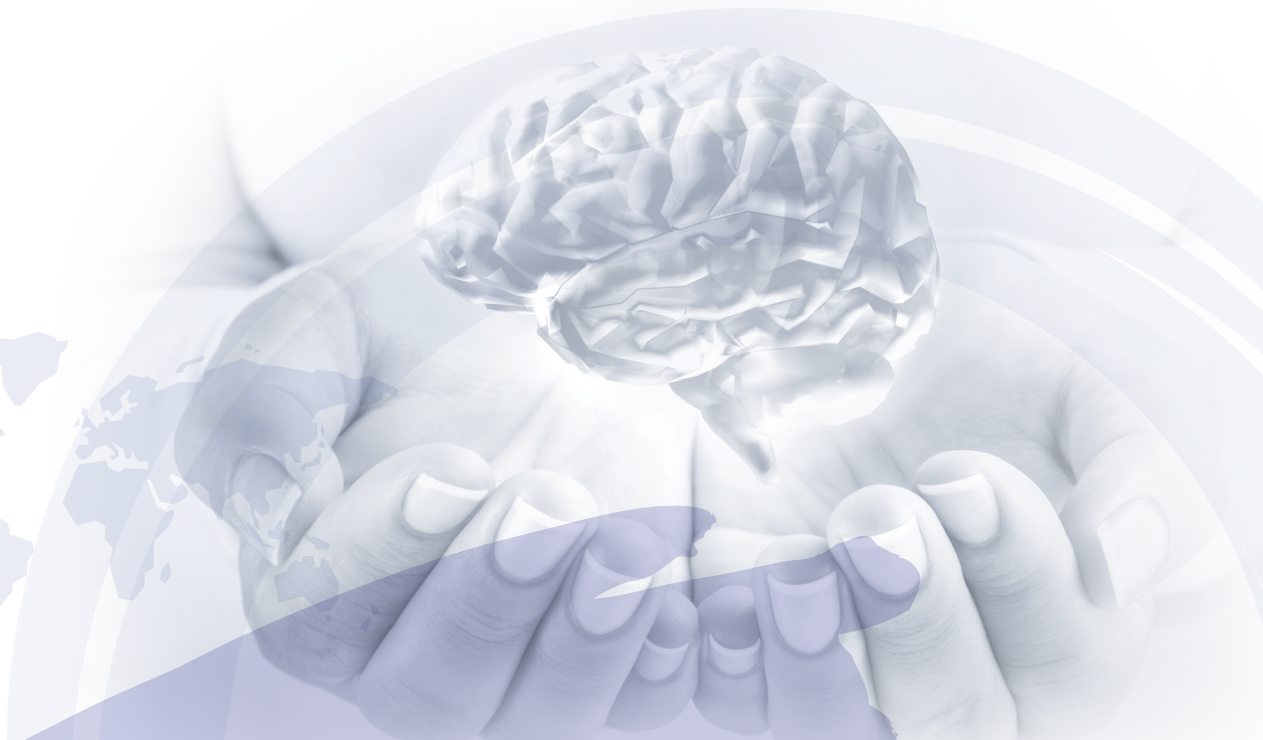




World Stroke
Organization



Global Stroke Fact Sheet

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Purpose:

The World Stroke Organization overviews the best available scientific evidence to provide reliable and up to date data on stroke and its impact around the world.

Using reliable and consistent stroke data to support stroke advocacy helps to build awareness of the scale of the disease and supports the call for urgent action at global, regional and national levels. This document provides information that can be used to inform communication with internal and external stroke stakeholders.

All statistics have been reviewed and approved for use by the WSO Executive Committee.

Data Sources:

These values have all been extracted from the most current Global Burden of Disease Stroke Statistics Worldwide for the year 2016 (<http://ghdx.healthdata.org/gbd-results-tool>).

They will be reviewed and updated by the WSO executive committee on an annual basis as appropriate.

Notes:

* (Uncertainty Interval [UI] represents a range of values that reflects the certainty of an estimate. In GBD, every estimate is calculated 1,000 times, each time sampling from distributions rather than point estimates for data inputs, data transformations and model choice. The 95th uncertainty interval is determined by the 25th and 975th value of the 1,000 values after ordering them from smallest to largest. Larger uncertainty intervals can result from limited data availability, small studies, and conflicting data, while smaller uncertainty intervals can result from extensive data availability, large studies, and data that are consistent across sources)

All Stroke (B 2.3)

