eTable 1: International Stroke Genetics Consortium Intracranial Aneurysm Groups (in alphabetical order of the cohort's name)

COHORTS	Coordinating Institution
ACROSS_AUS	Australian Cooperative Research on Subarachnoid Hemorrhage Study, Australia
@neurIST_GVA_CH	Neurosurgery Division, Department of Clinical Neurosciences, Geneva University Hospitals, Geneva, Switzerland
@neurIST_HBAR_ES	Hospital clinic Barcelona and Barcelona hospital General de Cataluna, Barcelona, Spain
@neurIST_MUP_HU	University of Pecs, Pecs, Hungary
@neurIST_EMC_NL	Erasmus Medical Center, Rotterdam, The Netherlands
@neurIST_UOXF_UK	Radcliffe Infirmary, Oxford, United Kingdom
@neurIST_USFD_UK	Royal Hallamshire Hospital, Sheffield, United Kingdom
BASICMAR_ES	IMIM and Hospital del Mar, Barcelona, Spain
CCC_USA	University of Cincinnati, College of Medicine, Cincinnati, Indiana, United States of America
FIA1_USA and FIA2_USA	University of Cincinnati, College of Medicine, Cincinnati, Indiana, United States of America Departments of Neurology and Public Health Sciences, University of Virginia School of Medicine, Charlottesville, Virginia, United States of America
FRCAN_CA	Montreal Neurological Institute and Hospital, McGill University, Montréal, Quebec, Canada
GERFHS1_USA and GERFHS2_USA	University of Cincinnati, College of Medicine, Cincinnati, Indiana, United States of America
GOSH_UK	Stroke Research Centre, University College London Queen Square Institute of Neurology, London, United Kingdom
GSA_NL	Department of Neurology and Neurosurgery, University Medical Center Utrecht Brain Center, Utrecht University, Utrecht, The Netherlands
HUCH_FI	Department of Neurosurgery, Helsinki University Hospital, University of Helsinki, Finland

ICAN_FR	Université de Nantes, CHU Nantes, INSERM, CNRS, l'institut du thorax, Nantes, France CHU Nantes, Department of Neuroradiology, Nantes, France
JUMC_PL	Department of Neurology, Faculty of Medicine, Jagiellonian University Medical College, Krakow, Poland
KIAD_FI	Neurosurgery NeuroCenter Kuopio, University Hospital Kuopio, Finland
UCSF_USA	Department of Neurology, University of California at San Francisco, San Francisco, United States of America
UMCU2_NL	Department of Neurology and Neurosurgery, University Medical Center Utrecht Brain Center, Utrecht University, Utrecht, The Netherlands.

eTable 2: Characteristics of the different cohorts

COHORTS	Cohort basis recruitment	Consecutive recruitment	Prospective recruitment	Cohort's inclusion and exclusion criteria
GOSH_UK	Aneurysmal SAH oriented cohort	Yes	Yes	Multicentre UK-wide study involving 20 neurosurgical centres. Inclusion of patients with proven IA, including angiographically-proven ruptured IA (irrespective of severity), and unruptured IA. Consent from subject(s) or nominated consultee(s) was obtained for all participants. Exclusion of patients with known inherited connective tissue disorders, such as Marfan's, Ehlers-Danlos syndrome and adult polycystic kidney disease, and those with non-aneurysmal SAH (e.g. from arterio-venous malformations, trauma, mycotic aneurysms and peri-mesencephalic SAH where no aneurysm was detected).
ICAN_FR	Population-based cohort	Yes	Yes	Sporadic and familial IA patients were collected. Exclusion criteria were a fusiform or dissected IA, or and IA related to an arteriovenous malformation. Patients were excluded if they had a family history of ADPKD, ED, Marfan's syndrome, fibromuscular dysplasia, or Moyamoya disease.
GSA_NL	Aneurysmal SAH oriented cohort	Yes	Yes	Diagnosis of an IA was made either with computerized tomography angiogram, magnetic resonance angiogram or cerebral digital subtraction angiogram and confirmed at surgery, when applicable. Rupture of an aneurysm was defined by identification of acute subarachnoid or intracranial hemorrhage (through computerized tomography or magnetic resonance imaging) from a proven aneurysm. Subjects with SAH without saccular IA, non-saccular IA (such as fusiform aneurysms) and those with known genetic syndromes that are believed to predispose to IA (e.g. polycystic kidney disease and Ehlers-Danlos syndrome Type IV) were excluded from the study.
UMCU2_NL	Aneurysmal SAH oriented cohort	Yes	Yes	Patients diagnosed with an unruptured IA or aneurysmal SAH after 2011 in the University Medical Center Utrecht, The Netherlands, were recruited. Inclusion and exclusion criteria are identical to those of the 'Utrecht 1' cohort (GSA_NL cohort).
JUMC_PL	Aneurysmal SAH oriented cohort	Yes	Yes	IA cases were recruited from patients of the Department of Neurology and the Department of Neurosurgery and Neurotraumatology of the Jagiellonian University in Krakow. Both subjects with ruptured IAs and with unruptured IA were recruited. Presence of IA was confirmed by intra-arterial angiogram, CTA, MRA or intraoperatively.
HUCH_FI	Family-oriented IA cohort	Yes	Yes	Diagnosis of an IA was made either with computerized tomography angiogram, magnetic resonance angiogram or cerebral digital subtraction angiogram and confirmed at surgery, when applicable. Rupture of an aneurysm was defined by

