ACC
20th Year
Commemorative
Book

The AsiaCohort
Consortium

The Asia Cohort Consortium

contents

Welcome Message

Manami Inoue

Chair
Deputy Director, National Cancer Center Institute for Cancer Control, Japan

Asia Cohort Consortium Celebrates Its 20th Anniversary This Year

The Asia Cohort Consortium (ACC) was established in 2004 by researchers with diverse perspectives on Asia, with the aim of contributing to the development of epidemiology in the region. With the common aim and scope of "serving as a platform for cross-cohort collaborative projects, and acting as an incubator for new cohorts", we are making progress through trial and error as a guide to the direction we should take.

Asia is rooted in various ethnic groups, histories, religions, and habits that accompany them, and the socioeconomic classes of the countries in the region also vary widely. It is immensely fascinating to develop research on these similarities and dissimilarities.

The role of the ACC is to bring together individuals with an interest in Asia, fostering discussion and cooperation to tackle issues as colleagues and work toward the common and grand goal of understanding the region. At the start, we were in a foggy state as to how best to navigate the diversity of Asia's various aspects. However, even if we experienced a little frustration, we did not rush to conclusions. Instead, we took our time, repeating trial and error and discussing until we were satisfied. I believe that's how we gradually arrived at the form we have today. During that time, we have also contributed to the human resource development of early career researchers who have spent time together at the same table. On the other hand, moving forward, it will also be necessary for the ACC to make a more rapid and concrete impact on the world.

Twenty years have passed since its establishment, and we have seen a changeover to a new generation that has learned about a new approach to global health, in which everyone sits around the table as stakeholders and discusses and decides on matters with the aim of achieving maximum satisfaction, rather than the classic system in which a few authorities decide everything.

I hope that we can work together as Team Asia to consider what we can do as a cohort consortium and ultimately make a contribution to global health from Asia.

Welcome Message

Paolo Boffetta

Deputy Chair
Professor, Stony Brook University, USA

It is my honor to welcome participants in the 20th Annual Meeting of the Asian Cohort Consortium, both in presence and remotely.

I am particularly happy that this meeting takes place in Seoul, one of the birthplaces of the Consortium, together with Seattle. Together with Professor Potter, Professor Yoo and Professor Kang were instrumental in establishing the Consortium, and in steering it for many productive years.

Today the Consortium is a vibrant forum for epidemiologic and preventive research throughout the Asian continent, with an ever-growing membership and list of projects. I want to thank the many persons who have dedicated their energy to the Consortium in particular those in charge of the Coordinating Center, before at Fred Hutchinson Cancer Center in Seattle and now at the National Cancer Center in Tokyo, past and present members of the Executive Committee, coordinators of the Working Groups, but above all the members of the Consortium, be they cohort PI or more junior investigators: they deserve most credit for our achievements.

We wish all participants a very fruitful and enjoyable experience during these days in Seoul, and look forward to another 20 years of successful collaboration!

History

The Asia Cohort Consortium (ACC) is a large consortium of cohort-based studies in Pacific Rim countries, with approximately 150 active members from China, India, Bangladesh, Japan, Korea, Malaysia, Singapore, Taiwan, Thailand, the United States, and elsewhere. The formulation of ACC was originally discussed with Rashmi Sinha and Nathaniel Rothman of National Cancer Institute, USA, and Daehee Kang when he was a senior fellow at the US NCI DCEG. After longtime preparation, Daehee Kang invited John Potter of the Fred Hutchinson Research Center, USA, Keun Young Yoo of Seoul National University as co-chair. The first inauguration meeting was held in Seoul, October 2004 chaired by Daehee Kang during Asian Pacific Cancer Prevention Conference at Seoul National University. By establishing a cohort of at least 1 million healthy individuals around the world who will be followed until various disease endpoints, the ACC seeks to identify associations of diseases with genetics, environmental exposures, and their interaction, and to discover early detection biomarkers.

The ACC aims "(i) to serve as a platform for cross-cohort collaborative projects and combined analysis and (ii) to act as an incubator for new cohorts." The ACC investigators meet biannually to update progress on existing and new cohorts in each country, to share ideas on data harmonization and development of common protocols, and to prepare collaborative projects. The ACC Coordinating Center was established at the Fred Hutchinson Cancer Research Center to provide support for scientific collaboration, coordination and communication, data operations, and statistical consultation and has since moved to the National Cancer Center Japan.

The second meeting of the ACC was held in April 2005 at the Fred Hutchinson Cancer Research Center. At that meeting, the Steering Committee was established, consisting of principal investigators from various cohort studies in each participating country. To address and resolve the issues of standardization and harmonization across different cohort studies, Working Groups were established in the areas of diet and nutrition, obesity and physical activity, occupation and environment, alcohol and tobacco use, family history and genetics, biospecimens and sample collection, data collection and management, and follow-up and endpoint ascertainment.

Currently, consortium members are collaborating on projects examining: Diet and Reproductive factors and various outcomes; rare cancers, which are infrequent and thus difficult to study in single studies; and biospecimen use across existing Asian cohorts. Proposals initiating a collaborative project can be submitted throughout the year. Before every biannual meeting, all proposals are reviewed by the Executive Committee (EC) and ACC members. Proposals from anyone interested in collaborating with the ACC are also reviewed, including those from non-ACC scientists who are sponsored by an ACC member. Data analysis and project coordination are performed by the Coordinating Center at the National Cancer Center Japan.

Rationale

The Asia Cohort Consortium (ACC) seeks to understand the relationship between genetics, environmental exposures, and the etiology of disease through the establishment of a cohort, or population laboratory, of at least 1 million healthy people around the world who will be followed over time to various disease endpoints, including cancer.

The concept of a population laboratory involves not just a population cohort but the capacity and intention to develop markers of early disease and to follow cohort members through diagnosis and treatment to outcome. Some informative relationships that can be explored using the population laboratory include the association of exposure with disease; genome variability with disease; gene-environment interaction with molecularly defined disease; marker sets (e.g. plasma-protein profile) with early detection of molecularly defined disease; and genome, treatment and molecularly defined disease with outcome.

Accordingly, what is needed involves not just measurement of genetic variation but also variation in environmental exposures. The ACC addresses the scientific need to establish the complete pattern of susceptibility and resistance to disease, to identify disease more finely, and to establish which protein patterns provide the signal for disease, by recruiting and tracking a large number of individuals from diverse settings who are well characterized genetically, whose behavioral and environmental characteristics are well mapped, and whose illness pattern and mortality can be monitored. One of the things that we have learned over the last 5 years is that much of the genetic variation that is associated with disease risk is relevant only in the presence of environmental variability.
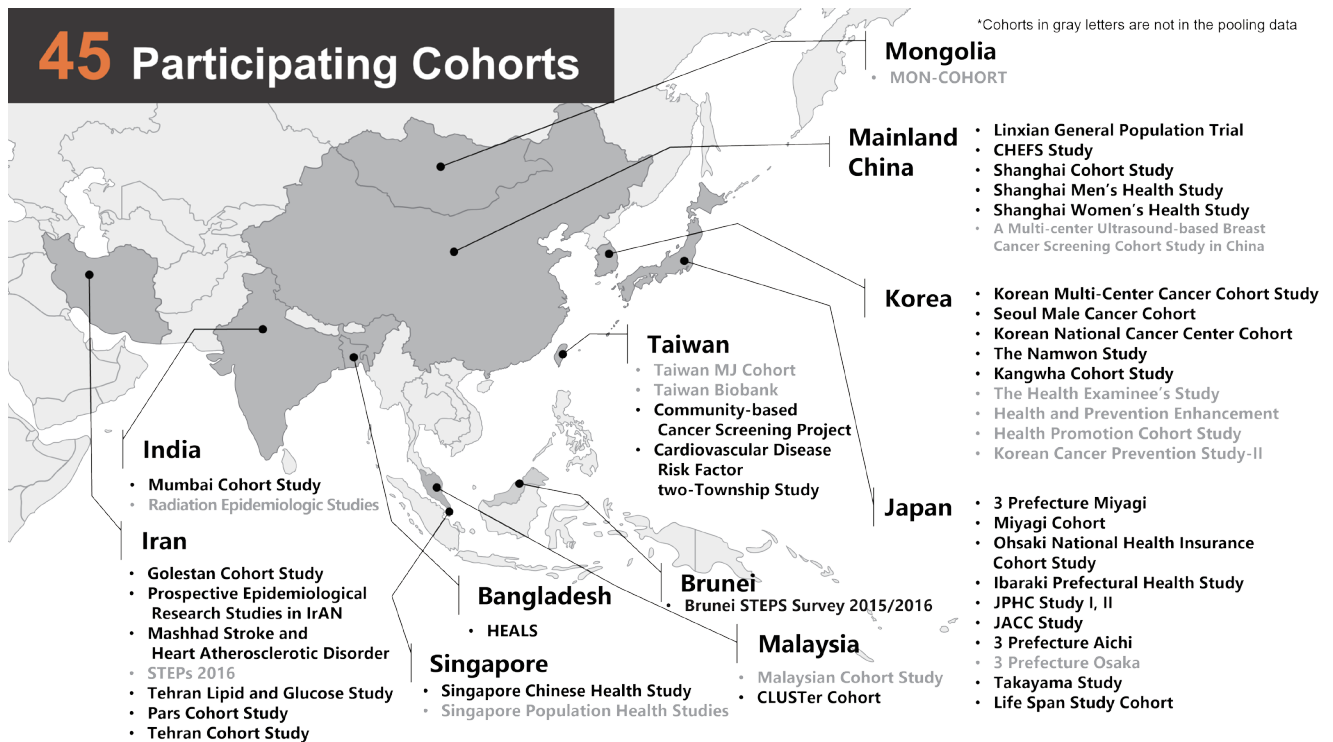
Collaboration

ACC holds regular meetings for researchers from countries such as Bangladesh, China, India, Iran, Japan, Korea, Malaysia, Mongolia, Singapore, Taiwan, and the United States to report the progress of their ongoing cohort researches, to discuss common research planning strategies, as well as to promote collaborative projects.

	Year	Date	City	Country	Meeting
1	2004	November	Seoul	Korea	ACC Meeting 2004
2	2005	April	Seattle WA	USA	ACC Meeting 2005
3	2005	September	Seoul	Korea	ACC Meeting 2005
4	2006	April	Washington DC	USA	ACC Meeting 2006
5	2006	September	Singapore	Singapore	ACC Meeting 2006
6	2007	April	Los Angeles CA	USA	ACC Meeting 2007
7	2007	October	Kuala Lumpur	Malaysia	ACC Meeting 2007
8	2008	April	San Diego, CA	USA	ACC Meeting 2008
9	2008	October	Beijing	China	ACC Meeting 2008
10	2009	April	Denver	USA	ACC Meeting 2009
11	2009	December	Tokyo	Japan	ACC Meeting 2009
12	2010	April	Washington DC	USA	ACC Meeting 2010
13	2010	October	Seoul	Korea	ACC Meeting 2010
14	2011	November	Orlando FL	USA	ACC Meeting 2011
15	2011	December	Dhaka	Bangladesh	ACC Meeting 2011
16	2012	October	Taipei	Taiwan	ACC Meeting 2012
17	2013	April	Bethesda, MD	USA	ACC Meeting 2013
18	2013	November	Tokyo	Japan	ACC Meeting 2013
19	2014	May	Shanghai	China	ACC Meeting 2014
20	2015	March	Seoul	Korea	ACC Meeting 2015
21	2015	November	Tokyo	Japan	ACC Meeting 2015
22	2016	April	New Orleans	USA	ACC Working Group Meeting 2016
23	2016	September	Singapore	Singapore	ACC Meeting 2016
24	2017	April	Washington DC	USA	ACC Working Group Meeting 2017
25	2017	August	Tokyo	Japan	ACC Meeting 2017
26	2018	April	Chicago IL	USA	ACC Working Group Meeting 2018
27	2018	April	Jeju	Korea	ACC Working Group Meeting 2018
28	2018	September	Nagoya	Japan	ACC General Membership Meeting 2018
29	2019	March	Atlanta	USA	ACC Working Group Meeting 2019
30	2019	November	Hanoi	Vietnam	ACC General Membership Meeting 2019
31	2020	February	Kyoto	Japan	ACC Working Group Meeting 2020
32	2020	April	Online		ACC Working Group Meeting 2020
33	2020	October	Online		ACC General Membership Meeting 2020
34	2021	October	Online		ACC General Membership Meeting 2021
35	2022	April	Online		ACC Working Group Meeting 2022
36	2022	October	Online		ACC General Membership Meeting 2022
37	2023	April	Online		ACC Working Group Meeting 2023
38	2023	October	Orlando FL/Online	USA	ACC General Membership Meeting 2023
39	2024	April	San Diego/Online	USA	ACC Working Group Meeting 2024
40	2024	October	Seoul/Online	Korea	ACC General Membership Meeting 2024

Currently, Consortium members who are also principal investigators of previously established cohorts are collaborating on multiple epidemiological studies focused on various risk factors and health outcomes in Asian populations. The scientific objectives of these projects are to assess the association of body mass index, diet, environmental and other risk factors and disease incidence, total and cause-specific mortality, and the role of a number of confounders. The ACC has over 40 on-going projects.