Measure: Incidence	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	13,676,761	0.03	185.01 (171.98-198.75)	203.38 (189.24-218.16)	There are over 13.7 million new strokes each year*. Globally, one in four people over age 25 will have a stroke in their lifetime**
1-69 years	7,994,163	-	-	-	Almost 60% of all strokes each year are in people under the age of 70 years
1-44 years	111,0311	-	-	-	8% of all strokes each year are in people younger than 44 years
Men (all ages)	7,192,679	0.03	193.05 (179.24-207.31)	231.02 (214.69-248.15)	52% of all strokes each year occur in men
Women (all ages)	6,484,083	0.03	176.85 (164.32-190.01)	179.13 (166.23-192.47)	48% of all strokes each year occur in women

* V. Feigin et al. Global, regional, and national burden of stroke, 1990 to 2016: A systematic analysis for the Global Burden of Disease study 2016. *The Lancet Neurology*, 2019, forthcoming

** V. Feigin et al. Global, Regional, and Country-Specific Lifetime Risks of Stroke, 1990 and 2016. *New Engl J Med* 2018;379:2429-2437

Measure: Prevalence	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	80,065,453	1.12	1,083.10 (1,002.23-1,167.80)	1,180.40 (1,093.20-1,273.43)	There are over 80 million people currently living who have experienced a stroke globally
1-69 years	49,693,284	-	-	-	60% of the people currently living who have experienced a stroke are under the age of 70
1-44 years	7,843,913	-	-	-	10% of the people currently living who have experienced a stroke are under the age of 44
Men (all ages)	38,968,949	1.10	1,045.89 (970.02-1,129.92)	1,232.57 (1,143.16-1,334.35)	49% of the people currently living who have experienced a stroke are men
Women (all ages)	41,096,505	1.15	1,120.90 (1,035.73-1,207.58)	1,136.08 (1,049.08-1,225.41)	Globally, women account for just over half (51%) of all persons who have experienced and survived a stroke

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All Stroke (B 2.3)

Measure: Deaths	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	5,528,232	10.11	74.78 (2.16-77.58)	86.52 (83.34-89.92)	Five and a half-million people die of stroke annually
1-69 years	2,135,159	-	-	-	39% of all deaths from stroke are in people under 70 years old
1-44 years	230,025	-	-	-	4% of all deaths from stroke are in people under 44 years old
Men (all ages)	2,931,769	9.77	78.69 (76.0-81.30)	103.21 (99.44-106.89)	53% of all deaths from stroke are in men
Women (all ages)	2,596,464	10.51	70.82 (67.00-74.86)	72.49 (68.60-76.54)	47% of all deaths from stroke are in women

Measure: DALYs	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	116,445,136	4.88	1,575.23 (1,506.78-1,642.35)	1,711.17 (1,635.32-1,784.40)	Over 116 million years of healthy life is lost each year due to stroke-related death and disabilities
1-69 years	7,3083,785	-	-	-	63% of healthy life lost due to stroke-related death and disability affects people under the age of 70 years
1-44 years	1,3249,535	-	-	-	18% of healthy life lost due to stroke-related death and disability affects people under the age of 44 years
Men (all ages)	65,640,112	5.05	1,761.72 (1,692.60-1,829.59)	2,045.51 (1,960.85-2,126.23)	Men account for 56% of healthy life lost due to stroke-related death and disability
Women (all ages)	50,805,025	4.68	1,385.70 (1,299.04-1,465.54)	1,407.74 (1,320.23-1,489.36)	Women account for 44% of healthy life lost due to stroke-related death and disability

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Ischemic Stroke (B 2.3.1)

Measure: Incidence	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	9,556,444	0.02	129.28 (117.08-142.21)	142.34 (129.10-156.60)	There were over 9.5 million new cases of ischemic stroke in 2016
1-69 years	5,524,967	-	-	-	Almost 60% of all new cases of ischemic stroke occur in people under 70 years
1-44 years	698,335	-	-	-	7% of all new cases of ischemic stroke occur in people under 44 years
Men (all ages)	5,012,911	0.02	134.54 (121.30-147.89)	161.74 (146.12-177.57)	52% of new cases of ischemic stroke in men
Women (all ages)	4,543,533	0.02	123.92 (112.56-136.54)	125.49 (113.82-138.40)	48% of new cases of ischemic stroke in women

Measure: Prevalence	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	67,595,368	0.95	914.40 (822.65-1,008.78)	999.33 (899.23-1,105.91)	Globally, over 67.5 million people are currently living who have experienced an ischaemic stroke
1-69 years	41,173,654	-	-	-	61% of the people currently living with the effects of ischemic stroke are under the age of 70
1-44 years	6,453,559	-	-	-	10% of the people currently living with the effects of ischemic stroke are under the age of 44
Men (all ages)	32,837,417	0.92	881.33 (796.33-979.77)	1,043.96 (945.71-1,163.46)	49% of the people currently living with the effects of ischemic stroke are men
Women (all ages)	34,757,951	0.97	948.02 (849.81-1,043.14)	961.79 (861.23-1,059.64)	Globally, women account for just over half (51%) of all persons living with the effects of ischemic stroke

