DOWNLOAD PDF FDA : A FAILED EXPERIMENT?

Chapter 1 : 92% of statistics are taken out of contextâ€¦ â€“ Speaking of Research

Arhu's Failed Experiment is a side quest acquired in Cyseal. Starting The Fabulous Five side quest is a prerequisite. After speaking to Mendius to trigger The Fabulous Five, you need to go.

Comments The personal sacrifices made by tens of thousands of patients, along with billions of dollars invested in drug development, are effectively being wasted because the results of failed experiments are so rarely made available to other scientists. The finding, from a McGill University study , points to a vast domain of data on so-called stalled drugs that could inform related scientific research and help physicians make better choices on behalf of their patients. Kimmelman and his colleagues looked at registered clinical trials involving a range of drugs that reached the level of a phase III trial â€” the final stage of testing before a drug can be approved by the U. Typically, FDA approval determines whether a drug will reach consumers in much of the world. The McGill team found that in cases where a phase III trial was conducted but the drug was not approved, the results were published only 37 per cent of the time. A total of 20, human subjects participated in the 63 per cent of the trials that were never published. The picture changed somewhat for drugs that won approval. The team found that the trial results of those drugs were published 75 per cent of the time. Yet this is also a concern, Prof. Kimmelman said, because it implies that complete data on one-quarter of the drugs coming to market are not publicly available. This problem has come to light in controversies over the risks and efficacy of a number of high-profile medications, including Vioxx, Paxil and Tamiflu. But the McGill investigation throws a spotlight on a related issue: Far less is known about drugs that are not approved for a particular use, even though that information could be scientifically important. When the work is conducted on behalf of a drug company, there could be incentive to suppress failed results because the details may aid competitors. And negative results can be harder to publish because editors of scientific journals find them less interesting and newsworthy. For busy researchers aiming to maximize the impact of their science, the most likely reason not to publish may simply be a lack of time and resources. That was the conclusion of a systematic review of authors who presented abstracts of findings at scientific conferences but never followed up by publishing full-length articles on the work. The review, which appeared last month in the Journal of Clinical Epidemiology, recommended that scientists be required to have a dissemination plan for their data before a clinical trial begins, and that all data ultimately be posted in an open-access format. The FDA currently requires that the results of clinical trials for approved drugs be deposited in a public registry, although this rule is not strictly enforced. New regulations under consideration by the U. Gordon Guyatt, a clinical epidemiologist at McMaster University, who was not involved in the McGill study, noted that research ethics boards, which are required for oversight of all human trials, should insist that data be made public regardless of the outcome. Kimmelmen added that when research is supported by public dollars, funding agencies could play a stronger role in improving publication rates of clinical trials.

Chapter 2 : Data on failed drug experiments rarely made public, McGill study finds - The Globe and Mail

Clinical trials are an integral part of new product discovery and development and are required by the Food and Drug Administration before a new product can be brought to the market.

