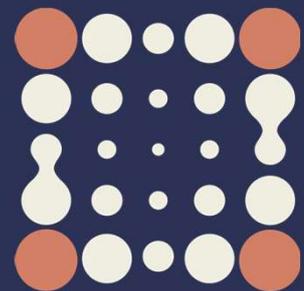


# Director's Report

Dr Elisabete Weiderpass, Director

Scientific Council, 62nd Session  
11–13 February 2026  
IARC, Lyon, France

International Agency  
for Research on Cancer



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International Agency  
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World Health  
Organization

Introduction: a few  
updates

# Director's Report



## IARC participation to major cancer-related events

- World Cancer Day 2025
- International Childhood Cancer Day 2025
- Childhood cancer Awareness Month 2025
- International Childhood Cancer Day
- International Women's Day 2025
- World Oral Health Day 2025
- International HPV Awareness Day 2025
- Oesophageal Cancer Awareness Month
- World Immunization Week 2025
- World Hepatitis Day 2025
- World Cancer Research Day 2025
- Breast Cancer Awareness Month 2025
- Lung Cancer Awareness Month 2025

IARC participated in major scientific events throughout 2025, as shown on this slide. Each event is described in more detail in the Annexes (from page 96).

## ESMO October 2025: Launch of the European Code against Cancer 5th edition



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Scientists from IARC led an educational session on the new **European Code Against Cancer 5th edition** (ECAC5) at the European Society for Medical Oncology (ESMO) Congress, which took place in Berlin, Germany, on 17–21 October 2025.

During the session, Dr Joachim Schüz, Head of the Environment and Lifestyle Epidemiology (ENV) Branch at IARC and co-Principal Investigator of the ECAC5, and Dr Carolina Espina, a scientist in ENV and the other co-Principal Investigator of the ECAC5, presented the new edition of the European Code Against Cancer and its role in cancer prevention to the scientific and oncology communities.

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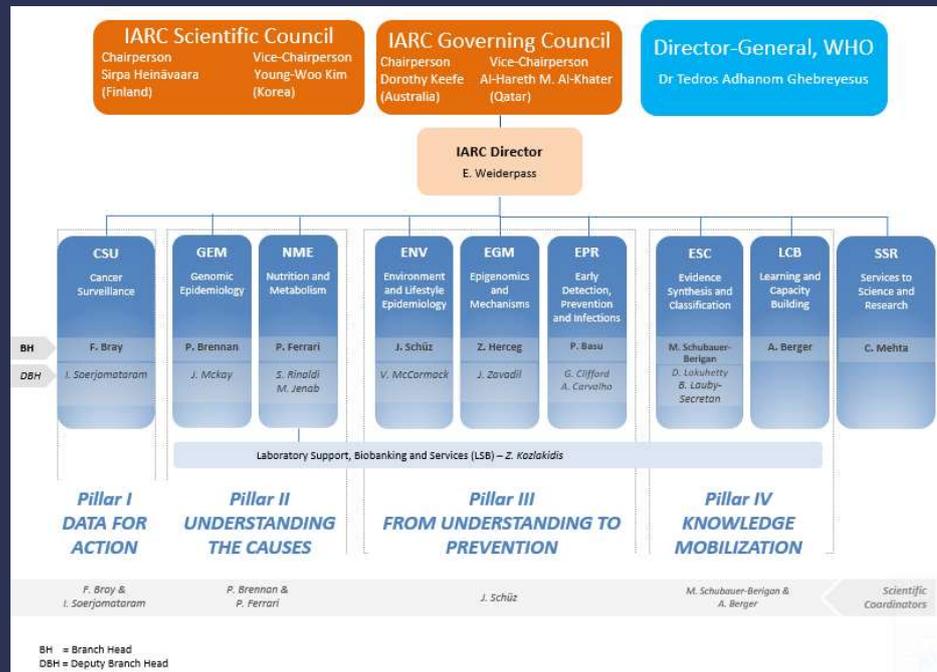
World Health  
Organization

## 1. Scientific highlights

# Director's Report



## Organigram as of 1 November 2025



The slide shows IARC organigram as of 1 November 2025.

The four pillars reflect IARC's fundamental activities:

Pillar 1: data for action

Pillar 2: understanding the causes

Pillar 3: from understanding to prevention

Pillar 4: knowledge mobilization

## Genomic Epidemiology (GEM) Review Panel

→ Will take place (remotely) from **Monday 12 to Friday 16 January 2026**.

### Review Panel:

- Scientific Council members: Dr André Karch (Germany); Professor Pål Romundstad (Norway) and Professor Orla Sheils (Ireland)
- External Experts: Professor Montserrat Garcia Closas (United Kingdom), Professor Nicholas Timpson (United Kingdom) and Professor Ruth Travis (United Kingdom)

The 5-year Review of the Genomic Epidemiology (GEM) Branch will take place remotely from 12 to 16 January 2026, before the Scientific Council.

## Scientific highlights

Pillar 1:  
*Data for action*

The following slides present some scientific highlights for **Pillar 1 – *Data for Action***, which includes the **Cancer Surveillance (CSU) Branch**.

## The Cancer Atlas, Fourth Edition, 2025

- A visual guide to global cancer patterns and disparities
- Available in print and digital formats
- User-friendly, accessible, and downloadable descriptions
- A resource for cancer control advocates, policymakers, patients, cancer survivors and the general public



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The Cancer Atlas, Fourth Edition, is a collaborative effort by IARC and the American Cancer Society (ACS) to uncover global cancer trends and address the burden of disease. The findings were presented at [The Cancer Prevention Research Conference 2025](#), hosted by ACS and [Cancer Research United Kingdom \(CRUK\)](#) in London in June 2025. Over 100 scientists from 35 institutions worldwide contributed to the creation of the Atlas, including 14 from IARC.

As with previous editions, the fourth edition of *The Cancer Atlas* is grouped into three sections namely [Risk Factors](#), [The Burden](#), and [Taking Action](#), with additional chapters to address timely and emerging important topics including Alcohol, Social Inequalities, [Climate Change](#), and [Health System Resilience](#). The theme of the current edition is “Cancer Action Now,” drawing attention not only to the problem at hand, but also the means of tackling the cancer burden through access to information and proven cancer prevention tools.

This resource, which is available in print and digital formats (<https://canceratlas.cancer.org/>), was carefully designed to ensure user-friendly, accessible, and downloadable descriptions and graphics that can be easily used by cancer-control advocates, government and private and public health agencies, and policymakers, as well as patients, survivors and the general public.

## GICR E-learning series: transition to WHO Academy and user stats

- Development of 16 self-learning modules on the essentials of cancer registration
- Integrated with IARC educational resources, in person-training for a blended approach and tailored support via the GICRNet



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This past year, one of IARC's flagships, the Global Initiative for Cancer Registry Development, or GICR, achieved a significant milestone in the release of 16 online modules that aim to provide users with a knowledge base about the principles of cancer registration. Developed with the support of Bloomberg Philanthropies and other partners, the GICR e-Learning Series aims to creating a new legacy of learners by offering free, self-paced education and training in cancer surveillance. The GICR E-Learning Series is available freely in English, French and Spanish, with translation to other languages underway.

The Series content has been taken from IARC and the GICR material to be transitioned from a synchronous classroom delivery format into a self-paced asynchronous training program. In addition, the Series provides skill instruction on specific implementation steps for registry operation, management, data analysis, and information dissemination, including the use of the IARC developed CanReg5 as a cancer registry database management software. The full Series is designed to function as a training tool that can be used as an ongoing resource and reference for personnel who have responsibility for registry planning and implementation. In October 2025, the GICR E-Learning Series was migrated to the WHO Academy as part of the learning tools made available to users worldwide.

In particular, the Series offers a significant contribution to the field of cancer surveillance. Embedded with the GICR, it means that online users can also access the additional resources available to them. Namely, the GICRNet, a network of IARC GICR regional trainers on specific subjects are working to support learners by hosting training courses, open webinars and providing tailored assistance to registries. This aspect of the GICR model helps to ensure local capacity and sustainability. Further, to recognize the specialized skills needed for cancer registration, a Global Certified Cancer Registrar credential will be issued for the completion of the full 16 modules and the successful passing of the final quiz for each individual module within a 12-month period. This importantly helps to fulfil a long-standing gap to provide acknowledgement for those in cancer registration.

Launched in February 2025, a total of 1924 users from 136 countries have registered for the Series, with 195 having successfully completed all 16 modules – surpassing the benchmarks that we set by the GICR Programme and the funders.

As next steps, the GICR E-Learning Interactive webinar series will take place in 2026 in each region, where GICRNet trainers will provide a synthesis of the modules learning objectives and be available to take questions from users.

## Launch of the IARC factsheets on socioeconomic inequalities in cancer mortality on the European Cancer Inequalities Registry (ECIR)

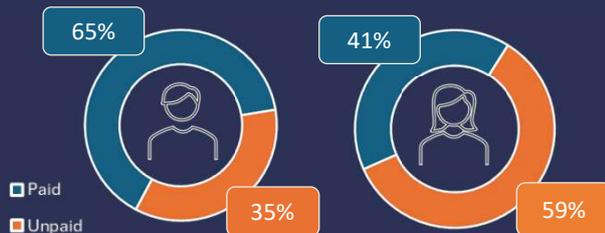
The image displays the ECIR website interface and two factsheet covers. The website header includes the European Commission logo and navigation links: Home, Data tool, Country Cancer Profiles, Analytical reports, Factsheets, Topics, and About. The main content area features the headline 'IARC's country-specific factsheets are now online!' and a 'Read more' button. Below this is a diagram of the ECIR governance structure, showing concentric circles for Stakeholder Contact Group, Member States, ESTAT, EIA, DG SANTE, JIRC, OECD, and WHO IARC, with labels for Key Contributors and Thematic Group. Two factsheet covers are overlaid: one for 'Sweden' titled 'Country Factsheet Series' and another titled 'EU-CanIneq Methodology'.

- The **European Cancer Inequalities Registry, or ECIR**, is a key initiative under Europe's Beating Cancer Plan. It tracks cancer information and identifies inequalities across EU Member States and regions. This data-driven approach is essential for understanding where the biggest challenges lie and for guiding strategic investments at the EU, national, and regional levels.
- **EU-CanIneq**, an IARC-led project, provides a research framework to develop and expand indicators of socioeconomic inequalities in cancer mortality, which are integrated into ECIR.
- In February 2025, country-specific factsheets were released, offering estimates of cancer mortality inequalities by educational level for each sex, covering total cancer and six specific cancer types in 2015–2019.
- These factsheets also provide a **critical interpretation of the results**, considering the context of each country, including exposure to risk factors, the characteristics of the healthcare system, and the organization of cancer care. By mapping inequalities in cancer mortality across different countries, the factsheets can support the development of targeted policies and help decision-makers address the most pressing disparities.

## Global paid and unpaid productivity losses due to cancer-related mortality

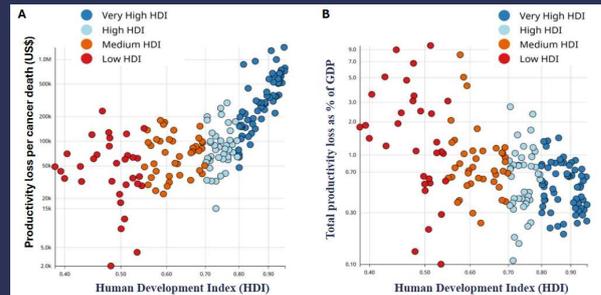
 \$566 billion = 0.6% of GDP

By Sex



Largest losses from paid activities among male and unpaid activities among females

By Human Development Index (HDI)



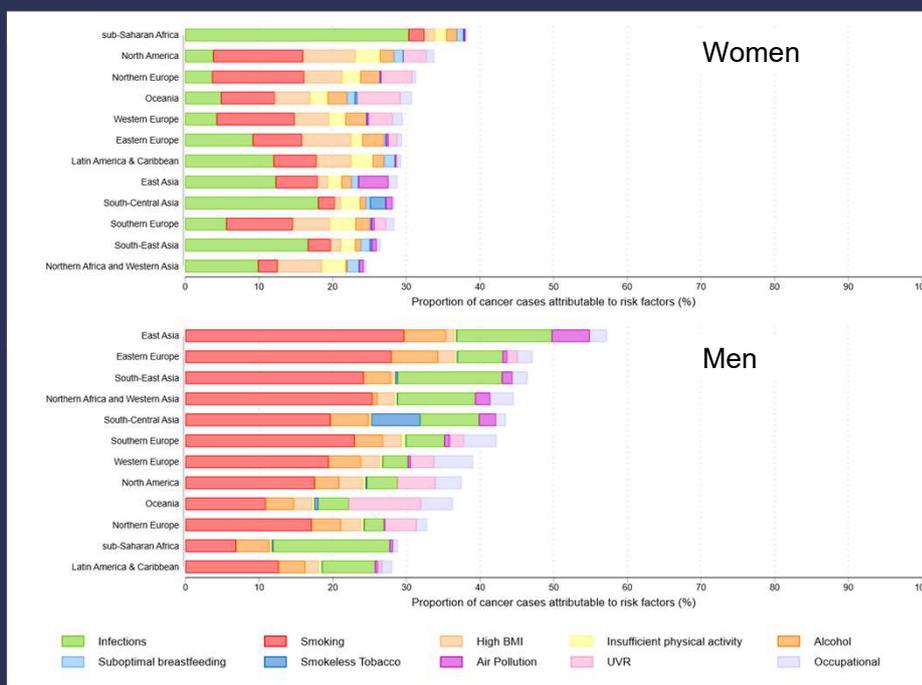
Heaviest loss to national economies of low and middle HDI countries

When an individual dies earlier than expected, we lose their contributions to their families, communities, and society. From the societal perspective, this loss can be quantified by estimating the value of productivity loss.

In a study published in the JNCI, CSU valued productivity losses from premature cancer mortality at an estimated US\$ 566 billion, equivalent to 0.6% of the global GDP. However, the societal loss from premature cancer deaths was unevenly distributed:

- Paid productivity losses were generally higher among men while unpaid productivity losses were greater among women, across world regions. This underscores the importance of accounting for lost contributions from unpaid activities, which not only acknowledges the gendered nature of unpaid work but also reflects a more accurate estimate of the societal burden of premature cancer deaths.
- In low- and middle-income countries, even modest losses in productivity can have a substantial impact on the national economy. These findings reiterate the crucial need to invest in cancer prevention in low- and middle-income countries, where health systems are already strained and the economic burden of cancer is particularly acute.

## Global cancer burden attributable to modifiable risk factors, 2022



Cancer remains a leading cause of morbidity globally, largely driven by modifiable risk factors. In a very recent study, CSU provided estimates of the global and national cancer burden attributable to these factors, namely high body mass index (BMI), insufficient physical activity, smoking, smokeless tobacco, alcohol consumption, suboptimal breastfeeding, air pollution, ultraviolet radiation (UVR), infections (due to nine agents), and occupational (due to 13 agents) to inform global prevention efforts.

In 2022, an estimated 7.1 million of 18.7 million new cancer cases (37.8%) worldwide were attributable to 30 modifiable risk factors – 2.7 million (29.7%) in women and 4.3 million (45.4%) in men.

The prevention proportion varies greatly, ranging from 38.2% of all new cancer cases in sub-Saharan Africa to 24.6% in the Middle East and Northern Africa among women and from 57.2% in East Asia to 28.1% in Latin America & the Caribbean among men.

The Figures shown here depict the proportion of cancer cases attributable to the selected modifiable risk factors in 2022 according to risk factor and world region for women and men in the top and bottom graphs, respectively.

Across regions, the contribution of individual risk factors varied more in women than in men, with distinct patterns observed by region. In women, infections accounted for 11.5% of all new cases, smoking for 6.3%, and high BMI for 3.4%. The contribution of infections was highest in sub-Saharan Africa, followed by South-Central Asia and South-East Asia. In contrast, smoking was the leading risk factor in higher income regions of Northern Europe, North America and in Western and Southern Europe. High BMI was the second most important risk factor in North America, Eastern Europe and the Middle East and Northern Africa.

Smoking contributed to almost one-quarter of all new cancer cases globally in men followed by infections (9.1%) and alcohol consumption (4.6%). In five world regions including East Asia, Eastern Europe, South-East Asia, Middle East and Northern Africa, and Southern Europe, smoking contributed to more than 1 in every 5 cases of new cancer. Infections ranked second in four world regions, including South-East Asia, East Asia, the Middle East and Northern Africa and Latin America and the Caribbean. Alcohol consumption was the second largest contributor to total cancer burden in Eastern Europe.

The results highlight the major opportunities for cancer prevention worldwide that reducing exposure to modifiable risk factors offers, underscoring the importance of tailored, evidence-based strategies in countries in each world region.

## Scientific highlights

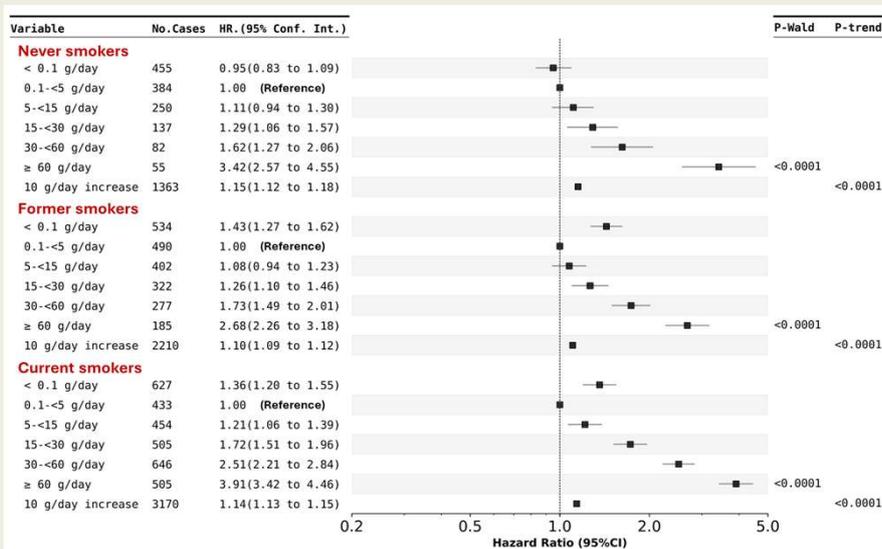
Pillar 2:  
*Understanding  
the causes*

The following slides present some scientific highlights for **Pillar 2 – *understanding the causes***, that includes the **Nutrition and Metabolism (NME) Branch & the Laboratory support, Biobanking and services (LSB)**, and the **Genomic Epidemiology (GEM) Branch**.

Some scientific highlights are presented separately for the **Risk Assessment and Early Detection (RED) Team**, which will transition from the GEM Branch (until end of December 2025) to the Early Detection, Prevention, and Infections (EPR) Branch, effective 1 January 2026.

## Alcohol intake and Upper Aero-Digestive Tract (UADT) Cancer

- Pooling Project on Alcohol and Cancer
- Consortium of 28 cohorts
- 7000 UADT cancer cases  
2.5M participants
- Strong associations between alcohol and UADT cancer
- Similar dose-responses in never and current smokers



Ebrahimi E, ..., Brennan P, Ferrari P, JNCI, 2025

### The Nutrition and Metabolism (NME) Branch: key highlights

Within the Pooling Project on Cancer, an NCI cohort consortium study co-led by the IARC Nutrition and Metabolism (NME) Branch and TH Chan Harvard School of Public Health, the association between alcohol intake and the risk of upper aero-digestive tract cancers was evaluated in 28 prospective cohorts in Europe, North-America, Asia and Australia.