KIAD_FI	Family-oriented IA cohort	Yes	Yes	identification of acute subarachnoid or intracranial hemorrhage (through computerized tomography or magnetic resonance imaging) from a proven aneurysm. Subjects with SAH without saccular IA, non-saccular IA (such as fusiform aneurysms) and those with known genetic syndromes that are believed to predispose to IA (e.g. polycystic kidney disease and Ehlers-Danlos syndrome Type IV) were excluded from the study.
@neurIST_HBAR_ES	Aneurysmal SAH oriented cohort	Yes	Yes	Patients were recruited based on the diagnosis of IA by angiographic appearance (3D-DSA, 3D- MRA), or 3D-CTA and of surgical documentation. SAH has to be verified by CT / MRI or by lumbar puncture. Patient had to be older than 14 years and had to provide consent. Patients with known genetic syndromes predisposing to IA (e.g. polycystic kidney disease and Ehlers-Danlos syndrome Type IV) were excluded from the study.
@neurIST_UOXF_UK	Aneurysmal SAH oriented cohort	Yes	Yes	
@neurIST_EMC_NL	Aneurysmal SAH oriented cohort	Yes	Yes	
@neurIST_MUP_HU	Family-oriented IA cohort	Yes	Yes	
@neurIST_USFD_UK	Aneurysmal SAH oriented cohort	Yes	Yes	
@neurIST_GVA_CH	Population-based cohort	Yes	Yes	
BASICMAR_ES	Aneurysmal SAH oriented cohort	Yes	Yes	Since 2007 all consecutive patients with aSAH confirmed by cerebral angiography admitted and treated in Hospital del Mar Barcelona Spain were considered for inclusion in the study. Exclusion criteria were nonaneurysmal SAH, SAH due to another cerebral vascular malformation, or lack of angiography data and absence of genetic samples.
FIA1_USA	Family-oriented IA cohort	Yes	Yes	Families with at least 2 members who had IA were ascertained through 26 clinical centers (41 sites) in North America, New Zealand, and Australia. Exclusion criteria included (i) a fusiform-shaped unruptured IA of a major intracranial trunk artery; (ii) an IA that is part of an arteriovenous malformation; (iii) a family or personal history of polycystic kidney disease, Ehlers Danlos syndrome, Marfan's syndrome, fibromuscular dysplasia, or Moya-Moya disease; or (iv) failure to obtain informed consent from the patient or family members.
FIA2_USA	Family-oriented IA cohort	Yes	Yes	

UCSF_USA	Aneurysmal SAH oriented cohort	Yes	Yes	The University of California, San Francisco recruited a prospective cohort of adult patients with spontaneous SAH due to IA who were admitted to a tertiary-care referral center in San Francisco during 2003 to 2008. Cases were confirmed by non-contrast CT and cerebral angiogram. Exclusion criteria were the same as for the FIA cohort.
GERFHS2_USA	Aneurysmal SAH oriented cohort	Yes	Yes	Participants were identified by random-digit telephone dialing from the Greater Cincinnati/Northern Kentucky community and matched to enrolled cases by age (±5 years), gender, and race. They had the same interview questions regarding environmental risk factors as FIA study participants. Inclusion criteria was presence of an IA confirmed by imaging.
GERFHS1_USA	Aneurysmal SAH oriented cohort	Yes	Yes	
FRCAN_CA	Population-based cohort	Yes	Yes	Participants were recruited in Montréal and Québec City, Canada. The diagnoses were confirmed either by magnetic resonance angiography, or by surgical confirmation (clipped or coiled).

eTable 3: Categories and definitions of the descriptors used to characterize patients and intracranial aneurysms

Descriptors	Categories	Definitions
Basis of recruitment	Subarachnoid hemorrhage	Patient diagnosed with subarachnoid bleed as a consequence of intracranial aneurysm rupture
	Symptomatic intracranial aneurysm	Patient diagnosed initially with a symptom associated with the intracranial aneurysm
	Incidental intracranial aneurysm	Patient incidentally diagnosed with intracranial aneurysm
	Case	Patients diagnosed with intracranial aneurysm(s) with unknown status of rupture
Sex	Female	Self-reported sex of the patient. Phenotype female
	Male	Self-reported sex of the patient. Phenotype male
Positive familial history	Yes	One or more 1st degree relative(s) with intracranial aneurysm
	No	No 1st degree relative with intracranial aneurysm
	Probably	The relative had a stroke but there is no definite diagnosis on the type of stroke
	Unknown	Unknown familial history of intracranial aneurysm