New cohorts, as part of the Consortium, were funded and began operating in Korea, Malaysia, Singapore, and Taiwan. Other countries are in the development stages for their cohorts. Instruments and protocols among Consortium members are shared via a password-accessible website, and discussion among Working Group members also takes place through occasional separate meetings and communications.
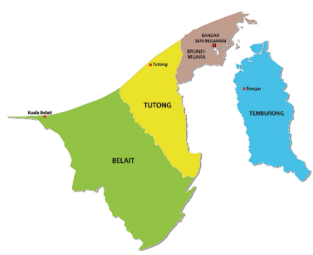
Participating Cohorts

45 Participating Cohorts

*Cohorts in gray letters are not in the pooling data

Mongolia
- MON-COHORT

Mainland China
- Linxian General Population Trial
- CHEFS Study
- Shanghai Cohort Study
- Shanghai Men's Health Study
- Shanghai Women's Health Study
- A Multi-center Ultrasound-based Breast Cancer Screening Cohort Study in China

Korea
- Korean Multi-Center Cancer Cohort Study
- Seoul Male Cancer Cohort
- Korean National Cancer Center Cohort
- The Namwon Study
- Kangwha Cohort Study
- The Health Examinee's Study
- Health and Prevention Enhancement
- Health Promotion Cohort Study
- Korean Cancer Prevention Study-II

Taiwan
- Taiwan MJ Cohort
- Taiwan Biobank
- Community-based Cancer Screening Project
- Cardiovascular Disease Risk Factor two-Township Study

Japan
- 3 Prefecture Miyagi
- Miyagi Cohort
- Ohsaki National Health Insurance Cohort Study
- Ibaraki Prefectural Health Study
- JPHC Study I, II
- JACC Study
- 3 Prefecture Aichi
- 3 Prefecture Osaka
- Takayama Study
- Life Span Study Cohort

India
- Mumbai Cohort Study
- Radiation Epidemiologic Studies

Iran
- Golestan Cohort Study
- Prospective Epidemiological Research Studies in IrAN
- Mashhad Stroke and Heart Atherosclerotic Disorder
- STEPs 2016
- Tehran Lipid and Glucose Study
- Pars Cohort Study
- Tehran Cohort Study

Bangladesh
- HEALS

Singapore
- Singapore Chinese Health Study
- Singapore Population Health Studies

Brunei
- Brunei STEPS Survey 2015/2016

Malaysia
- Malaysian Cohort Study
- CLUSTer Cohort

Bangladesh

Health Effects for Arsenic Longitudinal Study Bangladesh (HEALS)		
Country	Bangladesh	
PI	Habibul Ahsan	
Co-PI *(for ACC)	Yu Chen	
Institute	University of Chicago, New York University	
Location	Araihazar	
Status of the cohort	Ongoing	
Participant recruitment	Persons aged between 18-75; living in the study area for at least five years before recruitment	
# participants	11,746 (2000-2002); ~35,000 (present)	
Baseline age	18-75 years	
Key objectives	To evaluate the effects of full-dose range arsenic (As) exposure on various health outcomes, including premalignant and malignant skin tumors, total mortality, pregnancy outcomes, and children's cognitive development.	
URL		Cohort profile: https://pubmed.ncbi.nlm.nih.gov/16160703/

Participating Cohorts

Brunei Darussalam

Brunei STEPS Survey 2015/2016		
Country	Brunei	
PI	Ong Sok King	
Co-PI *(for ACC)	Elvynna Leong; Daphne Lai	
Institute	Universiti Brunei Darussalam	
Status of the cohort	Ongoing	
# clusters	4 districts	
Participant recruitment	Brunei citizens or permanent residents aged 18 to 69 years with regular stay throughout the year, not pregnant or diagnosed with terminal or incapacitating illnesses	
# participants	3,808 (2015-2016)	Recent follow-up: 1,154W Mortality follow-up year: 2022 Incidence follow-up year: 2022
Baseline age	Aged 18 to 69 years	
Follow-ups surveys	2022 follow-up for 1154 (526 Men / 628 Women) consented participants on key NCDs diagnosis (e.g. incidence of cancer, CVDs, diabetes and death).	
Key objectives		
URL	https://extranet.who.int/ncdsmicrodata/index.php/catalog/494	Cohort profile: https://pubmed.ncbi.nlm.nih.gov/29082745/

Participating Cohorts

Linxian General Population Trial Cohort		
Country	China	
PI	You-Lin Qiao	
Co-PI *(for ACC)	Zhikai-Zhu	
Institute	Cancer Foundation of China	
Location	Linxian, a rural county in Henan Province	
Status of the cohort	Ongoing/completed	
# clusters	Four northern communes in Linxian	
Participant recruitment	Residents 40 – 69 years of age with no history of cancer or debilitating disease were eligible for this trial and were asked to enroll.	
# participants	29,584	Mortality follow-up year: 2001
Baseline age	40- 69 years (1985-1991)	
Follow-ups surveys	10 years	
Key objectives		Cohort profile: https://pubmed.ncbi.nlm.nih.gov/7921303/

China

Shanghai Cohort Study (SCS)		
Country	China	
PI	Jian-Min Yuan	
Institute	University of Pittsburgh Cancer Institute	
Location	45-64 years who resided within geographically defined four neighborhoods in the city of Shanghai, China	
Participant recruitment	During January 1, 1986 through September 30, 1989, 18,244 men were recruited into the study	
# participants	Baseline: 18,244 men (1986-1989)	Recent follow-up: 7,735 Mortality follow-up year: 2016
Baseline age	45-64 years	
Follow-ups surveys	On annual basis from 1990 to 2012, and biannually since 2013.	
URL	https://www.schs.pitt.edu/methods/shanghai-cohort-study/	

Participating Cohorts

China

Shanghai Men's Health Study (SMHS)

Country	China	
PI	Xiao-ou Shu	
Institute	Vanderbilt University School of Medicine	
Location	Shanghai	
Status of the cohort	Ongoing, follow-up temporarily on hold	
# clusters	Eight urban communities in Shanghai	
Participant recruitment	A population-based cohort study of 61 480 men aged 40-74 years, launched in 2002 in urban Shanghai	
# participants	61,480 (2002-2006)	
Baseline age	40-74 years	
Follow-ups surveys	every 3 or 4 years we conduct in-person follow-up surveys to update and collect new exposure information	Recent follow-up: 2016 Mortality follow-up year: 2016 Incidence follow-up year: 2016
Key objectives	To investigate the contribution of lifestyle/environmental factors and genetic susceptibility to cancer and other non-communicable diseases (NCDs)	
URL	https://swhs-smhs.app.vumc.org/index.php	Cohort Profile: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4521127/

China

Shanghai Women's Health Study (SWHS)

Country	China	
PI	Wei Zheng	
Institute	Vanderbilt University School of Medicine	
Location	Shanghai	
Status of the cohort	Ongoing, follow-up temporarily on hold	
# clusters	Seven urban communities	
Participant recruitment	From 1996 to 2000, the Shanghai Women's Health Study recruited 74,942 adult Chinese women from selected urban communities	
# participants	74,942 women (1996-2000)	
Baseline age	40-74 years	
Follow-ups surveys	Every 3-4 years of follow-up surveys	Recent follow-up: 2016 Mortality follow-up year: 2016 Incidence follow-up year: 2016
Key objectives	To investigate genetic and other biomarkers as well as lifestyle factors for the risk and/or prognosis of cancers and other chronic diseases	
URL	https://swhs-smhs.app.vumc.org/index.php	Cohort profile: https://pubmed.ncbi.nlm.nih.gov/16236996/

+ **China Hypertension Survey Epidemiology Follow-up Study (CHEFS)**

+ **Multi-center Ultrasound-based Breast Cancer Screening Cohort Study in China**

Participating Cohorts

India

Mumbai Cohort Study		
Country	India	
PI	Prakash Gupta	
Co-PI *(for ACC)	Mangesh Pednekar	
Institute	Healis-Sekhsaria Institute of Public Health	
Location	Mumbai	
Status of the cohort	Completed up to second follow up	
Participant recruitment	Adults aged 35 years or older were recruited	
# participants	148,173 (1991-1997)	Recent follow-up: 134,912 Mortality follow-up year: 2018
Baseline age	≥ 35 years	
Follow-ups surveys	Started1999 – second follow up ended – 2018	
Key objectives	To study tobacco use and mortality	
URL	https://www. healis.org/project-data-analysis.html	Cohort Profile:

+ Radiation Epidemiologic Studies (Karunagappally Cohort Study)

Participating Cohorts

Iran

Golestan Cohort Study		
Country	Iran	
PI	Reza Malekzadeh	
Co-PI *(for ACC)	Akram Pourshams, Arash Etemadi, Paolo Boffetta	
Previous PIs	Sandy Dawsey, Christian Abnet, Paul Brennan	
Institute	Digestive Oncology Research Center, Digestive Diseases Research Institute, Tehran University of Medical Sciences; and National Cancer Institute; and International Agency for Research on Cancer.	
Location	Golestan Province	
Status of the cohort	Follow-up ongoing	
# clusters	Urban participants from Gonbad City and rural participants from363 villages in Gonbad, Kalaleh and Aq-Qala counties	
Participant recruitment	2004-2008	
# participants	50,045	Recent follow-up: April, 2024 Mortality follow-up year: April, 2024 Incidence follow-up year: April, 2023
Baseline age	40-75 years	
Follow-ups surveys	Outcome assessment for all; risk factor re-assessment for 12,000 at years 5 and 10 after recruitment.	
Key objectives	Risk factors for cancer and other non-communicable diseases	
URL	https://dceg2.cancer.gov/gemshare/	Cohort profile: International Journal of Epidemiology 2010;39:52-59

Participating Cohorts

Prospective Epidemiological Research Studies in IrAN (PERSIAN)		
Country	Iran	Persian Cohort PIs
PI	Reza Malekzadeh	
Co-PI *(for ACC)	Hossein Poustchi. Kamangar F, Etemadi A, Keshtkar AA, Hekmatdoost A, Mohammadi Z, Mahmoudi Z, Shayanrad A, Roozafzai F, Sheikh M, Jalaeikhoo A, Somi MH, Mansour-Ghanaei F, Najafi F, Bahramali E, Mehrparvar A, Ansari-Moghaddam A, Enayati AA, Esmaeili Nadimi A, Rezaianzadeh A, Saki N, Alipour F, Kelishadi R, Rahimi-Movaghar A, Aminisani N, Boffetta P	
Institute	Digestive Diseases Research Institute, Tehran University of Medical Sciences	
Location	Nationwide	
Status of the cohort	Ongoing	
# clusters	18 distinct areas	
Participant recruitment	Residence in designated areas of 19 cities in Iran	
# participants	180,000 (2014-present)	
Baseline age	35-70 years	
Follow-ups surveys	Outcome assessment for all; risk factor re-assessment every 5 year after recruitment.	
Key objectives	Risk factors for non-communicable diseases and cancer	
URL	https://persiancohort-portal.com/Account/Login?ReturnUrl=%2F	Cohort profile: Am J Epidemiol. 2018 Apr 1;187 (4):647-655

Tehran Lipid and Glucose Study (TLGS)		
Country	Iran	
PI	Fereidoun Azizi	
Co-PI *(for ACC)	Davood Khalili	
Institute	Endocrine Research Center, SBUMS	
# participants	15,005 people (1999-2001)	
Baseline age	Aged over 3 years	
Key objectives	TLGS was initiated in 1999 to investigate non-communicable disease (NCD) and its associated risk factors or determinants among a representative family-based population of Tehran, the capital of Iran	
URL	https://endocrine.ac.ir/page/Tehran-Lipid-and-Glucose-Study-TLGS?lang=en	Cohort profile: https://pubmed.ncbi.nlm.nih.gov/12643001/

Participating Cohorts

Iran

MAshhad Stroke and Heart Atherosclerotic Disorder (MASHAD Study)		
Country	Iran	
PI	Majid Ghayour-Mobarhan	
Co-PI *(for ACC)	Habibollah Esmaily Mohsen Mouhebati	
Institute	Mashhad University of Medical Sciences (MUMS)	
Location	Mashhad- Iran	
Status of the cohort	Second Phase	
# clusters	Cardiovascular disease	
Participant recruitment	9704	
# participants	9,704 men and women (2010) 5857 women 3847 men	Recent follow-up: 9704 Mortality follow-up year: 2020 Incidence follow-up year:2020
Baseline age	35-65 years	
Follow-ups surveys	2007 –First phase started 2007-2017 – two follow up every 3 years by phone 2017 –second phase started 2017-2020 – one overall follow up 2020-2021 –first follow up of second phase by phone 2024 ongoing follow up by phone	
Key objectives	aims to evaluate the impact of various genetic, environmental, nutritional and psychosocial risk factors on the incidence of cardiovascular events (CHD and stroke) all-cause mortality and specific mortality among an urban population in eastern Iran.	
URL	https://www.irancohorts.ir/Cohort/A-Cohort-Study-of-Stroke-and-Heart-Atherosclerotic-Disorders-in-Mashhad	Cohort profile: https://pubmed.ncbi.nlm.nih.gov/25943424/
Note	Our data is prepared and we would like to join ACC projects.	

Participating Cohorts
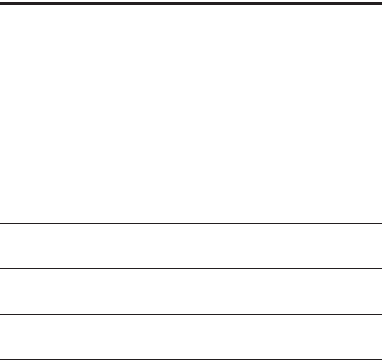
Iran

	Pars Cohort Study (PCS)	
Country	Iran	Reza Malekzadeh M.D Distinguished Professor of Medicine Tehran University of Medical Science
PI	Reza Malekzadeh	
Co-PI *(for ACC)	Hossein Poustchi, Abdullah Gandomkar Sareh Eghtesad	
Institute	Digestive Diseases Research Institute Tehran University of medical Sciences Tehran Iran	
Location	Fars province Iran	
Status of the cohort	Follow up ongoing	
# clusters	Urban participants from Valashahr City and rural participants from90 villages in Kazeroun Fars province	
Participant recruitment	(2012-2014)	
# participants	9264 local residents from Valashahr City and rural participants from90 villages in Kazeroun Fars province	Recent follow-up: June 2024 Mortality follow-up year:June2024 Incidence follow-up year: June 2023
Baseline age	Between 40 and 75 years	
Follow-ups surveys	Outcome assessment for all; risk factor re-assessment for 5000 at years 5 after recruitment.	
Key objectives	Risk factors for non-communicable diseases and cancer	
URL	https://Irancohorts.ir/pars-cohort-study/	Cohort profile: Int J Public Health. 2017 Apr;62(3):397-406

Iran

	Tehran Cohort Study	
Country	Iran	
PI	Abbasali Karimi	
Institute	A Joint study by Tehran Heart Center, Sina Trauma and Surgery Research Center, and Psychosomatic Medicine Research Center, all affiliated to Tehran University of Medical Sciences	
Participant recruitment	April 2016-March 2019	
# participants	4,215	
Baseline age	Aged 35 years and over	
URL	https://www.tehrancohort.com/	Cohort profile: https://www.sciencedirect.com/science/article/pii/S2590113321000043

+ Surveillance of Risk Factors of Non-Communicable Diseases in Iran STEPs 2016 (STEPs 2016)

Participating Cohorts

Japan Public Health Center-based Prospective Study (JPHC Study)		
Country	Japan	
PI	Norie Sawada	
Co-PI *(for ACC)	Reiko Kanehara	
Previous PIs	Sochihiro Tsugane (until 2020)	
Institute	National Cancer Center Japan	
Location	Nationwide	
Status of the cohort	Ongoing	
# clusters	11 public health centers	
Participant recruitment	Adults who attended annual health checkups in the designated public health centers	
# participants	Cohort I: 61,595 (1990) Cohort II: 78,825 (1993)	Mortality follow-up year: 2015 Incidence follow-up year: 2015
Baseline age	40-59 years (Cohort I), 40-69 years (Cohort II)	
Follow-ups surveys	5 years, 10 years,	
Key objectives	To investigate lifestyle-related risk factors for diseases, including lifestyle habits.	
URL	https://epi.ncc.go.jp/en/jphc/index.html	Cohort profile: https://epi.ncc.go.jp/en/jphc/248/87.html

Japan

Japan Collaborative Cohort Study (JACC)		
Country	Japan	
PI	Akiko Tamakoshi	
Co-PI *(for ACC)	Takashi Kimura; Yingsong Lin	
Previous PIs		
Institute	Hokkaido University	
Location	Regional	
Status of the cohort	Completed	
# clusters	45 areas (by 24 institutions)	Akiko Tamakoshi
Participant recruitment	Adults aged 40-79 years who were living within the study area	
# participants	Baseline: 110,585 (1988-1990)	Mortality follow-up year: 2009 Incidence follow-up year: 2009
Baseline age	40-79 years	
Key objectives	To evaluate the risk impact of lifestyle factors and levels of serum components on human health	
URL		Cohort profile: https://pubmed.ncbi.nlm.nih.gov/23583921/
Note	In most areas, follow-up was completed at the end of 2009; however, it was stopped at the end of 1999 in 4 areas, at the end of 2003 in another 4 areas, and at the end of 2008 in 2 areas.	

