

Stroke Smart Research

The following links provide useful research to support Stroke Smart efforts.

1. [Many stroke patients do not receive life-saving therapy](#), ScienceDaily
— Highlighting time to treatment delays (only 3.8% of ischemic stroke patients got tPA)
2. [Reducing Delay in Seeking Treatment by Patients With Acute Coronary Syndrome and Stroke](#) (PDF), AHA Scientific Statement
3. [Golden Hour Study](#) (PDF), Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine
— Highlights the effectiveness of early stroke treatment
4. [Prehospital Delay Lack of improvement 2017](#) (PDF), frontiers in Neurology
— Demonstrates that in the more than 2 decades medication has been available to treat strokes, many patients still do not access that effective treatment in time
5. A [JAMA Neurology study](#) (PDF) showing only 15% of patients get to tPA in time.
6. [Times from Symptom Onset to Hospital Arrival...Temporal Trends and Implications](#) (PDF)
— Shows that 75% of patients arrive too late.
7. [Barriers to Prompt Presentation to Emergency Departments in Colorado after Onset of Stroke Symptoms](#) (PDF)
— Shows 64% of patients don't get to treatment on time
8. [Activation of Emergency Medical Services for Acute Stroke in a Non-urban Population](#) (PDF)
— The study shows that less than 5% of stroke patients called 911 for themselves; only 38% of stroke patients overall arrived via EMS; the same study shows that 78% of patient arrive outside the treatment window.
9. [Time is Brain— Quantified](#) (PDF), American Heart Association Study
— "The typical patient loses 1.9 million neurons each minute in which stroke is untreated."
10. [Community Education Targeting a Middle East Population Improves Recognition of Stroke Signs and Onset to Door Times](#) (PDF)
— Surmounting cultural barriers to Stroke Smart training. A success story.
11. [A Neurosurgeon's Guide to Stroke Symptoms, Treatment and Prevention](#), American Association of Neurological Surgeons
— Shows only 3 to 5% of stroke patients get to treatment in time.
12. [Child-mediated Health Communication](#) (PDF), Journal of Health Disparities Research and Practice
— A study showing the value of school-based stroke education programs. The children effectively become first responders, recognizing the signs of a stroke and calling 911. The children also transmit

the knowledge to their parents, increasing community awareness overall even among adults. Click [here](#).

13. [Global Burden of Stroke](#) (PDF), University Hospital of Zurich
— A study outlining the global burden of stroke is here.
14. [Kids Identifying and Defeating Stroke](#) (PDF), NIH Public Access
— A study showing that "educational intervention was successful in improving students' stroke symptom and treatment knowledge and intent to call 911 upon witnessing a stroke compared with controls," is here.
15. [BE-FAST...Reducing the Proportion of Strokes Missed](#) (PDF), American Heart Association
— This study shows the results of adding "BE" to the "FAST" stroke sign acronym.
16. [Barriers and Disparities in Emergency Medical Services](#) (PDF)
— This study shows that "those less likely to call 911 were found in the following groups: 65 years or older, men, other race, unmarried, less than or equal to high school degree, less than \$25,000 family income, uninsured, no PCP, burden of medical costs, fair/poor health, previous history of strokes, or interaction between burden of medical costs and less than \$50,000 family income."
17. Some studies suggest that even prior experience with suffering strokes does not convey to getting treatment in time for subsequent strokes:
 - [Why People Do, or Do Not, Immediately Contact EMS following the Onset of Acute Stroke](#) (PDF), PLOS ONE
 - [Stroke Patients' Knowledge of Stroke: Influence on Time to Presentation](#), American Heart Association
18. [The Lifetime Risk of Stroke](#) (PDF), American Heart Association
— This study shows that the lifetime risk of stroke is 1 in 6.