Hypertension status	AnyType	Yes – Not treated blood pressure greater than 140/90 mm Hg and the patient does not take any antihypertensive treatment Yes – Treated and controlled blood pressure greater than 140/90 mm Hg, the patient takes antihypertensive treatment and the blood pressure is in normal range Yes – Treated and not controlled blood pressure greater than 140/90 mm Hg, the patient takes antihypertensive treatment but the blood pressure stay higher than normal blood pressure values
	Never	No= Blood pressure less than 120/80 mm Hg or patient-reported knowledge of either never diagnosed with high blood pressure
	Unknown	Hypertension status unknown
Smoking status	Current	Smoked (more than 300 cigarettes) and continues current smoking
	Former	Smoked (more than 300 cigarettes) and stopped (at least 6 months ago)
	No	Never smoked (more than 300 cigarettes ever)
	Unknown	Smoker status unknown
Age at time of aneurysm rupture	Age in years	Age of patient when intracranial aneurysm ruptured

Multiplicity status	N number	Number of diagnosed intracranial aneurysms. In case of multiple aneurysms, the number of aneurysms was recorded if this information was available.
	Unknown	Unknown number of aneurysm
	Multiple aneurysm	Yes / No. In case of multiple aneurysms, the ruptured or the most critical aneurysm was identified by the recruiting investigator for the dataset.
Ruptured status	Yes	Patient known to have ruptured an intracranial aneurysm
	No	Patient known to never have a ruptured aneurysm
	Unknown	Rupture status of the aneurysm unknown
Maximal aneurysm Diameter at rupture	Decimal	Maximum diameter size in mm single digit numerical display
	Unknown	Maximal diameter unknown

Aneurysm location	*Abbreviation used in the manuscript*	*Location names given in the different cohorts*
	Acom	Anterior communicating artery, Acomm, ACoA, ACOM, Anterior circulation others, Comm anterior CoA forward, Comm anterior CoA forward-upward, Comm anterior CoA upward, Comm anterior CoA backward, Comm anterior CoA down
	A2	Distally to the Acom, Pericallosal cerebral artery, A2 segment ant, ACA-Anterior Cerebral Artery, A1-A2, PericalA, Pericallosal proximal, Pericallosal typical
	MCA	Middle cerebral artery, Sylvian bifurcation, M1 segment middle cerebral artery, M1 perforator artery, Middle cerebral bifurcation, Middle cerebral MCA main trunk
	Pcom	Posterior communicating artery starting proximal to the implantation of the posterior communication artery and extending up to the anterior choroidal artery, Posterior Comm, Pcomm, PcoA, PCOM
	ICA	Internal carotid artery extending from the anterior choroidal artery up to the ICA bifurcation including it, Anterior and superior wall carotid, Carotid bifurcation, Ant Choroidal segment carotid, other location carotid artery, Superior wall ICA, Lateral wall ICA CoP, Lateral wall ICA ChA
	cav-ICA	Intracavernous portion of ICA, Cavernous ICA
	ophtI-ICA	Ophthalmic segment of ICA starting immediately proximal to the ophthalmic artery departure and ending immediately proximal to the implantation of the posterior communication artery,

	Medial wall carotid, Ophthalmic Artery, OphtA, AOA, OA, ICA-ophth, Medial wall ICA ophthalmic, Medial wall ICA distal, Inferior wall ICA
A1	A1 anterior segment: aneurysms located on the anterior cerebral artery distal to the ICA bifurcation but proximal to the anterior communicating artery
Basilar	Basilar artery, Basilar Tip, basilar artery bifurcation, BA, P1 posterior cerebral
VB	Vertebro-basilar artery, vertebro-basilar junction, V4 segment vertebral artery, Basilar trunk, AICA, Superior cerebellar artery, PICA, vertebral artery, VB-Other Basilar and Vertebral, VA, SCA, Vertebral trunk, Basilar others, Basilar SCA, Vertebral = PICA origin, PICA distal
PCA	Posterior cerebral artery, P1 Posterior cerebral artery, P2 posterior cerebral artery, P1-P2 junction posterior cerebral artery. Aneurysms located distally to the basilar bifurcation.
Other	Distal to sylvian bifurcation, Distal ant cerebral artery, Distal posterior cerebral artery, other location, Middle cerebral peripheral, Pericallosal distal, P3 posterior cerebral distal
Infundibulum	Vessel calibre irregularities that could not be clearly identified as aneurysms
Unknown	Unknown