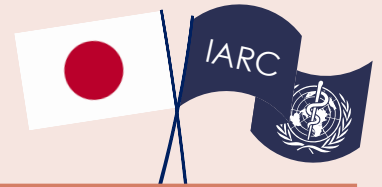


# IARC Impact in practice series

## The Japan experience



*“IARC membership has transformed national cancer research from a largely domestic endeavor into a globally connected, methodologically aligned, and policy-relevant enterprise.”*  
Dr Tomohiro Matsuda, National Cancer Center Japan

Since becoming an IARC Participating State in 1972, Japan has used IARC to connect national cancer priorities with global science. Membership allows Japan to combine the strengths of its own cohorts, registries and programmes with IARC's international networks, independent expertise and global standards. This gives Japan both influence in IARC's governance and additional value through access to international research platforms and globally comparable evidence for policy decisions.

### Why IARC membership made the difference for Japan:

- **Scientific leadership and deeper global integration:** In the past decade, Japanese researchers co-authored 212 oncology papers with IARC. These papers were produced through large international collaborations, with a median of 32.5 unique institutional affiliations per paper across 177 countries. This helps Japan take part in research areas where international scale matters most, including genetic studies, screening, HPV and cervical cancer, and lifestyle-related cancer risk.
- **Evidence that translates into policy and regulation:** IARC work is cited in about 350 Government of Japan reports and technical papers (2005–2026). These citations appear in work on cancer registration, tobacco control, nutrition policy, HPV vaccination, cervical-cancer prevention, radiation protection, and environmental and occupational regulation. In practice, IARC evidence is used alongside Japanese data as an important international reference point when major health-policy decisions are made.
- **A shared global framework for cancer control:** Through IARC, Japan works within a common framework for cancer control, using shared classifications, comparable statistics and a common scientific language. This helps Japan compare its policies and programmes with international standards while also contributing its own experience to that framework.
- **Global infrastructures for mutual learning:** Through IARC, Japan's cohorts, biobanks and public-health programmes contribute to shared international platforms, including the International Birth Cohort Harmonisation Group, the Population-Based Long-Term Surveillance (LTS) Team on lifestyle and cancer survival, and international genomic, metabolomic and screening collaborations. These platforms allow Japanese data and expertise to contribute to global evidence, while also supporting comparison, shared methods and mutual learning across countries.
- **Capacity, leadership and standards:** Since the mid-1960s, about 50 Japanese scientists have held IARC fellowships, one of the highest totals among Participating States. IARC training gives Japanese researchers experience with real international datasets, shared standards and global collaboration. It also strengthens the international coordination capacity of Japanese experts, helping them act not only as researchers but also as connectors and leaders in regional cancer-control efforts. Japanese experts further contribute to IARC Monographs, Handbooks and WHO tumour classifications, helping shape global cancer standards.

## Part I. Scientific leadership through international collaboration

### → Exceptional collaboration intensity and depth

Japan's partnership with IARC connects Japanese institutions to large international cancer studies. This matters because many research questions need large datasets, shared methods and results that can be compared across countries.

The publication data shows this clearly: Japan and IARC co-authored **212 oncology papers** in the last decade<sup>1</sup>. More important is how these papers were produced. Japan-IARC papers involved a median of

<sup>1</sup> Data derived from Web of Science records of IARC-Japan co-authored papers published between January 2016 and January 2026.

**32.5 unique institutional affiliations per paper**, compared with **1** in comparable Japanese oncology papers without IARC. In other words, IARC helps move Japanese research from single-institution work into large international collaborations. In total, Japan–IARC co-authored work involved **2,213 unique institutions across 177 countries**, linking Japanese teams to a global research network.

Web of Science micro-topic analysis shows that Japan–IARC outputs are strongly concentrated in high-impact, data-intensive areas, led by:

- **Genome-wide association studies (GWAS) and genomic susceptibility research;**
- **Screening disparities and early detection;**
- **Genetic testing and molecular diagnostics;**
- **Head and neck cancers, and nutrition/obesity**
- **HPV and cervical cancer prevention;**
- **Treatment-relevant translational topics, including breast cancer imaging and glioma research;**
- **Cancer types and pathways of particular relevance to Japan's burden, including bladder cancer;**
- **Metabolic and lifestyle risk mechanisms, including smoking cessation and related behavioural interventions.**