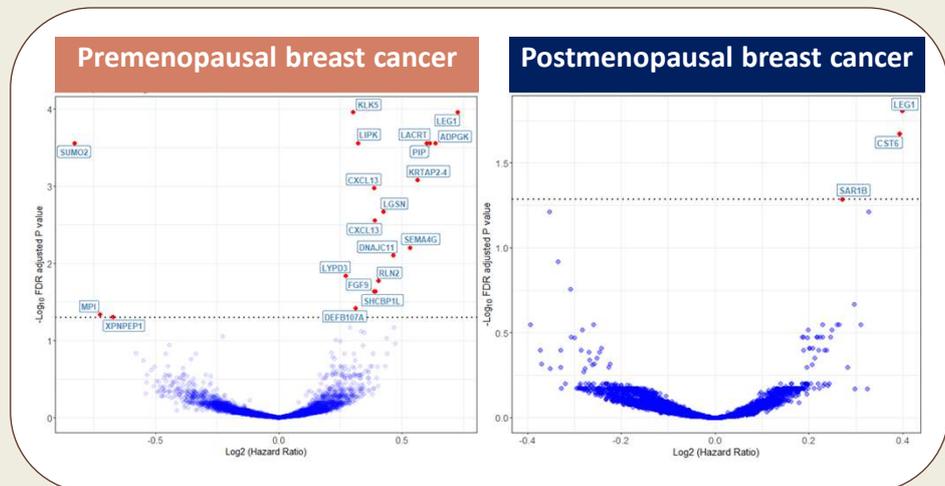
The study indicated strong overall relationship between alcohol intake and **Upper Aero-Digestive Tract (UADT)** cancer risk, and that alcohol intake was linked to UADT cancer risk among never smokers. Remarkably, the relationships between alcohol and UADT cancer risk were similar among never- and current smokers. The study highlighted alcohol as a risk factor independent from smoking for cancers of the upper aero-digestive tract.

## Proteomics and breast cancer risk in EPIC



In a case-cohort study, 7K SomaScan proteins were related to the risk of breast cancer ( $n_{\text{cases}}=970$ )

- Pre- and post-menopausal breast cancer displayed distinct protein profiles
- CXCL13, CST6 and LEG1** were replicated in independent cohorts (ARIC and UK Biobank)
- Complex interplay of **metabolic, hormonal and immunomodulatory** pathways involved in breast cancer risk



Mahamat-Saleh Y, ..., Dossus L. Nature communication, under review

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Proteomics has emerged as a potentially useful research tool for identifying novel biomarkers and aetiological biomarkers of cancer risk. To date, apart from insulin growth factor or IGF-1, few protein biomarkers have shown strong relationships with breast cancer risk.

In this study conducted by colleagues from NME branch using a case-cohort design in EPIC, prediagnostic circulating proteins, measured using the SomaScan 7K assay, were associated with breast cancer risk. Blood samples from 970 incident breast cancer cases and a sub-cohort of 2452 women were examined.

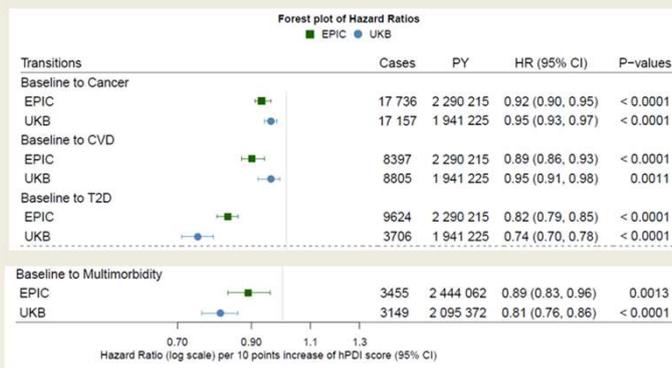
As displayed in the volcano plot on the left, 19 proteins were associated with premenopausal breast cancer risk, 16 of these were linked to an increased risk, while 3 were associated with a decreased risk. In addition, 3 proteins that were positively associated with postmenopausal breast cancer risk, as shown in the volcano plot on the right, including the proteins LEG1, CST6 and SAR1B.

Some of these associations were confirmed in two independent studies—ARIC and UK Biobank—strengthening their potential relevance. The findings from this study suggest that specific proteins in the blood may serve as early indicators of breast cancer risk and highlight biological pathways that differ by menopausal status.

# Plant-based diet and risk of cancer and cardiometabolic multimorbidity

## Plant-based dietary patterns and age-specific risk of multimorbidity of cancer and cardiometabolic diseases: a prospective analysis

Reynaldo Córdova\*, Jihye Kim\*, Alysha S Thompson, Hwayoung Noh, Sanam Shah, Christina C Dahm, Christopher F Jensen, Lene Mellemkjær, Anne Tjønneland, Verena Katzke, Charlotte Le Cornet, Christine El-Khoury, Matthias B Schulze, Giovanna Masala, Claudia Agnoli, Vittorio Simeon, Rosario Tumino, Fulvio Ricceri, W M Monique Verschuren, Yvonne T van der Schoor, Carlota Castro-Espin, María-José Sánchez, Amaia Aizpurua, Daniel Rodríguez Palacios, Marcela Guevara, Keren Papier, Tammy Y N Tong, Inge Huybrechts, Karl-Heinz Wagner, Komodo Matta, Nikos Papadimitriou, Alicia Heath, Dagfinn Aune, Marc J Gunter, Pietro Ferrari, Tilman Kühn, Heinz Freisling



- ☞ Multimorbidity is the occurrence of two or more chronic diseases in one individual
- ☞ In EPIC and UK Biobank, adherence to a plant-based diet was associated with a lower risk of cancer and cardiometabolic multimorbidity
- ☞ A diet consisting primarily of healthy plant foods (and small amounts of animal-based foods) might help maintain good health into older age
- ☞ Important co-benefit: lower greenhouse gas emissions and land use

Cordova R, ..., Freisling H. Lancet Healthy Longev, 2025

This study investigated associations of plant-based diets with the risk of multimorbidity, defined as the co-occurrence of at least two chronic diseases in an individual (either cancer at any site, cardiovascular disease, or type 2 diabetes).

This prospective cohort study used data from EPIC and UK Biobank across six European countries, with participants aged 35–70 years at recruitment.

Data on dietary habits were assessed either at baseline through a validated dietary questionnaire about habits in the previous 12 months or through several 24-h recall questionnaires during approximately a year of follow-up.

During a median follow-up time of 10.9 years in EPIC and 11.4 years in UK Biobank, 6604 cancer–cardiometabolic multimorbidity events occurred in both cohorts combined.

Higher adherence to a healthy plant-based diet was associated with a lower risk of cancer and cardiometabolic multimorbidity in both adults younger than 60 years and in those age 60 years or older.

Dietary recommendations, public health policies, and interventions should consider that diets mainly composed of healthy plant foods with small amounts of animal-based foods could help prevent cancer and cardiometabolic multimorbidity.

A co-benefit of plant-based diets is their contribution to environmental sustainability.

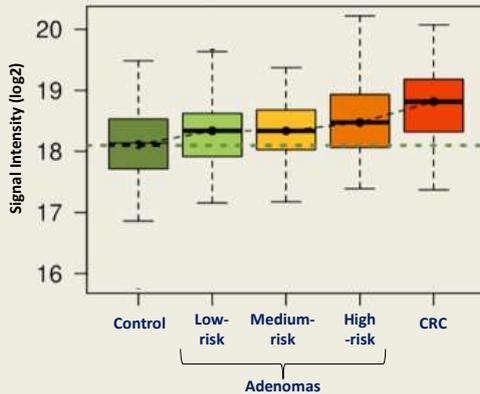
## Metabolomics uncovers a new biomarker candidate for colorectal cancer

**Discovery:** Within a Spanish CRC screening study, the polyamine metabolite *acisoga* was associated with stages of CRC development

**Confirmation:** GWAS of *acisoga*

- several SNPs related to CRC development
- genetically predicted *acisoga* positively associated with CRC risk

Serum *Acisoga* from Adenoma to Carcinoma



**Replication:** Similar results for *acisoga* in other published metabolomics data from CORSA (Austrian) and EPIC (across 7 European countries)

Study	OR (95% CI)	Comparison
CORSA	2.65 (1.41, 5.16)	CRC vs. low-risk adenoma
CORSA	1.79 (1.03, 3.18)	CRC vs. high-risk adenoma
EPIC	1.23 (1.01, 1.50)	CRC vs. healthy controls

Rius-Sansalvador, Chatziioannou, Keski-Rahkonen, et al. *Biomarker Research*, submitted

In this study, led by scientists in the NME Branch in collaboration with the Catalan Institute of Oncology, untargeted metabolomics generated in the NME Laboratory were related to adenoma and colorectal cancer risk. As displayed on the left-hand side figure, serum concentrations of a novel polyamine metabolite ACISOGA were associated with low- to high-risk adenomas onto colorectal cancer risk. The association of ACISOGA with CRC risk was confirmed in GWAS analyses, showing that genes associated with ACISOGA were involved in colorectal cancer development.

These associations were then replicated using metabolomics data from the CORSA, a screening study conducted in Austria, and in the EPIC nested case-control study.

These results highlight the utility of untargeted metabolomics to discover and replicate novel metabolites that are involved in metabolic pathways and offer new insights into cancer development. The findings of this study may support the development of biomarkers for the early stages of colorectal tumorigenesis, including the detection of low-risk lesions.

## Dietary biodiversity, planetary health and all-cause mortality in EPIC

nature food

- **Total & Plant Dietary Species Richness (DSR)** were strongly inversely related to all-cause mortality
- **Total & Plant DSR** were positively associated with the probability of adequate nutrient intake diet
- **Plant DSR** was inversely associated with Greenhouse Gas Emissions and Land Use, while **animal DSR** was positively associated with GHG emissions and land use

### Conclusions:

Diversifying our diet and favouring plant-based foods is beneficial for environmental health and human longevity

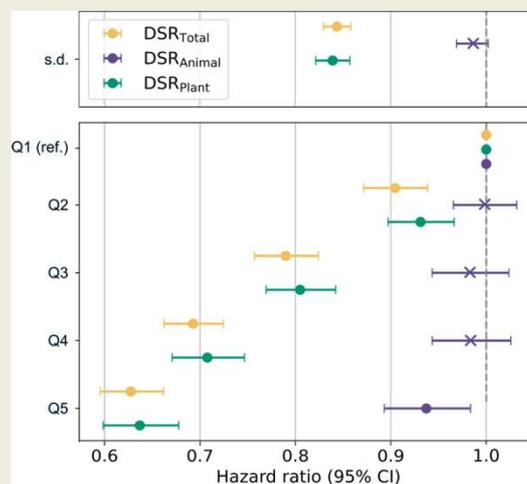


Figure 1. All-cause mortality Hazard Ratios (95% CI) for Dietary Species Richness (DSR) for 1-SD increments and by quintiles, with Q1 as reference category

Berden J, ..., Huybrechts I, Nature Food, 2025

In a study conducted within the EPIC cohort, colleagues in the NME Branch investigated the synergism of Dietary Species Richness (DSR), nutrient adequacy, greenhouse gas emissions and land use in relation to all-cause mortality.

As shown in the plot on the right-hand side of the slide, both plant and animal DSR were examined, in green and in purple respectively. Yellow bars indicate total DSR. Total and plant DSR were strongly inversely associated with the risk of dying for any causes, underscoring the advantage of having very diversified diets in terms of dietary ingredients.

DSR was also positively associated with the probability of having a diet with adequate nutrient intake. Also, plant DSR was inversely associated with greenhouse emissions and land use.

These results indicate the benefits of introducing dietary plant biodiversity in people's diets with clear advantages for the health of the environment and for human longevity.

## Considering the digital aspects of biobanking and medical research

- Biobanks concentrate significant volumes of physical samples and of associated data.
- There is limited understanding on how digital technologies impact the LMICs medical research and medical services.
- A series of publications and a book were produced in 2025, often with the collaboration of BCNet members from LMICs.

🏠 Biopreservation and Biobanking > Vol. 23, No. 3

Review Article | 🔒 NO ACCESS | Published Online: 12 June 2025

### Biobanking in Sub-Saharan Africa: A Review of Data Protection Frameworks

Authors: Anosh Mohammadzadeh, Samira Farjaminejad, Poonam Patel, Sandra Nanyonga, Raheelah Ahmad, Charitini Stavropoulou, and Zisis Kozlakidis

JMIR MEDICAL INFORMATICS

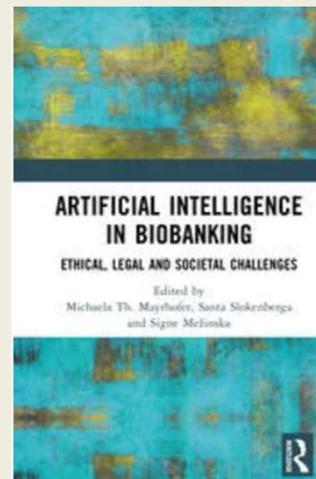
Aisyah et al

Original Paper

### Understanding Health Information Systems Utilization Across Public Health Centers in Indonesia: Cross-Sectional Study

Dewi Nur Aisyah<sup>1,2,3</sup>, PhD; Agus Heri Setiawan<sup>2</sup>, MPH; Chyntia Aryanti Mayadewi<sup>2</sup>, MSc; Alfiano Fawwaz Lokopessy<sup>2</sup>, BSc; Zisis Kozlakidis<sup>4</sup>, PhD; Logan Manikam<sup>1,5</sup>, PhD

Wei, Q., Luong, J. H., Cheong, I. H., & Kozlakidis, Z. (2025). The intersectoral challenges facing biobanking in One Health and Global Health. *Frontiers in Tropical Diseases*, 6, 1653226.



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### The Laboratory support, Biobanking and services (LSB) Branch: key highlights

- Biobanks concentrate significant volumes of physical samples and of associated data. Increasingly the data volumes surpass those of physical samples.
- Last year, the Laboratory Support, Biobanking and Services (LSB) reviewed the current regulatory frameworks in low- and middle-income countries (LMICs) in relation to healthcare data for research and data kept in biobanks.
- There is limited understanding on how digital technologies impact the LMICs medical research, biobanking and the wider medical services ecosystem.
- A series of publications and a book were produced in 2025, often with the collaboration of BCNet members from LMICs, summarising the current understanding of the digital aspects of biobanking and medical research.

## Technical aspects of biobanking and medical research

- The IARC Biobank summarises its operational expertise in technical publications that address specific needs of the field.



### Establishment of Automated Biobanking Systems: Technical Considerations

Authors: Birendra Kumar Yadav<sup>1</sup>, Zisis Kozlakidis<sup>2</sup>, Alka Rani<sup>3</sup>, Pramod Kumar<sup>3</sup>, Mausumi Bharadwaj<sup>3</sup>, Shalini Singh<sup>3</sup> and Anuj Kumar<sup>3</sup>

High-throughput technologies amplify the operational demands on biobanks, esp. increased scale and agility. Automation can offer a solution, but specific design principles, essential components, and integration strategies need to be considered.

STUDY PROTOCOL

### Southern European Prospective Investigation Into Childhood Cancer and Nutrition (EPICkids): Study design and protocol

Foteini Perganti<sup>1\*</sup>, Inge Huybrechts<sup>2\*</sup>, Adriana Cristina Balduzzi<sup>3</sup>, Ronald Barr<sup>4</sup>, Andrea Biondi<sup>5</sup>, Aina Llenas Bladé<sup>6</sup>, Evangelina Muñoz Bravo<sup>6,7</sup>, Erika Damasco<sup>8</sup>, Christina N. Katsagoni<sup>1</sup>, Antonis Kattamis<sup>9</sup>, Alvaro Lassaletta<sup>6</sup>, Marta Llopis Lera<sup>9</sup>, Anna Llorca<sup>5</sup>, Jessica Blanco Lopez<sup>2</sup>, Antonio Perez Martinez<sup>7</sup>, Maura Massimino<sup>10</sup>, Andrés Morales La Madrid<sup>9</sup>, Lucas Moreno<sup>5</sup>, Ana Muñoz Alonso<sup>11</sup>, Genevieve Nicolas<sup>2</sup>, Giorgia Preziati<sup>10</sup>, Sofia Rizzari<sup>3</sup>, Serena Della Valle<sup>10</sup>, Catalina Marquez Vega<sup>11</sup>, Michelle Walters<sup>4</sup>, Zisis Kozlakidis<sup>2</sup>, Elena J. Ladas<sup>8\*</sup>

Study protocol on Childhood cancer and nutrition, including the collection of biological samples for microbiome and metabolome.

Biopreservation and Biobanking > Vol. 23, No. 2

Research Article | NO ACCESS | Published Online: 14 April 2025



### Experts Speak Forum: Decarbonization for Green Biobanking—The Current Landscape and Challenges for the Future

Authors: Edited by Koh Furuta, Authors: Hanh Vu, Daniel Adamek, Armin Ahmadi, Jerome Baudry, Jajah Fachiroh, Neil Fleschner, Gregory H. Grossman, Paul Hofman, Marius Ilie, Zisis Kozlakidis, Birendra Kumar Yadav, Flodie Long-Mira, Vineetha Menon, Wayne Ng, Lee Organick, Swee Heng Milon Pang, Naghmeh Rastegar, Ryo Shirakashi, Tiiu Sildva, Heidi Wagner, and Koh Furuta

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The IARC Biobank summarizes its operational expertise in technical publications that address specific needs of the field.

Three such examples are presented:

- The Technical considerations for the establishment of automated biobanking systems.
- The Technical considerations for green biobanking and decarbonization
- The Study protocol for childhood cancer and nutrition, including the collection of biological samples for microbiome and metabolome.

## Biobanking and population cohort-based research

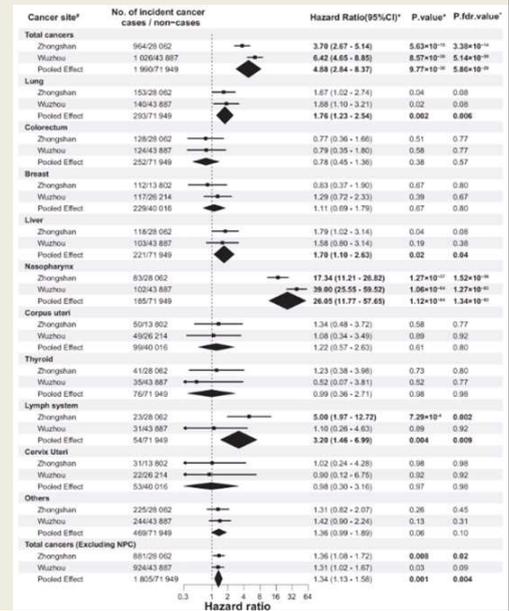
### Example: Epstein Barr virus antibody and cancer risk in two prospective cohorts in Southern China

- Association between EBV VCA-IgA antibody levels and cancer risk in two large cohorts in Southern China (73 939 adults with 8–10-years follow-up).
- Seropositive individuals had higher risks of total cancer and nasopharyngeal carcinoma, but also liver cancer, lung cancer and lymphoma compared to seronegative individuals.
- Population seropositivity was estimated at 7.8%
- These findings provide evidence that EBV seropositivity is associated with increased risks of multiple cancers.