Participating Cohorts
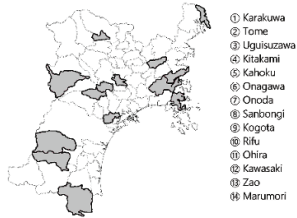
Japan

	Three Prefecture Cohort Study Aichi (3 Pref. Aichi)	
Country	Japan	
PI	Keitaro Matsuo Hidemi Ito	
Institute	Aichi Cancer Center	
Location	Aichi Prefecture	
Status of the cohort	Completed	
# clusters	Nagoya City and Inuyama City	
Participant recruitment	Residents aged ≥40 years	
# participants	33,529 (1985)	
Baseline age	40-103	
Key objectives	To reveal the association of multiphasic lifestyle factors with cancer incidence or mortality	Mortality follow-up year: 2000 Incidence follow-up year: 2000
URL		Cohort profile: https://pubmed.ncbi.nlm.nih.gov/28142030/

Japan

	Miyagi Cohort Study (Miyagi)	
Country	Japan	
PI	Atsushi Hozawa, Seiki Kanemura, Yumi Sugawara	
Institute	Tohoku University	
Location	Regional (Miyagi prefecture)	
Status of the cohort	Completed	
# clusters	14 municipalities	
Participant recruitment	Adults aged 40-64 years who were living in Miyagi prefecture	
# participants	Baseline: 41,163 (1990)	Recent follow-up: Dec. 31, 2019 Mortality follow-up year: 28 years Incidence follow-up year: 23 years
Baseline age	40-64 years	
Follow-ups surveys	11 years	
Key objectives	To assess the relation of lifestyle factors, personality and some biological markers to cancer incidence.	
URL		Cohort profile: https://www.jstage.jst.go.jp/article/jea1991/5/3/5_3_153/_pdf/-char/en

Participating Cohorts

Three Prefecture Cohort Study Miyagi (3 Pref. Miyagi)

Country	Japan	
PI	Atsushi Hozawa Yumi Sugawara	
Institute	Tohoku University	
Location	Miyagi Prefecture	
Status of the cohort	Completed	
# clusters	Eight selected urban/rural areas in Miyagi Prefecture (Sendai City and Wakuya/Tajiri Town)	
Participant recruitment	Residents aged ≥40 years	
# participants	31,345 (1984-1985)	
Baseline age	40 years and over	
Key objectives	To reveal the association of multiphasic lifestyle factors with cancer incidence or mortality	Recent follow-up: Dec. 31, 1998 Mortality follow-up year: 14 years Incidence follow-up year: 8 years
URL		Cohort profile: https://pubmed.ncbi.nlm.nih.gov/28142030/

Ohsaki National Health Insurance Cohort Study (Ohsaki)

Country	Japan	Map of the Ohsaki Cohort study area (14 municipalities) ① Furukawa ② Nakaniida ③ Onoda ④ Miyazaki ⑤ Shikama ⑥ Matsuyama ⑦ Sanbongi ⑧ Kashimadai ⑨ Iwadeyama ⑩ Naruko ⑪ Wakuya ⑫ Tajiri ⑬ Kogota ⑭ Nango
PI	Atsushi Hozawa, Yumi Sugawara	
Institute	Tohoku University	
Location	Regional (Miyagi prefecture)	
Status of the cohort	Completed	
# clusters	14 municipalities	
Participant recruitment	Adults aged 40-79 years who were living in Miyagi prefecture and beneficiaries of National Health Insurance	
# participants	52,029 (1994)	Recent follow-up: Mar. 31, 2008 Mortality follow-up year: 13 years Incidence follow-up year: 13 years
Baseline age	40-79 years	
Follow-ups surveys	20 years	
Key objectives	To assess the relation of lifestyle factors, health check-up data and mortality and cancer incidence.	
URL		Cohort profile: https://pubmed.ncbi.nlm.nih.gov/9884474/

Participating Cohorts

Japan

Life Span Study Cohort (LSS)		
Country	Japan	
PI	Ritsu Sakata	
Previous PIs	Eric J Grant	
Institute	Radiation Effects Research Foundation	
Location	Hiroshima and Nagasaki	
Status of the cohort	Completed	
# participants	120,321 (1950)	Mortality follow-up year: 2003 Incidence follow-up year: 2003
Key objectives	To investigate the long-term effects of Atomic bomb radiation on causes of death and incidence of cancer.	
URL	https://www.rerf.or.jp/en/programs/research_activities_e/outline_e/proglss-en/	Cohort profile: https://www.jstage.jst.go.jp/article/jea/28/4/28_JE20170321/_article

Japan

Ibaraki Prefectural Health Study (IPHS)		
Country	Japan	
PI	Fujiko Irie	
Location	Ibaraki Prefecture	
# clusters	85 communities in Ibaraki	
Participant recruitment	Adults aged 40-79 years living in Ibaraki prefecture who participated in annual community-based health checkups in 1993	
# participants	96,739 (1993)	Recent follow-up: 91,808 Mortality follow-up year: 2010 Incidence follow-up year: 2010
Baseline age:	40-79 years	

Participating Cohorts

Takayama Study	

Country	Japan
PI	Chisato Nagata, Keiko Wada
Previous PIs	Hiroyuki Shimizu (1992-2005)
Institute	Gifu University Graduate School of Medicine
Location	Takayama City, Gifu Prefecture
Status of the cohort	Ongoing
Participant recruitment	Non-hospitalized residents aged 35 years or over in Takayama City. Research questionnaire was distributed to the resident by neighborhood volunteers.
# participants	31,552 (1992)
Baseline age	aged 35 years or over
Follow-ups surveys	10 years
URL	https://www1.gifu-u.ac.jp/~ph/takayama.html

Chisato Nagata   Keiko Wada

Recent follow-up: 2013
Mortality follow-up year: 2013
Incidence follow-up year: 2008

Cohort profile:

Japan

Three prefecture Osaka (3 Pref Osaka)	

Country	Japan	
PI	Tomotaka Sobue, Yuri Kitamura	
Institute	Osaka University	
Location	Regional (Osaka prefecture)	
# clusters	One word in Osaka City and three towns	
Participant recruitment	Residents aged ≥40 years	
# participants	Baseline: 35,755 (1983-1985)	Recent follow-up: 2000
Baseline age	40-99 years	
Key objectives	To reveal the association of multiphasic lifestyle factors with cancer incidence or mortality	
URL		Cohort profile: https://pubmed.ncbi.nlm.nih.gov/ 28142030/

Participating Cohorts

Korean Multi-center Cancer Cohort Study (KMCC)

Country	Korea	
PI	Keun-Young Yoo, Sue Kyung Park	
Co-PI *(for ACC)	Aesun Shin, Daehee Kang	
Contact point	Sangjun Lee	
Previous PIs	Keun-Young Yoo, Sue Kyung Park	
Institute	Seoul National University	
Location	Korea	
Status of the cohort	Completed (baseline enrollment) Ongoing (passive FU)	
Participant recruitment	Men and women aged over 35, in the geographically defined areas	
# participants	Baseline: 35,692 (1993)	Mortality follow-up year: 2016 Incidence follow-up year: 2015
Baseline age	18 years and over	
Follow-ups surveys	15 years	
Key objectives	To investigate the relationship between exposures to environmental factors, lifestyle factors, host factors and the risk of cancer in Korea.	
URL		Cohort profile: https://pubmed.ncbi.nlm.nih.gov/12718614/

Korea

Seoul Male Cancer Cohort (Seoul)

Country	Korea	
PI	Myung-Hee Shin Yoon-Ok Ahn	
Co-PI *(for ACC)	Choonghyun Ahn Dong-Hyun Kim	
Location	Korea	
# participants	Baseline: 14,450 (1992-1993)	Mortality follow-up year: 2008 Incidence follow-up year: 2008
Baseline age	40-59 years	
Follow-ups surveys	10 years	

Participating Cohorts

Korea

Health EXAminee Cohort, HEXA

Country	Republic of Korea	
PI	Korea Disease Control and Prevention Agency	
Co-PI *(for ACC)	Daehee Kang	
Previous PIs	Keun Young Yoo, Jong Koo Lee, Ji Yeob Choi, Aesun Shin, Sang-Ah Lee, Daehee Kang	
Institute	Seoul National University	
Location	Nationwide	
Status of the cohort	Ongoing	
# clusters	37 Hospitals Providing the national annual health check-ups	
Participant recruitment	Adults who attended annual health checkups from the national health examinee registry	
# participants	Baseline: 173,195 (2004-2013) Repeated: 70,214	Mortality follow-up year: 2022 Incidence follow-up year: 2018
Baseline age	40-59 years	
Follow-ups surveys	4 years	
Key objectives	To investigate the genetic and environmental aetiology of common complex diseases in Koreans and causes of death with long term follow-up.	
URL	https://www.nih.go.kr/ko/main/contents.do?menuNo=300563 (in Korean)	

Korea

Korean National Cancer Center Cohort (KNCC)

Country	Korea	
PI	Jeongseon Kim	
Institute	National Cancer Center	
Status of the cohort	Ongoing	Jeongseon Kim
Participant recruitment	Participants aged over 20 years were enrolled in this cohort study	
# participants	Baseline: 50,156 (2002~2024)	Recent follow-up: 49,345 (mortality), 39,359 (incidence) Mortality follow-up year: 2022 Incidence follow-up year: 2021
Baseline age	20-92 years	
Key objectives	To investigate the relationship between exposures to specific factors (e.g., lifestyle) and the risk of cancers in the Korean population.	
URL		Cohort profile: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4183059/

Participating Cohorts

Korea

The Namwon Study		

Country	Korea	
PI	Sun-Seog Kweon	Sun-Seog Kweon
Co-PI *(for ACC)	Min-Ho Shin	
Institute	Chonnam National University Medical School	
Location	Namwon city (a rural area in Jeonbuk province)	
Status of the cohort	Ongoing	
# participants	Baseline: 10,667 (2004-2007)	Recent follow-up: 8,157 Mortality follow-up year: 2007-2012
Baseline age	45-74 years	
Follow-ups surveys	4-year intervals	
Key objectives	To investigate determinants of the occurrence and progression of cardiovascular diseases, osteoporosis, dementia, and cancer among middle-aged or elderly Koreans	
URL		Cohort profile: https://pubmed.ncbi.nlm.nih.gov/23505254/

Korea

Kangwha cohort study		

Country	Korea	
PI	Yi Sang-Wook	
Institute	Catholic Kwandong University College of Medicine	
Location	Kangwha County	
Status of the cohort	Ongoing	
Participant recruitment	Participants aged 55 years or older (born in 1930 or before) who lived in Kangwha county	
# participants	Baseline: 6,333 (1983)	Recent follow-up: 6,151 Mortality follow-up year: 2008
Baseline age	55 years or older	
URL		Cohort profile: https://jech.bmj.com/content/70/8/778.long

+ **Health and Prevention Enhancement (H-PEACE)**

+ **Seoul National University Hospital Health Promotion Cohort Study (HPC)**

+ **Korean Cancer Prevention Study-II (KCPS-II) Severance**

Participating Cohorts

Singapore

Singapore Chinese Health Study (SCHS)

Country	Singapore	
PI	Jian-Min Yuan Woon-Puay Koh	
Co-PI *(for ACC)	Low Siew Hong Renwei Wang	
Institute	University of Pittsburgh and National University of Singapore	
Location	Singapore	
Status of the cohort	Ongoing	
Participant recruitment	Permanent resident or citizens of Singapore who resided in government-built housing estates and belonged to one of the two major dialect groups of Chinese in Singapore - the Hokkiens and the Cantonese.	
# participants	63,257 (1993-1998)	Recent follow-up: 63,201 Mortality follow-up year: 2016 Incidence follow-up year: 2015
Baseline age	45-74 years	
Follow-ups surveys	Follow-up I:1999-2003; Follow-up II:2006-2010; Follow-up III: 2014~)	
Key objectives	To elucidate the role of diet and its interaction with genetic and genomic factors in the causation of cancer and other chronic diseases.	
URL	https://www.schs.pitt.edu/methods/singapore-chinese-health-study/	Cohort profile:

Participating Cohorts

Singapore Population Health Studies (SPHS)		
Country	Singapore	
PI	Singapore	
Co-PI *(for ACC)	Chia Kee Seng	
Institute	Wei Jie Seow	
Location	National University of Singapore	
Status of the cohort	Ongoing	
# clusters	Population-based	
Participant recruitment	Recruited from public housing estates.	
# participants	MEC1-3: 51,500	Recent follow-up: 2022 Mortality follow-up year: 2021 Incidence follow-up year: 2021
Baseline age	≥18 years	
Follow-ups surveys	5 years	
Key objectives	SPHS aims to - investigate the interactions between lifestyle, physiological, genetic and other omics biomarkers and their impact on health and longevity - serve as a platform to monitor risk factors in the population and gain insight into determinants of health-related behaviours - understand disease etiology in urban Asian settings, and the development of improved preventive and therapeutic measures for Singapore and other Asian populations	
URL	https://blog.nus.edu.sg/sphs/	Cohort profile: https://academic.oup.com/ije/article/47/3/699/4857182

Participating Cohorts

Taiwan

Taiwan MJ Cohort		
Country	Taiwan	
PI	Chi-Pang Wen, Xifeng Wu, Huakang Tu Wayne Gao, Min-Kuang Tsai, Mei-Yi Wu	
Co-PI *(for ACC)	Chi-Pang Wen and Min-Kuang Tsai	
Previous PIs	Chwen Keng Tsao	
Institute	National Health Research Institutes, Taiwan Taipei Medical University Taipei Medical University- Shuang Ho Hospital	
Location	From all corners of Taiwan including Northern (Taipei), north-west (Taoyuan), central (Taichung) and southern (Kaohsiung) parts of Taiwan	
Status of the cohort	Ongoing	
# clusters	Unlimited: all types of cancer incidence and mortality, CKD and ESRD, COPD and PRISm, Physical activity and resting heart rate, Cancer screening and overdiagnosis, life expectancy	
Participant recruitment	An open cohort with no ending data. Healthy individuals who participated in a medical screening program.	
# participants	646,989 (1994–2017)	Mortality follow-up year: 2020 Incidence follow-up year: 2020
Baseline age	Age 20 years and above	
Follow-ups surveys	Maximum 26 years of continuing follow-up	
Key objectives	Health promotion and risk assessment, Prevention and public health	
URL	http://www.mjhrf.org/en/index.php?action=database&id=1	Cohort profile: https://academic.oup.com/ije/article/ 46/6/1744/2999349
Note	https://www.thelancet.com/journals/lancet/article/ PIIS0140-6736(08)60952-6/abstract https://www.thelancet.com/journals/lancet/article/ PIIS0140-6736(11)60749-6/abstract	

Taiwan

Community-based Cancer Screening Project (CBCSP)		
Country	Taiwan	
PI	San-Lin You	
Institute	Academia Sinica, Taiwan	
# clusters	Seven urban and rural townships	
# participants	23,820 (1991–1993)	
Baseline age	30–65 years	

Participating Cohorts

Taiwan

Cardiovascular Diseases Risk Factor two-Township Study (CVDFACTS)		
Country	Taiwan	
PI	Wen-Harn Pan	
Institute	National Health Research Institutes, Taiwan	
Location	Regional	
# participants	6,316 (1990-1993)	