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Ischemic Stroke (B 2.3.1)

Measure: Deaths	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	2,690,171	4.92	36.39 (34.79-38.12)	43.40 (41.43-45.47)	Over 2.7 million people die from ischemic stroke each year
1-69 years	708,472	-	-	-	One-quarter of deaths due to ischemic stroke occur in people under the age of 70.
1-44 years	34,019	-	-	-	1% of deaths due to ischemic stroke occur in people under the age of 44
Men (all ages)	1,343,464	4.48	36.06 (34.37-37.72)	50.22 (47.89-52.64)	49% of deaths due to ischemic stroke occur in men.
Women (all ages)	1,346,707	5.45	36.73 (34.45-39.45)	37.72 (35.34-40.48)	Each year, women account for more than half of the ischemic stroke-related deaths

Measure: DALYs	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	51,897,437	2.17	702.05 (647.93-751.70)	787.55 (728.37-843.24)	51.9 million years of healthy life is lost each year due to ischemic stroke-related death and disabilities
1-69 years	26,161,786	-	-	-	50% of healthy life lost due to ischemic stroke-related death and disability affects people under the age of 70 years
1-44 years	2,740,408	-	-	-	5% of healthy life lost due to ischemic stroke-related death and disability affects people under the age of 44 years
Men (all ages)	27,528,703	2.12	738.85 (688.39-788.17)	908.40 (849.21-968.50)	Men account for 53% of healthy life lost due to ischemic stroke-related death and disability
Women (all ages)	24,368,735	2.24	664.65 (601.14-721.29)	681.27 (616.67-739.22)	Women account for 47% of healthy life lost due to ischemic stroke-related death and disability

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Haemorrhagic stroke (intracerebral and subarachnoid haemorrhage combined) (B 2.3.2)

Measure: Incidence	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	4,120,318	0.01	55.74 (50.92-60.99)	61.04 (55.79-66.73)	There were 4.1 million new hemorrhagic strokes in 2016
1-69 years	2,469,197	-	-	-	60% of new hemorrhagic stroke occur in people under 70 years
1-44 years	411,976	-	-	-	10% of new hemorrhagic stroke occur in people under 44 years
Men (all ages)	2,179,769	0.01	58.50 (53.43-63.83)	69.28 (63.51-75.40)	53% of new hemorrhagic strokes occur in men
Women (all ages)	1,940,550	0.01	52.93 (48.26-57.93)	53.64 (48.91-58.69)	47% of new hemorrhagic strokes occur in women

Measure: Prevalence	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	15,310,197	0.22	207.11 (187.45-229.34)	222.68 (201.54-246.33)	Over 15 million people globally live with the effect of hemorrhagic stroke
1-69 years	10,319,487	-	-	-	67% of people living with the effect of hemorrhagic stroke are under 70 years
1-44 years	2,237,325	-	-	-	15% of people living with the effect of hemorrhagic stroke are under 44 years
Men (all ages)	7,565,942	0.21	203.06 (183.11-224.78)	233.29 (210.04-258.82)	49% of people living with the effect of hemorrhagic stroke are men
Women (all ages)	7,744,255	0.22	211.22 (191.53-233.78)	213.27 (193.31-235.95)	51% of people living with the effect of hemorrhagic stroke are women

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Haemorrhagic stroke (intracerebral and subarachnoid haemorrhage combined) (B 2.3.2)

Measure: Deaths	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	2,838,062	5.19	38.39 (37.18-39.69)	43.13 (41.71-44.67)	Half of all deaths (51%) from stroke are due to hemorrhagic stroke
1-69 years	1,426,687	-	-	-	50% (Half) of deaths due to hemorrhagic stroke occur in people under the age of 70.
1-44 years	196,006	-	-	-	7% of deaths due to hemorrhagic stroke occur in people under the age of 44.
Men (all ages)	1,588,305	5.30	42.63 (41.02-44.23)	52.99 (50.95-55.10)	56% of deaths due to hemorrhagic stroke occur in men
Women (all ages)	1,249,757	5.06	34.09 (32.51-35.79)	34.77 (33.15-36.53)	44% of deaths due to hemorrhagic stroke occur in women

