



Michael Phelps And Cupping

A role model to follow or an Olympic sized fallacy?

By Daniel Liang

Daniel Liang looks at a familiar world in an unfamiliar way - through a skeptical lens. Every month he peeks under the hood of a meme, myth, bias, or news article. Disclaimer: the opinions expressed do not represent the magazine, advertisers, employer, or International Olympic Committee.

When Michael Phelps emerged from the Olympic pool, most of the world wondered, "What on earth are those round purple bruises?" Our readers in China knew exactly what they were - cupping marks. After all, cupping is a common folk medical practice in China, and just like scraping (刮痧), it leaves a highly visible and unmistakable mark often worn like a badge of honor.

Cupping is an ancient medical practice that first appeared in a book called "52 Remedies" over two thousand years ago. The basic idea is to put a cup against the patient's skin and create a partial vacuum. The vacuum causes the skin to rise into the cup, breaking capillary vessels and creating the telltale circular marks. Sometimes incisions are made prior to cupping, making the process more like bloodletting.

The most common way to create suction is to light a cotton ball soaked in alcohol, quickly coat the inside of a glass cup, hold the cotton, and slap the burning cup onto the patient's skin. If the seal is complete, the flame will go out due to the lack of oxygen. If

the seal is incomplete, well, let's just say you would know immediately. A safer and more modern approach is to use a pump to draw air out of the cup through a valve.

Cupping has been touted as a treatment for everything from the common cold, arthritis, shingles, hypertension, asthma, paralysis, to impotence. As Dr. Crislip pointed out, it seems to work for everything except birth control. As tempting as it may be, do not try cupping for birth control.

Does cupping actually work? Let's examine the evidence. Instead of looking at anecdotes and individual studies, the best evidence comes from a systematic review of randomized trials. The most recent reviews generally show that there is a potential positive effect, especially for pain. This is interesting, because virtually every single physician practicing science-based medicine considers cupping to be pseudoscience. Is this a case of ideology trumping evidence? No. A closer look at the evidence tells the real story.

The systematic reviews show efficacy because the underlying studies are overwhelmingly positive, and the vast majority of those studies are from (where else?) China. You see, in China, when it comes to Traditional Chinese treatments such as acupuncture and cupping, only positive studies are published. In fact, a careful review found that ALL trials originating in China for acupuncture were found to be effective. Funny, because most high quality studies performed outside of China show the exact opposite.

Another major problem is the quality of the studies. The gold standard of

clinical trials is a large scale, placebo controlled, double blind study. It's easy to give a sugar pill as a placebo when you're looking at a drug; but with treatments such as acupuncture and cupping, finding a suitable placebo is much more difficult. Sure enough, all of the reviews quoted very poor methodology of the underlying studies, and nearly all of the trials included had a high risk of bias.

The nail in the coffin comes in the form of an overview of the systematic reviews - "Based on evidence from the currently available SRs, the effectiveness of cupping has been demonstrated only as a treatment for pain, and even for this indication doubts remain". The conclusion is only as strong as the underlying data; in other words, garbage in, garbage out. If the pond is only stocked with goldfish, don't expect to catch a marlin.

If cupping is ineffective, why do Olympians do it? Well, Olympians may be good at sports, but that doesn't automatically make them experts in anything else. They are subject to the same biases and logical fallacies, and

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存疑之隅 迈克尔菲尔普斯与拔罐



里约奥林匹克运动会上迈克尔菲尔普斯背上的印子引起了全世界的关注，所有人都在问那到底是什么。在中国的朋友们早就知道答案了，但问题是拔罐真的有益吗？

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are every bit as superstitious as you and I. Every Olympic athlete is talented, hard-working, well supported, and a winner of the gene pool lottery; and in a world where medals are separated by hundredths of a second, anything that promises the tiniest advantage will seem appealing. It is not surprising that in their pursuit of an edge, athletes will resort to various forms of superstition, from lucky red shirts, hologram bracelets, to kinesiotape and cupping.

Olympic coaches are paid to produce results, not to teach critical thinking. As long as it makes the athlete feel comfortable and does not get in the way, the coaches will likely be indifferent to the latest pseudoscience fad. Unfortunately, this indifference legitimizes the fad with an implicit endorsement, which is further amplified by basking in the glow of a gold medal.

Cupping fits a narrative -it's been practiced for thousands of years (appeal to antiquity), millions of people do it (argumentum ad populum), famous people do it (appeal to celebrity), and it's "natural" (appeal to nature). It also has a rarely discussed but arguably more persuasive force behind it: psychology.

Cupping is not a risk-free or painless procedure. The time and money invested, along with the discomfort, subconsciously prime us to recognize this as an effective therapy. Our brain is motivated to reduce inconsistencies; it justifies our efforts and ratifies our choices without us even being aware of it. This is known as cognitive dissonance theory, and is one of the most important developments in social psychology. In this sense, cupping works the same way as hazing; our perception of value is driven by the

cost. Our brain believes that we go through the pain because it's worth it.

We live in a celebrity culture, where being good at entertaining, pretending, or exercising seemingly confers expertise in nutrition, toxicology, immunology, medical procedures, planetary sciences, even global warming. But before we follow our favorite swimmer and get giant hickeys, realize that there is little scientific evidence that it works, even though your brain might tell you otherwise. Of course, you might have other reasons for doing it. For example, I enjoy a foot massage now and then, even though it hurts like hell. Why do I do it? Well, it feels good when it stops.

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