Taiwan

Taiwan Biobank		
Country	Taiwan	
PI	Hsiu-Ming Shih	
Co-PI *(for ACC)	Ann Chen Chung-ke Chang	
Institute	Academia Sinica	
Baseline age	years	

Malaysia

- Malaysian Cohort Study
- Cohort study on clustering of lifestyle risk factors and understanding its association with stress on ealth and wellbeing among school teachers in Malaysia (CLUSTer)

Mongolia

- Nationwide cancer cohort study MON-COHORT

Executive Committee Members

Term	Chair	Co-chair	Other EC members
2004 ~ 2014	John Potter (Fred Hutchinson Cancer Center, USA)	Keun-Young Yoo (Seoul National University, Korea)	Daehee Kang Rashmi Sinha (National Cancer Institute, USA)
Nov. 2014 ~ Nov. 2019	John Potter	Daehee Kang (Seoul National University, Korea)	Habibul Ahsan (University of Chicago, USA) Paolo Boffetta Manami Inoue Chia Kee Seng (National University of Singapore, Singapore) Keun-Young Yoo Wei Zheng (Vanderbilt University Medical Center, USA)
Nov. 2019 ~ Oct. 2023	Daehee Kang		Habibul Ahsan Paolo Boffetta Manami Inoue Keitaro Matsuo (Aichi Cancer Center, Japan) You-Lin Qiao (Cancer Institute, Chinese Academy of Medical Sciences, China) Nataniel Rothman (National Cancer Institute, Korea) Chia Kee Seng Wei Zheng
Oct. 2023 ~ present	Manami Inoue (National Cancer Center Japan, Japan)	Paolo Boffetta (Stony Brook University, USA)	Jeongseon Kim (National Cancer Center Korea, Korea) Jung Eun Lee (Seoul National University, Korea) Keitaro Matsuo You-Lin Qiao Nathaniel Rothman Aesun Shin (Seoul National University, Korea) Wei Zheng

Present Executive Committee Members
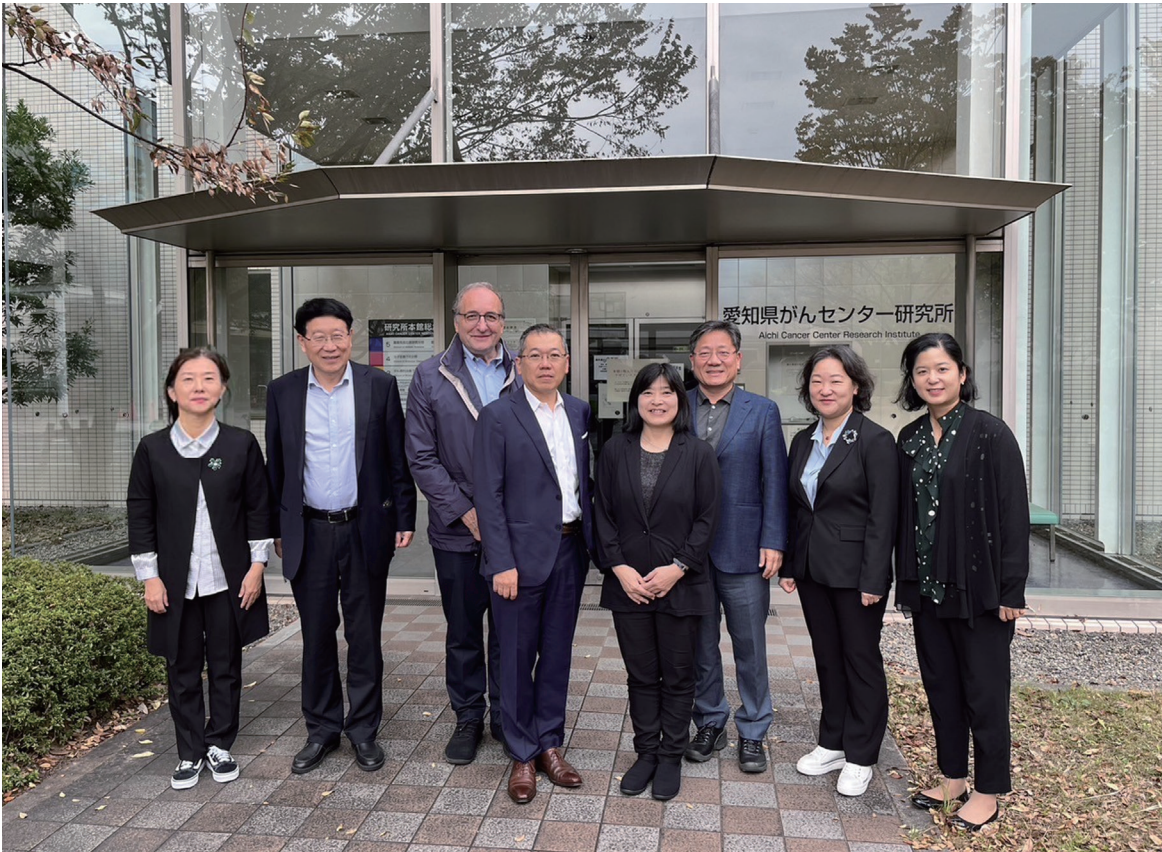
From Left, Jeongseon Kim, You-Lin Qiao, Paolo Boffetta, Keitaro Matsuo,
Manami Inoue, Daehee Kang, Aesun Shin, Jung Eun Lee

ACC Group Members

Coordinating Center Members

Members

Manami Inoue(Director of the Coordinating Center, National Cancer Center Japan, Japan)

Sarah K. Abe, Eiko Saito(Coordinators, National Cancer Center Japan, Japan)

Md. Shafiur Rahman, Md.Rashedul Islam(Data Scientists, National Cancer Center Japan, Japan)

Yoko Hirose, Mayo Hirabayashi(Assistant Coordinators, National Cancer Center Japan, Japan)

Tetsuya Tajima(IT staff, National Cancer Center Japan, Japan)

Working Group Members

Past   BMI Working Group, Physical Activity Working Group

Present   Reproductive Working Group Members

Leaders   Ji-Yeob Choi(Seoul National University, Korea)

Ryoko Katagiri(National Cancer Center Japan, Japan)

Melissa Merritt(University of Sydney, Australia)

Aesun Shin(Seoul National University, Korea)

Members   Yu Jin Hong   Rie Kishida

Md. Rashedul Islam   Md. Shafiur Rahman

Seow Wei Jie   Wang, Qian

ACC Group Members

Diet Working Group

Leaders   Jeongseon Kim(National Cancer Center, Korea)
              Jung Eun Lee(Seoul National University, Korea)
              Rashmi Sinha(National Cancer Institute, USA)

Members   Sarah Abe   Seunghee Margevicius
              Paolo Boffetta   Akinkunmi Okekunle
              Linh Bui   Md. Shafiur Rahman
              Yu Chen   Eiko Saito
              Hyun Jeong Cho   Wei Jie Seow
              Madhawa Gunathilake   Sangah Shin
              Junko Ishihara   Xiao-Ou Shu
              Md. Rashedul Islam   Minkyo Song
              Ryoko Katagiri   Monika Stah
              Hung N. Luu   Tao Thi Tran
                                           Qian Wang

Association between Body-Mass Index and Risk of Death in More Than 1 Million Asians.

N Engl J Med. 2011;364:719-729, Published: February 24, 2011
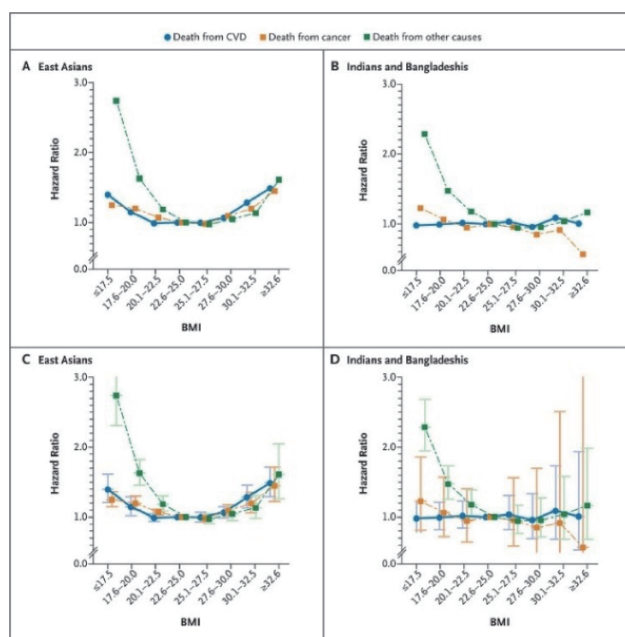
The study investigates the relationship between body-mass index (BMI) and mortality risk in over 1.1 million people from 19 Asian cohorts, including East Asians (Chinese, Japanese, Koreans) and South Asians (Indians, Bangladeshis). Over an average follow-up of 9.2 years, approximately 120,700 deaths were analyzed using Cox regression models to adjust for confounders. Findings revealed that the lowest mortality risk for East Asians occurred with a BMI of 22.6 to 27.5, with increased risks at BMIs above 35.0 and below 15.0. A similar U-shaped risk pattern was noted for deaths from cancer, cardiovascular diseases, and other causes. Conversely, in Indians and Bangladeshis, underweight individuals (BMI ≤ 20.0) had higher mortality risks, but high BMI did not correlate with increased mortality. The study concludes that underweight status increases mortality risk across all Asian populations, whereas high BMI poses a significant risk primarily for East Asians.

Body mass index and diabetes in Asia: a cross-sectional pooled analysis of 900,000 individuals in the Asia cohort consortium

PLOS ONE, 2011;6(6):e19930, Published: June 22, 2011
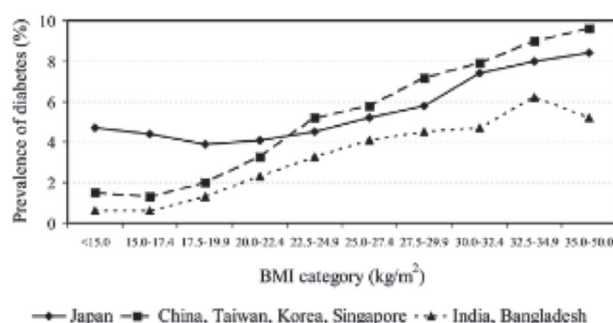
The study analyzed over 900,000 individuals from 18 Asian cohorts to examine the link between BMI and self-reported diabetes. It found a positive association between higher BMI and increased diabetes risk across all cohorts, with a stronger association in individuals under 50, from India and Bangladesh, with low education, and smokers. The diabetes prevalence was 4.3% overall. Using a BMI of 22.5-24.9 kg/m² as a reference, the odds of diabetes ranged from 0.58 for BMI <15 kg/m² to 2.23 for BMI >34.9 kg/m². The study highlights the varying strength of the BMI-diabetes association by age, country, and other risk factors.

Association between body mass index and cardiovascular disease mortality in east Asians and south Asians: pooled analysis of prospective data from the Asia Cohort Consortium

BMJ 2013;347:f5446, Published: October 1, 2013
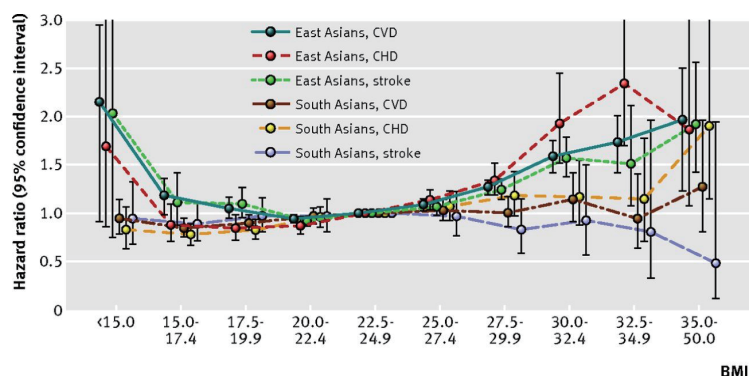
The study evaluated the relationship between BMI and cardiovascular mortality in 1,124,897 East and South Asians across 20 cohorts. Over an average follow-up of 9.7 years, 49,184 cardiovascular deaths were recorded. In East Asians, BMI above 25 was linked to increased cardiovascular mortality, with risks rising progressively with higher BMI categories. Low BMI (<17.4) also showed elevated risks. South Asians had a weaker association, with significant risk noted only for BMI above 35. The study concludes that BMI exhibits a U-shaped association with cardiovascular mortality in East Asians, while high BMI is a lesser risk factor in South Asians.

Association between type 2 diabetes and risk of cancer mortality: a pooled analysis of over 771,000 individuals in the Asia Cohort Consortium

Diabetologia, 2017;60(6):1022-1032, Published: March 07, 2017
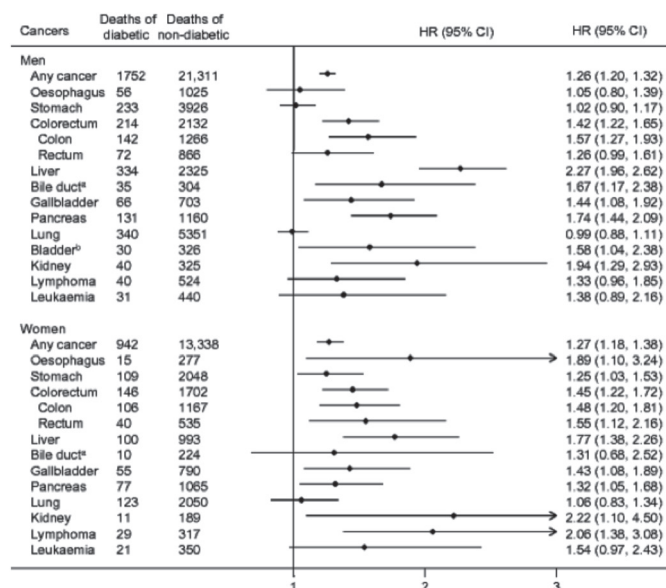
The study examined the link between type 2 diabetes and cancer mortality in 658,611 East Asians and 112,686 South Asians from 19 cohorts. Over an average 12.7-year follow-up, 37,343 cancer deaths were recorded. Diabetes at baseline was associated with a 26% increased risk of death from any cancer. Significant associations were found for cancers of the colorectum, liver, bile duct, gallbladder, pancreas, breast, endometrium, ovary, prostate, kidney, thyroid, and lymphoma. No significant link was found for cancers of the bladder, cervix, esophagus, stomach, lung, or leukemia. The study highlights the need for improved diabetes and obesity management to reduce cancer mortality.