Ji, MF., He, YQ., Tang, MZ. et al. *Nat Commun* 16, 5940, 2025.

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About the LSB group, we present a study recently published in Nature Communication that investigated the association between EBV antibody levels and cancer risk in two large prospective cohorts in Southern China. The combined cohorts involved 73 939 adults with an average 9-year follow-up period.

The overall EBV seropositivity in the study population in the two cohorts was estimated at 7.8%.

Antibody EBV seropositivity was strongly associated with total cancer – as well as with nasopharyngeal carcinoma, lung cancer, liver cancer and lymphoma. The graph shows the hazard ratio for this study.

These findings provide evidence that EBV seropositivity is associated with multiple cancers at a population level.

nature

Article | Open access | Published: 23 April 2025

## Geographic and age variations in mutational processes in colorectal cancer

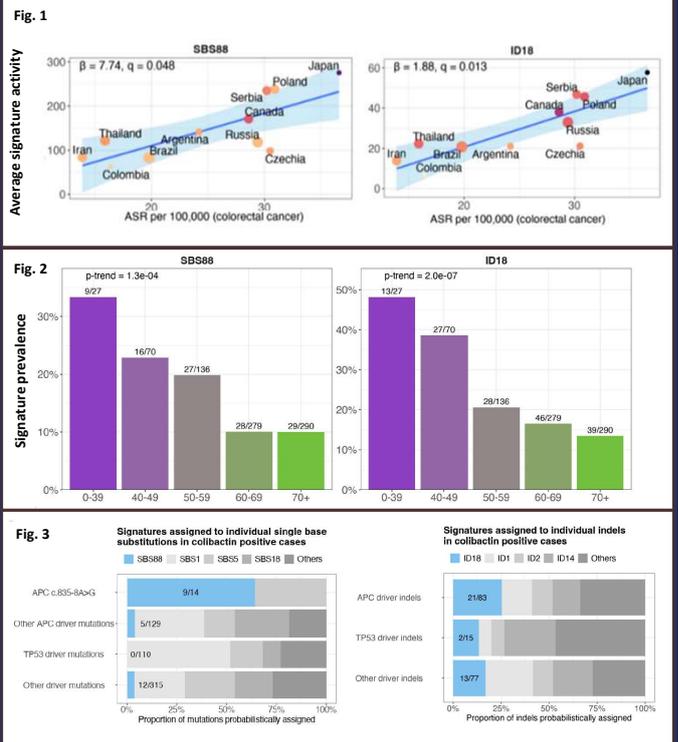
Marcos Díaz-Gay, Wellington dos Santos, Sarah Moody, Mariya Kazachkova, Ammal Abbasi, Christopher D. Steele, Raviteja Vangara, Sergey Senkin, Jingwei Wang, Stephen Fitzgerald, Erik N. Bergstrom, Azhar

### A study of 981 colorectal cancer whole genomes from 11 countries

#### Key findings :

- Mutational signatures SBS88 and ID18, caused by the bacteria-produced mutagen colibactin, had higher mutation loads in countries with higher colorectal cancer incidence rates (Fig.1)
- SBS88 and ID18 were also enriched in early-onset colorectal cancers (Fig.2)
- Colibactin exposure was further linked to *APC* driver mutations, with ID18 being responsible for about 25% of *APC* driver indels in colibactin-positive cases (Fig.3)

On behalf of the Mutographs team



## The Genomic Epidemiology (GEM) Branch: key highlights

Mutographs is a Cancer Grand Challenges project that aims to understand the causes of five different cancer types across five continents by generating mutational signature profiles. Through whole-genome sequencing of 981 colorectal tumours from 11 countries with varying incidence rates, scientists from the Genomic Epidemiology (GEM) Branch identified several signatures, including colibactin signature. Colibactin signature (SBS88), resulting from *pks+* *Escherichia coli* exposure, has been associated with colorectal cancer tumorigenesis.

Colibactin signature had a higher prevalence in tumors from younger patients, showing a potential role in the increasing incidence of colorectal cancer in younger individuals.

***This study has been published in Nature.***



### Increase of early-onset colorectal cancer: a cohort effect

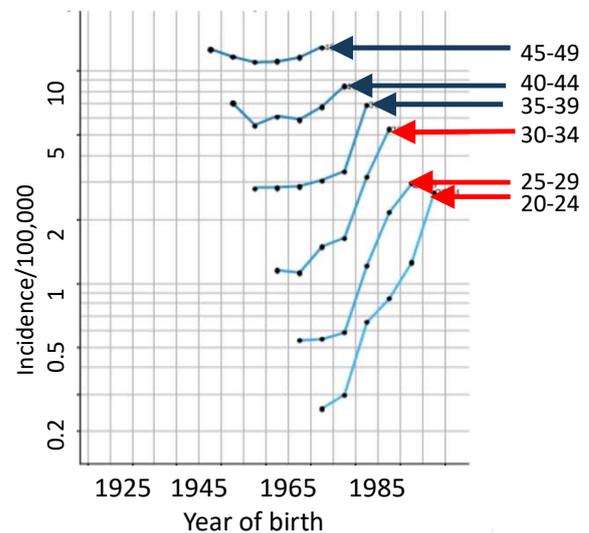
Laura Downham, PhD, Mathieu Laversanne, Pr, Sandra Perdomo, PhD, Adalberto M Filho, PhD, Freddie Bray, PhD, Paul Brennan, PhD ✉

JNCI: Journal of the National Cancer Institute, djaf238, <https://doi.org/10.1093/jnci/djaf238>

Published: 23 August 2025 Article history ▼

- The increasing incidence is much more apparent at very young ages (i.e. 20–34) than older ages (i.e. 35–49)
- Indicates that the underlying cause is initiated in childhood or adolescence

Early-onset colorectal cancer by age and year of birth, UK, males



Increasing incidence rates of early-onset colorectal cancer (eoCRC, <50 years) have been reported across multiple countries. Scientists from GEM investigated long-term cancer incidence data (from 1995 or earlier) from Australia, Canada, England, and the USA, separately by sex. Estimated annual percentage change (EAPC) and age-period-cohort (APC) models were used to assess trends by country and sex.

All countries showed increasing eoCRC incidence in successive birth cohorts since 1960, with those born in the 1990s facing at least five-fold higher risks than those born in the 1960s. Cohort effects were observed across all countries, with sharper increases at younger ages. Over the most recent decade, EAPC ranged from 3.7% in Canada to 6.0% in England, with steep rises before age of 40.

The emergence of these trends from ages 20-29 suggests contributing factors may originate early in life and may reflect exposures whose effect begin in youth and accumulate throughout the lifespan.



**European Research Council**  
Established by the European Commission  
SYNERGY Grant

## ECCE : The Causes of the Global Increase in Early Onset Colorectal Cancer

The global increase in early-onset colorectal cancer is caused by increasing childhood exposure to colibactin and other microbiome-derived mutagens during the second half of the 20th century



**Paul Brennan**  
GEM Branch, IARC



**Sir Mike Stratton**  
Wellcome Sanger  
Institute



**Trevor Lawley**  
Wellcome Sanger  
Institute

Researchers from the GEM Branch at IARC and the Wellcome Sanger Institute (United Kingdom) **have been awarded a significant grant by the European Research Council (ERC)** to continue their investigations into the causes of early-onset colorectal cancer.

Dr Paul Brennan, Head of the GEM Branch, together with Professor Sir Mike Stratton and Dr Trevor Lawley of Wellcome Sanger, previously gathered data – including findings from the Cancer Grand Challenges Mutographs project – suggesting that, in recent decades, exposure to certain gut bacteria in early life may help explain the increasing incidence of early-onset colorectal cancer that is being observed globally. If current trends continue, colorectal cancer is projected to become the leading cause of cancer-related deaths among young adults globally by 2030.

The new ERC Synergy Grant will enable the team to collect blood, stool, and colorectal tissue samples from more than 3000 people in 10 countries, including individuals with early- and late-onset colorectal cancer and healthy controls, to study tumour tissue and normal tissue. This should reveal whether any patterned changes in DNA, known as mutational signatures, may be linked to bacteria that produce genotoxins (DNA-damaging substances). In parallel, the team will screen bacteria for genotoxic activity and expose gut organoids (miniature versions of laboratory-grown organs) to these strains to confirm associated changes in DNA.

Although colorectal cancer cases are decreasing overall, in the past 20 years there has been a notable increase in early-onset colorectal cancer, which is typically defined as receiving a diagnosis before the age of 50 years. The reasons behind this surge in cases have remained a mystery. The results of this study, which will last 6 years, will help assess the role of bacteria that change or harm DNA in early-onset colorectal cancer and inform new prevention strategies.

## Risk Assessment and Early Detection (RED) Team

- 5 Professional staff (4 scientists, 1 project officer)
- 2 General Service staff (1 database, 1 admin)
- 9 Early Career and Visiting Scientists (6 postdocs, 3 PhD students)



SE US IR IQ CN PS RO FR NG ZM DZ GA JP VN



We've moved!

From GEM to EPR,  
as of January 2026

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### Risk Assessment and Early Detection (RED) Team: key highlights

The RED Team is one of IARC's innovation Teams. Because much of the research conducted by the RED team has policy or translational implications, it was decided that they would move from the GEM Branch to the Early Detection, Prevention and Infections (EPR) Branch in January 2026.

## Risk Assessment and Early Detection Team – in a nutshell



### Objectives

1. Improve **primary cancer prevention** by addressing modifiable risk factors
2. Advance **secondary cancer prevention** by optimizing early detection and screening

### International consortia



← **The Lung Cancer Cohort Consortium (LC3)**  
 26 prospective cohorts  
 3 million participants  
 70,000 incident lung cancers

**The Opioid Cohort Consortium (OPICO)** →  
 25 cohorts and registries  
 2 million participants  
 126 000 incident cancers



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### Projects and funding

Project group	External funding	Principal investigators
Tobacco use and smoking cessation	€650 000	Sheikh, Feng
Biomarkers for early lung cancer	€4 600 000	Johansson, Robbins
Metabolic risk factors	€200 000	Johansson
Opioids and cancer risk	€3100 000	Sheikh
Cancer screening benefits and harms	€580 000	Robbins
Early detection of HPV-driven cancers	€1 500 000	Robbins
Lung cancer screening and risk	€260 000	Feng, Robbins

The RED team focuses on conducting translational research that informs primary and secondary prevention.

The team coordinates two large international cohort consortia, the Lung Cancer Cohort Consortium and the Opioid Cancer Cohort Consortium.

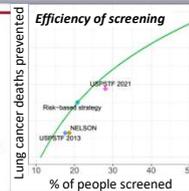
RED operates almost fully on external budget with 2.5 million EUR of external funding annually, spread across projects focused on tobacco, lung cancer, modifiable risk factors, biomarkers, and cancer screening.

## Lung cancer and tobacco control - 2025 RED team publications

### Eligibility criteria for lung cancer screening in France: a modelling study

*The Lancet Regional Health Europe, 2025*

Xiaoshuang Feng,<sup>a</sup> Karine Alcala,<sup>a</sup> Florence Guida,<sup>b</sup> Marcel Goldberg,<sup>c</sup> Marie Zins,<sup>c</sup> Olivier Leleu,<sup>d</sup> Pianpian Cao,<sup>e</sup> Jihyou Jeon,<sup>f</sup> Sébastien Couraud,<sup>g,h</sup> Mattias Johansson,<sup>g</sup> and Hilary A. Robbins<sup>g,h</sup>

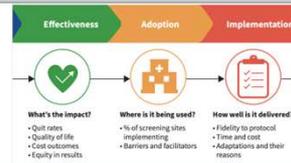


➤ This study informed the design of the French national lung cancer screening pilot program

### Lung cancer screening in Europe: a golden opportunity to address tobacco use through scalable, WHO-guided cessation interventions

*European Respiratory Journal, 2025*

Mahdi Sheikh and Elisabete Weiderpass

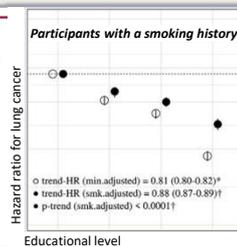


➤ This paper addressed integration of smoking cessation with lung cancer screening

### Association between socioeconomic position and lung cancer incidence in 16 countries: a prospective cohort consortium study

*eClinicalMedicine, 2025*

Justina Uchejor Onwuka,<sup>a</sup> Hana Zahed,<sup>b</sup> Xiaoshuang Feng,<sup>c</sup> Karine Alcala,<sup>d</sup> Loretta Eghunmwuse,<sup>e</sup> Randi M. Williams,<sup>f</sup> Melinda C. Aldrich,<sup>g</sup> Jasjit S. Ahluwalia,<sup>h</sup> Demetrius Albanes,<sup>i</sup> Alan A. Arslan,<sup>j</sup> Julie K. Bassett,<sup>k</sup> Paul Brennan,<sup>l</sup> Quyin Cai,<sup>m</sup> Chu Chen,<sup>n</sup> Niki Dimou,<sup>o</sup> Pietro Ferrari,<sup>p</sup> Neal D. Freedman,<sup>q</sup> Wen-Yi Huang,<sup>r</sup> Michael E. Jones,<sup>s</sup> Miranda R. Jones,<sup>t</sup> Rudolf Kaaks,<sup>u</sup> Woon-Puzy Koh,<sup>v</sup> Arnulf Langhammer,<sup>w</sup> Linda M. Liao,<sup>x</sup> Reza Malekzadeh,<sup>y</sup> Roger L. Milne,<sup>z</sup> Thomas E. Rohan,<sup>aa</sup> Maria-José Sánchez,<sup>ab</sup> Mahdi Sheikh,<sup>ac</sup> Rashmi Sinha,<sup>ad</sup> Xiao-Ou Shu,<sup>ae</sup> Victoria L. Stevens,<sup>af</sup> Lesley F. Tinker,<sup>ag</sup> Kala Visvanathan,<sup>ah</sup> Ying Wang,<sup>ai</sup> Renwei Wang,<sup>aj</sup> Stephanie J. Weinstein,<sup>ak</sup> Emily White,<sup>al</sup> Jian-Min Yuan,<sup>am</sup> Wei Zheng,<sup>an</sup> Mattias Johansson,<sup>ao</sup> and Hilary A. Robbins<sup>ap</sup>



➤ This study quantified socioeconomic disparities in lung cancer incidence on four continents

The slide presents 2025 RED Team publications on lung cancer screening.

The first study, published in *The Lancet Regional Health – Europe*, informed the design of the French national lung cancer screening pilot program.

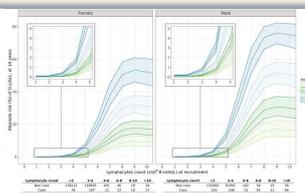
The second study, published in the *European Respiratory Journal*, examined how smoking-cessation interventions can be integrated into lung cancer screening. The third study, published in *eClinicalMedicine*, quantified socioeconomic disparities in lung cancer incidence across four continents.

## Innovation in cancer risk assessment - 2025 RED team publications

### Lymphocyte count and risk of chronic lymphocytic leukaemia

*Journal of the National Cancer Institute, 2025*

Simon Pahnke\*<sup>1</sup>, Karine Alcalá\*<sup>2</sup>, Connie Bulos Salim<sup>2</sup>, Ricardo Cortez Cardoso Penha<sup>2</sup>, Hanla A. Park<sup>2</sup>, James McKay<sup>2</sup>, Mattias Johansson<sup>2</sup>

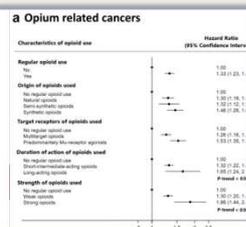


➤ This study proposes an improved approach to assess CLL risk based on lymphocyte count, age, and sex

### Regular use of pharmaceutical opioids and subsequent risk of cancer: a prospective cohort study and Mendelian randomization analysis

*eClinicalMedicine, 2025*

Mahdi Sheikh,<sup>a,\*</sup> Allison Domingues,<sup>a</sup> Karine Alcalá,<sup>a</sup> Ryan Langdon,<sup>a</sup> Daniela Mariosa,<sup>a</sup> Xiaoshuang Feng,<sup>a</sup> Peter Sarich,<sup>b</sup> Marianne F. Weber,<sup>b</sup> Vivian Viallon,<sup>a</sup> Agnes Fournier,<sup>c</sup> Farin Kamangar,<sup>d</sup> Reza Malekzadeh,<sup>e</sup> Chris Gillette,<sup>f,g</sup> Mara Z. Vitolins,<sup>g</sup> Meredith C. B. Adams,<sup>h</sup> Shama Virani,<sup>a</sup> Elmira Ebrahimi,<sup>a</sup> Tom Dudding,<sup>i</sup> Tessel E. Galesloot,<sup>j</sup> Lambertus A. Kiemeny,<sup>j</sup> Nathaniel Rothman,<sup>k</sup> Stella Koutros,<sup>k</sup> Jijang Zhou,<sup>l</sup> Sallie-Anne Pearson,<sup>m,n</sup> Marie-Odile Parat,<sup>o</sup> Paul Brennan,<sup>a</sup> Mattias Johansson,<sup>a</sup> George Davey Smith,<sup>h</sup> and Hilary A. Robbins<sup>a</sup>



➤ This initial publication from OPICO found that regular use of pharmaceutical opioids is associated with increased risk for cancer types caused by opium (a Group 1 carcinogen), but not other cancer types

The fourth study, published in *JNCI*, proposes an improved method for assessing chronic lymphocytic leukaemia (CLL) risk using lymphocyte count, age, and sex.

The fifth study, published in *eClinicalMedicine*, reports that regular use of pharmaceutical opioids is associated with an increased risk of cancers caused by opium (a Group 1 carcinogen), but not with other cancer types.

## Scientific highlights

Pillar 3:  
*From  
understanding to  
prevention*

The following slides present some scientific highlights for **Pillar 3 – *from understanding to prevention***, that includes the **Early Detection, Prevention and Infections (EPR) Branch**, the **Environment and Lifestyle Epidemiology (ENV) Branch**, and the **Epigenomics and Mechanisms (EGM) Branch**.

**Effective 1 January 2026**, the EGM Branch will cease to exist as an independent Branch. This strategic, evidence-based decision is fully aligned with the recommendations of the evaluation report of the IARC Medium-Term Strategy 2021–2025, as endorsed by the Governing Council in May 2025. All EGM Branch staff members will be reassigned to other Branches aligned with their scientific expertise.



## CanScreen5 flagship updates

Cancer Screening in Five Continents

CanScreen5 aims to collect information on characteristics and performance of cancer screening programmes across the globe



Data from **106 participating countries** are currently published.



**1624 users from 184 countries** completed the **CanScreen5 online training**. **109 cancer screening programme managers** from **75 countries** participated in the hybrid training programmes on “quality improvement” in cancer screening.



We will prepare and publish the **Third EU Cancer Screening report** based on data collected from all EU & EAA Members States in 2026-2027.



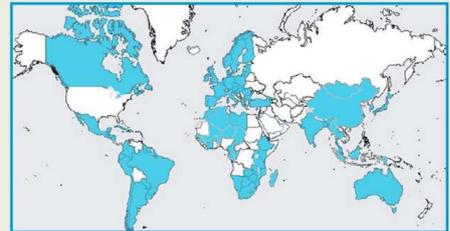
The Third EU Cancer Screening report will **capture lung** and **prostate cancer screening programmes** in addition to **breast, cervical** and **colorectal**.