Measure: DALYs	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	64,547,700	2.71	873.18 (847.13-899.55)	923.62 (896.18-951.85)	Hemorrhagic strokes are responsible for over 64.5 million years of healthy life lost each year.
1-69 years	46,921,999	-	-	-	Almost three-quarters (73%) of healthy years of life lost due to hemorrhagic stroke occur in people under the age of 70 years.
1-44 years	10,509,128	-	-	-	16% of healthy years of life lost due to hemorrhagic stroke occur in people under the age of 44 years.
Men (all ages)	38,111,410	2.93	1,022.88 (986.61-1,060.75)	1,137.11 (1,097.49-1,179.49)	Men account for 59% of all years of healthy life lost due to hemorrhagic stroke.
Women (all ages)	26,436,290	2.43	721.05 (689.95-754.35)	726.48 (695.29-760.07)	Women account for 41% of all years of healthy life lost due to hemorrhagic stroke.

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Risk Factors for Stroke

Atrial Fibrillation and flutter (B 2.6)

Measure: Incidence	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	3,841,072	0.01	51.96 (45.71-59.35)	57.92 (51.07-66.26)	There are almost 4 million new cases of atrial fibrillation diagnosed each year.
Men	1,925,572	0.01	51.68 (45.61-59.05)	62.18 (54.85-71.12)	Half of all new cases of atrial fibrillation each year occur in men
Women	1,915,501	0.01	52.25 (45.93-59.67)	53.87 (47.32-61.70)	Half of all new cases of atrial fibrillation each year occur in women

Measure: Prevalence	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	46,310,600	0.65	626.47 (560.60-703.62)	715.47 (637.51-806.78)	There are over 46 million people who have atrial fibrillation
Men	23,197,500	0.65	622.60 (557.83-697.20)	796.41 (713.46-893.79)	Half of all people living with atrial fibrillation globally are men
Women	23,113,101	0.65	630.41 (560.08-711.11)	648.24 (575.37-733.34)	Half of all people living with atrial fibrillation globally are women

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Risk Factors for Stroke

Diabetes (B 2.6)

Measure: Incidence	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	20,827,783	0.05	281.75 (259.20-307.54)	280.05 (258.16-305.35)	There were 20.8 million new cases of diabetes diagnosed in 2016
Men	10,744,013	0.05	288.36 (264.90-314.98)	289.99 (266.91-315.61)	52% of new cases of diabetes diagnosed in 2016 are men
Women	10,083,771	0.04	275.03 (252.41-300.87)	269.79 (248.11-295.02)	48% of new cases of diabetes diagnosed in 2016 are women

Measure: Prevalence	Number	Percent of total from all causes	Crude rate per 100,000 per year (UI)*	Age-adjusted rate per 100,000, per year (UI)	Approved Statement for use in WSO Materials
Ages (all), Sexes (both)	383,453,016	5.38	5,187.21 (4,769.67-5,608.23)	5,334.83 (4,908.60-5,759.71)	Over 383 million people have diabetes.
Men	198,739,364	5.60	5,333.99 (4,907.77-5,779.51)	5,672.49 (5,225.48-6,136.63)	Among people living with diabetes globally, 52% are men
Women	184,713,652	5.17	5,038.04 (4,625.33-5,441.08)	5,009.53 (4,612.78-5,412.94)	Among people living with diabetes globally, 48% are women

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2016 GBD estimates for stroke burden (as measured by DALYs) attributable to risk factors.



Metabolic risks (high systolic blood pressure (SBP), high body-mass index (BMI), high fasting plasma glucose (FPG), high total cholesterol, and low glomerular filtration rate) account for

72.1%
(66.4–77.3)
of stroke burden



Behavioural factors (smoking, poor diet, and low physical activity) account for

66.3%
(59.3 to 73.1)

of stroke burden, and environmental risks (air pollution and lead exposure)

28.1%
(25.3 to 30.9)



Globally, high systolic blood pressure

is the largest single risk for stroke

(57.3% [49.8-64.4])

followed by dietary risk factors (51.1% [40.7-61.2]), high BMI (23.6% [15.1-33.3]), smoking (23.4% [20.2-26.6]), high fasting glucose (17.3% [11.6-24.7]), alcohol use (11.9% [9.4-14.6]), high total



All risk factors combined account for

88.8%
(86.5-90.9)

of the global stroke burden (from the GBD viz <http://ghdx.healthdata.org/gbd-results-tool>)

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**World Stroke
Organization**

WSO Administrative Office

c/o Kenes International

7, rue François-Versonnex C.P. 6053, 1211 Geneva 6, Switzerland

Tel: + 41 22 908 0488 | Fax: + 41 22 906 9129

E-mail: admin@world-stroke.org

www.world-stroke.org