Unfortunately, not all of these projects work out so well. These five experiments have all gone wrong, whether due to the errors of the scientists, the unexpected behavior of the subjects or because the public reaction destroyed what may have actually been an advantageous advance in the field. Tripping Elephants On Parade Image via http [Flickr] While many test animals are killed in the name of research, many of them are at least being used to investigate potentially life-saving drugs. Perhaps the saddest and most spectacular failure of any animal-based experiment occurred in , when Tusko the elephant not the one pictured was given LSD simply for the sake of seeing how the magnificent beast would react to such a substance. Pierce, had no idea how much LSD it would take to dose an elephant. They ended up deciding to give Tusko milligrams, which is about times the dosage a human takes, despite the fact that an elephant weighs about 90 times more than the average human. After being dosed, Tusko immediately started running around in his pen and soon lost control of his movements, eventually collapsing to the ground and going into seizures. To counteract the LSD, the doctors gave the elephant 2, milligrams of an antipsychotic. He died a few minutes later. Two other elephants were later dosed with the drug and suffered no ill effects. The Monster Study The effects of positive vs. Ten of the children had stutters and the rest spoke just fine. The stutterers were put in two groups, group IA that was to use positive reinforcement and other, group IB, that was to receive negative reinforcement. The non-stutterers were also broken into two groups, group IIB, that was told they spoke fine, and group IIA, who were told they were starting to stutter and needed to avoid making mistakes at any cost. The impact on group IIA was exactly what the doctor had hoped for. The entire group started falling behind on their school work. The children started to second-guess their speech abilities and many stopped talking at all. One girl ran away shortly after the experiment ended. Although none of the kids became stutterers, many of the children retained speech problems their entire life and most were reluctant to speak. The Baby Born A Chimp Image via BoingBoing There have been ample stories of human children being raised by other species and eventually becoming more like that animal than an actual human. If the process could go one way, Winthrop Kellogg was sure that it could also go the other, particularly if the animal involved was one of our closest genetic cousins. This would give them the unique opportunity to raise a baby chimp, named Gua, right along side a human baby. The chimp scored notably higher on the intelligence tests due the fact that the species matures faster than human babies. Gua picked up quite a few human behaviors, such as walking upright and eating with a spoon, but she failed to learn how to speak and learn simple repetition games, like patty cake. Her emotions were also much less predictable and inclined to change at the drop of a hat. Unfortunately, the experiment really started to go wrong when little David started to become more chimplike than Gua became humanlike. He only learned a few simple words and often took to making chimp howls when he wanted something. After only nine months, the Kelloggs gave up on Gua, concerned that David would fail to grow up like a normal human child. In the years since this project, plenty of people have adopted chimps as babies, proving beyond a doubt that the animals can never act completely human â€”even if they are adorable in overalls. Yellow Fever Fever Doctor Stubbins Ffirth observed that yellow fever was prominent during the summer, but receded as winter approached and made the mistaken conclusion that this meant the disease was not contagious. The fact that he never caught the disease after constant exposure to patients with the malady further inspired him. In order to prove the disease was non-contagious, Ffirth decided he needed to expose himself to all types of bodily fluids secreted by yellow fever victims. He drank the vomit of the victims, he injected it into his veins, he dripped it into his eyes and he inhaled the fumes from the vomit. Through it all, he never did manage to contract the disease. Rather than admitting that he made his point or moving on to testing on other people, Ffirth realized there were far more body fluids for him to experiment with. He used blood, urine, saliva and perspiration. Even after all of these tests, his still managed to resist the disease. Unfortunately, Ffirth failed to take into account the different stages of the disease. His samples all came from persons who were in the late

stages of the malady, and were, thus, no longer contagious. Had he experimented with samples from people who only recently contracted the disease, his results likely would have been a whole lot different. As for the observation that the disease disappeared during the winter months? He was right about that, just wrong about the cause. Yellow fever is caused by a RNA virus that is spread by mosquitoes. A Baby In A Box Image via Silly Rabbit [Wikipedia] This is perhaps the only science experiment in this list that went totally right â€”up until the idea was released to the public. When his wife became pregnant with a second child, he worked hard to develop a more comfortable and elegant solution. The sleeping area was a shallow bin with a safety glass window that allowed it to see the outside world while keeping it safe. The box provided the baby with a heater, humidifier and an air filter so the baby always had fresh, warm air. It was also well-insulated to help keep out loud noises. Parents could lift the baby out of the device without back strain. Plus, this also meant less laundry for the parents. The mattress was made of a sheet of canvas held in place by two rollers, so when it got dirty, they just had to roll it to reveal a new, clean section. People accused the doctor of caging his child up like an animal, raising a child like a vegetable garden and gaining inspiration for his idea from a grocery freezer case. While Skinner did want to run formal experiments comparing ten children who were raised with the box and ten children who were raised in a crib to see if either group had any disadvantages long term, the public outrage against his work led him to back off on his project. His own daughter did seem to come out just fine in the end, becoming a successful artist in London. Now, obviously, there are far more science projects gone wrong than just these. Or let us know what you think about the projects. Personally, I think the baby box is a great idea and I would love to have had one when I have a kid.

Chapter 3 : Scientific Problems - American Anti-Vivisection Society

Leading experts on the use of medical drugs in capital punishment have accused death penalty states of conducting a "failed experiment" with new drug combinations following a recent run of.

