


Why are strokes becoming more common in young adults?

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Disclosures

“ None

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Stroke in Young: What is % young+?

TABLE 1. Age-adjusted prevalence* of stroke among noninstitutionalized adults aged ≥18 years,[†] by selected characteristics – Behavioral Risk Factor Surveillance System, United States, 2006–2010

Characteristic	2006		2007		2008		2009		2010		p-value for linear trends	% change from 2006 to 2010
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)		
Total	2.7	(2.6–2.8)	2.6	(2.5–2.7)	2.6	(2.5–2.7)	2.4	(2.4–2.5)	2.6	(2.6–2.7)	0.05	-3.7
Age group (yrs)												
18–44	0.7	(0.6–0.8)	0.7	(0.6–0.8)	0.7	(0.6–0.8)	0.6	(0.5–0.7)	0.7	(0.7–0.8)	0.86	0.0
45–64	2.9	(2.7–3.1)	2.8	(2.7–3.0)	2.8	(2.7–2.9)	2.7	(2.6–2.8)	2.9	(2.8–3.0)	0.62	0.0
≥65	8.4	(8.1–8.8)	8.4	(8.1–8.7)	8.4	(8.1–8.7)	7.9	(7.7–8.2)	8.3	(8.0–8.5)	0.09	-1.2
Sex												
Men	2.8	(2.7–3.0)	2.8	(2.6–2.9)	2.6	(2.5–2.7)	2.5	(2.4–2.6)	2.7	(2.6–2.8)	<0.01	-3.6
Women	2.5	(2.4–2.7)	2.5	(2.4–2.6)	2.6	(2.5–2.7)	2.4	(2.3–2.5)	2.6	(2.5–2.7)	0.68	4.0

CDC Morbidity and Mortality Report, May 2012
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The Cost of Young Stroke

- “ In 2009, 34% of stroke hospitalizations were for patients younger than 65
- “ Cost of \$15.5 *billion* in 2008 due to lost productivity and premature mortality
- “ \$18.8 *billion* spent in 2008 on care for stroke survivors of all ages
- “ 2014 . South Carolina: **54.8%** of strokes were in individuals under 65.

National Center for Health Statistics data brief, 2012;
Roger VL, et al. *Circulation*, 2012
SC DHEC, 2014

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Young Stroke: Global Perspective

- “ Between 1990 and 2013, 25.6% increase in stroke prevalence globally in adults aged 20-64 years
- “ Total disability-adjusted life years globally ages 20-64 in 2013: 51,429,440
 . 24.4% increase from 1990

Krishnamurthi RV, et al, 2015

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2013 Diabetes Prevalence in US

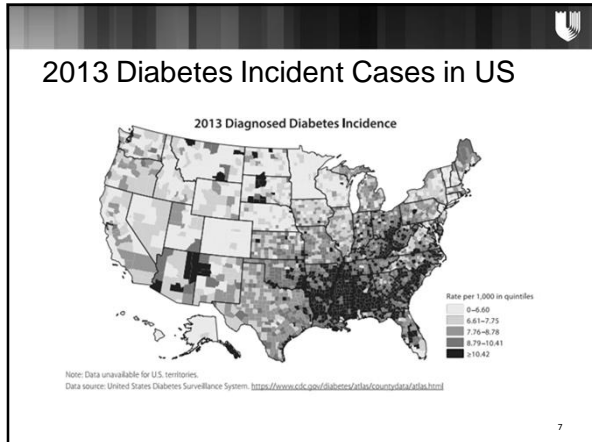
2013 Diagnosed Diabetes Prevalence

Percentage in quintiles

- 0-7.83
- 7.84-8.80
- 8.81-9.96
- 9.97-11.65
- >11.66

Data source: United States Diabetes Surveillance System. <https://www.cdc.gov/diabetes/data/countydiabetes.html>

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Diabetes Mellitus in Young Adults