**Country-specific factsheets** to disseminate the status of programme achievement, offering summaries of screening activities.

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Countries participating in CanScreen5



21 participants from 11 countries attending CanScreen5 workshop, at NCC, Japan. 14-17 October 2025



CanScreen5 factsheets

### Early Detection, Prevention and Infections (EPR) Branch: key highlights

CanScreen5 is a global initiative of IARC, launched in June 2019.

Its purpose is to serve as a **global data repository** for cancer-screening programmes worldwide — collecting, analysing and disseminating information on the organisation and performance of such programmes across the globe. The platform covers screening programmes for **breast cancer, cervical cancer and colorectal cancer**.

Data from 106 Participating States are currently published.

The third EU Cancer Screening Report will capture lung and prostate cancer screening programmes in addition to breast, cervical and colorectal cancer screening programmes.

## Research for Implementation

### PRAISE-U (5 EU pilot sites)

EU4Health funded,  
To pilot risk-stratified population-based prostate cancer screening programme in Spain (Manresa and Galicia), Ireland, Poland and Lithuania.



### ICISIS - Improving cancer screening in Slovenia

EU DG Reform funded,  
To introduce prostate and lung cancer screening, and to transition to HPV based cervical screening

### CBIG-Screen (EU pilot sites)

EU HORIZON 2020 funded,  
To reduce inequality by improving the offer of cervical cancer screening to vulnerable and underserved groups



### LLUMINAS (Latvia and Luxembourg)

EU DG reform funded,  
Evaluate and improving existing cancer screening practices and to support introduction of lung cancer screening



### HPV-FASTER Implement (EU)

EU HORIZON funded,  
To implement combined HPV vaccination and screening interventions, health education, and data-driven policy recommendations for cervical cancer elimination

The slide highlights several EU-funded implementation research initiatives aimed at improving cancer screening across Europe:

- **ICISIS (Slovenia):** Focuses on enhancing cancer screening in Slovenia, including the introduction of prostate and lung cancer screening and transitioning to HPV-based cervical screening. Funded by EU DG Reform.
- **LLUMINAS (Latvia and Luxembourg):** Targets improvements in cancer screening in Latvia and Luxembourg.
- **HPV-FASTER Implement (EU):** Supports the implementation of combined HPV vaccination and screening interventions, health education, and data-driven policy recommendations for cervical cancer elimination.
- **PRAISE-U (5 EU pilot sites):** Evaluates and improves existing cancer screening practices and supports the introduction of lung cancer screening. Funded by EU DG Reform.
- **CBIG-Screen (EU pilot sites):** Aims to reduce inequality by improving cervical cancer screening for vulnerable and underserved groups. Funded by EU Horizon 2020.
- **EU4Health Prostate Cancer Screening Pilot:** Pilots risk-stratified, population-based prostate cancer screening programs in Spain (Manresa and Galicia), Ireland, Poland, and Lithuania.

These projects collectively aim to advance cancer screening, reduce inequalities, and support the adoption of innovative approaches across multiple European countries.

## Training and evaluation of an AI-supported system for triaging HPV-positive women

AI-based tools offer significant potential to support frontline health workers by enhancing screening quality and expanding access to healthcare services, particularly in underserved settings.

**Standardized collection of cervical images across different geographical regions to ensure representativeness and generalizability of the AI models**

INDIA AND THAILAND	ZIMBABWE
<ul style="list-style-type: none"> <li>✓ Launched in 2020</li> <li>✓ 1820 HPV+ women recruited</li> <li>✓ 697 CIN2+</li> </ul>	<ul style="list-style-type: none"> <li>✓ Launched in 2023</li> <li>✓ 1200 women recruited</li> <li>✓ 256 HPV +</li> <li>✓ 62 CIN2+</li> <li>✓ Target to recruit 3200 women</li> </ul>

A high acuity portable image capturing device was developed to collect cervical images from HPV +ve women



Funded by NCI/NIH  
Merit Award number  
5R37CA275824-03

### Progress Towards Developing a Robust AI Model

- 1) First step:** We developed a base line model and validated it with India/Thailand images.
- 2) Second step:** The baseline model was challenged with images from Zimbabwe without pretraining. As expected, the model's initial performance was deficient.
- 3) Third step:** The model was retrained using images from India, Thailand & Zimbabwe; **Significant improvement in performance was observed as shown below.**

Step wise AI development	Strategy	Sensitivity	Specificity
<b>1) First step</b>	<b>Development of a Baseline Model</b> <ul style="list-style-type: none"> <li>• using SAVE-CERVIX</li> </ul>	<b>82.7%</b>	<b>73.9%</b>
<b>2) Second step</b>	<b>Challenge Baseline Model</b> <ul style="list-style-type: none"> <li>• With images from Zimbabwe</li> <li>• <b>WITHOUT</b> PRE-TRAINING</li> </ul>	<b>20.0%</b>	<b>83.8%</b>
<b>3) Third step</b>	<b>Challenge Baseline Model</b> <ul style="list-style-type: none"> <li>• With an additional set of images from Zimbabwe</li> <li>• <b>AFTER</b>-PRE-TRAINING</li> </ul>	<b>70.0%</b>	<b>81.1%</b>

**The model already performs better than triage cytology**  
**Next steps:** Expand data collection to additional geographical regions to enhance model robustness and generalizability; study initiated in Latin America and the USA

The EASTER project focuses on developing and validating AI-based tools to support frontline health workers in cervical cancer screening, especially for HPV-positive women in underserved regions. A portable image-capturing device was created to collect standardized cervical images, ensuring the AI model's generalizability across different geographical areas. Studies were launched in Zimbabwe (2023, 1200 women recruited so far, target 3200) and India/Thailand (2020, 1820 HPV+ women recruited).

The AI model's development followed three steps:

- **Baseline Model:** Developed and validated with images from India/Thailand (Sensitivity: 82.7%, Specificity: 73.9%).
- **Challenge with Zimbabwe Data (No Pretraining):** Sensitivity dropped to 20.0%, Specificity increased to 83.8%.
- **Retraining with Multinational Data:** Significant improvement (Sensitivity: 70.0%, Specificity: 81.1%).

The AI model now outperforms traditional triage cytology and is being expanded to Latin America and the USA to further enhance robustness. The project is funded by the NCI/NIH Merit Award.

## Global burden of cancer attributable to infections key IARC/EPR indicators for cancer prevention programs

### Causal attribution of human papillomavirus genotypes to invasive cervical cancer worldwide: a systematic analysis of the global literature

Felipe Wei, Damien Georges, Irene Man, Iacopo Baussano, Gary M Clifford

Lancet 2024; 404: 435-44

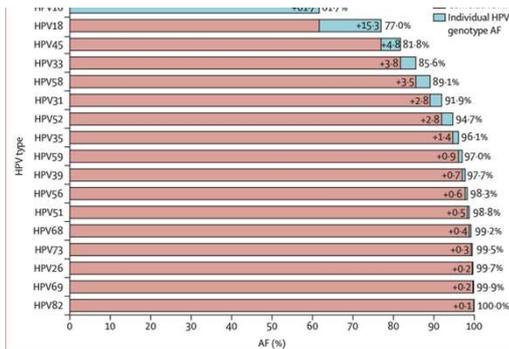


Figure 1: Individual and cumulative HPV genotype-specific AF in invasive cervical cancer at the global level. The number outside each bar shows the cumulative AF. AF=population attributable fraction. HPV=human papillomavirus.

- Of 17 HPV types shown to cause cervical cancer, eight types caused 95%, and are priority targets for screening tests and vaccines

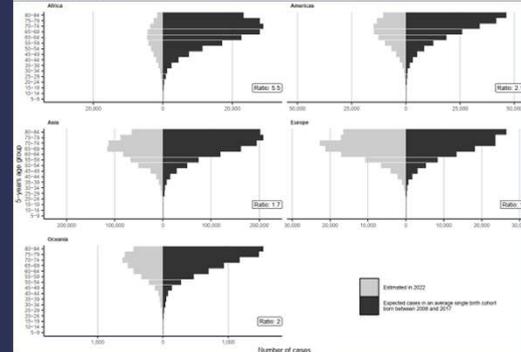
nature medicine

### Global lifetime estimates of expected and preventable gastric cancers across 185 countries

Received: 11 December 2024

Jin Young Park<sup>1</sup>, Damien Georges<sup>2</sup>, Catharina J. Alberts<sup>3,4</sup>, Freddie Bray<sup>5</sup>, Gary Clifford<sup>6</sup> & Iacopo Baussano<sup>1</sup>

Accepted: 23 May 2025



- Gastric cancer burden is ~90% due to H.pylori, and will increase due to improving life expectancy
- In sub-Saharan Africa in particular, future burden is expected to increase six times over current estimates

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In a work published in the Lancet, a global analysis established the attributable fractions of HPV types in cervical cancer, globally and by world region, for the first time. Of the 17 HPV types that were shown to cause cervical cancer, 95% of cervical was shown to be due to just 8 types, which are thus priority targets for screening tests and vaccines.

In work led by Dr Jin Park and the Gastric Cancer team (in collaboration with the public health decision making team and CSU), published in Nature Medicine, we predicted global lifetime estimates of gastric cancers in birth cohorts born between 2008 and 2017. 87% of these cases were estimated to be attributable to H.pylori, and hence preventable by H.pylori screen and treat programs.

When gastric cancer cases expected in current cohorts was compared to current GLOBOCAN estimates for the year 2022, there were important increases. Most of all in sub-Saharan Africa, where the current burden is low, but where the future burden is expected to increase 6 times, due to increasing life expectancy.

## Public Health Decision Science at IARC (EPR branch)

**Informs local public health actions on Cervical Cancer Elimination, through**

- Local data collection** on cervical cancer burden and impact of primary and secondary prevention
- Model-based projection** to evaluate population health and economic impact of prevention policies

### Key data collection initiatives

**CHRONOS - Centre of Excellence to monitor HPV vaccination impact through HPV prevalence surveys**

Transfer of knowledge and standardized material: protocol, SOPs, training toolkit

Local evidence on impact on HPV and cervical cancer

Conducted in 6 & in planning in 3 LMICs

Website

**IARC India HPV vaccine trial for single-dose data**

>15 yrs follow-up efficacy and immunogenicity data by dose schedule

Endpoint	3-dose (N=2,368)	2-dose (N=2,538)	Single dose (N=1,582)
HPV 16/18	95.8%	95.3%	92.4%
9vGPI	(95.1 - 97.6)	(95.0 - 97.0)	(97.7 - 97.0)
HPV 4/12/16/18	82.4%	83.2%	84.9%
HPV 31/33/45	(79.6-87.3)	(80.8-85.5)	(81.8-87.7)
	(57.7 - 81.8)	(77.9 - 92.5)	81.1 - 87.5

Analysis of long term duration of immune responses 15 years after vaccination on-going

Malvi et al. [JNCI monograph](#) (2024)

**COEUS Costing Surveys to assess economic burden of cervical cancer in the society**

Rippling effects of cervical cancer to patients' households

Data on households' out-of-pocket costs, income loss, financial toxicity

COEUS framework: Fuady et al. [Glob Oncol](#) (2024)

### Key modelling projects

**Low- and middle-income setting**

Optimal resource reallocation when switch to single-dose in Brazil, India, Rwanda

Health and economic impact of HPV catch-up vaccination in 130 LMICs

**High-income setting**

Developing European guidelines for screening

Cancer Radar: Adapted cancer prevention policies in migrant in Europe

Website of our modelling platform

**METHIS**  
Modelling tools for HPV infection-related cancers

The slide outlines how the Public Health Decision Science (EPR Branch) supports local public health actions for cervical cancer elimination through:

### 1. Local Data Collection

Gathering data on cervical cancer burden and the effects of prevention strategies.

Key initiatives include:

- **CHRONOS:** Centre of Excellence for monitoring HPV vaccination impact via prevalence surveys in low- and middle-income countries (LMICs), providing standardized tools and local evidence.
- **IARC India HPV Vaccine Trial:** Long-term study (>15 years) on efficacy and immune response for single-dose HPV vaccination.
- **COEUS Costing Surveys:** Assessing the economic burden of cervical cancer, including household costs and financial toxicity.

### 2. Model-Based Projections

Using modeling to evaluate population health and the impact of prevention policies.

**Key modeling projects:**

**Low- and Middle-Income Settings:** Resource allocation modeling for single-dose HPV vaccination and catch-up strategies in countries like Brazil, India, Rwanda, and 130 LMICs.

**High-Income Settings:** Developing European screening guidelines and adapting cancer prevention strategies using platforms like Cancer Radar.

### 3. METHIS Platform

The slide references METHIS, IARC's modeling platform for HPV infection-related cancers, supporting both research and policy development.

**Overall, the slide highlights IARC's integrated approach—combining data collection, implementation research, and advanced modeling—to inform and optimize cervical cancer prevention and elimination strategies globally.**

## Automated mRNA based detection of biomarkers for breast cancers (STRAT4™)– reinventing FNA for decentralized care

Limited access to histopathology & IHC to detect ER/PR/Her2/Ki67 is a major impediment to timely diagnosis & tailored treatment for breast cancers in LMICs

Fine needle aspiration (FNA) biopsy has high sensitivity (92.7%) & specificity (94.8%) to detect breast ca in women with palpable lumps – pooled analysis of 46 studies

### FNA can not be used to detect biomarkers

We evaluated performance of mRNA based detection of biomarkers on cell blocks prepared from FNA & direct FNA specimens

Compared to IHC on core biopsies the STRAT4 on cell blocks & FNAs showed high agreement, sensitivity, specificity to detect ER/PR/HER2

Manuscript submitted

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	No. of Patients	Concordance (95% CI)		Kappa	Sensitivity	Specificity
Compared with immunohistochemistry performed on core biopsies						
STRAT4 on cell blocks prepared from FNA specimens						
ER	103	92.2	(87.1 - 97.4)	0.84	97.7	88.3
PR	96	89.6	(83.5 - 95.7)	0.78	88.6	90.2
HER2	102	80.4	(72.7 - 88.1)	0.61	85.7	75.5
Ki-67	94	64.9	(55.2 - 74.5)	0.23	82.1	39.5
STRAT4 on direct FNA specimens						
ER	74	89.2	(82.1 - 96.3)	0.78	91.2	87.5
PR	69	72.5	(61.9 - 83.0)	0.35	90.0	69.5
HER2	73	80.8	(71.8 - 89.9)	0.60	65.6	92.7
Ki-67	66	62.1	(50.4 - 73.8)	0.13	53.8	64.2

Kappa 0.41-0.60: moderate; 0.61–0.80: substantial; 0.81–1.00: almost perfect agreement

STRAT4 is performed on Cepheid XPERT platform that is widely available in LMICs

11-13 February 2026

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Ref to pooled analysis Yu et al. BMC Cancer 2012, 12:41

<http://www.biomedcentral.com/1471-2407/12/41>

### Background & Need:

In low- and middle-income countries (LMICs), limited access to histopathology and immunohistochemistry (IHC) for detecting key breast cancer biomarkers (ER, PR, HER2, Ki67) hinders timely diagnosis and tailored treatment. Fine needle aspiration (FNA) biopsy is sensitive and specific for detecting breast cancer in women with palpable lumps, but cannot detect biomarkers.

### Innovation:

The study evaluated automated mRNA-based detection of biomarkers using the STRAT4 assay on cell blocks and direct FNA specimens, comparing results to IHC on core biopsies.

### Key Findings:

STRAT4 on FNA cell blocks and direct FNA specimens showed high agreement, sensitivity, and specificity for ER, PR, and HER2 detection compared to IHC.

Concordance, sensitivity, and specificity were generally higher for cell blocks than direct FNA specimens.

Ki-67 detection showed lower concordance and agreement.

Kappa values indicated substantial to almost perfect agreement for ER and PR, moderate for HER2, and low for Ki-67.

### Platform:

STRAT4 is performed on the Cepheid XPERT platform, which is widely available in LMICs.

### Significance:

This approach could help decentralize breast cancer care by enabling biomarker detection in settings with limited pathology resources, supporting more timely and personalized treatment.

## Patterns of care (POC) of childhood cancers and common adult cancers in Nepal

### Background/aim

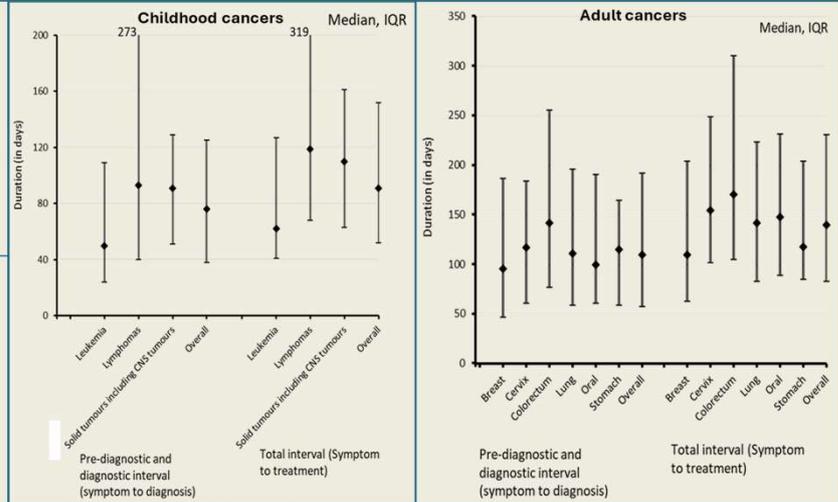
- POC studies results have a significant value to improve utilization of cancer care services in any given setting.
- Our ongoing study in Nepal reports the **delays that occur at different phases of care pathway, their determinants & impact on stage at diagnosis.**

### Study design and methods

- Our ongoing prospective cohort study, DECAN, recruited **1,180 adult cancers (breast, cervix, lung, colorectum, stomach, oral)** and **170 childhood cancers patients** at the largest public cancer hospital in Nepal.
- **Baseline data collected** from June to November 2022 (follow up till September 2025) through face-to-face interview and extraction of data from medical records of respective departments.

### Interpretation

- Striking delays from recognition of symptoms to confirmatory diagnosis (**median ranges from 96 to 142 days**) in adult cancer patients and in childhood cancer patients (**median 50-91 days**) was observed.
- Median intervals from recognition of symptoms to treatment ranged from **62 to 119 days** in childhood cancer patients
- Lower socio-economic status and old-aged patients were particularly vulnerable to late-stage diagnosis



**Conclusion:** We highlighted **barriers in symptom recognition** by both patients and health care providers, **limited and delayed healthcare access**, or **referral mechanism**, likely led to pre-diagnostic, diagnostic, and treatment delays. Quality of life and survival data are being collected for future reporting

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Accepted in **BMJ Global Health**; Contact: [singhd@iarc.who.int](mailto:singhd@iarc.who.int)

The slide presents a structured overview of the DECAN project, focusing on its main components and workflow.