ACC Publication Highlights

Association of leisure-time physical activity with total and cause-specific mortality: a pooled analysis of nearly a half million adults in the Asia Cohort Consortium
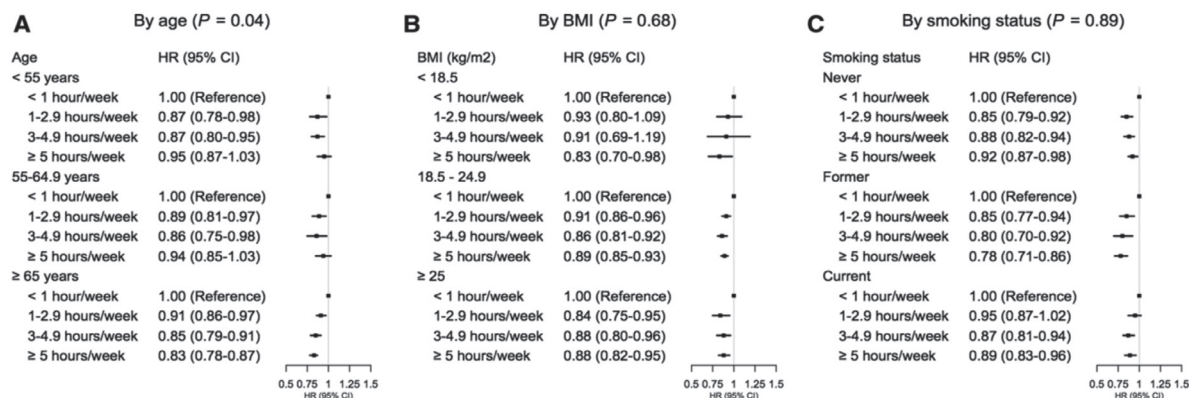
The study investigated the link between leisure-time physical activity (LTPA) and mortality in 467,729 East Asians from nine cohorts. Over an average follow-up of 13.6 years, 65,858 deaths were recorded. Higher LTPA levels were associated with reduced all-cause and cause-specific mortality, particularly for cardiovascular diseases and non-cancer causes. The inverse association held for individuals with severe diseases (cancer, stroke, coronary heart disease) and other chronic conditions (diabetes, hypertension). No significant differences were found by sex, BMI, or smoking status. The study concludes that regular LTPA reduces mortality in middle-aged and elderly Asians, regardless of existing health conditions.

Tobacco Smoking and Mortality in Asia: A Pooled Meta-analysis
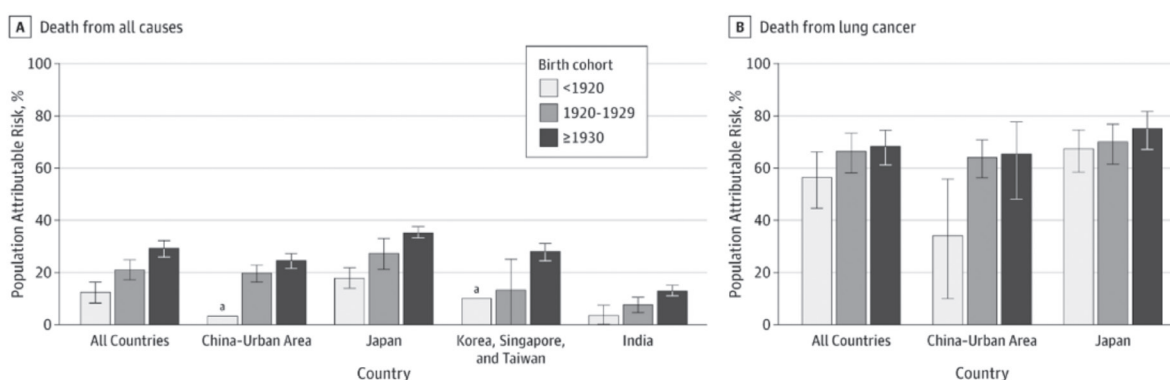
This meta-analysis study assessed trends in tobacco smoking by countries or regions and birth cohorts, and the consequent mortality in Asian populations, using data from 20 cohort studies. Analyzing over one million Asian individuals, the study found that smoking prevalence among men steadily increased in China and India, and younger birth cohorts started smoking at earlier ages and smoked more cigarettes. These trends were associated with an increased risk of death from all causes and lung cancer across successive birth cohorts, with higher hazard ratios for more recent cohorts. Smoking accounted for 12.5% to 29.3% of all-cause mortality and 56.6% to 68.4% of lung cancer mortality among men. Among women, smoking patterns and lung cancer mortality varied widely by country and region. The findings suggest that smoking will continue to be a major public health issue in Asia, highlighting the need for comprehensive tobacco control programs.

ACC Publication Highlights

Reduction in total and major cause-specific mortality from tobacco smoking cessation: a pooled analysis of 16 population-based cohort studies in Asia
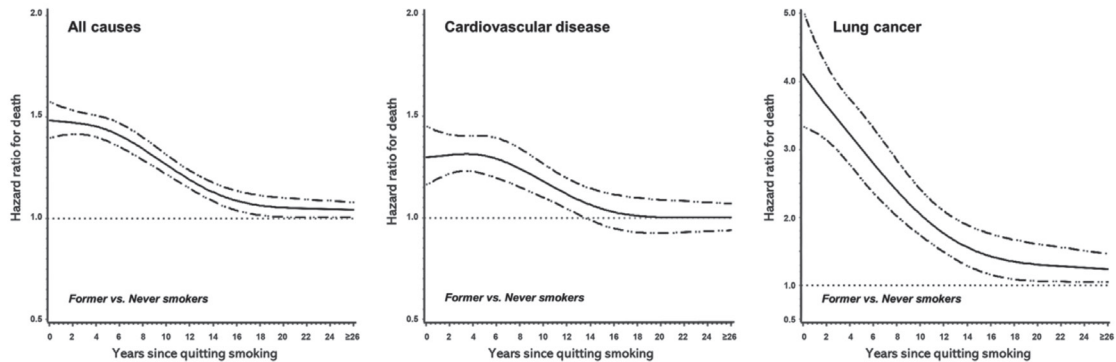
The study analyzed the mortality reduction following smoking cessation in 709,151 Asians from 16 cohorts over an average follow-up of 12 years, recording 108,287 deaths. Among men, quitting smoking reduced mortality from all causes, cardiovascular disease (CVD), and lung cancer, but risks remained elevated even 10-14 years after quitting for all-cause and CVD mortality, and nearly doubled for lung cancer mortality 15-19 years after quitting. Heavy smokers faced even higher lung cancer risks. Women who quit smoking for 5 or more years still had elevated mortality risks. The persistence of smoking's adverse effects suggests the need for extended risk assessment periods in clinical guidelines.

Associations of coffee and tea consumption with lung cancer risk
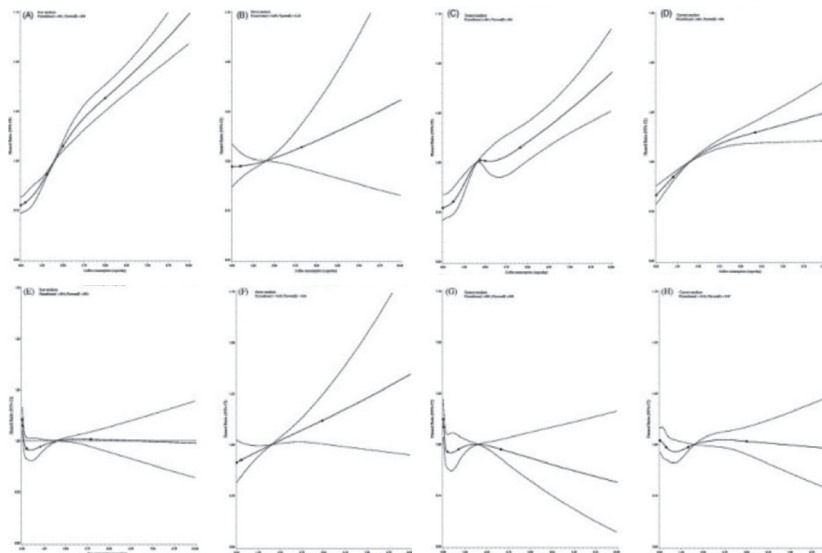
The study investigated the link between coffee and tea consumption and lung cancer risk in over 1.1 million participants from 17 cohorts. Over a median follow-up of 8.6 years, 20,280 lung cancer cases were identified. Compared to non-consumers, those who drank 2 or more cups of coffee daily had increased lung cancer risks, with hazard ratios (HRs) of 1.30 (1.15-1.47) for current smokers, 1.49 (1.27-1.74) for former smokers, and 1.35 (1.15-1.58) for never smokers. For tea drinkers (≥2 cups/d), the corresponding HRs were 1.16 (1.02-1.32), 1.10 (0.92-1.32) and 1.37 (1.17-1.61). These associations were consistent across sex, race, and cancer subtypes. The study suggests a higher lung cancer risk with increased coffee or tea consumption, though residual confounding by smoking and other factors cannot be ruled out.

Coffee and tea consumption and mortality from all causes, cardiovascular disease and cancer: a pooled analysis of prospective studies from the Asia Cohort Consortium
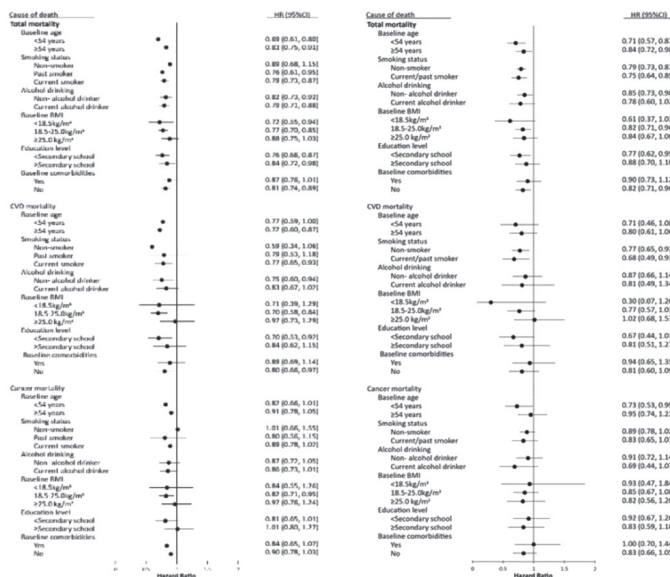
This study examined the association between coffee and tea consumption and mortality in Asian populations using data from 12 prospective cohort studies involving over 528,000 participants from China, Japan, Korea, and Singapore. The findings revealed that drinking at least five cups of coffee per day was associated with a significantly lower risk of all-cause mortality (24% lower for men and 28% lower for women), as well as lower mortality risks from cardiovascular disease (CVD) and cancer. Green tea consumption was linked to reduced mortality from all causes and CVD, with particularly strong effects on CVD mortality for those drinking at least five cups per day. However, there was no significant association between green tea consumption and cancer, and the relationship between black tea consumption and mortality was weak with no clear trends. Overall, coffee and green tea consumption were associated with lower mortality risks in Asian populations.

Association of Marital Status With Total and Cause-Specific Mortality in Asia
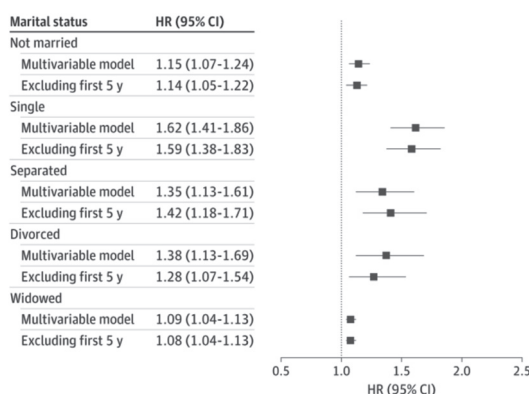
This study pooled data from 16 prospective Asian cohort studies to examine how marital status affects mortality. With 623,140 participants and a mean follow-up of 15.5 years, the research found that unmarried individuals had higher total mortality rates compared to married ones, with hazard ratios (HRs) ranging from 1.15 to 1.20 for various causes of death. Specifically, single, separated, divorced, and widowed individuals all showed increased mortality risks. The association was stronger among men and those under 65 years. The findings suggest that marital status significantly impacts mortality, highlighting the need for targeted social support for unmarried individuals.

Association of Sleep Duration With All- and Major-Cause Mortality Among Adults in Japan, China, Singapore, and Korea
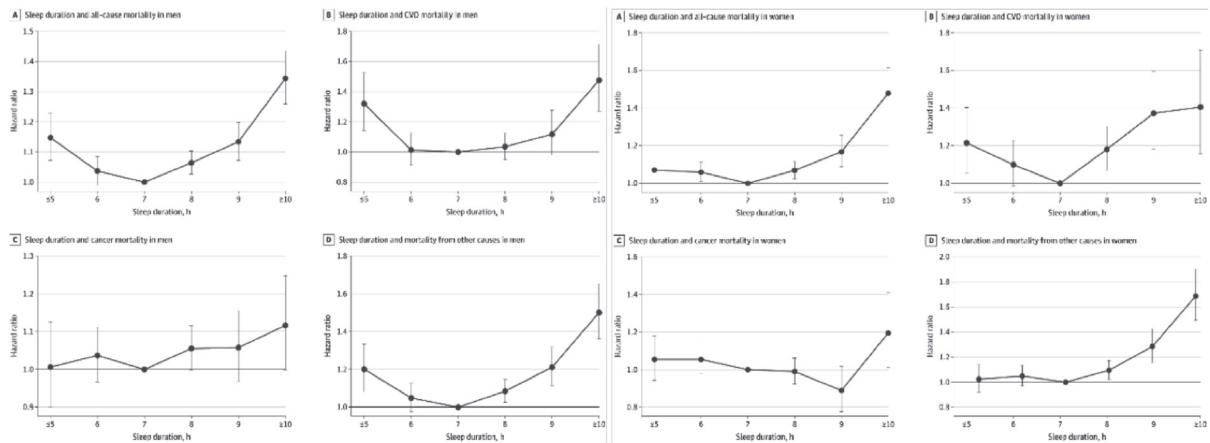
This cohort study examined the relationship between sleep duration and mortality in 322,721 East Asian participants from Japan, China, Singapore, and Korea. With an average follow-up of 14 years for men and 13.4 years for women, the study found a J-shaped association between sleep duration and all-cause mortality for both sexes. The lowest mortality risk was at 7 hours of sleep. Sleep durations of 10 hours or more were linked to higher mortality risks (HR 1.34 for men and HR 1.48 for women). Sex significantly modified the associations between sleep duration and mortality from cardiovascular disease, cancer, and other causes. Age was a significant modifier in men but not in women. The study suggests that sleep duration is a behavioral risk factor for mortality and that recommendations should consider sex and age differences.

Body Mass Index and Thyroid Cancer Risk: A Pooled Analysis of Half a Million Men and Women in the Asia Cohort Consortium
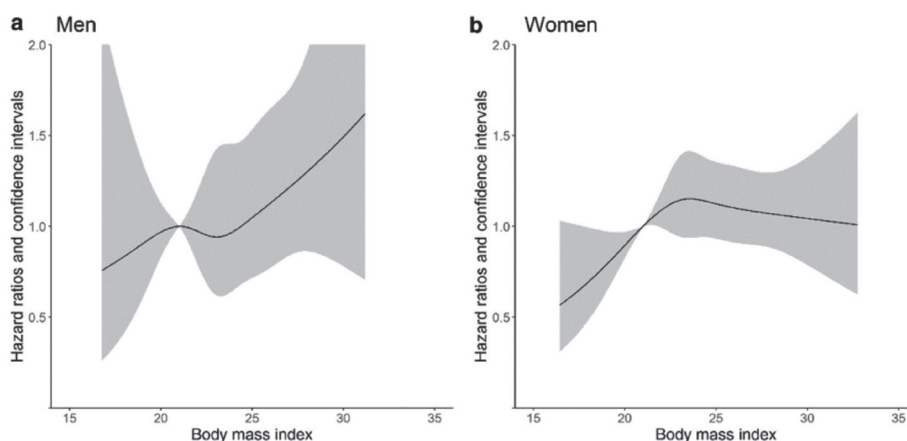
This pooled analysis of 13 Asian cohorts (totaling 538,857 participants) explored the link between body mass index (BMI) and thyroid cancer risk. Over a mean follow-up of 15.1 years, 1,132 thyroid cancer cases were identified. The study found that higher BMI was associated with an increased risk of thyroid cancer, with hazard ratios (HRs) of 1.31 for BMI 25-29.9 kg/m² and 1.84 for BMI ≥30 kg/m² in men. Women with a BMI of 23-24.9 kg/m² had an elevated risk (HR: 1.26). A linear association was observed in men (HR per 5-U increment: 1.25), but not in women (HR: 1.07). Although underweight individuals generally had a lower risk, underweight men might have an increased risk for papillary thyroid cancer (HR: 2.24).

