LAUGHING GAS

Parachute Approach to Evidence-Based Medicine

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(The following is a summary of an article by C. Smith and J. Pell that appeared in the British Medical Journal *in 2003—*BMJ*:327; 1459–1461—and the responses to it published in 2006 by M. Potts, N. Prat, J. Walsh, et al.—*BMJ*:33; 701–703—as well as letters to the editor—*BMJ*:333; 807–808—later published in that respected journal.)*

A widely accepted truism in medicine is that a medical intervention justified by observational data should be verified by a randomized controlled trial (RCT). In 2003, an article was published in *British Medical Journal* that looked humorously *and* seriously at RCTs. Specifically, the authors reflected on those situations where this rigor of investigation is not necessary, such as the use of parachutes to prevent death and major trauma related to gravitational challenge. The question the authors posed is whether policies can be established without RCTs, but nonetheless based on reasonable science. This may be of particular significance and appropriate for nations with severely limited health care resources for situations with high mortality and in which simple interventions (without RCTs) can have a major beneficial impact. Indeed, evidence-based medicine and RCTs are not synonymous.

Up front, the article offered that parachute use for recreational, voluntary and military sectors does reduce the risk of serious injury after "gravitational challenge," most frequently when encountered in jumping from an airplane. The authors claimed that belief in this successful intervention stems largely from anecdotal evidence. Given this, the paper attempted to systematically review RCTs that deal with the use of parachutes. It proposed a definition of parachute intervention as involving "a fabric device, secured by strings to a harness, worn and released by the participant (either automatically or manually) during free fall with the purpose of limiting the rate of descent." Studies without a control group were excluded, and the "clinical outcomes" sought were death or major trauma. Not surprisingly, the resultant meta-analysis failed to find a single RCT.

In the discussion section, the authors indicated that observational studies have been subject to "data dredging, confounding and bias," not to mention fraudulent research (that our own specialty has been uncovering with disturbingly increased frequency). Then, they continued, one must consider the natural history of gravitational challenge. In truth, the deployment of parachutes has led to morbidity and mortality due *both* to failure to deploy correctly *and* to iatrogenic complications. Because free fall without parachutes does *not* inevitably have serious adverse effects, the effectiveness of a parachute does have to be judged relative to the failure to use one.

The authors went on to inform us that those who would jump from airplanes without a parachute might well have a high prevalence of psychiatric illness, while those who do use parachutes not only are less likely to suffer from such, but also may differ in other demographic categories. Therefore, the supposed protective effects of parachutes may be a manifestation of the "healthy cohort" effect, and therefore would require observational studies to try to adjust estimates of relative risk for any such biases. No such analyses exist.

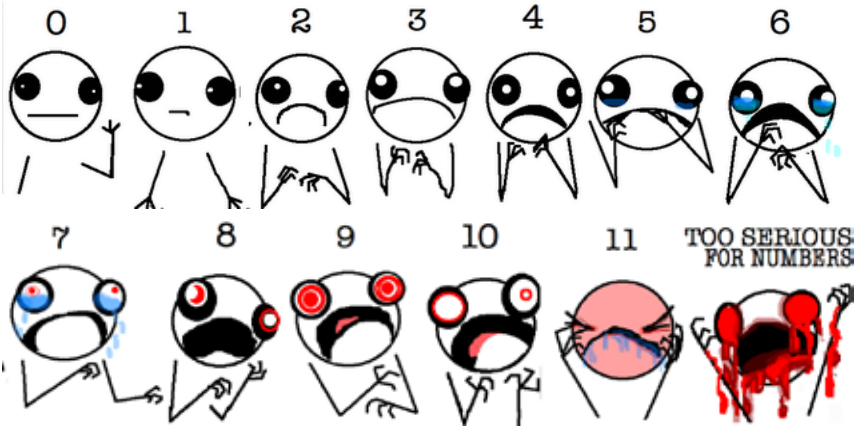
Then again, might utilization of parachutes represent physicians' obsession with preventive medicine and, in fact, be a misplaced belief in unproven technology to protect against occasional adverse events? But why stop here? What about the military-industrial complex and the profits made from companies that sell parachutes to those of that complex who have been convinced that parachutes are effective? Would they insist on first testing parachutes with an RCT, and, if they did, would it be wise to believe an RCT that declared parachutes safe?

The authors then spoke to the two options that remain for society: 1) common sense might instruct us as to the potential risks and benefits of parachutes; or 2) we might continue searching for "exclusively evidence-based interventions and preclude parachute use outside the context" of an RCT. The article concluded with the following: "The dependency we have created in our population may make recruitment … to such a trial difficult. If so, we feel assured that those who advocate evidence-based medicine and criticize use of interventions that lack an evidence base will not hesitate to demonstrate their commitment by volunteering for a double-blinded, randomized, placebo controlled, crossover trial."

Mark Singleton comments that while it may well appear to be ridiculous or even absurd to require "proof" of the seemingly obvious and indisputable in our medical practices, this thought process is not the same as further developing, improving and even innovating the very things we "know" to be truths. After all, the world was once flat, malaria caused by bad swamp air ("mal aria"), bleeding and purging effective treatment modalities, and gastric ulcers caused by stress and acid (bacterial infection not considered). Indeed, Einstein commented on scientific research by declaring that "information is not knowledge," and "imagination is more important than knowledge."