The opinions expressed here are those of the author and do not represent the official position of the U. Food and Drug Administration or the U. This article has been cited by other articles in PMC. I demonstrate that a growing body of scientific literature critically assessing the validity of animal experimentation generally and animal modeling specifically raises important concerns about its reliability and predictive value for human outcomes and for understanding human physiology. The unreliability of animal experimentation across a wide range of areas undermines scientific arguments in favor of the practice. Additionally, I show how animal experimentation often significantly harms humans through misleading safety studies, potential abandonment of effective therapeutics, and direction of resources away from more effective testing methods. The resulting evidence suggests that the collective harms and costs to humans from animal experimentation outweigh potential benefits and that resources would be better invested in developing human-based testing methods. Regardless of its categorization, animal experimentation is intended to inform human biology and health sciences and to promote the safety and efficacy of potential treatments. This fact makes it surprising that animal experimentation is typically viewed as the default and gold standard of preclinical testing and is generally supported without critical examination of its validity. A survey published in of anecdotal cases and statements given in support of animal experimentation demonstrates how it has not and could not be validated as a necessary step in biomedical research, and the survey casts doubt on its predictive value. I further show that the collective harms that result from an unreliable practice tip the ethical scale of harms and benefits against continuation in much, if not all, of experimentation involving animals. I argue for the critical importance of each of these conditions. Animals in laboratories are involuntarily placed in artificial environments, usually in windowless rooms, for the duration of their lives. Captivity and the common features of biomedical laboratoriesâ€”such as artificial lighting, human-produced noises, and restricted housing environmentsâ€”can prevent species-typical behaviors, causing distress and abnormal behaviors among animals. Yet, when the mice were housed in larger cages, those defects almost completely disappeared. The results suggest that there are important influences of environmental conditions and procedures specific to individual laboratories that can be difficultâ€”perhaps even impossibleâ€”to eliminate. These influences can confound research results and impede extrapolation to humans. The Discordance between Human Diseases and Animal Models of Diseases The lack of sufficient congruence between animal models and human diseases is another significant obstacle to translational reliability. Human diseases are typically artificially induced in animals, but the enormous difficulty of reproducing anything approaching the complexity of human diseases in animal models limits their usefulness. Stroke is relatively well understood in its underlying pathology. Yet accurately modeling the disease in animals has proven to be an exercise in futility. To address the inability to replicate human stroke in animals, many assert the need to use more standardized animal study design protocols. This includes the use of animals who represent both genders and wide age ranges, who have comorbidities and preexisting conditions that occur naturally in humans, and who are consequently given medications that are indicated for human patients. However, the drug failed in clinical trials, despite the fact that the set of animal experiments on this drug was considered the poster child for the new experimental standards. Standard stroke medications will likely affect different species differently. There is little evidence to suggest that a female rat, dog, or monkey sufficiently reproduces the physiology of a human female. Perhaps most importantly, reproducing the preexisting conditions of stroke in animals proves just as difficult as reproducing stroke pathology and outcomes. In order to reproduce the effects of atherosclerosis in animals, researchers clamp their blood vessels or artificially insert blood clots. These interventions, however, do not replicate the elaborate pathology of atherosclerosis and its underlying causes. Reproducing human diseases in animals requires reproducing the predisposing diseases, also a formidable challenge. The inability to reproduce the disease in animals so that it is congruent in relevant respects with human stroke has contributed