- 2015 rates of diabetes mellitus prevalence in the US by age group:
 - Age 18-44: 4%
 - Diagnosed DM cases in US (millions): 3 (2.6-3.6)
 - Undiagnosed DM cases in US: 1.6 (1.1-2.3)
 - Age 45-64: 17%
 - Diagnosed DM cases in US: 10.7 (9.3-12.2)
 - Undiagnosed DM cases in US: 3.6 (2.8-4.6)
- 87.5% of adults in the US with DM overweight or obese
- 40.8% of adults in the US with DM get less than 10 minutes/week of moderate or vigorous physical activity

National Diabetes Statistics Report, 2017;
2011-14 National Health and Nutrition Examination Survey;
2015 U.S. Census Bureau

Hypertension in the US in Young Adults


TABLE. Age-adjusted* prevalence of hypertension and blood pressure control among adults aged 2-18 years, by selected demographic and health characteristics - National Health and Nutrition Examination Survey, United States, 2007-2010

Characteristic	Hypertension [†]				Blood pressure control [‡]				
	Sample Size [‡]	%	(95% CI)	Absolute difference (percentage points)	Relative difference (%)	%	(95% CI)	Absolute difference (percentage points)	Relative difference (%)
Total	11,782	29.6	(28.6-30.7)			48.0	(44.6-51.4)		
Sex									
Male	5,854	30.5	(29.0-31.9)	1.9***	6.6	42.7	(38.3-47.2)	-12.8**	-23.1
Female	5,928	28.6	(27.4-29.7)	Ref.	Ref.	55.5	(51.8-59.3)	Ref.	Ref.
Age group (yrs), unadjusted ^{††}									
18-44	5,051	9.8	(8.9-10.7)	Ref.	Ref.	40.9	(34-47.5)	-12.4**	-23.3
45-64	3,854	40.4	(37.9-43.0)	30.6**	312.2	53.3	(49-56.8)	Ref.	Ref.
≥65	2,877	71.6	(68.4-74.7)	61.8**	630.6	51.1	(47-54.6)	-1.9	-3.6

Gillespie and Hurvitz, 2013

Less Physical Activity

- “ Telecommuting:
 - . 2008: 2.5 million employed people used home as primary place of business
 - . 2017: 3.7 million employed people worked from home 50% of the time or more



Global Analytics Workplace, 2017 10

A Tale of a European Experience

Life Expectancy:
Italy: 82.7 years
United States: 79.3 years
Cigarette Smoking:
Italy: #34 globally at 1442.87 cigarettes/yr/person
United States: #57 globally at 1083.41/yr/person



World Health Organisation, 2017 11

Better Recognition and More Awareness

- “ Greater public awareness campaigns about stroke in general (patients and providers)
- “ Easier information sharing
- “ One quarter of strokes under age 45 stem from carotid/vertebral dissection
 - . More readily obtaining CT-Angiography in emergency departments in thrombectomy era

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the stroke blog

STROKE IN THE MAINSTREAM MEDIA YOUNG STROKE SURVIVORS FACEBOOK

Cerebellar stroke – it's about more than coordination and balance

by Jodi Dodds, MD on April 13, 2015 - 11:23 pm

The traditional teaching about the role of the cerebellum has typically been that it coordinates movements and "fine tunes" them. It provides balance when walking, and stability of a hand when reaching for a glass of water. When the cerebellum sustains an injury or is malfunctioning, then the result may be gait disturbance, falls, dizziness, or tremor.

The ideas above are what I learned in high school biology, in anatomy, and in physiology. Even throughout my neurology residency training, I largely thought of the cerebellum as a structure that provided balance and fine tuned movement.

It has interested me during my time in clinical practice to witness the fallout from cerebellar stroke, particularly in the younger stroke population, because it is often far beyond balance and movement. Yes, the symptoms mentioned above are often present in some form when the cerebellar stroke occurs, perhaps along with a...

<http://strokeblog.net>

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