ACC Publication Highlights

Lung Cancer Risk Prediction Models for Asian Ever-Smokers
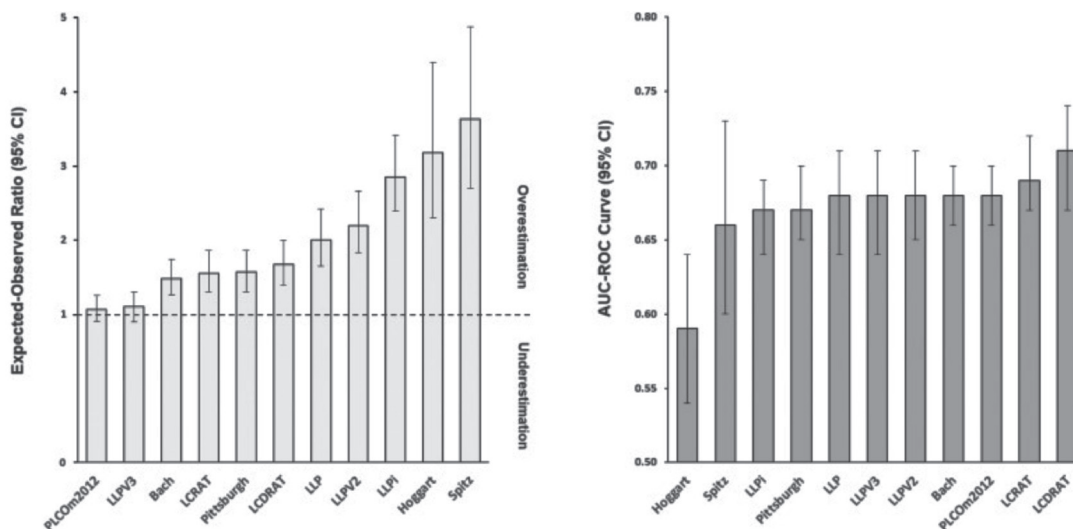
This study evaluated 11 lung cancer risk prediction models in 186,458 Asian ever-smokers from 19 cohorts. While existing models like the Lung Cancer Death Risk Assessment Tool and the Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial Model showed good performance, they underestimated risk in low-intensity smokers and long-term quitters. The newly developed "Shanghai models" improved prediction for these groups, achieving comparable overall performance to existing models and offering better risk assessment for Asians with lower smoking histories.

Association of female reproductive and hormonal factors with gallbladder cancer risk in Asia: A pooled analysis of the Asia Cohort Consortium
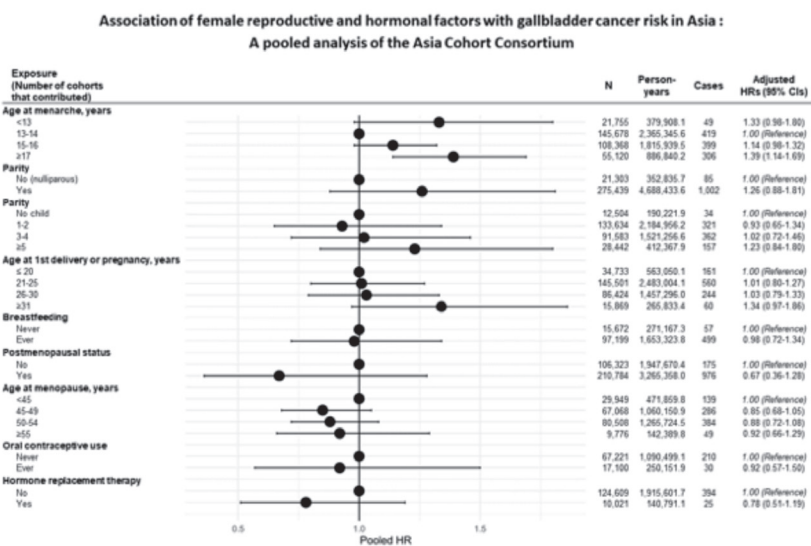
Women have higher incidence and mortality rates for gallbladder cancer than men, suggesting that female reproductive factors may be involved. To investigate this association, the authors analyzed reproductive factors including age at menarche, number of pregnancies, age at first delivery, breastfeeding, and age at menopause among more than 300,000 women from 12 cohorts across four Asian countries. They found that later age at menarche was associated with increased GBC risk, particularly in cohorts born after 1940. In cohorts born before 1940, later age at first delivery was a significant risk factor for GBC.

ACC Publication Highlights

Association between reproductive factors with lung cancer incidence and mortality: A pooled analysis of over 308,000 females in the Asia cohort consortium
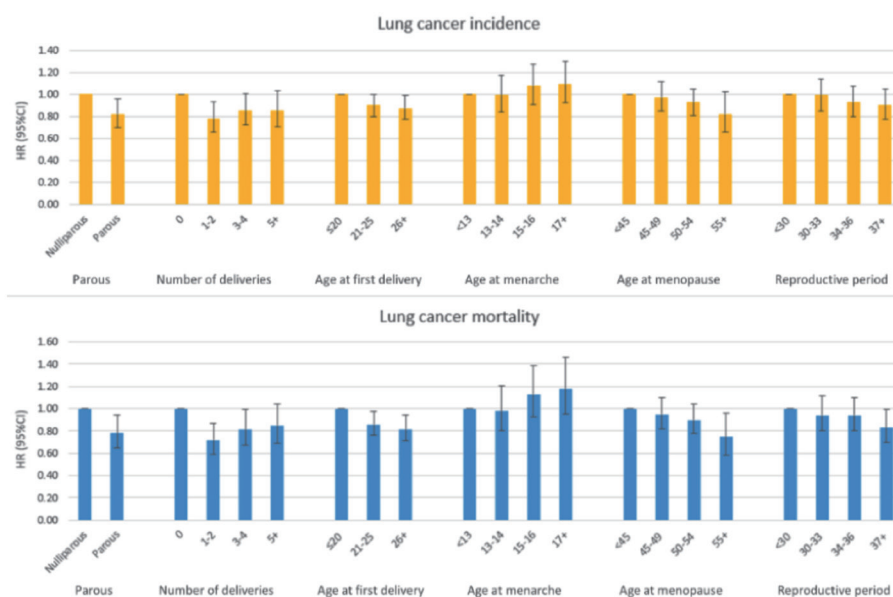
Hormonal etiology may play a direct role in the development of lung cancer among women, and associations between reproductive factors and lung cancer risk have been assessed. However, the findings are conflicting, particularly between Asian and Western studies. In this large prospective study, a pooled analysis of 308,949 female participants from 11 cohorts in four Asian countries indicates that Asian parous women, especially those who have one or two children, have a lower risk of lung cancer incidence and mortality than nulliparous women, with HRs of 0.82 (95% CI = 0.70-0.96) and 0.78 (95% CI = 0.65-0.94). The protective association of parity and lung cancer incidence was greater among ever-smokers (HR = 0.66, 95% CI = 0.49-0.87) than in never-smokers (HR = 0.90, 95% CI = 0.74-1.09) (P-interaction = 0.029). Compared with age at first delivery ≤20 years, older age at first delivery (21-25, ≥26 years) was associated with a lower risk of lung cancer incidence and mortality. Ever-use of hormone replacements increased the risk of non-small cell lung cancer and lung adenocarcinoma.

Diabetes and gastric cancer incidence and mortality in the Asia Cohort Consortium: A pooled analysis of more than a half million participants
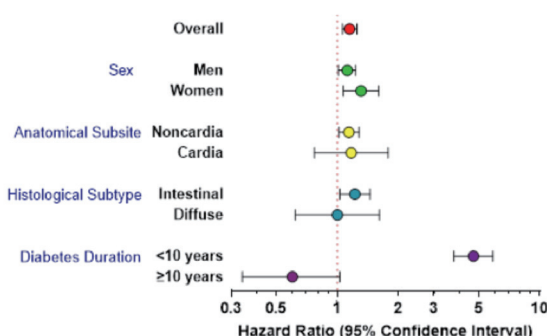
Evidence suggests a possible link between diabetes and gastric cancer risk, but the findings remain inconclusive, with limited studies in the Asian population. This study assessed the impact of diabetes and diabetes duration on the development of gastric cancer overall, by anatomical and histological subtypes using pooled data from 12 studies from the Asia Cohort Consortium. Diabetes was associated with an increased gastric cancer incidence regardless of sex, anatomical subsite, or histological subtypes of gastric cancer. The risk of gastric cancer was particularly high during the first decade following diabetes diagnosis.

ACC Publication Highlights

Family history and gastric cancer incidence and mortality in Asia: a pooled analysis of more than half a million participants
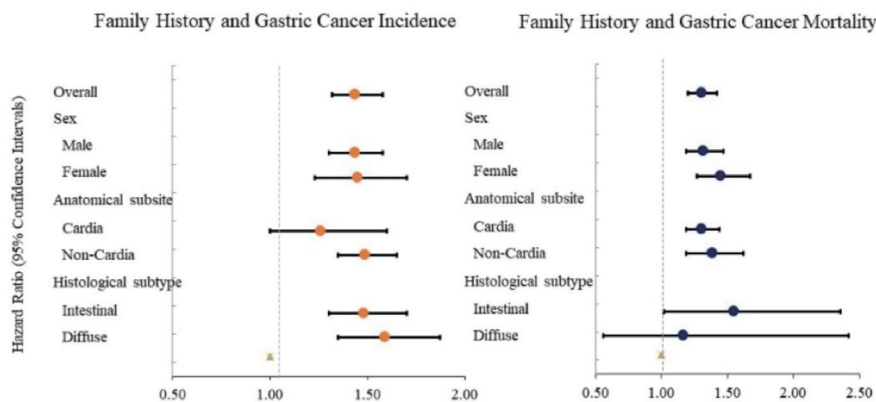
Figure 1. Association Between Family History of Gastric Cancer and Gastric Cancer Incidence and Mortality by Sex and Specific subtypes

The family history of gastric cancer holds important implications for cancer surveillance and prevention, yet existing evidence predominantly comes from case-control studies. This study included 12 prospective cohorts with more than half a million participants in the Asia Cohort Consortium to investigate the association between family history of gastric cancer and gastric cancer risk overall and by various subtypes in Asians. The findings indicate that a familial background of gastric cancer increases the risk of gastric cancer by approximately 50%, regardless of sex, anatomical subsite, or histological subtype in the Asian population.

Differential patterns of reproductive and lifestyle risk factors for breast cancer according to birth cohorts among women in China, Japan and Korea
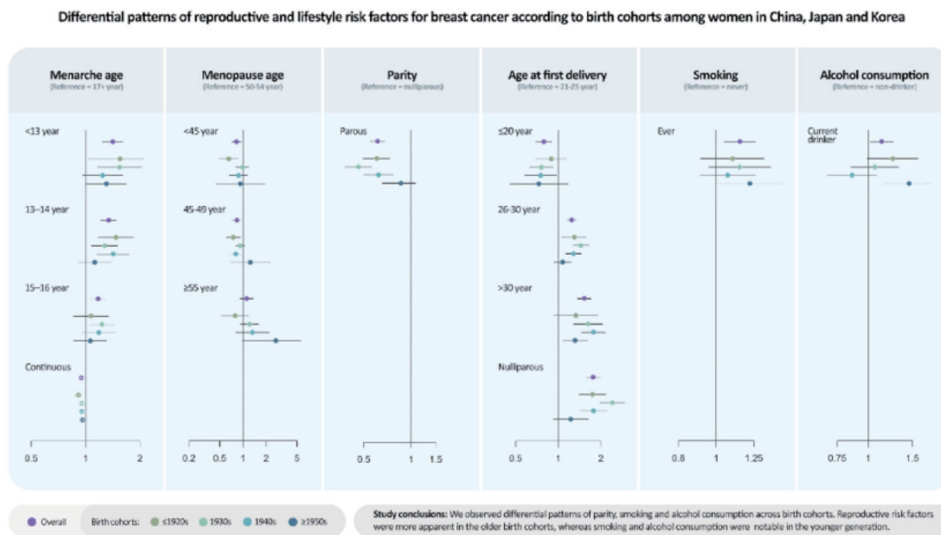
The birth cohort effect has been suggested to influence the rate of breast cancer incidence and the trends of associated reproductive and lifestyle factors. This study was conducted to determine whether a differential pattern of associations exists between certain factors and breast cancer risk based on birth cohorts using pooled data from 12 cohort studies from the Asian Cohort Consortium. We observed differential patterns of parity, smoking and alcohol consumption across birth cohorts. Reproductive risk factors were more apparent in the older birth cohorts, whereas smoking and alcohol use were only notable in the younger generation.

ACC Publication Highlights

Obesity is associated with biliary tract cancer mortality and incidence: A pooled analysis of 21 cohort studies in the Asia Cohort Consortium

International Journal of Cancer. 2024;154(7):1174-1190, Published: April 1, 2024

Purpose
Obesity is a risk factor for biliary tract cancer (BTC), yet the magnitude of this risk among Asians remains insufficiently elucidated. Additionally, gallstone disease, a mediator between obesity and BTC risk, has not been adequately accounted for in prior research. The study was conducted to better understand the effect of BMI on BTC.

Conclusion
Results confirmed the association of BMI with BTC risk in Asians. Moreover, obesity affects BTC risk through cholelithiasis, and may also increase BTC risk without cholelithiasis.

Methods
A pooled analysis of 905,530 subjects from 21 cohort studies participating the Asia Cohort Consortium.

Key findings
- BMI ≥25 kg/m² was associated with elevated risk of BTC.
- BMI was associated with BTC risk directly and through gallstone disease in females, whereas the association was unclear in males.

Figure 1. The association between BMI and BTC risk.

Figure 2. The direct, indirect, and total effects of BMI on BTC risk estimated by mediation analysis.

While obesity is a probable risk factor for biliary tract cancer, the association is mediated by gallstones. To thoroughly comprehend the impact of BMI on biliary tract cancer risk, accounting for the effect of gallstones, we conducted a pooled analysis of 905,530 individuals from 21 cohort studies within the Asia Cohort Consortium. This study identified an association between higher BMI and increased mortality from biliary tract cancer. Notably, obesity elevates the risk of biliary tract cancer both directly and indirectly through gallstones, with this effect being evident in females.