#### ➔ Leadership in global research infrastructure

Through IARC, Japanese institutions take part in major international research platforms that support cancer prevention, screening and risk assessment. These collaborations connect Japan's cohorts, biobanks, clinical programmes and public-health data to multi-country studies with shared methods and pooled analysis. Examples from 2016-2026 include:

#### **Box #2: Lifestyle, cancer survival, and healthy ageing: a Japan–Europe long-term surveillance platform**

In 2021, IARC and the National Cancer Center helped create IARC's first international research team, focused on lifestyle and cancer outcomes. Building on this, they [launched](#) the [Population-Based Long-Term Surveillance \(LTS\) IARC–Japan Team](#) in January 2022. The team studies how diet and other lifestyle factors affect cancer risk, survival and quality of life after diagnosis.

The project links major cohort infrastructures in Japan and Europe, the **Japan Public Health Center-based Prospective Study (JPHC)**, **JPHC-NEXT**, and the **European Prospective Investigation into Cancer and Nutrition (EPIC)**, together covering **more than 770,000 participants**. Using harmonised exposure measures, cancer incidence and mortality follow-up, and biobank resources, the LTS platform will quantify how smoking, diet, obesity, physical activity and other behaviours *before diagnosis* shape prognosis, survival and long-term quality of life after cancer.

For Japan, this is both a scientific and systems innovation: it pioneers the kind of **data linkage between cohorts and cancer registries** that is still difficult to achieve domestically, creates a model that can be extended to other diseases, and generates the large-scale evidence needed to design lifestyle guidance and survivorship care in an ageing society with growing numbers of cancer survivors in Japan, across Asia, and worldwide.

#### **Cancer in Japan: a high-burden profile in an ageing society**

Based on [GLOBOCAN 2022 estimates](#), cancer remains a major public health challenge in Japan, with around **1.0 million new cases** and **426,000 deaths** in 2022. The leading cancers are **colorectal, lung and stomach**, followed by **prostate and breast**. This reflects both lifestyle-related risks and a continued burden from infections such as **H. pylori**. In one of the world's oldest populations, this burden shows the need for continued action on prevention, risk reduction and early detection.

- **Early-life and environmental exposure platforms:** Japan funds IARC to coordinate the International Birth Cohort Harmonisation Group, a long-running platform supported by the Japanese Ministry of the Environment that links Japanese birth cohorts with cohorts in Europe and elsewhere around shared protocols, common documentation and coordinated scientific hypotheses. Through IARC's convening role, this platform helps participating institutions compare and harmonise data on early-life environmental exposures - including radiation, pollutants and other developmental risk factors - and study their long-term implications for cancer and other chronic diseases.

- **Lifestyle and survivorship cohorts in an ageing society:** Long-term joint studies with the National Cancer Center and other partners, such as projects on lifestyle change after cancer diagnosis and on lifetime overweight and obesity and cancer survival, embed Japanese cohorts in international infrastructures that use common exposure metrics and harmonised outcome definitions, enabling robust pooled analyses.

- **Biobank and metabolomics collaborations linked to screening and risk stratification:** Japan's partnership with St. Luke's International Hospital, the University of Tokyo and IARC adds a more translational infrastructure dimension. In the study on lifestyle determinants

of mammographic density in post-menopausal Japanese women, serum samples from the St. Luke's Annual Health Check-up Screening Cohort are analysed on the IARC Metabolomics Platform, with statistical analysis led jointly by Japanese investigators. This links Japanese screening cohorts and biospecimens to IARC's high-resolution metabolomics infrastructure, creating a model for future breast-cancer risk stratification work.

