excellent means of identifying areas of interest for physicians to inspect. The ThermoBreast screening can be equally applied for women in all age groups and breast density.

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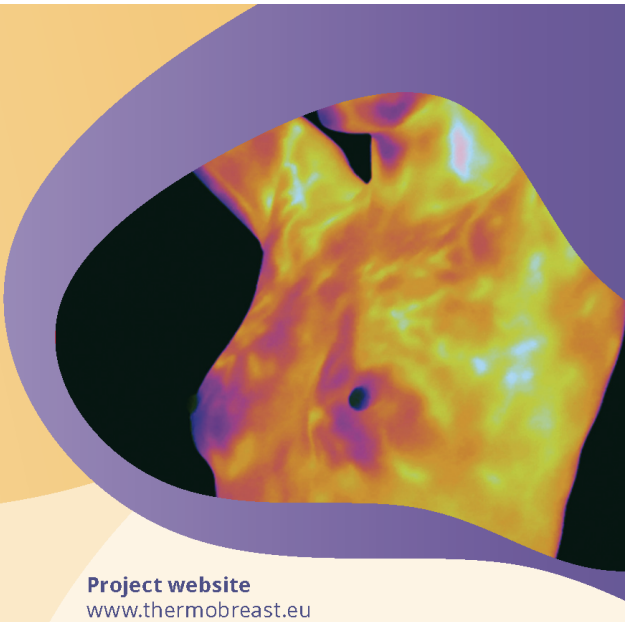
Another startling statistic from the World Health Organisation (WHO) reports that in 2020, there were 2.3 million women diagnosed with breast cancer and 685 000 deaths worldwide. The results of a study headed by the National Institute for Health and Care Research (NIHR) revealed that the annual screening of women aged 40 or above saves one life per every thousand women checked. The World Health Organization (WHO) also stated that when breast cancer is identified and treated at its initial stages, it can have a cure rate close to 90%.



EXPECTED OUTCOMES

ThermoBreast's unique approach presents an opportunity to unlock the potential of dynamic thermography, significantly improving breast cancer prevention, diagnostics, and monitoring. The project aims to improve the survival rate of breast cancer patients by effectively detecting cancer in early stages in women of all age groups and breast densities. Its cost-efficient method will make it possible to start regular screening of women from the age of 18 years, facilitate follow-up tests for better patient monitoring and use ThermoBreast as a supplementary diagnostic modality. Due to its harmless, comfortable screening and instant analysis, it will be possible to implement better patient monitoring programs in the future, reducing the burden on female patients, their families, healthcare professionals, and all others affected by breast cancer directly or indirectly.

Project website
www.thermobreast.eu

ThermoBreast on social media

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