## OReproductive Factors and Endometrial Cancer Risk Among Women

JAMA Network Open. 2023;6(9):e2332296, Published: September 05, 2023
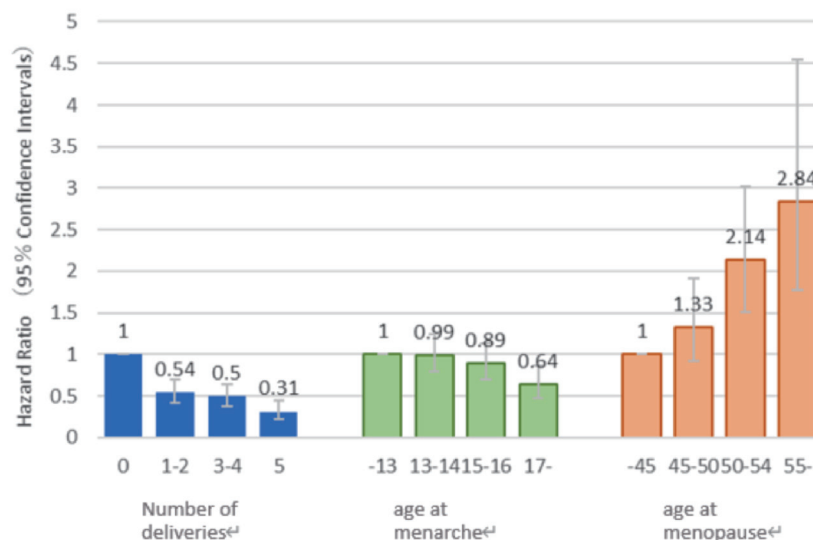
To assess the association between reproductive factors, such as number of deliveries, age at menarche, or menopause, and endometrial cancer risk in East Asia. In this pooled cohort study of 332 625 women including 1005 endometrial cancer cases from 13 Asian cohort studies, late menarche, early menopause, and a greater number of deliveries were associated with a lower risk of endometrial cancer. The findings from this large pooled analysis in Asia, which are consistent with previous evidence, may have an impact on the understanding of risk factors for endometrial cancer.

Diabetes is associated with increased liver cancer incidence and mortality in adults: A report from Asia Cohort Consortium
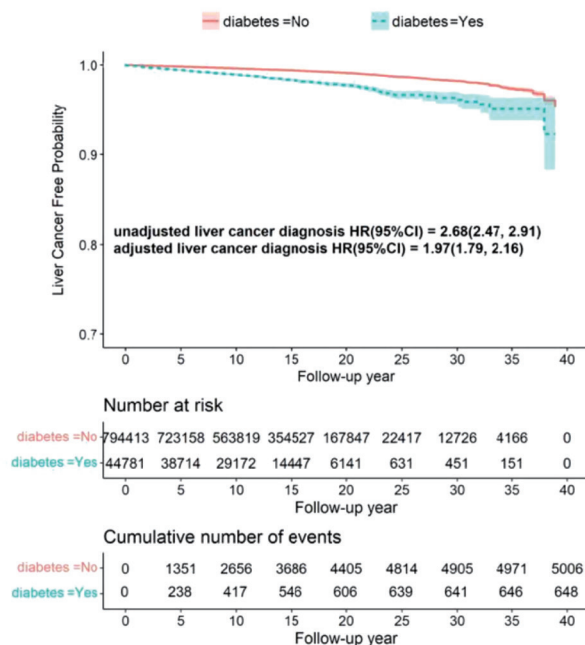
There has been growing evidence suggesting that diabetes may be associated with increased liver cancer risk. However, studies conducted in Asian countries are limited. This project considered data of 968,738 adults pooled from 20 cohort studies of Asia Cohort Consortium to examine the association between baseline diabetes and liver cancer incidence and mortality. There were 839,194 subjects with valid data regarding liver cancer incidence (5,654 liver cancer cases (48.29/100,000 person-years)), follow-up time and baseline diabetes (44,781 with diabetes (5.3%)). There were 747,198 subjects with valid data regarding liver cancer mortality (5,020 liver cancer deaths (44.03/100,000 person-years)), follow-up time and baseline diabetes (43,243 with diabetes (5.8%)). Hazard ratio (HR) (95% confidence interval (95%CI)) of liver cancer diagnosis in those with vs. without baseline diabetes was 1.97 (1.79, 2.16) ($p < 0.0001$) after adjusting for baseline age, gender, body mass index, tobacco smoking, alcohol use, and heterogeneity across studies (n = 586,072; events = 4,620). Baseline diabetes was associated with increased cumulative incidence of death due to liver cancer (adjusted HR (95%CI) = 1.97 (1.79, 2.18); $p < 0.0001$) (n = 595,193; events = 4,110). A two-stage meta-analytic approach showed similar results.

More Publications

Coordinating Centers in Cancer-Epidemiology Research: The Asia Cohort Consortium Coordinating Center

Cancer Epidemiology Biomarkers and Prevention. July 29, 2011

https://doi.org/10.1158/1055-9965.EPI-11-0391

Asia Cohort Consortium: Challenges for Collaborative Research

Journal of Epidemiology. May 10, 2012

https://doi.org/10.2188/jea.je20120024

Body mass, tobacco smoking, alcohol drinking and risk of cancer of the small intestine: a pooled analysis of over 500 000 subjects in the Asia Cohort Consortium

Annals of Oncology. July, 2012

https://doi.org/10.1093/annonc/mdr562

Association of body mass index and risk of death from pancreas cancer in Asians: findings from the Asia Cohort Consortium

European Journal of Cancer Prevention. May, 2013

https://doi.org/10.1097/CEJ.0b013e3283592cef

Meat intake and cause-specific mortality: a pooled analysis of Asian prospective cohort studies

The American Journal of Clinical Nutrition. July 31, 2013

https://doi.org/10.3945/ajcn.113.062638

Burden of Total and Cause-Specific Mortality Related to Tobacco Smoking among Adults Aged ≥45 Years in Asia: A Pooled Analysis of 21 Cohorts

PLoS Medicine. April 22, 2014

https://doi.org/10.1371/journal.pmed.1001631

Association of Body Mass Index, Smoking, and Alcohol Consumption With Prostate Cancer Mortality in the Asia Cohort Consortium

American Journal of Epidemiology. August 04, 2015

https://doi.org/10.1093/aje/kwv089

Association of Diabetes With All-Cause and Cause-Specific Mortality in Asia: A Pooled Analysis of More Than 1 Million Participants

JAMA Network Open. April 19, 2019

http://doi.org/10.1001/jamanetworkopen.2019.2696

The Establishment of the Household Air Pollution Consortium (HAPCO)

Atmosphere. July 23, 2019

https://doi.org/10.3390/atmos10070422

Association of BMI, smoking and alcohol with multiple myeloma mortality in Asians: a pooled analysis of more than 800,000 participants in the Asia Cohort Consortium

Cancer Epidemiology Biomarkers and Prevention. August 09, 2019

https://doi.org/10.1158/1055-9965.EPI-19-0389

Association between educational level and total and cause-specific mortality: a pooled analysis of over 694 000 individuals in the Asia Cohort Consortium

BMJ. August 22, 2019

https://doi.org/10.1136/bmjopen-2018-026225

Quantifying the association of low-intensity and late initiation of tobacco smoking with total and cause-specific mortality in Asia

Tabacco Control. May, 2021

https://doi.org/10.1136/tobaccocontrol-2019-055412

Association between body mass index and oesophageal cancer mortality: a pooled analysis of prospective cohort studies with >800 000 individuals in the Asia Cohort Consortium

International Journal of Epidemiology. August 10, 2022

https://doi.org/10.1093/ije/dyac023

Reminiscence

Wei Zheng

Executive committee member and cohort PI
Professor, Vanderbilt University School of Medicine, USA

As we celebrate the 20th anniversary, I'm reminiscing about the BMI-mortality pooling project. In 2007, NCI began studying BMI-mortality associations among European descendants. Inspired by this, I thought a similar project for Asians would be important particularly given the controversy at that time. I discussed this idea with Paolo, and we both agreed that this would be an ideal ACC project. In April 2008, I presented the project at an ACC meeting and received enthusiastic supports. John committed resources at Hutch to help with data coordination, and Daehee, Manami, and Keitaro contacted potential cohorts in Korea and Japan. Soon, 19 cohort studies joined, and we harmonized data from 1.1 million participants. By 2011, we published ACC's first paper, shedding light on the associations of BMI with mortality in Asians. The data we compiled have since been used in many projects. I'm glad that I was able to help the ACC launch this study and feel incredibly fortunate to have the opportunity to work with the amazing ACC team. As we mark the 20th anniversary, it's a great moment to celebrate our achievements and look forward to many more years of collaboration, innovation, and friendship!

Betsy Rolland

Former Project Manager, ACC Coordinating Center
Translational Science Strategist, University of Michigan, USA

The ACC was my first real foray into team science, the field which would subsequently become my career. The lessons I learned from all of you during that time have shaped how I approach facilitating science teams. I learned the importance of creating community to build trust and shared learning, of creating infrastructure to support collaboration, and of coming together to tackle complex problems bigger than anyone could solve on their own. I learned that scientists who are intrinsically motivated by doing important scientific work will move mountains to achieve their goals. Our meeting hosts always went above and beyond to welcome us, providing us with opportunities to experience local food, culture, and architecture. I am so grateful to everyone who has given their time and energy to this endeavor over the past 20 years and am delighted to have played a role in the ACC's success. Here's to 20 more years!

Reminiscence

Sarah K. Abe

Project Coordinator

Section Head, National Cancer Center Japan, Japan

Happy 20th anniversary Asia Cohort Consortium! I first joined ACC as a doctoral student a decade ago during the GMM at the University of Tokyo. Since moving to NCCJ, I have taken over the role as Project Coordinator at the Coordinating Center and have worked intensely with the EC, Cohort PIs, Project PIs and analyst. Participating in the expansion of the ACC and seeing the fruits of our labor is wonderful in the form of a network of researchers in and related to Asia. I am grateful to all our collaborators, particularly the EC members who have dedicated their time and energy to host the GMM (in Nagoya, Seoul, Hanoi) and Spring WG meetings (in Atlanta, Chicago, Florida, San Diego etc.) that keep the initiatives and individual projects moving along. Looking forward to engaging in the Asia Cohort Consortium's future activities for the next 20+ years.

Eiko Saito

Former ACC Coordinator

Associate Professor, The University of Tokyo, Japan

During my time as a research coordinator for the Asia Cohort Consortium (ACC) from 2013 to 2018, I was privileged to witness its incredible growth. Over the years, the ACC has blossomed into a vibrant and influential network, driving important studies that help us understand diverse health outcomes. The journey wasn't always smooth, but the dedication and teamwork of ACC members made it possible to overcome challenges and achieve great things. I'm so proud to have been part of this dynamic team, working alongside some of the brightest and most passionate individuals in the field. The support and camaraderie of both past and current members have been invaluable. Looking back, I'm filled with a sense of accomplishment and gratitude. The experience enriched my professional life and fostered lasting friendships. Thank you to everyone who has been part of this incredible journey!

Reminiscence

Rashmi Sinha

Project Investigator

Senior Investigator, National Cancer Institute, USA

I started working on the concept of the ACC with Dr. Daehee Kang while he was at Division of Cancer Epidemiology and Genetics of the National Cancer Institute USA. This was around the time when Dr. John Potter was thinking about an international million persons cohort. We joined forces and proceeded to develop this interesting idea of a possible Asian cohort consortium. The idea was to study diverse exposures and genetics in different Asian countries. We felt it was important to have Asian data to complement and contrast with Western data that was predominant in the literature. The idea was two-fold, first, to bring existing cohorts together for pooled and meta-analyses; and second, to develop materials for new cohorts. The idea of bringing the existing cohorts together took off to what is now the Asian Cohort Consortium with investigators from Bangladesh, China, India, Iran, Japan, Korea, Malaysia, Mongolia, Singapore, Taiwan, the United States, and other countries. First, the ACC Coordinating Center was established at the Fred Hutchinson Cancer Research Center which provided support for scientific collaboration, coordination and communication, data operations, and statistical consultation. The coordinating center has since moved to the National Cancer Center Japan under the supervision of Dr. Manami Inoue. This transition has been very successful with investigators from different countries being able to analyses the data themselves. I was primarily interested in the dietary exposures. Dr. Jung Eun Lee and I conducted the first dietary study in the ACC "Meat intake and cause-specific mortality: a pooled analysis of Asian prospective cohort studies". Our study examined ecological data which indicated that there was an increase in meat intake in Asian countries in recent years. However, contrary to the Western data, our pooled analysis did not provide evidence of a higher risk of mortality for total meat intake and provided evidence of an inverse association with red meat, poultry, and fish/seafood. Red meat intake was also inversely associated with CVD mortality in men and with cancer mortality in women in Asian countries. In a second study, Dr. Jung Eun Lee and I investigated coffee and tea intake "Coffee and tea consumption and mortality from all causes, cardiovascular disease and cancer: a pooled analysis of prospective studies from the Asia Cohort Consortium". In this study we found that in Asian populations, coffee consumption was associated with a lower risk of death overall and with lower risks of death from CVD and cancer. These findings confirmed the results from Western studies. We also found that green tea consumption, exposure unique to Asian populations, was associated with lower risks of death from all causes and CVD. The Diet working group is very active now with multiple ongoing dietary studies. Working with the ACC investigators has been one of the most enriching and fulfilling part of my career and life. I hope that ACC will go on for another 20 years and be very productive and make important contributions to the scientific community and to the public health of Asian communities and internationally.