to a high failure rate in drug development. More than potential therapies initially tested in animals failed in human trials. Animal cancer models in which tumors are artificially induced have been the basic translational model used to study key physiological and biochemical properties in cancer onset and propagation and to evaluate novel treatments. The high clinical failure rate in drug development across all disease categories is based, at least in part, on the inability to adequately model human diseases in animals and the poor predictability of animal models. In other words, the animal experiments were no more likely than a flip of the coin to predict whether those interventions would benefit humans. These factors certainly require consideration, and recognition of each potential difference between the animal model and the human disease motivates renewed efforts to eliminate these differences. As a result, scientific progress is sometimes made by such efforts. However, the high failure rate in drug testing and development, despite attempts to improve animal testing, suggests that these efforts remain insufficient to overcome the obstacles to successful translation that are inherent to the use of animals. Too often ignored is the well-substantiated idea that these models are, for reasons summarized here, intrinsically lacking in relevance to, and thus highly unlikely to yield useful information about, human diseases. In spinal cord injury, for example, drug testing results vary according to which species and even which strain within a species is used, because of numerous interspecies and interstrain differences in neurophysiology, anatomy, and behavior. A systematic review found that even among the most standardized and methodologically superior animal experiments, testing results assessing the effectiveness of methylprednisolone for spinal cord injury treatment varied considerably among species. Even rats from the same strain but purchased from different suppliers produce different test results. A drug might be shown to help one strain of mice recover but not another. Despite decades of using animal models, not a single neuroprotective agent that ameliorated spinal cord injury in animal tests has proven efficacious in clinical trials to date. The study found that mice differ greatly from humans in their responses to inflammatory conditions. Mice differed from humans in what genes were turned on and off and in the timing and duration of gene expression. The mouse models even differed from one another in their responses. Wide differences have also become apparent in the regulation of the same genes, a point that is readily seen when observing differences between human and mouse livers. Despite the high degree of genome conservation, there are critical differences in the order and function of genes among species. To use an analogy: Where we mostly differ is in the way the genes or keys are expressed. In other words, the same keys or genes are expressed, but their different orders result in markedly different outcomes. Recognizing the inherent genetic differences among species as a barrier to translation, researches have expressed considerable enthusiasm for genetically modified GM animals, including transgenic mice models, wherein human genes are inserted into the mouse genome. However, if a human gene is expressed in mice, it will likely function differently from the way it functions in humans, being affected by physiological mechanisms that are unique in mice. For example, a crucial protein that controls blood sugar in humans is missing in mice. Use of GM mice has failed to successfully model human diseases and to translate into clinical benefit across many disease categories. In many instances, nonhuman primates NHPs are used instead of mice or other animals, with the expectation that NHPs will better mimic human results. However, there have been sufficient failures in translation to undermine this optimism. HRT is now known to increase the risk of these diseases in women. Yet all of about 90 HIV vaccines that succeeded in animals failed in humans. However, because the serum protected chimpanzees from HIV infection, two Phase 3 clinical trials were undertaken 57 â€”a clear example of how expectations that NHP data are more predictive than data from other in this case, cell culture testing methods are unproductive and harmful. The implicit assumption that NHP and indeed any animal data are reliable has also led to significant and unjustifiable human suffering. For example, clinical trial volunteers for gp were placed at unnecessary risk of harm because of unfounded confidence in NHP experiments. Two landmark studies involving thousands of menopausal women being treated with HRT were terminated early because of increased stroke and breast cancer risk. The compound was designed to dampen the immune system, but it had the opposite effect in humans. NHPs also underwent repeat-dose toxicity studies and were given times the human dose for at least four consecutive weeks. Cynomolgus and rhesus monkeys were specifically chosen because their CD28 receptors demonstrated similar affinity to TGN as human CD28 receptors. Based on such