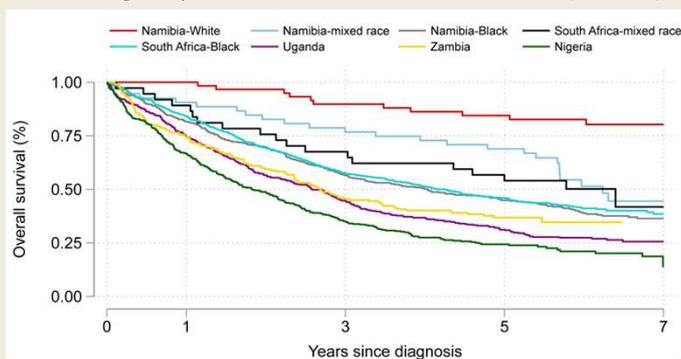
It is organized into three main sections:

- **Project Objectives and Scope:** Outlines the primary goals and the scope of the DECAN project, likely emphasizing its relevance to cancer prevention or research.
- **Project Activities/Phases:** Displays a timeline or flowchart of the project's activities, illustrating the sequence of tasks, milestones, or phases involved in the project's implementation.
- **Collaboration and Stakeholders:** Highlights the key partners, stakeholders, or collaborative entities engaged in the project, possibly including research institutions, funding bodies, or international organizations.

The visual layout suggests a systematic approach to project management, with clear delineation of responsibilities and timelines.

## The African Breast Cancer-Disparities in Outcomes (ABC-DO) cohort study

Overall survival of the full cohort was **40%** at 5y and **33%** at 7y, with large disparities between countries and races (N=2153).

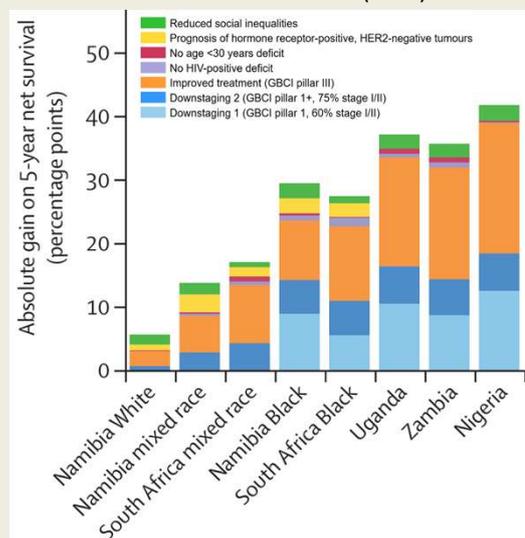


Mo T, et al., McCormack V. Breast cancer overall survival, annual risks of death, and survival gap apportionment in sub-Saharan Africa (ABC-DO): 7-year follow-up of a prospective cohort study. *Lancet Glob Health* 2025; 13(10): e1681-e90.

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**Predicted survival gains** if the distribution of prognostic factors shift in line with WHO's Global Breast Cancer Initiative (GBCI)



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### The Environment and Lifestyle Epidemiology (ENV) Branch: key highlights

Breast cancer remains the most diagnosed cancer and the leading cause of cancer mortality worldwide. However, there were few estimates of breast cancer survival in Africa and its determinants at 5 years and beyond.

To fill this gap, the African Breast Cancer-Disparities in Outcomes (ABC-DO) cohort study was done at eight hospitals across five sub-Saharan African countries.

The study included 2153 women with incident breast cancer with follow-up up to 7 years.

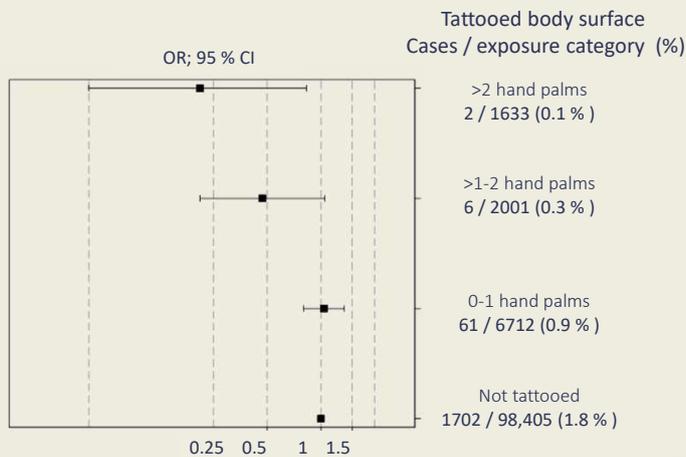
The study found that in general only 1 in 3 women diagnosed with breast cancer survived for 7 years after diagnosis, with large disparities between countries and races.

Annual risk of death remained substantial even after 3 years post-diagnosis, with the risk of dying in the subsequent year for 4-year survivors being 8-21% for Black women in Namibia, Uganda, and Nigeria.

Survival gap apportionment showed that achieving the WHO's Global Breast Cancer Initiative's pillar 1 (early detection) and 3 (completion of recommended treatment) will avert about 1/3 of death in Black women.

## Tattoo exposure associated with decreased skin cancer risk ?

First results from the Cancer Risk Attributable to the Body Art of Tattooing study **CRABAT**



! Few cases in higher exposure category hamper interpretability !

**Interpretation:**  
Response bias or exposure misclassification?

UVR-absorption through dark tattoo pigments?

In line with recent case control, animal and in-vitro evidence -> warrants future research

Mo, T., ... Schüz, J., Foerster, M. (2025). Tattoos and risk of cutaneous melanoma and non-melanoma skin cancer in France. *JNCI*.



As first results of the CRABAT study on tattoo associated cancer risks using retrospective cancer outcome data, no associations was seen with being tattooed and overall skin cancer risk. However, skin cancer risk decreased with increasing tattooed body surface.

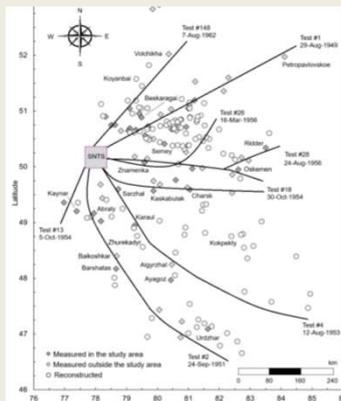
While these are exciting results, they need to be interpreted with caution, mainly because of very few cases in the higher exposure categories. Nevertheless, plausible mechanisms exist, such as the absorption of ultraviolet radiation by intradermal tattoo pigments, particular if dark.

Similar results were recently found in a case-control, an animal and in an in vitro study. Taken together, the results warrant further research; the results are published in *JNCI*, with first author Tingting Mo from ENV branch.

## Cancer risks in the general population after nuclear accidents

### Semipalatinsk nuclear weapons test site (SNTS), Kazakhstan

A cohort study of 53 000 people affected by radioactive fallout in 1949–1962 with 70 yrs of all-cause mortality follow-up



Individual whole-body doses from external irradiation

All-cause, cancer and cardiovascular dx mortality radiation-related risks assessment

Contract 3624102212, BfS, Germany

(Drozdovitch et al., 2025)

### Chornobyl nuclear power plant accident, Ukraine

An ecological study on risks of haematological malignancies incidence (1986–2019) in the Belarusian residents of most radioactively contaminated areas in relation to cumulative bone marrow dose

Haematological malignancy	Cases	Relative Risk per 100 mGy	95% CI
Hodgkin lymphoma	2022	0.63	0.32; 1.22
Non-Hodgkin lymphoma	4265	0.60	0.40; 0.90
Multiple myeloma	1824	0.83	0.46; 1.49
Lymphoid leukaemia	4333	0.90	0.61; 1.33
Myeloid leukaemia	2694	1.29	0.81; 2.05
All leukaemia	8173	0.98	0.74; 1.30

(Zupunski et al. 2025, submitted)

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ENV continues studying cancer risks in general populations exposed to nuclear incidents and accidents that has an increased importance in the current geopolitical situation. New research includes building up a cohort study of over 50 000 people affected by nuclear weapons tests at the Semipalatinsk test site situated in Kazakhstan. The cohort has 70 years of cancer and non-cancer disease mortality follow-up. The cohort is a useful scientific resource to receive additional insights on life-time cancer risks after low-dose irradiation and on lifestyle factors that could interact with radiation-associated cancer risk.

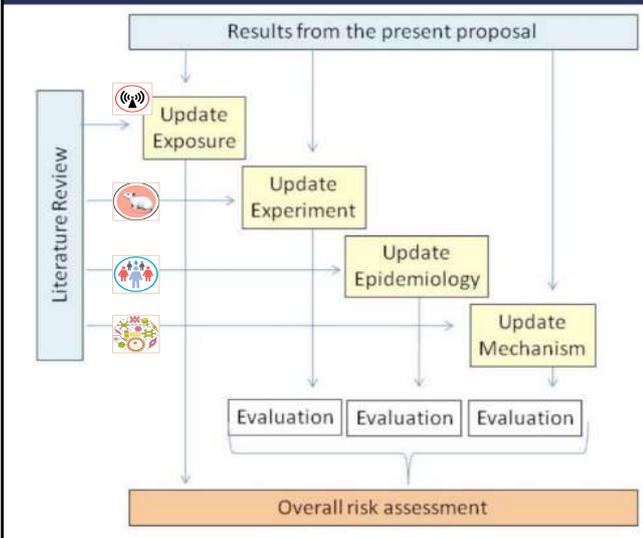
New ecological studies on cancer risks in the residents of territories contaminated with long-lived radionuclides after Chornobyl nuclear accident radioactive fallout show for haematological malignancies incidence during 40 years of follow-up in the affected population of Belarus no evidence of radiation-related increase of lymphoma, multiple myeloma and total leukaemia. There was a suggestion of an elevated risk of the myeloid leukaemia that requires further monitoring. Similar analysis of the Ukrainian data is underway.

# SEAWAVE WP9: CANCER RISK ASSESSMENT DUE TO EXPOSURE TO 5G RF-EMF

5G FR1: 0.41–7.125 GHz  
 5G FR2: 24.25–52.60 GHz  
 OUTCOME: SKIN CANCER

## EVALUATION

	Human	Animal	Mechanistic	Overall
FR1	inadequate	inadequate	inadequate	Inconclusive
FR2	inadequate	inadequate	inadequate (limited)	Inconclusive



For the use of the 5G mobile technology two frequency ranges in the radiofrequency spectrum were reserved, with the lower range widely deployed in Europe in 2019 and similar to previous mobile phone technology generation, while the higher and new frequency band has against all implementation plans not been deployed in Europe.

The SEAWave project Risk Assessment follows EU approaches (not to be mixed up with an IARC Monograph) addressing whether either of the used frequency ranges was associated with skin cancer risk in humans and, if yes, what the magnitude of risk would be and the projected cancer burden in the European population.

The overall assessment for both frequency ranges however was inconclusive based on inadequate evidence from all three streams of evidence.



## European Code Against Cancer, 5th edition 14 ways you can help prevent cancer

International Agency  
for Research on Cancer  
World Health Organization

- 1 Smoking**  
Do not smoke. Do not use any form of tobacco, or vaping products. If you smoke, you should quit.
- 2 Exposure to other people's tobacco smoke**  
Keep your home and car free of tobacco smoke.
- 3 Overweight and obesity**  
Take action to avoid or manage overweight and obesity:
  - Limit food high in calories, sugar, fat, and salt.
  - Limit drinks high in sugar. Drink mostly water and unsweetened drinks.
  - Limit ultra-processed foods.
- 4 Physical activity**  
Be physically active in everyday life. Limit the time you spend sitting.
- 5 Diet**  
Eat whole grains, vegetables, legumes, and fruits as a major part of your daily diet. Limit red meat, and avoid processed meat.
- 6 Alcohol**  
Avoid alcoholic drinks.
- 7 Breastfeeding**  
Breastfeed your baby for as long as possible.
- 8 Sun exposure**  
Avoid too much sun exposure, especially for children. Use sun protection. Never use sunbeds.
- 9 Cancer-causing factors at work**  
Inform yourself about cancer-causing factors at work, and call on your employer to protect you against them. Always follow health and safety instructions at your workplace.
- 10 Indoor radon gas**  
Inform yourself about radon gas levels in your area by checking a local radon map. Seek professional help to measure levels in your home and, if necessary, reduce them.
- 11 Air pollution**  
Take action to reduce exposure to air pollution by:
  - Using public transportation, and walking or cycling instead of using a car.
  - Choosing low-traffic routes when walking, cycling, or exercising.
  - Keeping your home free of smoke by not burning materials such as coal or wood.
  - Supporting policies that improve air quality.
- 12 Cancer-causing infections**  
Vaccinate girls and boys against hepatitis B virus and human papillomavirus (HPV) at the age recommended in your country.
  - Take part in testing and treatment for hepatitis B and C viruses, human immunodeficiency virus (HIV), and *Helicobacter pylori*, as recommended in your country.
- 13 Hormone replacement therapy**  
If you decide to use hormone replacement therapy (for menopausal symptoms) after a thorough discussion with your health-care professional, limit its use to the shortest duration possible.
- 14 Organized cancer screening programmes**  
Take part in organized cancer screening programmes, as recommended in your country, for:
  - Bowel cancer
  - Breast cancer
  - Cervical cancer
  - Lung cancer

## Co-benefits for other NCDs with similar risk factors and opportunities for health promotion

### Personal behavioural factors

Recommendations **1 2 3 4 5 6**

Adopting healthy behaviours such as not smoking, avoiding alcohol, maintaining a balanced diet, and engaging in regular physical activity not only reduces cancer risk but also lowers the incidence of heart disease, diabetes, and respiratory conditions.

### Recommendation **7**

Breastfeeding benefits both mother and child. For mothers, it supports post-partum weight loss and reduces obesity-related health risks later in life. For children, it aids nutrition, development, and infection prevention.

### Recommendation **8**

Excessive exposure to ultraviolet (UV) radiation may alter immune responses, which could potentially affect autoimmune disorders.

### Environmental factors

Recommendations **9 10 11**

Mitigating exposures in the workplace and daily environment can also contribute to reducing the risk for respiratory diseases.

### Medical interventions

Recommendation **12**

Comprehensive prevention and treatment strategies for infection-related cancer also prevent severe diseases related to or caused by these infections, such as liver cirrhosis.

Recommendation **13**

Hormone replacement therapy (HRT) does not protect the heart or brain. On the contrary, HRT appears to increase the risk of dementia.

Recommendation **14**

Participating in cancer screening may be an opportunity to learn about healthy behaviours that can reduce the risk of cancer and other NCDs.

## INNOVATIONS

- Population-level recommendations (policies)
- Equity
- Alignment with other NCDs
- Knowledge translation outputs for different audiences

The 5th edition of the European Code Against Cancer contains 14 actionable, evidence-based recommendations on behavioural, environmental, occupational, and infectious risk factors, as well as preventive medical interventions, for the general public to reduce their cancer risk.

The 5th edition for the first time also targets policymakers by including 14 complementary recommendations on population-level policies that can reinforce the recommendations for individuals, by structurally influence the systems that shape individual choices, and protecting against involuntarily environmental exposures.

The 5th edition of the European Code Against Cancer provides several innovations as regards the previous edition:

1) the first is these policy recommendations, as policymakers have the mandate and responsibility to propose and implement cancer control policies, but policy recommendations can also be used by civil society and health professionals to advocate for policy changes towards cancer prevention. 2) another innovation is that special care has been taken to present all recommendations through an equity perspective and 3) and not to compete with other recommendations and preventive strategies, we have aligned the European Code Against Cancer messages with co-benefits that they may bring to prevent other NCDs with similar underlying risk factors

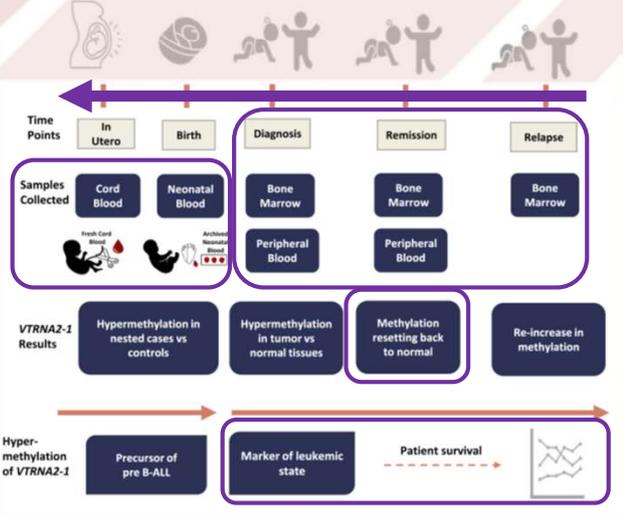
Different materials have been developed to tailor messages to diverse audiences: the citizens, the policy-makers but also materials for health professionals and advocates.



Press Release  YouTube 

## Tracking childhood cancer back to birth uncovers promising epigenetic markers for early detection and intervention

*Ghantous A et al, Mol Cancer 2024*  
*Ghantous A et al, Mol Cancer, in press*



**Time Points:** In Utero, Birth, Diagnosis, Remission, Relapse

**Samples Collected:** Cord Blood, Neonatal Blood, Bone Marrow, Peripheral Blood

**VTRNA2-1 Results:**

- In Utero: Hypermethylation in nested cases vs controls
- Birth: Hypermethylation in tumor vs normal tissues
- Diagnosis: Methylation resetting back to normal
- Relapse: Re-increase in methylation

**Hyper-methylation of VTRNA2-1:** Precursor of pre B-ALL → Marker of leukemic state → Patient survival

**Pediatric Brain**



**Cell, Organoid & Mouse models**



- Pediatric leukemia and brain cancer are the most common childhood cancers.
- Epigenetic markers of pediatric leukaemia were identified in the patients' blood since birth.
- These markers were also present in cancerous tissues from the patients and served as indicators of various clinical readouts, including remission, relapse and survival.
- DNA methylation is potentially reversible, and this is what was observed in patients who responded positively to therapy.
- The epigenetic precursors were robust over several years and across populations from Europe, America and Australia, including European and Hispanic ethnicities.
- Recently funded projects aim to extend this promising approach to pediatric brain cancer and triangulate the evidence using experimental models.
- With further validation, these findings could revolutionize early detection and treatment of childhood cancer.

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INCa, France (PEDIAHRG-2020, PEDIAHRG-2024 PEDIAC, Plan Cancer-EVA-Inserm); WCRF, CwC, UK; IARC Postdoc Fellowship

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## The Epigenomics and Mechanisms (EGM) Branch: key highlights

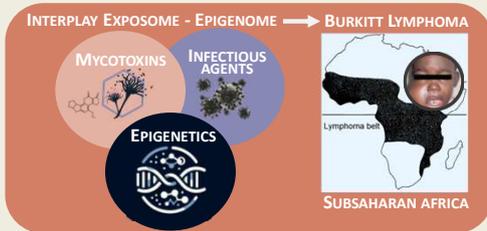
In a study published in *Mol Cancer* in 2024, with additional findings released in the same journal in 2025, EGM scientists have conducted the first epigenome-wide analysis across the development span of pediatric leukemia, while backtracking the disease to birth.

The study uncovered in blood at birth epigenetic markers that link to later development of pediatric leukemia, the most common cancer affecting children. These markers were also present inside cancerous tissues taken at multiple stages of the disease (diagnosis, remission and relapse) and served as indicators of prognosis and how well the patients survive. These epigenetic precursors were robust over several years and across populations from Europe, America and Australia, including European and Hispanic ethnicities. Two recently funded projects aim to extend this promising approach to pediatric brain cancer and to triangulate evidence using experimental models.