- **International cancer genomics platforms:** Japan's collaboration with IARC also extends to global cancer genomics infrastructures. One example is an international project involving the National Cancer Center Japan, the Wellcome Sanger Institute and IARC, supported by the Japan Agency for Medical Research and Development (AMED), whose outputs were registered and made publicly available through the International Cancer Genome Consortium – Accelerating Research in Genomic Oncology (ICGC-ARGO).
- **Metabolic and endocrine pathways in liver cancer:** Another collaboration with St. Luke's International Hospital, funded by World Cancer Research Fund International (UK), examines the role of thyroid hormone metabolism in liver cancer development by integrating lifestyle and omics data from large cohort studies. Focusing on the links between obesity, metabolic dysfunction-associated steatotic liver disease (MASLD), hypothyroidism and hepatocellular carcinoma, this work connects Japanese clinical and epidemiological expertise with IARC's international analytic platforms to explore how metabolic and endocrine pathways may shape cancer risk.
- **Radiation and thyroid-cancer monitoring after nuclear accidents:** Japan-funded work with IARC, including the International Expert Group on Long-term Strategies for Thyroid Monitoring after Nuclear Accident and studies on childhood and adolescent thyroid cancer, provides a platform for global guidance on post-accident monitoring strategies, built on Japanese experience but designed for international use (see section II).
- **HPV vaccination effectiveness and cervical-cancer control:** Large, nationally grounded evaluations of HPV vaccination effectiveness against high-grade cervical lesions in Japan, conducted with IARC support and methods, contribute to a wider evidence infrastructure that underpins WHO recommendations and informs vaccination and screening policy in other countries (see Box #3).

### ➔ Shaping the global cancer research agenda and standards

Japanese experts and diplomats help steer IARC's direction. Through seats on the **Scientific Council and Governing Council**, and active involvement in developing the [Medium-Term Strategy \(MTS\)](#), Japan contributes directly to setting IARC's research and capacity-building priorities. This high-level engagement is a form of **soft power**. By shaping IARC's work programme, Japan brings national and regional realities into global decision-making while gaining early insight into emerging priorities, methods, and partnership opportunities, aligning its own cancer plans and investments with cutting-edge international evidence.

Japan also play a central role in developing widely respected **international evidence frameworks and classification standards** that shape global cancer science, prevention, and regulation. During the 2020-2025 cycle, 33 Japanese experts have contributed to the IARC's flagship evaluations, including:

- **IARC Monographs Volume 126:** *Opium Consumption*
- **IARC Monographs Volume 127:** *Some aromatic amines and related compounds*
- **IARC Monographs Volume 128:** *Acrolein, Crotonaldehyde, and Arecoline*
- **IARC Monographs Volume 129:** *Gentian violet, leucogentian violet, malachite green, leucomalachite green, and CI direct blue 218*
- **IARC Monographs Volume 130:** *1,1,1-Trichloroethane and Four Other Industrial Chemicals*
- **IARC Monographs Volume 131:** *Cobalt, antimony compounds, and weapons-grade tungsten alloy*
- **IARC Monographs Volume 132:** *Occupational Exposure as a Firefighter*
- **IARC Monographs Volume 133:** *Anthracene, 2-bromopropane, butyl methacrylate, and dimethyl hydrogen phosphite*
- **IARC Monographs Volume 134:** *Aspartame, methyleugenol, and isoeugenol*
- **IARC Monographs Volume 135:** *Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS)*
- **IARC Monographs Volume 136:** *Talc and Acrylonitrile*
- **IARC Monographs Volume 137:** *Hydrochlorothiazide, Voriconazole, and Tacrolimus*
- **IARC Monographs Volume 138:** *Automotive gasoline and some oxygenated gasoline additives*



*“By joining IARC, Japan has established its position within the multilateral balance on the global agenda, rather than simply pursuing benefits for its own country or its own research.”*

**Dr Manami Inoue  
National Cancer  
Center Japan**

- **IARC Monographs Volume 140:** *Atrazine, Alachlor, and Vinclozolin*
- **IARC Handbooks of Cancer Prevention Volume 18:** *Cervical cancer screening*
- **IARC Handbooks of Cancer Prevention Volume 20A:** *Reduction or cessation of alcoholic beverage consumption and cancer risk*
- **IARC Handbooks of Cancer Prevention Volume 21:** *Lung cancer screening and early detection approaches*
- **World Health Organization Classification of Tumours (Blue Books) 5th and 6th editions:** Extensive editorial board, expert panel, and reporting-system contributions supporting international standards for tumour pathology classification, diagnostic criteria, and reporting systems across multiple organ systems.

## Part II. From evidence to action: IARC's impact on national Public Health

### ➔ Evidence that informs national regulation and prevention policy

In Japan, IARC-linked evidence appears in government reports, risk assessments, radiation guidance and vaccination materials. An [Overton](#) analysis shows that IARC work was cited in around **350 Government of Japan reports and technical papers between 2005 and 2026**. These documents cover cancer control, environmental health, occupational safety and chemical regulation.

