



# Stroke: Two thought experiments: The wide-angle lens

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## Introduction

In this column, I hope to condense a number of important points into two compact fictitious scenarios. I hope you find these thought-provoking.

### Thought Experiment #1: The Trial

Dr. Katherine Comfort is feeling the strain of maintaining a calm exterior. In fact, she is anything but calm. She has been repeatedly offended by the grilling she has just suffered at the hands of the plaintiff's attorney.

It's a stroke case, and the plaintiff's attorney enjoys the calm confidence of a man who sees such a case as a slam dunk. He feels he has set the table for another easy payday from judge and jury. Now, the defense attorney approaches the witness stand.

Dr. Comfort's attorney introduces testimony indicating that the patient presented with neck and upper back pain. The patient also mentioned that his choir master was working with him to improve his 'breath support' while singing. Dr. Comfort had decided to measure the patient's breathing capacity by asking him to take a deep breath in, then count out loud, two numbers per second, as long as that single breath held out. This is a standard test of breathing capacity – the single breath count test. (1) With some difficulty, the patient managed to count to 19. Several weeks later, this single breath count test was repeated, and the patient could now count to 32. In addition, he reported that his choir master noted a marked improvement in his breath support.

The plaintiff's attorney angrily objects. What possible relevance does this have to the stroke that occurred at a visit several weeks later?

The defense attorney assures the judge that the relevance will be explained very soon. The testimony now turns to the issue of sports activity. At presentation, the patient had given up golf,

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which he loved. He stated he lacked the energy to do much of anything athletic, and certainly could not handle 18 holes of golf. After several weeks, he reported that he was back to his favorite game and was generally more active than before.

Another angry objection erupted from the plaintiff's attorney. Once again, the defense attorney assured the judge that relevance would soon be revealed.

The testimony now turned to blood pressure. The patient's blood pressure had been elevated at the first visit. When Dr. Comfort questioned him about this, the patient revealed his pressure had been somewhat elevated for several months, and his primary medical doctor was seriously considering putting him on antihypertensive drugs. After the first visit, the patient's pressure was significantly reduced. This reduction continued at the subsequent follow-up visits. The primary medical doctors' records confirmed the improvement of the patient's blood pressure while under chiropractic care. These records were now introduced into evidence.

The plaintiff's attorney now exhibited the frozen silence of a man suddenly finding himself on thin ice.

The defense attorney asked Dr. Comfort whether or not hypertension is a risk factor for stroke. Citing extensive research evidence, she answered in the affirmative. (2, 3, 4, 5, 6) He asked whether or not reduced lung volumes are a risk factor for stroke. Again, an affirmative answer, based on the scientific literature. (7, 8, 9, 10, 11). He then asked whether or not a sedentary lifestyle is a risk factor for stroke. Definitely, replied Dr. Comfort, with yet more literature backing up her assertion (12, 13, 14, 15, 16, 17, 18). Finally, he asked whether or not, in her professional opinion, the patient's improvement in activity level, breathing capacity and blood pressure were brought about in whole or in part by the chiropractic adjustments, including the cervical adjustments. Another affirmative answer, with more citations. (19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38)

Expert witnesses then were called. They each testified that any intervention that improves activity levels, blood pressure, and breathing capacity is in fact ameliorating modifiable risk factors for stroke.

In his closing statement, the plaintiff's attorney argued that not only is it biologically implausible that Dr. Comfort caused the stroke, but in fact the evidence indicates that she delayed the inevitable catastrophe by ameliorating the patient's multiple risk factors.

The jury handed in a defendant's verdict.

### **Thought Experiment #2: The Referral**

Dr. Comfort's new patient is a stroke survivor. Eager to avoid a second stroke, the patient attended the Kaleidoscope Institute, which is known for the multidisciplinary approach advocated in a paper several years previously. (39) The Institute is working with the patient in terms of diet, exercise, and stress management to ameliorate as many modifiable risk factors as possible. To support this program, chiropractic care has been recommended.

The patient has been referred to Dr. Comfort by the Kaleidoscope Institute. Her clinical notes will be carefully documented by the Institute, not only to help coordinate the patient's care, but also as part of their clinical research effort.

*(Please remember this is a thought experiment. The Kaleidoscope Institute does not exist... yet.)*

### **Discussion**

Excellent critiques of what may be called the '*stroke libel*' literature are easily accessible (40, 41, 42, 43, 44, 45, 46). These critiques gave and continue to give much needed defensive ammunition against our well-funded detractors. Taking nothing away from these well-argued and

much-needed papers, I suggest it is time to move beyond the 'not guilty' arguments and examine the issue with more of a wide-angle lens. There is a body of research strongly suggesting we ameliorate several risk factors for stroke, and the possible utility of this research in the courtroom should be considered. Certainly, it is high time for more interprofessional collaboration in both the clinical and research arenas where cardiovascular patients are concerned.

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