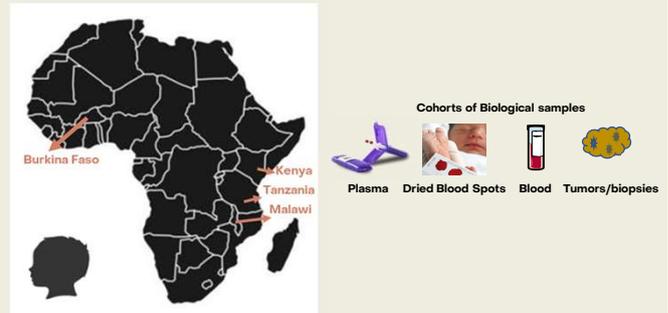
With further validation, these findings could improve early detection and treatment of childhood cancer.

## Decoding Epigenomics and Mechanisms of Childhood Cancer: Biomarkers, Exposures, risk factors and Policy Impact.

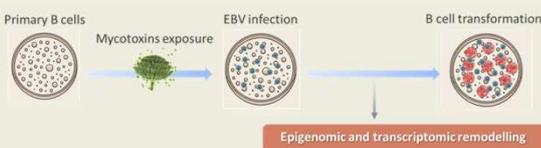
### BACKGROUND



### STRATEGY 1 - COHORTS STUDY



### STRATEGY 2 - IN-VITRO STUDY



Manara et al, *Cancers* 2022  
 Odongo et al. *PNAS* 2024  
 Mouchtaris-Michailidis et al. *Crit Rev Food Sci Nutr.* 2024.  
 Mouchtaris-Michailidis et al. *Environment International*, 2025

### OUTCOMES

- Identification of risk factors of endemic Burkitt Lymphoma
- Mechanisms of carcinogenesis
- Biomarkers of exposures, cancer risk and outcomes
- Basis for prevention studies and actions

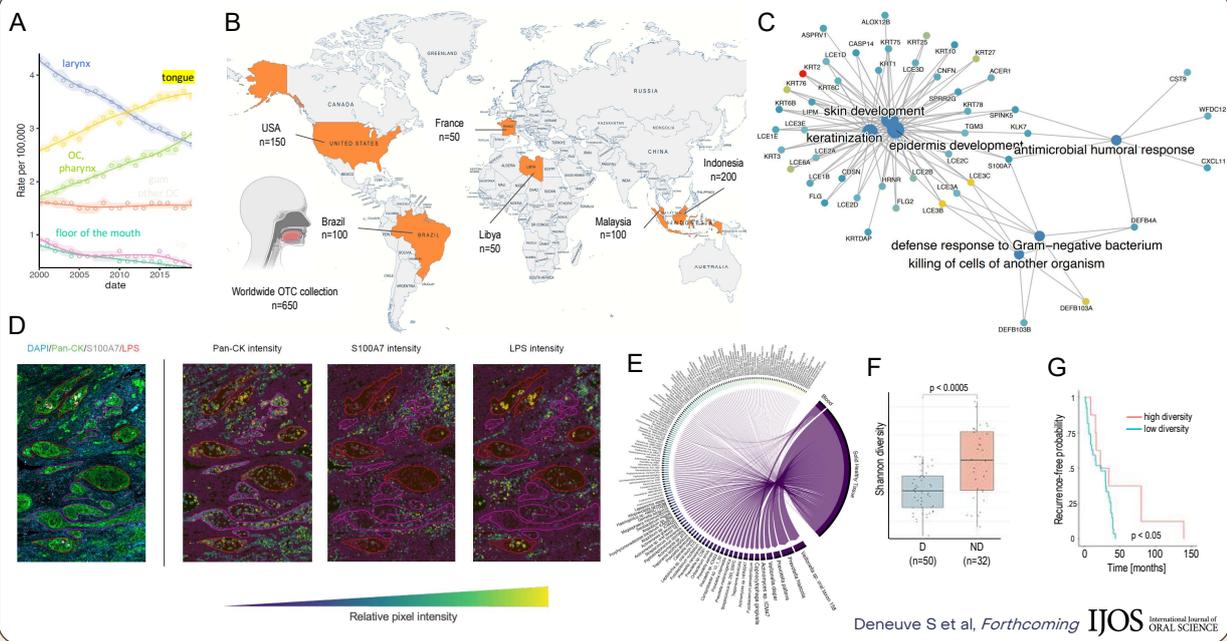
Endemic Burkitt lymphoma and leukaemia are the most common childhood cancers in sub-Saharan Africa, yet their risk factors and molecular profiles remain understudied.

To address this gap, EGM, ENV, and researchers from Ghent University (Belgium) and the Princess Máxima Center (Netherlands) have partnered with local teams across several sub-Saharan countries to collect early-life and diagnostic biological samples.

These samples will undergo multi-omics, infection profiling, and metabolomics analyses, complemented by in vitro exposure studies, to identify risk factors, clarify disease mechanisms, and uncover biomarkers of exposure, cancer risk, and outcomes.

This work will lay the groundwork for prevention strategies, and—given rising viral and mycotoxin exposures driven by climate change—will provide insights relevant to global child and adult health.

## Microbiome–host interactions in oral tongue cancer (OTC)



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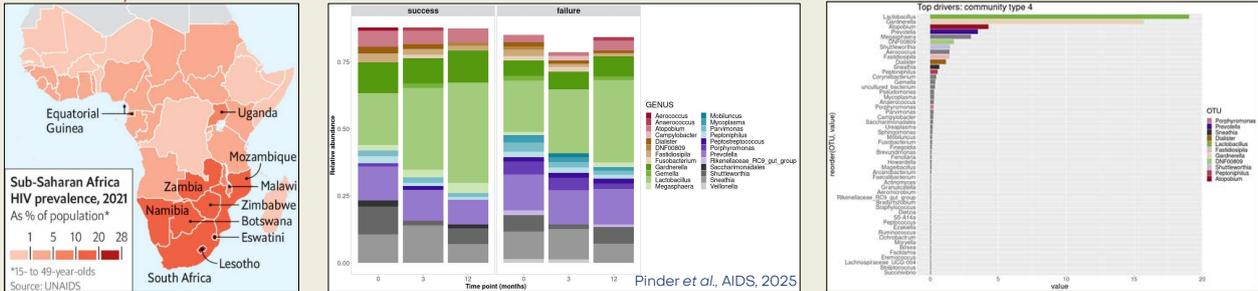
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The incidence of oral tongue squamous cell carcinoma (OTC) is increasing worldwide, including in younger patients with no identified risk factors (NIRF): non-smokers, non-drinkers, and human papillomavirus (HPV)-negative. EGM found that NIRF cases are characterized by molecular programmes indicating greater tumour cell keratinization, immune activation, and reduced anti-bacterial responses. To investigate bacterial, viral, and fungal microbiome–host interactions in OTC, EGM and partners devised a multi-omics study of ~650 samples from six countries across five continents. In the samples from the USA, lack of alcohol consumption history correlated with higher bacterial diversity and better recurrence-free survival. Spatial histopathology revealed Gram-negative bacteria inside tumour cells and shifts in antimicrobial peptide expression linked to tumour grade and invasion.

**Figure legend:** (A) Rising OTC incidence in the USA (Surveillance, Epidemiology, and End Results [SEER] data) implicates squamous cell carcinoma of the oral tongue as the driver of the increase in oral cancer incidence. (B) Global study of OTC cases coordinated by EGM with partners in Brazil, France, Indonesia, Libya, Malaysia, and the USA (case/sample numbers shown). (C) The Cancer Genome Atlas (TCGA) gene expression implicates keratinization and antimicrobial responses in OTC lacking known risk factors. (D) Pixel intensity maps of OTC tumours show spatial localization of cytokeratin (Pan-CK), antimicrobial protein S100A7 and Gram-negative bacteria (LPS). 4',6-Diamidino-2-phenylindole (DAPI) stains nuclei. (E) Public data sets (The Cancer Microbiome Atlas [TCMA]) show that healthy tissue has minimal impact on the tumour microbiome. (F) Bacterial (Shannon) diversity associates with alcohol consumption history (non-smokers only): D, ever drinker; ND, never drinker. (G) Kaplan–Meier curve shows OTC recurrence-free probability by bacterial diversity.

## Vaginal microbiome composition in women with HIV undergoing treatment of cervical transformation zone in a screen and treat program in Zambia

- In a nature medicine paper published in 2024 by the EPR Branch, the success rate of treatments for premalignant cervical lesions has been reported to be significantly lower in women with HIV (WVH) compared to HIV-negative women, irrespective of the treatment method used (Basu *et al.*, Nat. Med., 2024).
- In collaboration with the EPR Branch, we have analyzed the vaginal microbiome in relation to treatment outcomes at baseline, three months, and 12 months (Pinder *et al.*, AIDS, 2025).
  - In the group of women who experienced treatment success, an increasing abundance of *Lactobacillus* over time was observed, accompanied by a decreasing abundance of pathogenic bacteria.
  - This trend was further confirmed when stratifying by HPV status and through clustering analysis (e.g., Cluster 4, which had a treatment success rate of 80%).



**A specific microbiome profile dominated by *Lactobacillus* may be considered a potential predictive biomarker of a positive response to cervical lesion treatment regimens**

- Future directions:** Additional studies on vaginal microbiome composition will be conducted with patients recruited from Zimbabwe and South Africa to evaluate its potential use for screening and triage, as well as its value as a predictive biomarker of treatment outcomes.

An IARC's 2024 *Nature Medicine* study reported that women with HIV have significantly lower treatment success rates for premalignant cervical lesions than HIV-negative women, regardless of the therapy used.

Building on this finding, EGM's collaborative work with the EPR Branch examined how the vaginal microbiome relates to treatment outcomes at baseline and again at three and 12 months. Among women who responded well to treatment, the team observed a steady rise in *Lactobacillus* species and a concurrent decline in pathogenic bacteria, a pattern that held true when analyses were stratified by HPV status and supported by clustering results, which showed an 80% success rate.

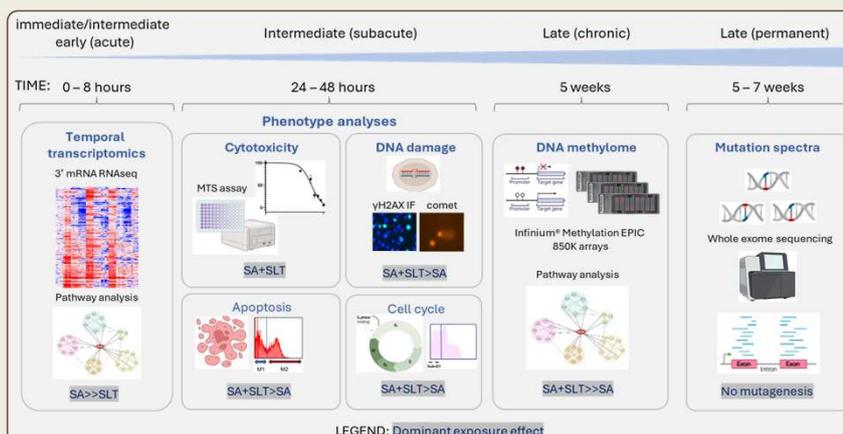
Moving forward, the team will extend this research to cohorts in Zimbabwe and South Africa to assess whether vaginal microbiome profiles can aid in screening, triage, or predicting treatment outcomes.

## Molecular and cell phenotype programs in oral epithelial cells directed by co-exposure to arsenic and smokeless tobacco

**Background:** Arsenic exposure and heavy smokeless-tobacco (SLT) use in Northeast India jointly raise oral-cancer and genotoxic risk. Sadagura, a common local SLT product, is often used with betel quid or areca nut, further increasing damage.

**Hypothesis:** Arsenic + Sadagura co-exposure increases genotoxicity and oral-cancer risk.

**Objective:** Using multi-omic analysis, investigate the pro-cancer effects of arsenic and SLT on DNA, cell growth, and epigenetic/gene-expression changes in oral cells.



### ORAL CELL RESPONSES SA>>SLT

- Cell response to stress ↑
- Cell cycle, G2/M, sub G1 ↑
- DNA damage and repair ↑
- Induction of apoptosis ↑
- Inflammatory/immune response ↑

### Conclusions:

- EGM's omics results show that acute and chronic arsenic+smokeless tobacco exposures activate shared molecular pathways linked to cancer
- These molecular signatures in oral cells offer potential biomarkers for future cancer-risk studies in exposed populations.

Das S et al, 2025, *Biofactors* Biofactors

Director's Report - SC/62nd Session

11–13 February 2026

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Chronic arsenic exposure and the heavy use of smokeless tobacco (SLT) are widespread in Northeast India, where products like Sadagura are commonly combined with betel quid or areca nut. This mixture sharply increases oral-cancer risk and genotoxic damage. Building on this concern, this EGM's study tested the hypothesis that co-exposure to arsenic and Sadagura amplifies molecular changes that drive oral cancer development. Using a multi-omic approach, EGM examined how these agents affect DNA integrity, cell-growth behavior, and epigenetic and gene-expression programs in oral cells. The findings published in 2025 show that both acute and long-term exposures trigger overlapping pro-cancer pathways, revealing consistent molecular signatures of early carcinogenic stress. These signatures may serve as useful biomarkers for future studies aimed at assessing cancer risk in exposed communities.

**Figure Legend:** Comprehensive schematic of the experimental design and the molecular and phenotypic outcomes and results reflecting the candidate mechanisms by which arsenic (SA = sodium arsenite) and smokeless tobacco (SLT) co-exposure can lead to the induction of carcinogenesis in oral cells. IF, immunofluorescence; MTS, 3-(4,5-dimethylthiazol-2-yl)-5-(3-carboxymethoxyphenyl)-2-(4-sulfophenyl)-2H-tetra-zolium.

## Scientific highlights

Pillar 4:  
*Knowledge  
Mobilization*

The following slides present some scientific highlights for **Pillar 4 – *knowledge mobilization***, that includes the **Evidence Synthesis and Classification (ESC) Branch** and the **Learning and Capacity Building (LCB) Branch**.

**Handbook Vol. 20B “Alcohol Policies” - 7–11 October 2024**

- Special report published in the NEJM; full volume published in October 2025
- Series of webinars leading up to the launch, in collaboration with WHO-EURO
- Evidence Summary Brief on alcohol and cancer (coll. with CSU)
- Official high-level launch at WHO-EURO offices with Health Ministry representatives

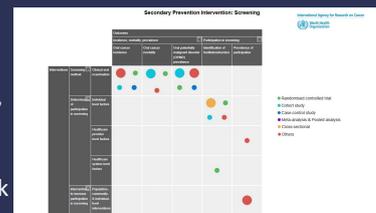


**Handbook Vol. 21 “Lung Cancer Screening” - 20-24 April 2026**

- Scoping meeting: April 2025 - E-Subgroup sessions: November-December 2025
- Kazakhstan: new state represented within the Working Group members

**Evidence Gap Maps (EGMs) on review of oral cancer prevention**

- Evidence Gap Maps posted on the Handbooks website ; publication accepted in IJC



**CUP Global framework for the evaluation of biologic pathways linking diet, nutrition, body weight, and physical activity with cancer incidence (WCRF-lead project)**

- Project protocol published in Health Open Research (coll. with NME)
- Evaluation of association of birthweight & early life adiposity with breast cancer risk

**European Commission Initiative on Cervical Cancer (EC-CvC)**

- First set of recommendations on screening methods released

**Oral Cancer Team**

- Calls on researchers and health professionals to join global oral cancer screening network

**IARC Summer School 2025**

- Co-chair of session on alcohol and cancer; contribution as Teaching Associate and Topic Expert

IP & O	E & IP			
	Convincing	Convincing Strong	Probable Strong	None or limited Moderate or no evidence available
Probable		Strong	Moderate	Weak or no evidence available
None or limited		Moderate or no evidence available	Weak or no evidence available	Weak or no evidence available

**Handbooks of Cancer Prevention Programme: key highlights**

# IARC Monographs Programme (IMO)

Aim: identify preventable causes of human cancer through systematic review and expert evidence evaluation

## Accomplishments in 2025

- Held Monographs meetings 138, 139 and 140
  - New or updated classifications for 12 agents:
    - ✓ **Group 1:** Automotive gasoline, hepatitis D virus, Merkel cell polyomavirus
    - ✓ **Group 2A:** Atrazine, Alachlor
    - ✓ **Group 2B:** MTBE, ETBE, human cytomegalovirus, Vinclozolin
    - ✓ **Group 3:** TBA, DIPE, TAME

**IARC Monographs Vol. 138**  
Automotive Gasoline and Some Oxygenated Gasoline Additives  
20 February to 4 March 2025

**Automotive gasoline**  
Group 1  
Carcinogenic to humans

Sufficient evidence in humans for bladder cancer and acute myeloid leukaemia.  
Limited evidence in humans for non-Hodgkin lymphoma (including diffuse large-B-cell lymphoma, mantle cell lymphoma, myelodysplastic syndromes, cancers of the stomach and kidney, and childhood acute lymphoblastic leukaemia).

Strong mechanistic evidence in exposed workers

**Oxygenated gasoline additives**

<b>MTBE ETBE</b> Group 2B Probably carcinogenic to humans	<b>TBA DIPE TAME</b> Group 3 Not classifiable as to its carcinogenicity to humans
---	---

Main uses  
MTBE, ETBE, TBA, DIPE, and TAME are volatile compounds added to gasoline to increase combustion efficiency, especially since the phase-out of leaded gasoline.

Who is exposed to these agents?  
Service station attendants, mechanics, and workers in production and transportation of gasoline. The general population via air pollution or gasoline vapours at service stations.

The IARC classification (Group 1, 2A, 2B, and 3) indicates the level of certainty that a substance causes cancer (based on identification).

**IARC Monographs Vol. 139**  
3-10 June 2025

<b>Hepatitis D virus</b> Group 1 Carcinogenic to humans	<b>Human cytomegalovirus</b> Group 2B Probably carcinogenic to humans	<b>Merkel cell polyomavirus</b> Group 1 Carcinogenic to humans
---	---	--

The IARC classification (Group 1, 2A, 2B, and 3) indicates the level of certainty that a substance causes cancer (based on identification).

**IARC Monographs Vol. 140**  
28 October to 4 November 2025

<b>Atrazine</b> Group 2B Probably carcinogenic to humans	<b>Alachlor</b> Group 2A Probably carcinogenic to humans	<b>Vinclozolin</b> Group 2B Probably carcinogenic to humans
--	--	---

Exposure for all agents  
For each of these pesticides, workers have the highest exposures, which can occur during pesticide production and agricultural activities.  
Exposure of the general population occurs primarily via drinking water and the diet and is typically considered to be lower.

The IARC classification (Group 1, 2A, 2B, and 3) indicates the level of certainty that a substance causes cancer (based on identification).