Stakeholders testimonies suggest that IARC evidence is now used routinely in practice. Japanese experts described it as an important reference point alongside national data when major health-policy decisions are made.

The main users include the **Ministry of Health, Labour and Welfare**, the **Ministry of the Environment**, the **National Institute of Infectious Diseases**, food and chemical risk-assessment bodies, and expert groups on radiation protection and nuclear safety.

Across these sources, IARC outputs are used to:

- **Strengthen cancer registration as a national policy tool:** IARC standards for cancer registration, including common classifications and quality indicators, helped Japan improve the comparability of incidence, mortality and survival data. They also supported the continued strengthening of national guidelines, data quality, long-term sustainability, workforce development and data governance.
- **Shape radiation and thyroid-cancer policy after nuclear accidents:** Government reports on ionising radiation and nuclear safety draw heavily on IARC-coordinated cohort studies such as [INWORKS](#), using them to quantify cancer risk at low and moderate doses and inform exposure limits, occupational dose standards and long-term health-risk assessments (see next section).

### Box #3: How IARC-supported evidence helped inform HPV vaccination policy in Japan

In Japan, incidence of cervical cancer fell until the late 1990s, then reversed its course: age-adjusted rates have since increased by about 2.6% per year overall, with especially steep rises among young women, roughly **5% per year in women in their 20s, 3% in their 30s, and 2% in their 40s**. Against this backdrop, the suspension of proactive HPV vaccine recommendations from 2013 to 2022 created a large unprotected cohort.

Japanese researchers generated critical national evidence to understand and address this trend, working in collaboration with international partners including IARC. A large study using the national cervical cancer screening programme, more than **37 000 women aged 20–29 years**, with vaccination mainly at ages 12–16, showed that vaccinated women had a **76% lower risk of CIN2+** and a **91% lower risk of CIN3+** precancerous lesions compared with unvaccinated women. These findings provided **locally generated, population-based evidence** that HPV vaccination is effective in Japan's own programme and screening context, while benefiting from international methodological support and comparability.

This body of evidence contributed to Government deliberations on HPV vaccination and supported the **resumption of proactive recommendations in April 2022**, after nearly nine years of suspension. It is now used in communication materials and technical briefings to strengthen public and professional confidence in HPV vaccination and align Japan's strategy with WHO's cervical cancer elimination framework.

Building on this, IARC Public Health Science Decision Team and Japanese scientists are now working together on a **cost-effectiveness analysis of gender-neutral HPV vaccination in Japan**. This ongoing work aims to move from demonstrating effectiveness to supporting data-driven decisions on whether and how to extend vaccination to boys and optimise long-term cervical and other HPV-related cancer prevention.



*“IARC helped elevate cancer registration from a technical activity to a strategic national asset.”*

**Dr Tomohiro Matsuda**  
National Cancer Center  
Japan

- **Underpin environmental and chemical regulation:** Risk assessments for PFAS and other priority chemicals, trichloroethylene, N-nitrosamines and nanomaterials cite the *IARC Monographs* and epidemiological studies as core evidence when classifying hazards and revising exposure limits.
- **Support tobacco control and “smoking and health” reviews:** National reports on the health effects of smoking cite IARC hazard classifications for tobacco and second-hand smoke, as well as IARC-linked multi-country studies, to quantify preventable cancer burden and justify stronger tobacco-control measures.
- **Guide HPV vaccination and cervical-cancer prevention:** Briefing materials and technical documents on the 9-valent HPV vaccine reference IARC-involved effectiveness studies and global evaluations, helping to strengthen confidence in HPV vaccination and align Japan’s strategy with WHO recommendations (see box#3).
- **Inform nutrition and obesity guidelines:** The 2020 Dietary Reference Intakes and related nutrition policy papers draw on large prospective studies with IARC participation on diet, adiposity and cancer, helping to link dietary standards to long-term NCD and cancer risk.

“Today, when health policy decisions are made, scientific evidence is mandatory. In Japan, that means using both our national data and IARC evidence to compare ourselves with the rest of the world.”