ACC Meeting 2004, Seoul, Korea

Album

ACC Meeting 2005, Seattle, USA

ACC Meeting 2005, Seoul, Korea

Album

ACC Meeting 2008, Beijing, China

ACC Meeting 2009, Tokyo, Japan

Album

ACC Meeting 2013, Tokyo, Japan

Album

ACC Meeting 2015, Seoul, Korea

ACC Meeting 2015, Tokyo, Japan

Album

ACC Meeting 2017, Tokyo, Japan
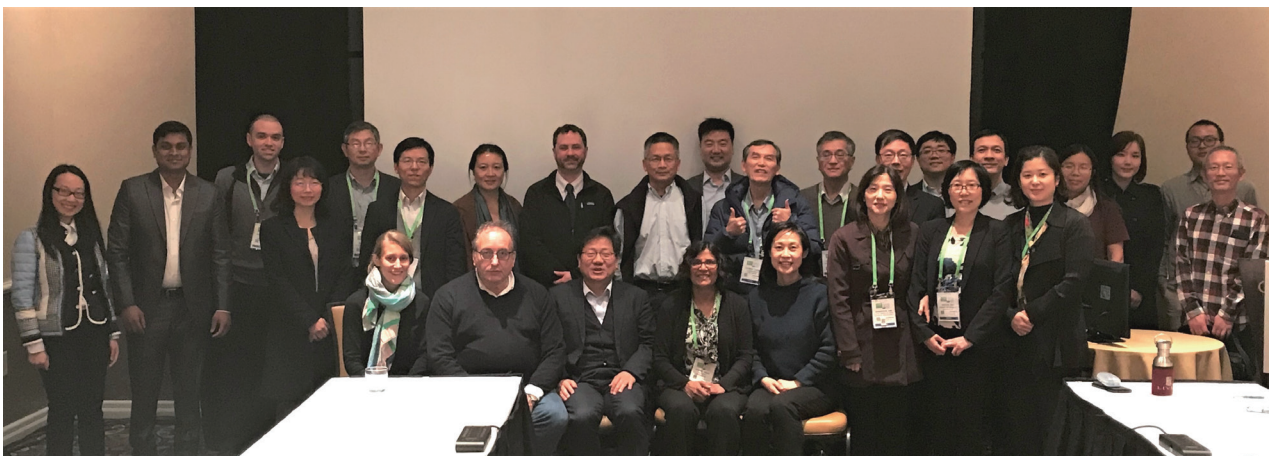

ACC Working Group Meeting 2018, Chicago, USA

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ACC Working Group Meeting 2018, Jeju, Korea

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ACC General Membership Meeting 2018, Nagoya, Japan

ACC Working Group Meeting 2019, Atlanta, USA
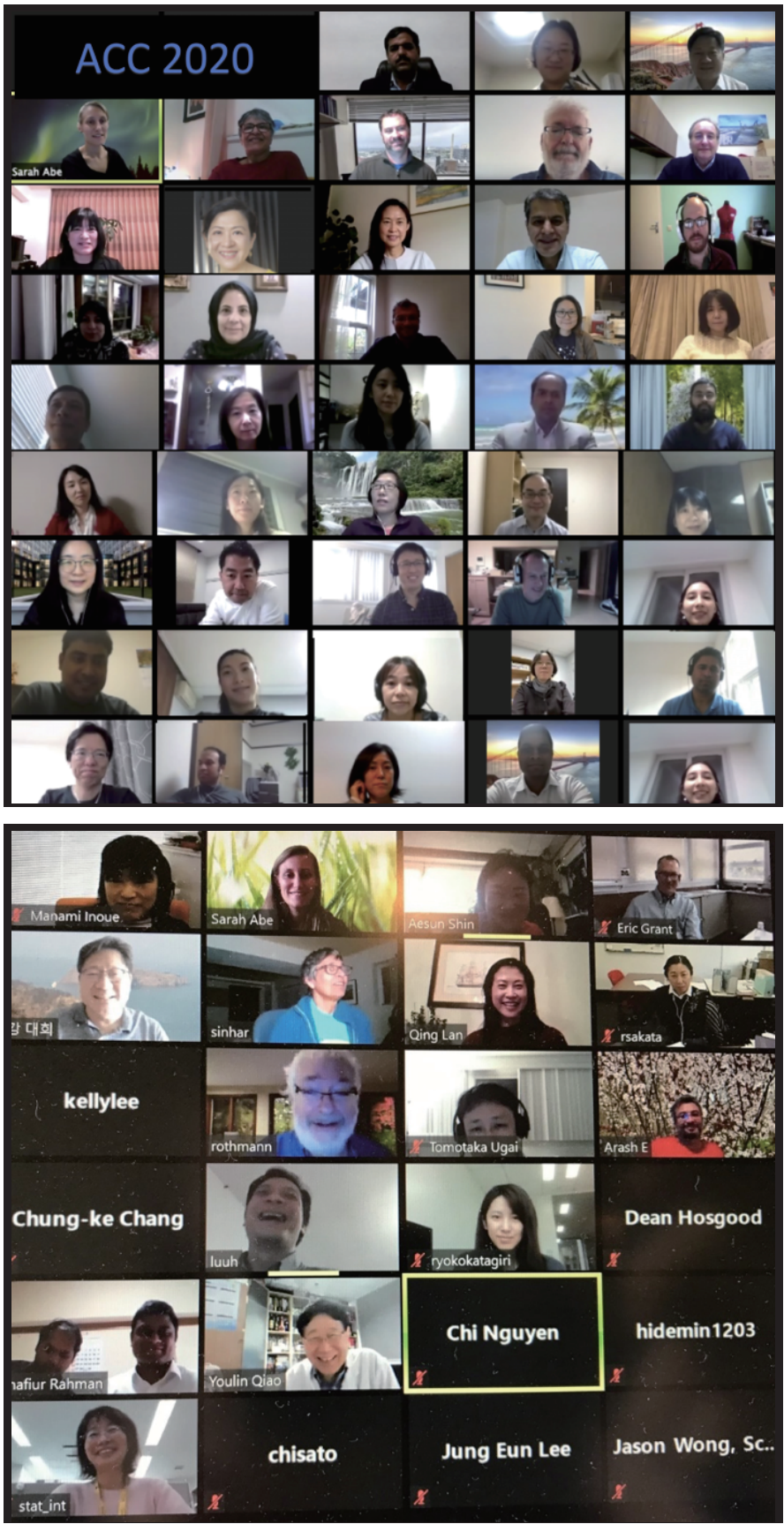
Album

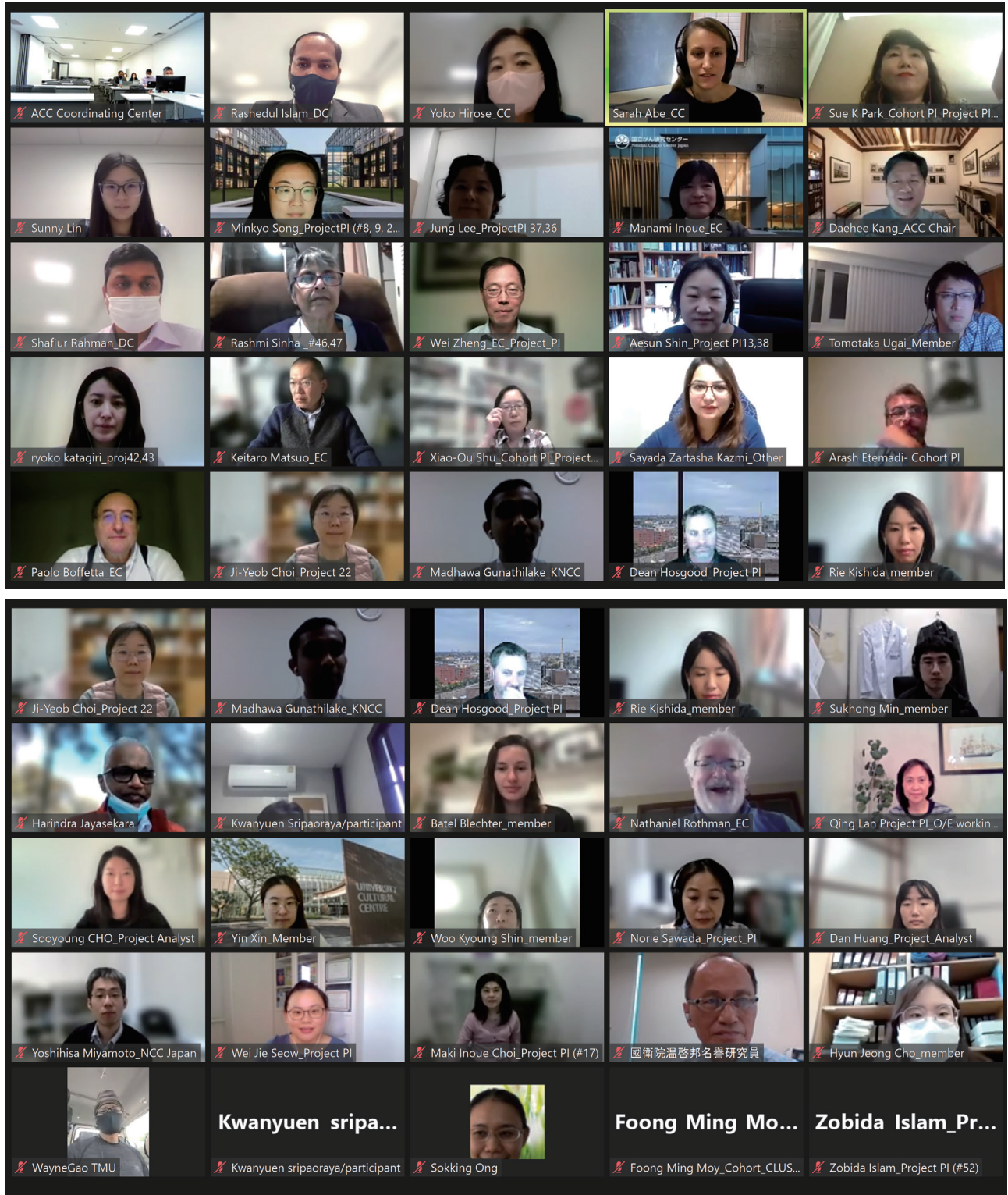ACC General Membership Meeting 2019, Hanoi, Vietnam

Album

Album

ACC Working Group Meeting 2020, Kyoto, Japan

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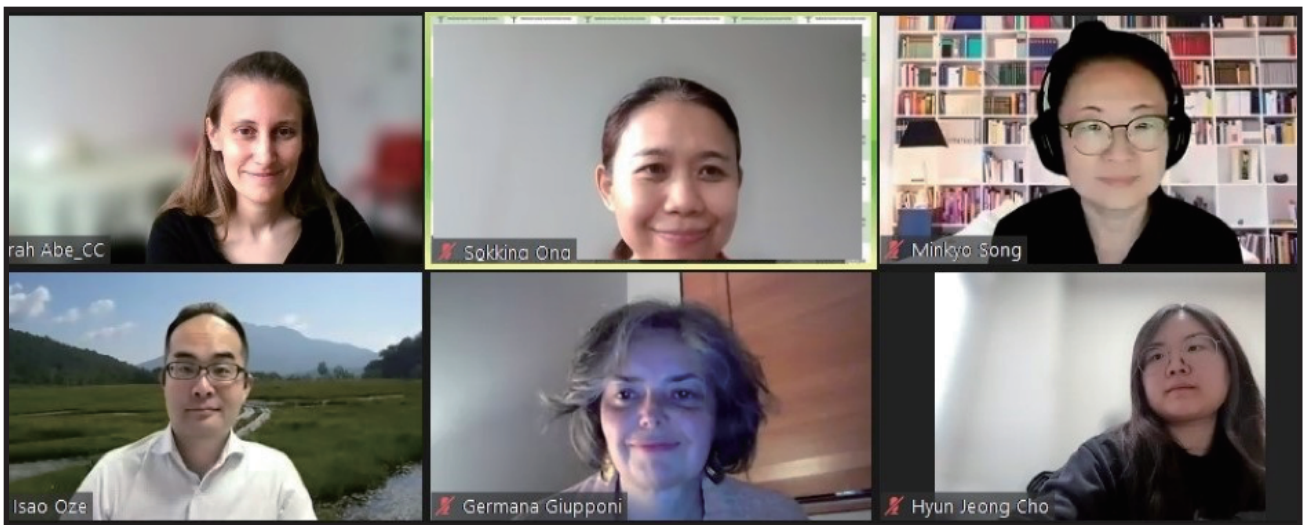ACC Working Group Meeting 2020, Online

Album

ACC General Membership Meeting 2021, Online

Album

ACC General Membership Meeting 2022, Seoul, Korea & Online (Hybrid)

ACC Working Group Meeting 2023, Orlando, USA & Online (Hybrid)

ACC General Membership Meeting 2023, Nagoya, Japan

Album

Album

ACC Working Group Meeting 2024, San Diego, USA & Online (Hybrid)

Address of Publication

It has been an honor to be in charge of publishing the ACC 20th commemorative book. ACC's history is one of challenges, perseverance, and remarkable achievements, reflecting the dedication and hard work of all members involved over the past 20 years. This book illustrates how ACC coordinating center staff, cohort PIs, executive committee members, and project investigators have been committed to advancing research, fostering collaboration, and driving impactful scientific discoveries that have made significant contributions to the global scientific community.

I would like to extend my sincere thanks to Sarah, Yoko, Aesun, Eiko, Rashedul, and Shafiur for their efforts in reaching out to investigators and assisting with the publication process. Additionally, I want to express my deepest gratitude to Soye, who organized the content and worked to harmonize it all. As we celebrate this milestone, I look forward to the continuous development and prosperity of ACC in the years to come.

Jung Eun Lee

Professor
Department of Food and Nutrition
Seoul National University, Korea

Contributors
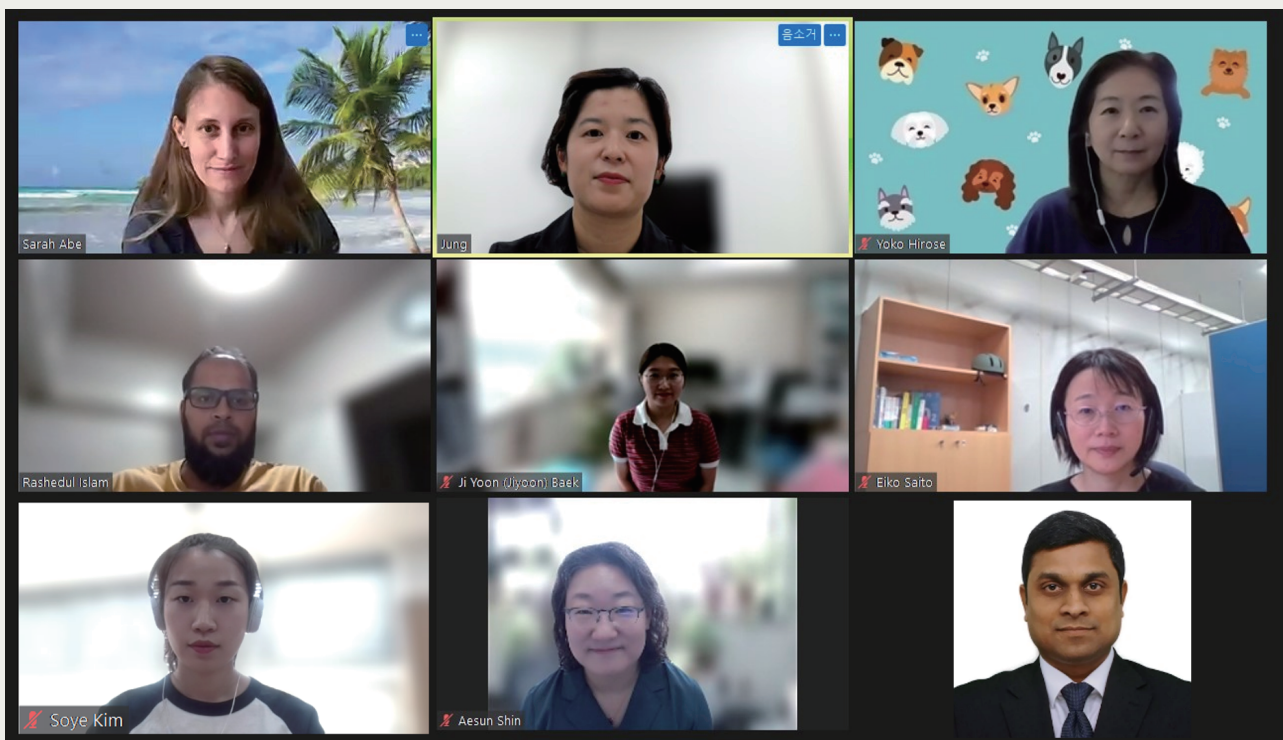
Sarah Abe, Jung Eun Lee, Yoko Hirose, Md. Rashedul Islam, Ji Yoon Baek,
Eiko Saito, Soye Kim, Aesun Shin, Md, Shafiur Rahman

The Asia Cohort Consortium