## IARC Monographs Programme: achievements 2025 – meetings and classifications

## IARC Monographs Programme (IMO)

- Published three articles in *Lancet Oncology*
- Published two *Monographs* volumes
  - ✓ v.135: PFOA and PFOS
  - ✓ v.136: Talc and Acrylonitrile

### Scientific accomplishments in 2025

- Published manuscripts on *Monographs*-related topics
- Convened expert consultation group on scientific issues related to cancer in experimental animals
- Published an *IARC Monographs* Technical Report on Key Characteristics of Carcinogens Workshop



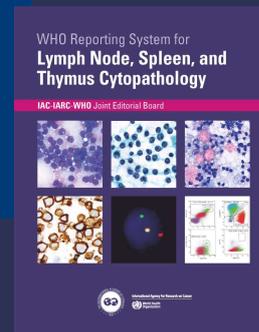
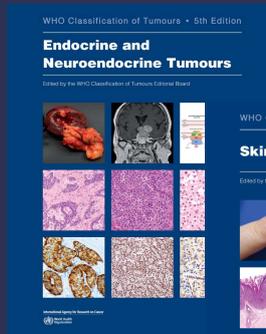
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**IARC Monographs Programme: achievements 2025 - publications**

# WHO Classifications of Tumours Programme (WCT)

## Accomplishments in 2025

- Published 5 books (four in print and one online)
  - 5th edition**
    - ✓ Endocrine Tumours
    - ✓ Skin Tumours
    - ✓ Eye Tumours
  - 6th edition**
    - ✓ Digestive Tumours – Online beta version
  - Cytopathology**
    - ✓ Lymph Node, Spleen and Thymus Cytopathology
- **IC3R**: Consortium agreement extended for another 5 years
- **EVI MAP** produced 5 Citation and Evidence maps for the 6th edition WHO Classification of Tumours



### Histopathology Laboratory:

Supporting multidisciplinary cancer research and the WHO Classification of Tumours through high-quality histology and digital pathology.

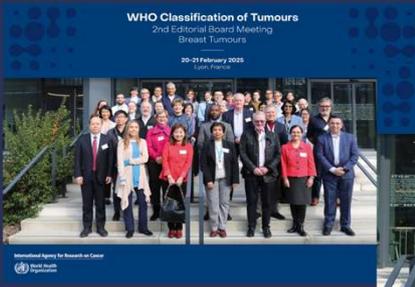
**WHO Classification of Tumours Programme: achievements 2025 – publications and activities of the Histopathology Laboratory.**

# WHO Classifications of Tumours Programme (WCT)

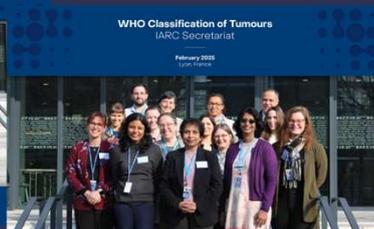
- Held first and second Editorial Board Meetings for the Soft Tissue and Bone volume, and second Editorial Board Meetings for the Female Genital Tract, Digestive, and Breast volumes of the 6th edition
- Held first editorial Boards for Central Nervous System Tumours and Thoracic Tumours volumes of the 6th edition

## Other accomplishments in 2025

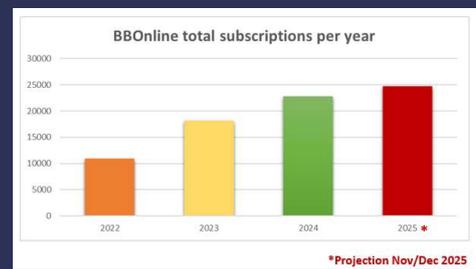
- Scientists in the group chaired **2** scientific sessions, delivered **9** invited guest lectures, **1** invited public lecture and **1** keynote address, conducted **1** workshop and presented **3** scientific papers/posters at international congresses
- **4** manuscripts were published, **3** accepted and **5** submitted to scientific journals
- Tumour Classification online: increase in subscriptions in 2025 compared to previous years. Data for 2025 currently includes Jan to Sept and projected till end of the year.



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11–13 February 2026

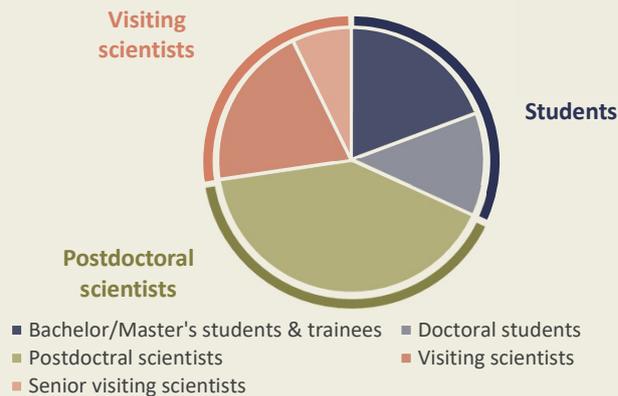


WHO Classification of Tumours Programme – other achievements 2025

# IARC Research Training and Fellowship Programme

In 2025, **238 students, postdoctoral and visiting scientists**

Funding from IARC Branches grants/collaborations or IARC Fellowships



## Learning and Capacity Building (LCB) Branch: key highlights

The Research Training and Fellowship Programme offers researchers at different levels of their career opportunities to get trained at IARC through their participation in collaborative research projects.

Those Early Career and Visiting Scientists (ECVS) are supported either by project funds, collaborators from IARC Branches or by IARC Fellowships.

Around 240 ECVSs were hosted at IARC in 2025, among which over 90 postdoctoral scientists. This is an increase compared to previous years and is certainly related to the success of scientific branches to increasingly attract external funding.

# IARC Fellowships

Call 2025 - Outcomes



## Post-doctoral fellowships

- For LMICs postdoctoral scientists wanting to pursue research relevant to IARC's missions
- 2 years - 2026–2027
- **5 awards**



## Mid-career scientist awards

- For LMICs senior scientists in their mid-career
- **3 awards**



## Partnerships

- The Mark Foundation for Cancer Research (TBC)  
1 scientist
- Wallonie-Bruxelles International  
2 scientists from Wallonie universities (WBI call 1 February 2026)
- Canadian Institutes of Health Research

The last call for IARC Fellowships was launched in March 2025.

This allowed to award :

- 5 postdoctoral fellowships for two-year stays at IARC. The renewed partnership with the Mark Foundation for Cancer Research allowed to support a fifth fellowship, in addition to the 4 supported by IARC.
- 3 fellowships for stays of six months at IARC targeting mid-career scientists

The Agency continued to develop collaborations for joint fellowships :

- Wallonie-Bruxelles International will allocate, through their current call, 2 postdoctoral fellowships of two years each at IARC. These will target students/scientists from Wallonie's universities (Belgium or of different nationality).
- The Canadian Institutes of Health Research is exploring options to fund a Canadian postdoctoral fellow

## IARC Summer School

### Edition 2025 - Lyon

- 72 participants
- 42 nationalities over **90% LMICs**
- Three **webinars** were open to the public
- Online learning material **publicly** available
- Excellent **feedback**

### Leveraging impact

- Regional Learning Centres
- South-eastern Asia: **IARC-NCC China**  
Second epidemiology course held in 2025
- Brazil and Portuguese speaking countries: **IARC-Brazil**  
First epidemiology course planned in 2026



The IARC Summer School in Cancer Epidemiology aims to improve the methodological and practical skills of cancer researchers and health professionals.

→ Edition 2025 - Lyon

In 2025, both modules – Introduction to Cancer Epidemiology / Implementing Cancer Prevention and Early Detection – were held in a blended format.

A total of 72 cancer researchers and health professionals from 42 countries (most of which were LMICs) participated in the two modules, representing a wide variety of disciplines and nationalities, which is what makes the IARC Summer School so unique.

→ Leveraging impact

Regional learning centers are a powerful way to leverage the impact of an institution's courses and learning resources. The Agency and the National Cancer Centre China have collaborated to set up a first regional center, the IARC-NCC China Learning Centre. As formalised through a MoU in May 2023, this joint centre, funded and sustained by NCC China will include: i) the organization of the IARC Summer School's modules in China, targeting researchers and health professionals from China and South-Eastern Asian countries, ii) the joint development of new learning modules, and iii) the organization of train the trainers courses in the framework of initiatives such as GICR, CanScreen5 or primary prevention programmes. The second course of the IARC-NCC China Learning Centre (Introduction to Cancer Epidemiology) was successfully held in 2025.

A similar partnership is being developed with the INCA Brazil and the University of Sao Paulo, in collaboration with other national entities. The first course (Introduction to Cancer Epidemiology) is planned for Spring 2026, will be 100% online and will target health professionals from Brazil. The set up of other similar regional partnerships will be considered, subject to availability of financial resources in LCB to launch and coordinate activities implemented with partners.

# IARC Fellowships

Next call March 2025



## Post-doctoral fellowships

- For postdoctoral scientists wanting to pursue research relevant to IARC's missions
- Emphasis on LMICs
- **2 years** - from end 2024 - beginning 2025



## Mid-career scientist awards

- For senior scientists in their mid-career
- **2-3 awards**



## Partnerships

- The Mark Foundation for Cancer Research (TBC)  
1 scientist
- Spain-IARC Postdoctoral Fellowship  
2 scientists from Spain – return grant
- Wallonie-Bruxelles International  
2 scientists from Wallonie universities  
(WBI call 1 February 2025)

The next call for IARC Fellowships has been postponed to March 2025, as its scope may vary according to the outcome of a grant application to EU.

We are currently working with the Mark Foundation for Cancer Research to renew its commitment to the programme, with one fellowship supported.

A new partnership with the Instituto de Salud Carlos III in Spain will allow us to include in the call 2 dedicated fellowships targeting early career scientists from Spain, with a two year return grant in the country.

Finally, Wallonie-Bruxelles International will allocate, through their current call, 2 postdoctoral fellowships of 2 years each at IARC. These will target students/scientists from Wallonie's universities (Belgium or of different nationality).

# WHO Academy



Migration of IARC courses to a new IARC Learning Space on the WHO Academy platform

<https://whoacademy.org/IARC>

World Health Organization  
WHO Academy

Courses About us

Home > Courses > IARC

International Agency for Research on Cancer

> 70 courses  
> 7 000 enrolled users

About Courses Initiatives

73 Results found

Language: ALL

Air Pollution and Cancer - Epidemiological and Clinical Perspectives

Nutrition, Diet, and Cancer

Current Status and Perspectives from Epidemiological and Clinical Research...

Liquid Biopsy-Based Biomarkers for Cancer Detection and Monitoring

Measuring success in cancer prevention and basic epidemiological measures

Implementation research for cancer prevention

Primary prevention of cancer, main modifiable risk factors

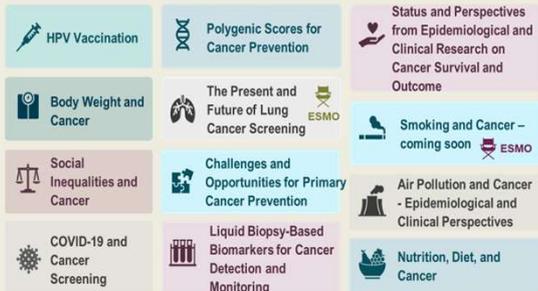
The Present and Future of Lung Cancer Screening

The LCB Branch and the WHO Academy team in charge of developing its learning platform have been collaborating closely since October 2023. During the first year of the collaboration, IARC provided extensive inputs on functionalities that are instrumental to the implementation of IARC courses.

A dedicated learning space was created for IARC to be able to autonomously create and manage its courses. In 2025, more than 70 courses were migrated from previous IARC learning platforms to the IARC Learning Space of the WHO Academy platform. More than 7000 users have enrolled in at least one of these courses.

# IARC-ESMO Cancer Prevention Learning and Capacity-Building Initiative

**12** live webinars and self-learning resources



**5** stories of “The Prevention Oncologist” comics series

**3** teaching toolkits (slides, notes, and interactive activities) on Cancer Research for Cancer Prevention, Cancer Epidemiology, and Cancer Hazard Identification



**2** immersive and interactive self-paced modules on pollution and cancer



**1** interactive e-learning courses to discover and use the IARC Atlas for Breast Cancer Early Detection



**20** ready-to-use IARC infographics available in 4 formats (print and social media)



<https://whoacademy.org/IARC/11-iarc-esmo-learning-and-capacity-building-initiative-for-cancer-prevention?from=learning-space>

In 2020, IARC and ESMO initiated a collaboration on learning and capacity-building activities. Between 2020-2023, the project was structured around the content from the 2020 IARC *World Cancer Report*. In 2024-2025, the initiative embraced a wider scope, reflected by its change of name.

Between 2020 and 2025, with the support and in collaboration with ESMO, IARC:

- Organized 12 multidisciplinary webinars featuring keynote speakers from various discipline and countries. 2 278 individuals from 148 countries attended one or more of the 12 webinars (36% of them work in low-and middle-income countries). All webinars were then repackaged into self-paced learning courses, including the presentations, a written transcription of the questions and answers, and a quiz.
- Designed an evidence-based comics series called The Prevention Oncologist, illustrating situation in the life of oncology professionals where cancer prevention is or should be integrated.
- Developed 3 teaching toolkits on “The Rationale and Scope of Cancer Research for Cancer Prevention”, “Cancer Epidemiology”, and “Cancer Hazard Identification”. These sets of PowerPoint slides with notes and suggestions of interactive activities are published under a creative commons licence, allowing anyone involved in teaching on those topics to freely download, adapt and translate the material.
- Designed 2 highly immersive and interactive e-learning courses on pollution and cancer.
- Developed an interactive e-learning course including guidance and concrete examples of how to use the IARC Atlas of Breast Cancer Early Detection in the daily practice of primary health practitioners, radiologists, pathologists and trainers.
- Updated and edited 20 IARC infographics in 4 ready-to-use formats for printing and posting on social media. These infographics are freely available on a dedicated webpage of the IARC website, called Infographic Resources Centre.

International Agency  
for Research on Cancer



2. Highlights from the  
meeting of the  
67th Session of the  
Governing Council

# Director's Report



61

The following slides report some highlights from the meeting of the **67th Session of the Governing Council** held in Lyon on 6–8 May 2025.



Meeting of the 67th Session of the  
IARC Governing Council  
IARC, France, 6-8 May 2025

International Agency  
for Research on Cancer



World Health  
Organization

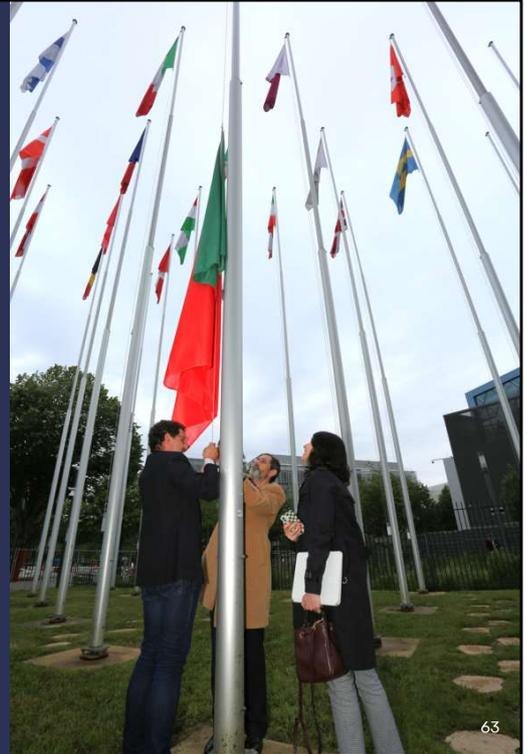




## Portugal joins IARC as the 30th Participating State – A Milestone in Global Collaboration

Director's Report - SC/62nd Session

11–13 February 2026



IARC is pleased to welcome Portugal as its 30th Participating State, strengthening global collaboration in cancer research.

# Director's Report

The Governing Council,

- Welcomes the **strengthened coordination and communication** between IARC and WHO.
- Notes that unbudgeted assessments from new Participating States will no longer fund administrative or data system upgrades, with future requests to be made via the Special Fund.
- Expresses satisfaction with the Director's written and oral reports.

Governing Council  
Director's report

GC67/2  
Page 3

## Director's Report 2025

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## Report of the Scientific Council

The Governing Council,

- **Commends the Scientific Council for its outstanding support and contributions.**
- Appreciates the Director's constructive response to the recommendations from the 61st Scientific Council Session.

## Evaluation Report of the IARC Medium-Term Strategy for 2021–2025

### The Governing Council:

- Thanks the Working Group for its excellent evaluation of the MTS 2021–2025.
- Appreciates the Scientific Council’s thorough review and recommendations.
- Recognizes IARC’s strong scientific and operational performance and global research impact.
- Approves the Evaluation Report of the Medium-Term Strategy 2021–2025.

Evaluation of  
the International Agency for Research on  
Cancer (IARC)  
Medium-Term Strategy (MTS)  
2021–2025

**Draft report**

## Report of the Working Group on Sustainable Financing of IARC

### The Governing Council:

- Thanks the Secretariat for the Working Group report.
- Acknowledges the Group's progress and guidance.
- Approves the updated Terms of Reference.
- Extends the Group's mandate for one year.
- Confirms its composition: **Canada, Italy, Russian Federation, and USA.**
- Encourages other Participating States to join as guests or observers.
- **Belgium and Australia expressed interest and were invited as guests**
- Requests a follow-up report at the 68th Session in 2026.

## IARC–IRCC: IARC Initiative For Resilience in Cancer Control

The Governing Council,

- Thanks the Secretariat for the update on the initiative.
- Commends IARC for this important work.
- Thanks the United Kingdom for its voluntary financial contribution.
- Requests regular progress updates from the Secretariat throughout the initiative.