Dr Manami Inoue  
National Cancer Center Japan

→ **Thyroid cancer, radiation risk, and post-accident monitoring**

In Japan, thyroid cancer is a clear example of how IARC’s work on radiation connects with an important national public-health issue: the legacy of the **Fukushima Daiichi nuclear accident**. In response to the accident, the Fukushima Prefectural Government launched the **Fukushima Health Management Survey**, including a large-scale thyroid ultrasound examination (TUE) programme for more than **300,000 children and adolescents** who were aged 18 years or younger at the time of the accident. The programme detected many thyroid abnormalities and cancers, but also generated intense anxiety among families and a national debate about overdiagnosis and the appropriate long-term strategy for thyroid monitoring.

Japan turned to IARC to help navigate this dilemma. With funding from the **Japanese Ministry of the Environment**, IARC convened the **International Expert Group on Long-term Strategies for Thyroid Monitoring after Nuclear Accidents**, drawing on experience from **Chernobyl, the Southern Urals and global thyroid-cancer incidence studies**. This work led to **IARC Technical Publication No. 46**, which recommends against routine population-wide thyroid screening after a nuclear accident. Instead, it proposes **targeted monitoring for higher-risk groups**, together with clear communication and centralised data collection.

**Part III. Building capacity for lasting impact**

→ **Talent pipeline into international cancer science**

Training and knowledge exchange are a long-term part of the Japan–IARC partnership. Since the mid-1960s, about **50 Japanese scientists** have received IARC fellowships, one of the highest totals among Participating States. In **2021–2025, 6 trainees** from Japanese institutions also completed short- or medium-term placements at IARC, helping maintain strong links between Japanese centres and international research teams.

“As a former Fellow, I can attest to the value of the experience at IARC. The network I developed has enriched my professional career and continues to enable me to serve as a bridge between IARC and Japan.”

Dr Kayo Togawa  
IARC Liaison Officer  
For Japan

For Japanese researchers, the value of IARC training goes beyond methods. It offers **practical experience with real international datasets and exposure to shared research standards**. This helps researchers **look at Japanese questions in a global context**. Participation in IARC projects also strengthens the international coordination capacity of Japanese experts, helping them act not only as researchers but also as **connectors and leaders in regional cancer-control efforts**.

international coordination capacity of Japanese experts, helping them act not only as researchers but also as **connectors and leaders in regional cancer-control efforts**.

This people-to-people pipeline is anchored by formal cooperation frameworks. A **Memorandum of Understanding with the National Cancer Center (NCC)**, in place since 2017 and renewed in 2022, expands joint work on cancer prevention, epidemiology, early detection, cancer control and survivorship. A **Memorandum of Agreement with St. Luke’s International University in Tokyo (2019–2028)** supports collaborative projects on diet, obesity, metabolic dysfunction and cancer. These agreements ensure that fellowships, traineeships and joint projects are not one-off exchanges but part of a **structured, long-term partnership** covering research, training and standards development.

This engagement is part of IARC's wider capacity-building ecosystem, which includes the Postdoctoral Fellowship Programme, the IARC Summer School, the IARC Learning Platform, and global networks for cancer registries, screening and biobanking. Together, these initiatives train thousands of professionals worldwide and generate durable benefits: in a 2024 outcome survey, **98% of postdoctoral respondents reported transferable skills, 72% maintained research ties with IARC after training, and over half progressed to leadership roles (53%) or managed independent research funding (52%)**. This creates a **two-way multiplier effect**: expertise gained at IARC is reinvested in national institutions, while the priorities, data, and methodological strengths of participating countries feed back into IARC's networks, helping shape future research, standards, and capacity-building efforts.

### ➔ **Scaling training across Asia: regional platforms and standards**

Japan also helps extend IARC training across Asia. Under the [Global Initiative for Cancer Registry Development \(GICR\)](#), the National Cancer Center became the first [first IARC/GICR Collaborating Centre](#) in 2017. Its role is to strengthen cancer registry analysis and descriptive epidemiology in East Asia. Through this work, NCC helps neighbouring countries improve registry methods, quality control and the use of cancer data for planning. Japan also contributes to broader IARC-led platforms such as **Cancer Incidence in Five Continents (CI5)** and the **Asian Code Against Cancer**, extending its role from national data contribution to regional standard-setting and prevention messaging.

Japan has also become a regional hub for screening training. In **October 2025**, IARC and NCC Japan co-hosted a [CanScreen5 Asia-Pacific training course in Tokyo](#) for programme managers and health professionals from more than a dozen countries. The course combined online learning with in-person workshops on screening organisation, quality assurance, data use and communication.