A Realistic Visual Chart for Postoperative Pain

A new way for visual reporting of postoperative pain follows, modified from the entertaining chart in the humorous and witty website/blog "Hyperbole and a Half" (hyperboleandahalf.blogspot.com). Clinically, this "tongue-in-cheek" chart is perhaps *more realistic* and of *greater diagnostic and therapeutic value* for our patients' assessment of their postoperative pain.



0. Hi. I am not experiencing any pain at all. I don't even know why I am here. And, by the way, am I really supposed to feel pain after a surgery?

1. I am completely unsure whether I am experiencing pain or itching, or maybe I just have a bad taste in my mouth.

2. I probably just need a Band-Aid, my comforter, or even a Binky.

3. This is distressing. I don't want this to be happening to me at all. Should I still be smiling?

4. My pain is not fooling around.

5. Why is this happening to me? Am I deserving of this? Do I need to use this visual chart?

6. Ow! Okay, my pain is super-legit now. Forget about this chart. Maybe a Tylenol? Maybe a more advanced chart?

7. I see the Lord coming for me, and I am scared. Maybe two extra-strength Tylenol?

8. I am experiencing a disturbing amount of pain. In fact, I might actually be dying. Please help.

9. I am definitely dying.

10. I am actively being mauled by a bear, or is it an alligator? Help!

11. Blood is going to explode out of my face at any moment.

Too serious for simple numbers. How about "infinity and beyond"!?!

Cruise Ships and Hotel/Motel Chains—Cheaper Alternative to Traditional Assisted-Living and Retirement Facilities

The cruise ship industry, especially since the recent debacle of the cowardly captain, might well find a new source of "customers"—the elderly seeking affordable assisted-living facilities. It has been labeled as "cruise ship care," perhaps soon to become a corollary of the Obamacare concept. It would involve converting cruise liners (well, maybe not the Disney-themed ones) into "floating assisted-living centers." The costs? They might be competitively priced with those of land-based facilities. In a 2004 article in the *Journal of the American Geriatrics Society,* it was estimated that a 20-year prepaid cost for such assisted-living facilities would be approximately a quarter of a million dollars, pretty much identical to that of the traditional assisted-living facility. Cruise ships have many of the traditional services such as housekeeping, laundry, socialization opportunities, and even a currently sought-after benefit—a full-time physician! Yet this is not the only potential boon for retirees!

What about your favorite modestly priced motel/hotel chain as a replacement for a nursing home? Again, in 2004, it was estimated that with a combined long-term discount and senior discount, the cost at one of these chains would amount to about $50 a day. Given the average cost of a nursing home in 2004—about $190 a day—this would leave about $140 a day for food, laundry, gratuities (enough to make the help quite happy) and even new movies on the cable TV! Moreover, there are amenities such as daily housekeeping, heated swimming pools, exercise rooms, regular cable TV, laundry facilities (if you choose to do it yourself), free repairs (TV broken, light bulb not working, mattress not feeling good?), security, room service, and even free toothpaste, soap, shampoo, coffee and tea. Most hotel/motel chains are located on city bus lines, but there usually are free municipal transportation services for seniors, and of course, the airport shuttles would be available should one desire a mini-trip for a change of scenery. But that change in scenery can be even more varied and exiting: you might want to move around from one city to another, perhaps in Hawaii, Florida, California, Europe or elsewhere. Wherever the hotel/motel may be, it likely would be an enticement for the grandkids (or even children) to visit, sort of a destination holiday for the family or old friends. And some even permit pets.

Adapted from a November 2004 article by Mark Ingebretsen in The Wall Street Journal *and another flight of fantasy from an anonymous source the same year.*

PUNS—THE LOWEST CONCENTRATION OF LAUGHING GAS*

The butcher in the emergency room had backed up against the meat grinder and got a little behind in his work.

When chemists die, they barium.

I had a patient who was addicted to brake fluid; however, he claims he can stop at any time.

The patient says she recognized me from the vegetarian club, but I'd never met herbivore.

I was so engrossed in reading a physics textbook about anti-gravity that I couldn't put it down.

The patient received a letter that she had type-A blood, but it was a type-O.

I didn't like my beard at first, but then it grew on me.

Bladder infections mean urine trouble.

Great Britain has no kidney banks, but it does have a Liverpool.

The toilets in the police station were stolen. The police had nothing to go on.

A hole was found in the nudist camp wall. The police are looking into it.

When the smog lifts from Los Angeles, UCLA.

She was only a whiskey-maker, but he loved her still.

The guy who fell onto an upholstery machine was fully recovered.

A person who jumps off a cliff jumps to a conclusion.

A theatrical performance based on the above puns would be a play on words.

**Well, dear readers, in their fascinating book on using humor to reverse-engineer the mind* (Inside Jokes, *The MIT Press, 2011), the renowned philosopher Daniel Dennett and his co-authors, Matthew Hurley and Reginald Adams., Jr., state that "puns are a notoriously weak form of humor. Occasionally we find a shockingly good one, but it is usually shockingly good because it is a pun, and the expectation is that puns are weak. ... It is a minimal kind of humor." —Ed.*