# Showcase of IARC Flagships

## The Global Cancer Observatory

International Agency  
for Research on Cancer



World Health  
Organization



# Showcase of IARC Flagships

## The Global Initiative for Cancer Registry Development (GICR)

International Agency  
for Research on Cancer



# Showcase of IARC Flagships

## The European Prospective Investigation into Cancer and Nutrition (EPIC)

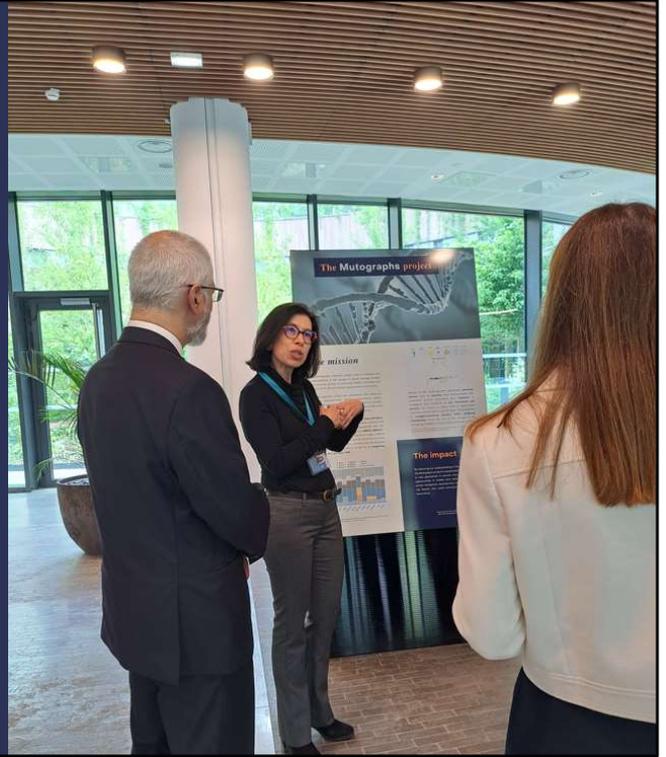
International Agency  
for Research on Cancer



# Showcase of IARC Flagships

## The Mutographs project

International Agency  
for Research on Cancer



# Showcase of IARC Flagships

## The CanScreen5 project

International Agency  
for Research on Cancer



World Health  
Organization



# Showcase of IARC Flagships

## The World Code Against Cancer Framework

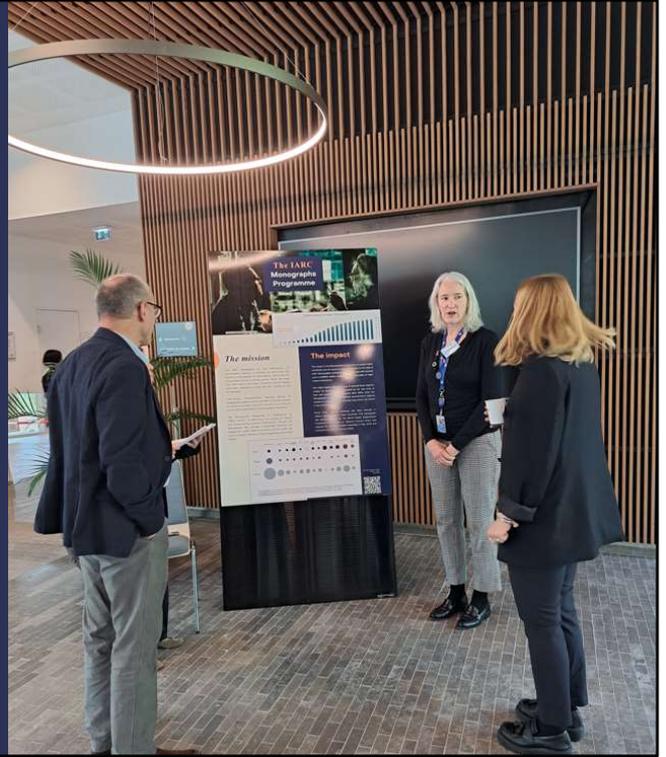
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# Showcase of IARC Flagships

## The *IARC Monographs Programme*

International Agency  
for Research on Cancer



# Showcase of IARC Flagships

## The IARC Handbooks Programme

International Agency  
for Research on Cancer



# Showcase of IARC Flagships

## The WHO Classification of Tumours

International Agency  
for Research on Cancer



# Showcase of IARC Flagships

## IARC Learning

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for Research on Cancer



## Biennial Report of the IARC Ethics Committee, 2023–2024

### **The Governing Council:**

- Welcomes the Biennial Report of the IARC Ethics Committee (2023–2024)
- Requests the Director to continue providing biennial updates on ethics-related matters

## Appointment of New Members of the Scientific Council

The Governing Council,

APPOINTS:

Professor **Eva Schernhammer**, Austria

Dr **Mariana Emerenciano Cavalcanti de Sá**, Brazil

Dr **Rayjean Hung**, Canada

Dr **Robert Barouki**, France

Professor **Lúcio José de Lara Santos**, Portugal

Professor **Mohamed Ussama Alhomsy**, Qatar

→ to serve for four years on the Scientific Council

Professor **Henrik Hjalgrim**, Denmark

→ to serve for one year, replacing Dr J. Falck Winther

## Election of Chairperson and Vice-Chairperson for next session of the Governing Council

- Chair: Dr Dorothy Keefe (Australia)
- Vice-Chair: Dr Al-Hareth Al-Khater (Qatar)

## Date of the Sixty-eighth Session of the Governing Council

The Governing Council,

- DECIDES to hold its next regular session in Lyon, France, within the two weeks following closure of the World Health Assembly in the year 2026.

## Proposed Programme and Budget (2026–2027)

The Governing Council,

- **Proposed Use of Governing Council Special Fund to Support the Assessed Contributions / Regular Budget**
- The closing balance of the Governing Council Special Fund, including the budget increase for 2026–2027, presents **an appropriate opportunity** for its strategic use.

## Proposed Programme and Budget (2026–2027)

Request to the Governing Council: approved

**Funding of €51.46M from the Participating States and €2.06M from the GCSF = €53.52M**

Section	IARC Project Tree – Level 2 Pillars	Amount (€)
1.	Data for Action	5 723 200
2.	Understanding the causes	9 187 220
3.	Prevention for Impact	7 711 550
4.	Knowledge Mobilization	5 663 449
5.	Research Infrastructure	7 783 956
6.	Leadership Governance and Services to Science	17 453 041
	Total	53 522 415

## Requests for Support from the Governing Council Special Fund

### The Governing Council

- **Authorizes** the Director to allocate up to **€6.75 million** from the Governing Council Special Fund—subject to available funds—for:
  - Enhancing the **Scientific IT Platform**
  - Covering **staffing expenditures**
  - Implementing a new **Enterprise Resource Planning (ERP) system**

International Agency  
for Research on Cancer



3. Director's update  
from the 61st Session of  
the Scientific Council

# Director's Report



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The following slides report some highlights from the **61st session of the Scientific Council** held at IARC on 12–14 February 2025 (remote session).



## Scientific Council feedback on flash talks

### **Overall comments and overview:**

- Excellent overviews of the scientific activities and structure of the Branches
- Excellent to outstanding presentations from scientific staff
- High scientific quality of studies
- High public health impact
- Innovative work/pioneering projects
- Alignment with the IARC Medium-Term Strategy very high
- Strong collaboration with international partners and key stakeholders
- Diversity of backgrounds highly appreciated
- Gender balance

## Scientific highlights and evaluation of the Medium-Term Strategy 2021-2025

- The Scientific Council congratulated the Director and her staff on the scientific achievements of the past year, as outlined in the Director's Report.
- The Scientific Council noted that the implementation of the MTS 2021–2025 according to four fundamental priorities (four Pillars) is a **relevant model** corresponding to the value chain of cancer research and prevention continuum.
- The Scientific Council **reaffirmed IARC's strong scientific and operational performance**, as well as **its impactful research worldwide**, paving the way for the development of the MTS 2026–2030 this year.

## Request for support from the Governing Council Special Fund (GCSF) Computing infrastructure for the IARC Scientific IT Platform

- The Scientific Council recommended that the Governing Council approve the allocation of **€250 000** from the GCSF in support of :
  - ➔ new computing servers, including some with high-performance graphics processing unit (GPU) designed for artificial intelligence analyses,
  - ➔ general infrastructure (network, power supply, cables) and maintenance of the servers for a period of five years

## Director's response to the Evidence Synthesis and Classification (ESC) Branch Review (2024)

- The SC is concerned about the funding of the *Monographs* programme, which relies on a US grant (60% of its total budget) that is now in jeopardy given the uncertainty of future US funding,
- The SC alerted the Secretariat to the unsustainability of the *Monographs* funding scheme, further exacerbated by the freezing of NIH grants in the US and urged its members to reach out to their Governing Council representatives to explore sustainable and multi-annual funding solutions.
- The SC further noted that direct contributions from other funders, would not provide a stable, long-term funding solution and may be challenging as per the ongoing discussions with the European Union to secure some funding for the *Monographs*.
- The SC noted that the Secretariat is working on developing targeted funding packages for potential donors more inclined to support specific thematic areas and emphasized that by far the best and preferred option remains regular contributions from multiple Participating States increasing IARC Regular Budget, ensuring independence and preventing conflicts of interest.
- The SC notes that utilizing the Core Voluntary Contribution (CVC) mechanism as a complementary option would allow Participating States to provide voluntary contributions.

## IARC scientific programmes & IARC@60

- The Scientific Council noted with great interest the presentation of the IARC-led programme: **Oesophageal cancer, a long-neglected killer**, presented by Drs Behnoush Abedi-Ardekani, Valerie McCormack and Joachim Schüz.
- The Scientific Council noted that the implementation of this programme would require a budget of €700 000 to be sought from IARC Participating States interested in investing in the oesophageal cancer prevention programme.
- The Scientific Council will support the Secretariat in making **IARC@60 a success**.

## Scientific Report of the Epigenomics and Mechanisms (EGM) Branch Review

### **Assessment of EGM's scientific quality**

- EGM's past performance: Outstanding
- EGM's future plans: Outstanding/Forefront

### **Assessment of the relevance of EGM's work to the mission of IARC**

- EGM's past performance: Perfect Fit
- EGM's future plans: Perfect Fit

## Scientific Report of the Early Detection, Prevention and Infections (EPR) Branch Review

### **Assessment of EPR's scientific quality**

- EPR's past performance: Outstanding
  - EPR's future plans: Outstanding

### **Assessment of the relevance of EPR's work to the mission of IARC**

- EPR's past performance: Perfect Fit
  - EPR's future plans: Perfect Fit

## 62nd Session of the Scientific Council in 2026

### ELECTION OF CHAIRPERSON AND VICE-CHAIRPERSON FOR THE 62ND SESSION OF THE SCIENTIFIC COUNCIL IN 2026

- **Dr Sirpa Heinävaara** was elected Chairperson.
- **Dr Young-Woo Kim** was elected Vice-Chairperson.

### DATE OF NEXT SESSION

- The 62nd Scientific Council will take place on **Wednesday 11, Thursday 12 and Friday 13 February 2026 in Lyon.**

Thank you

International Agency  
for Research on Cancer



## Annexes

- IARC participation to major events

# World Cancer Day 2025

1. Launch of **EU-Cancer Inequalities (CanIneq)** webpage: 1 Press Release, Q&A and social media posts
2. Launch of e-learning series **GICR Cancer Registration: 5 videos, flyer, full social media Kit** (5 infographics to share with partners)
3. Launch of **Global Cancer Incidence data** (Lancet Medicine)- Press Release, interviews, major media coverage.

**EU-CanIneq: Mapping Socioeconomic Inequalities in Cancer Mortality across European Countries**

ABOUT | METHODOLOGY | RESOURCES AND NEWS | CONTACT

**World Cancer Day 4 February**  
#UNITEDBYUNIQUE

**Dr. Elisabete Weiderpass**  
IARC Director

**Global lung cancer incidence according to smoking: new study highlights rising socioeconomic rates linked to air pollution**

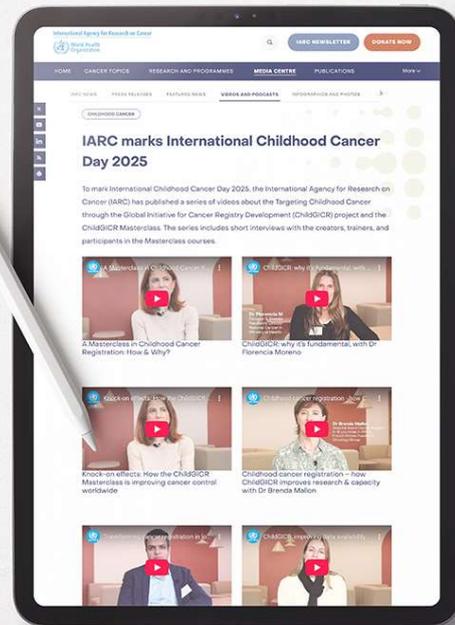
Press Release No. 299 | 3 February 2025

**Key findings:** In the paper in World Cancer Day, scientists from the International Agency for Research on Cancer (IARC) provide global estimates of lung cancer incidence in 2021 and over time, according to historical smoking patterns. Published today in The Lancet Respiratory Medicine, the study shows that lung cancer incidence has increased significantly since 1985, with the largest increases seen in low- and middle-income countries and in people with lower socioeconomic status.

**Key findings:** The study also highlights that the largest increases in lung cancer incidence are seen in people with lower socioeconomic status, particularly in low- and middle-income countries. The study also highlights that the largest increases in lung cancer incidence are seen in people with lower socioeconomic status, particularly in low- and middle-income countries.

# International Childhood Cancer Day 2025

- Full package on **ChildGICR** Initiative, *GICRNet*, etc
- Feature page and web page
- **6 videos**  
Social media posts: x, LinkedIn & YouTube



# Childhood cancer Awareness Month 2025

International Agency  
for Research on Cancer



1 September 2025

CHILDHOOD CANCER

## IARC marks Childhood Cancer Awareness Month 2025



The International Agency for Research on Cancer (IARC) is marking Childhood Cancer Awareness Month 2025. IARC works with partners around the world to understand, measure, and prevent childhood cancer.

[Read the news item](#)



**INTERNATIONAL CHILDHOOD  
Cancer Day**

- Field Story:  
DECAN-Child identifying the  
challenges of childhood cancer  
care in Nepal
- ‘Two patients’ testimonies
- Social media posts, relayed on  
WHO platforms

**IARC - International Agency for Research on Cancer / W...** 28,762 followers  
2w · 🌐

On [#InternationalChildhoodCancerDay](#), we highlight the DECAN-Child Project, an important initiative by @IARCWHO, to improve paediatric [#cancer](#) care in Nepal. By identifying barriers, measuring delays, and assessing survival outcomes, ...more

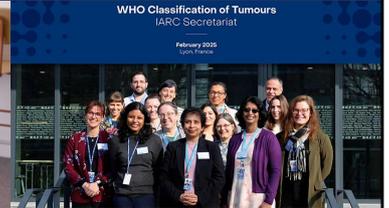
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👍 Like    💬 Comment    🔄 Repost    ➦ Send

# International Women's Day 2025

8 March

INTERNATIONAL  
WOMEN'S DAY



# World Oral Health Day 2025

20 March 2025

HEAD AND NECK CANCER

## World Oral Health Day 2025

Dr Harriet Rungay and Dr Shama Virani of the Oral Cancer Team for Research on Cancer (IARC) present the causes, burden, and a new video to mark World Oral Health Day 2025.



# International HPV Awareness Day 2025

4 March 2025

## IARC marks International HPV Awareness Day 2025



The International Agency for Research on Cancer (IARC) is marking International Human Papillomavirus (HPV) Awareness Day with a video explaining its latest study on the most effective ways of using HPV testing to prevent cervical cancer. Almost all cases of cervical cancer are caused by HPV infection. More than 660 000 women developed cervical cancer and nearly 350 000 women died of cervical cancer in 2022.

## Video

In this video, Dr Smita Joshi of Prayas, a non-profit organization based in Pune, India, presents the results of the study, which was a randomized controlled trial comparing two strategies of screening for HPV infection in women living with HIV.



# Oesophageal Cancer Awareness Month

April 2025

International Agency for Research on Cancer  
World Health Organization

## OESOPHAGEAL CANCER IN AFRICA

Oesophageal cancer is a disease in which **cancer cells** grow in the food or swallowing pipe



\*most of which occur in Eastern Africa

### Habits that increase the chances of oesophageal cancer

- Low intake of fruits and vegetables
- Drinking very hot beverages
- Breathing smoke from wood fires
- Alcohol consumption and tobacco smoking

### Warning signs to visit a doctor

- Weight loss from unknown causes
- Pain while swallowing food or drinks
- Chest pain
- Coughing that lasts for a long time

**Oesophageal cancer** is a disease in which cancer cells develop in the food pipe. 4 in 5 patients die within 5 years.

**Risk factors**

- chronic heartburn
- drinking very hot beverages
- family history
- indoor air pollution
- low intake of fruits and vegetables
- alcohol consumption and tobacco smoking

**Prevention tips**

- Avoid tobacco and alcohol
- Maintain a healthy body weight
- Eat fruits and vegetables regularly

**Oesophageal cancer awareness:** To detect early. Consult a doctor if you are at risk.

**1 in 167** lifetime risk

**7th** most common cause of cancer death

**511 000** new cases in 2022

**445 000** deaths in 2022

# World Immunization Week 2025

## Video – The determination to eliminate cervical cancer

In a new video, Dr Partha Basu, Head of the Early Detection, Prevention, and Infections Branch at the International Agency for Research on Cancer (IARC), describes how we can eradicate human papillomavirus (HPV), in the same way that smallpox was eradicated, and eliminate cervical cancer.

[Read news item](#)



# World Hepatitis Day 2025: Social media tiles

28 July 2025

INFECTIONS LIVER CANCER

## IARC marks World Hepatitis Day 2025



The World Health Organization (WHO) and the International Agency for Research on Cancer (IARC) are calling for urgent action to dismantle the financial, social, and systemic barriers – including stigma – that stand in the way of hepatitis elimination and liver cancer prevention, as part of this year's World Hepatitis Day campaign, "Hepatitis: Let's Break It Down".

[Read the news item](#)

28 July 2025

INFECTIONS LIVER CANCER

## World Hepatitis Day 2025: Social media tiles

To mark World Hepatitis Day 2025, IARC is making available these social media tiles with information about hepatitis virus types and liver cancer prevention.



[View](#) [View](#) [View](#) [View](#)

**Sharing**

[Copy link](#) [Email](#) [Twitter](#) [Facebook](#) [LinkedIn](#) [Google Plus](#)

# World Cancer Research Day 2025

## CANCER RESEARCH NEEDS US ALL



International Agency  
for Research on Cancer



### CANCER RESEARCH NEEDS US ALL

That's why IARC and the European Commission (EC) Joint Research Centre have launched an open call for clinical, scientific, and technical experts, as well as patients and caregivers, to come together to develop new guidelines for the primary prevention of gastric cancer in Europe, as part of the IARC-led EC Initiative on Gastric Cancer (EC-GaC).

A collage of images showing various people in a laboratory setting, including a scientist, a woman in a headscarf, and a man in a lab coat, with a pink heart-shaped object in the center.

International Agency  
for Research on Cancer  
World Health  
Organization

WORLD CANCER  
RESEARCH DAY  
20th November

# Breast Cancer Awareness Month 2025



Only 1 in 3 women diagnosed with breast cancer in sub-Saharan Africa survived for 7 years after diagnosis.

African Breast Cancer - Disparities in Outcomes (ABC-DO) Study

International Agency for Research on Cancer  
World Health Organization

BREAST CANCER AWARENESS MONTH 2025

Increasing awareness of breast cancer in women and health providers, accelerating diagnosis, and ensuring access to and completion of treatment would strengthen breast cancer control.

International Agency for Research on Cancer  
World Health Organization

BREAST CANCER AWARENESS MONTH 2025

"Continued progress in early diagnosis and improved access to treatment are essential to address the global gap in breast cancer."

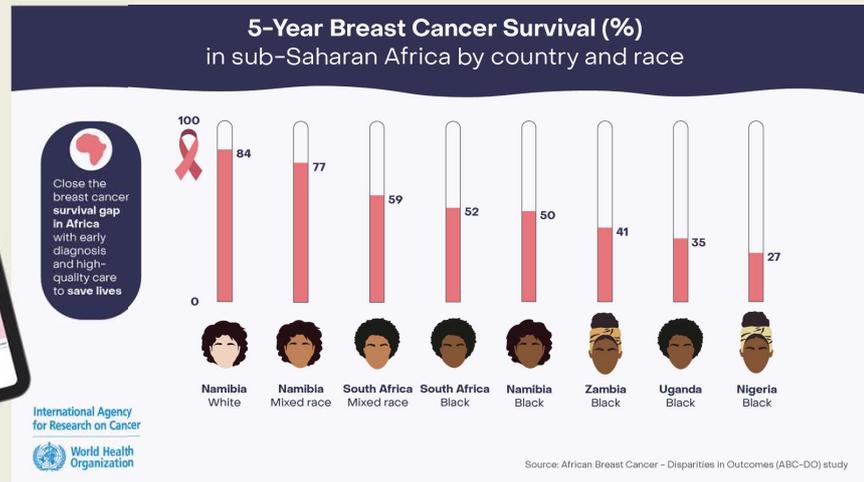
Dr Isabelle Soergemaster  
IARC Scientist

International Agency for Research on Cancer  
World Health Organization

BREAST CANCER AWARENESS MONTH 2025

# Breast Cancer Awareness Month 2025

Infographic: 5-year breast cancer survival in sub-Saharan Africa



## Lung Cancer Awareness Month 2025

