

## **A Medical School Physician Professor's Case Against Vivisection in Medical Education**

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“Though this may be play to you, tis death to us” Sir Roger L’Estrange

Doctors taking the Hippocratic Oath upon graduating from medical school vow to place their patients’ welfare above all other considerations. While such a lofty and selfless aspiration is unreachable for most physicians in everyday practice, it can, like the stars above, inspire us and give us something to steer by. Medical educators are therefore naturally resistant to animal rights arguments about eliminating vivisection from medical school curricula, since any possible human benefit deriving from such exercises trumps concern about animal suffering. The burden of proof, therefore, falls upon physician opponents of animal vivisection to convince both medical school faculty and medical students that the replacement of vivisection with other modalities will not compromise education and ultimately patient care.

Most terminal animal laboratory teaching exercises are found in physiology and pharmacology courses during the first two basic science years of medical school. These courses are usually taught by Ph.D. faculty who routinely use animals for research. For these educators, animal use in teaching differs little from animal use in research where, they believe, the suffering imposed upon the animals is a perhaps regrettable but necessary price to be paid for the knowledge gained, which could eventually benefit humans.

Unlike animal research, however, vivisection teaching exercises generate no new knowledge. In fact, if everything doesn’t go just as predicted during the vivisections, their teaching value is lost. Since no new knowledge derives from these vivisections, they can only be ethically justified if they provide otherwise unobtainable educational benefit. But studies comparing students’ objectively measured mastery of physiology and pharmacology have repeatedly shown no educational advantage for animal vivisection over alternative instructional methods.

Perhaps reflecting this failure to identify any superiority for vivisection over non-lethal alternatives has been a trend away from animal laboratory exercises in medical education. As recently as 1985, 63 percent of U.S. medical school physiology courses used, and typically required participation in animal vivisection, most often of dogs. By 2001, this percentage had dropped to 18 percent and 82 percent of these were theoretically optional rather than required. The decline in pharmacology has been even more dramatic, from 50 percent of courses using vivisection in 1985 to 5% in 2001. For this remaining 5 percent, all were optional instead of required. We physician medical school faculty members opposed to vivisection cite these changes as an argument against continuing such laboratories in the minority of departments where they persist. We reason that if vivisection is not used in the majority of medical schools producing graduates qualified to practice medicine (including such prestigious institutions as Harvard, Yale, Stanford, and the Mayo Clinic), it can not be necessary to continue using it in any schools. Once the necessity has been removed from a necessary evil, all that persists is the evil.

Many medical school physiology and pharmacology departments have now substituted sophisticated computer simulation programs for live animal laboratory exercises. These simulations can be repeated as often as needed until the medical students grasp the underlying physiologic or pharmacologic principles being demonstrated. This is one clear advantage computer simulations have over live animal laboratory exercises, since the latter can be performed only once, ending with the animal's life.

Even the staunchest opponent of vivisection in teaching must grant, however, that no matter how life-like simulators may be, replete with ersatz human torsos and faux veins for injecting drugs, they can not replicate the awe-inspiring "Gee whiz" effect of an opened living breathing dog or pig. Physiology in action with expanding lungs, a beating heart, and blood spurting arteries is profoundly impressive. But vivisection is not the only, and certainly not the best way for medical students to experience this thrill. Mandatory clinical clerkships include general surgery and obstetrical and gynecologic surgery, which place the students in the operating room under the supervision of physicians. Here they will experience the same thrilling awe that vivisection provides, but their attention will be focused on how to preserve the miraculous life they witness, rather than on ending it.

Since most persisting physiology and pharmacology vivisection teaching laboratories are optional, they could be ended if medical students simply opted not to participate in them. To paraphrase an anti-war slogan from the 60s "What if they gave a dog lab...and nobody came?" But students are often concerned and conflicted about opting out of these vivisections. While many of them are instinctively opposed to hurting animals, their first priority is to become competent physicians. They fear that they might miss out on a crucial component of their education if they don't do the vivisections. To allay these fears, often stoked by advocates of vivisection in physiology and pharmacology departments, the University of California Medical School physician faculty members opposed to vivisection have enlisted the aid of physicians practicing in the community. These veteran doctors can assure the medical students that developing clinical competence does not require vivisection, and bears no relation to what a student does or does not do on one day of his or her first year of medical school.

The case against vivisection in clinical surgery clerkships is less obvious than the preceding arguments opposing live animal laboratory exercises in physiology and pharmacology. Surgery clerkships with vivisections fell from 38% to 17% in 1994, but have not since continued to decline. At first blush, practicing surgery on animals before performing it on people seems ethically unassailable, at least from the human's point of view. But in fact, interns and residents committed to becoming surgeons acquire their technical skills by operating on patients under the supervision of experienced surgeons over the course of 5 to 7 year residency training programs. No one becomes a surgeon without this prolonged post MD apprenticeship. While vivisectioning a dog or pig during the third year of medical school may provide the flavor of what human surgery is like, it isn't how surgeons are trained and can certainly be forgone by the great majority of medical students without surgical aspirations.

The intimacy of the doctor-patient relationship demands more of a physician than knowledge and technical skill. The key to caring for a patient is caring about the patient, which requires empathy. Teaching medical students to suppress their natural empathy for the animals they are instructed to vivisection runs contrary to the highest motivation students have for entering medicine in the first place, the desire to relieve suffering, not to cause it. Physicians of course cannot be immobilized by their empathy: they must develop a capacity for objectivity in the midst of emotionally charged circumstances.

Some vivisection proponents go so far as to celebrate the tough minded obliteration of empathy necessary to vivisection a dog you would, under other circumstances, play with or pet. They equate treating a dog as a 'physiologic preparation' with developing a capacity for objectivity. But this mistakes a vice for a virtue, as described in the Tibetan Buddhist concept of the near enemy. All virtues have cousin vices, termed "near enemies," which superficially resemble them, but are really distinctly different if not opposite in nature. Jealousy looks like love, but isn't, just as apathy resembles equanimity, but isn't. So too, the callousness required for vivisection appears similar to the scientific virtue of objectivity, but is actually the vice of indifference to the suffering of others.

It is humbling for a physician to admit it, but probably the best definition of empathy comes from a lawyer, not a doctor. The lawyer was Abraham Lincoln. Once, when discussing a fellow politician's lukewarm enthusiasm for outlawing slavery, Lincoln remarked that some men feel the lash pretty well when it is applied to their own backs, but feel nothing when seeing it applied to the backs of others. Empathy is the ability to feel the lash applied to another's back. Students' capacity for empathy should be encouraged, strengthened, and reinforced by their medical education, not destroyed by it.

Enlightened Buddhist insights about the near enemies of virtue and Lincolnesque empathy for the suffering of others are probably too much to expect of medical students being told to vivisection by their revered professors. It is more realistic for physician faculty members opposed to vivisection to hope for the attitude of John Updike's Harry (Rabbit) Angstrom. Harry once recalled that when he was a boy, he sometimes saw other kids amusing themselves by using a magnifying lens to burn ants. Harry, although hardly a paragon of virtue, never participated in this recreation, because even as a child he recognized that people were cruel enough without working at it. We hope that medical students, once informed that vivisection is unnecessary in their education, will conclude that it represents another example of people working at cruelty and decide like Harry, not to work at it with them.

The opinions expressed in this article are my own, and should not be interpreted as expressing any official positions by the University of California San Diego Medical School or its Departments of Pathology and the Neurosciences.