data as these, it was confidently concluded that results obtained from these NHPs would most reliably predict drug responses in humansâ€”a conclusion that proved devastatingly wrong. The repeated failures in translation from studies with NHPs belie arguments favoring use of any nonhuman species to study human physiology and diseases and to test potential treatments. If experimentation using chimpanzees and other NHPs, our closest genetic cousins, are unreliable, how can we expect research using other animals to be reliable? The bottom line is that animal experiments, no matter the species used or the type of disease research undertaken, are highly unreliableâ€”and they have too little predictive value to justify the resultant risks of harms for humans, for reasons I now explain. The Collective Harms That Result from Misleading Animal Experiments As medical research has explored the complexities and subtle nuances of biological systems, problems have arisen because the differences among species along these subtler biological dimensions far outweigh the similarities, as a growing body of evidence attests. These profoundly importantâ€”and often undetectedâ€”differences are likely one of the main reasons human clinical trials fail. But, in practice, how does one take into account differences in drug metabolism, genetics, expression of diseases, anatomy, influences of laboratory environments, and species- and strain-specific physiologic mechanismsâ€”and, in view of these differences, discern what is applicable to humans and what is not? If we cannot determine which physiological mechanisms in which species and strains of species are applicable to humans even setting aside the complicating factors of different caging systems and types of flooring , the usefulness of the experiments must be questioned. It has been argued that some information obtained from animal experiments is better than no information. The use of nonpredictive animal experiments can cause human suffering in at least two ways: Humans are harmed because of misleading animal testing results. Imprecise results from animal experiments may result in clinical trials of biologically faulty or even harmful substances, thereby exposing patients to unnecessary risk and wasting scarce research resources. An equal if indirect source of human suffering is the opportunity cost of abandoning promising drugs because of misleading animal tests. Because much pharmaceutical company preclinical data are proprietary and thus publicly unavailable, it is difficult to know the number of missed opportunities due to misleading animal experiments. However, of every 5,â€”10, potential drugs investigated, only about 5 proceed to Phase 1 clinical trials. An editorial in Nature Reviews Drug Discovery describes cases involving two drugs in which animal test results from species-specific influences could have derailed their development. However, liver toxicity was not detected in human cell assays, and clinical trials proceeded, which confirmed the absence of significant liver toxicity in humans. Many useful drugs that have safely been used by humans for decades, such as aspirin and penicillin, may not have been available today if the current animal testing regulatory requirements were in practice during their development. Providing further examples, PharmaInformatic released a report describing how several blockbuster drugs, including aripiprazole Abilify and esomeprazole Nexium , showed low oral bioavailability in animals. They would likely not be available on the market today if animal tests were solely relied on. In addition to potentially causing abandonment of useful treatments, use of an invalid animal disease model can lead researchers and the industry in the wrong research direction, wasting time and significant investment. Some claim that we do not know which benefits animal experiments, particularly in basic research, may provide down the road. Yet human lives remain in the balance, waiting for effective therapies. Funding must be strategically invested in the research areas that offer the most promise. The opportunity costs of continuing to fund unreliable animal tests may impede development of more accurate testing methods. Human organs grown in the lab, human organs on a chip, cognitive computing technologies, 3D printing of human living tissues, and the Human Toxome Project are examples of new human-based technologies that are garnering widespread enthusiasm. The benefit of using these testing methods in the preclinical setting over animal experiments is that they are based on human biology. Thus their use eliminates much of the guesswork required when attempting to extrapolate physiological data from other species to humans. Additionally, these tests offer whole-systems biology, in contrast to traditional in vitro techniques. Although they are gaining momentum, these human-based tests are still in their relative infancy, and funding must be prioritized for their further development. The recent advancements made in the development of more predictive, human-based systems and biological approaches in chemical toxicological testing are an example of how newer and

improved tests have been developed because of a shift in prioritization. Animals are in many respects biologically and psychologically similar to humans, perhaps most notably in the shared characteristics of pain, fear, and suffering.

Chapter 4 : Health News | Latest Medical, Nutrition, Fitness News - ABC News - ABC News

An experimental Alzheimer's drug that had previously appeared to show promise in slowing the deterioration of thinking and memory has failed in a large Eli Lilly clinical trial, dealing a.

The Washington Post recently obtained a copy of the confidential report, which is attracting congressional interest. It was provided by a source who asked to remain anonymous because of personal safety concerns. The report concludes that Pfizer never obtained authorization from the Nigerian government to give the unproven drug to nearly children and infants. Pfizer selected the patients at a field hospital in the city of Kano, where the children had been taken to be treated for an often deadly strain of meningitis. At the time, Doctors Without Borders was dispensing approved antibiotics at the hospital. The news was met in Nigeria with street demonstrations, lawsuits and demands for reform. Pfizer contended that its researchers traveled to Kano with a purely philanthropic motive, to help fight the epidemic, which ultimately killed more than 15, Africans. The committee rejected that explanation, pointing out that Pfizer physicians completed their trial and left while "the epidemic was still raging. There are no records documenting that Pfizer told the children or their parents that they were part of an experiment, it said. The panel concluded that the experiment violated Nigerian law, the international Declaration of Helsinki that governs ethical medical research and the U. Convention on the Rights of the Child. Five children died after being treated with the experimental antibiotic and others showed signs of arthritis, although there is no evidence the drug played a part. Six children died while taking a comparison drug. The panel recommended that Pfizer be "sanctioned appropriately" and directed to issue "an unreserved apology to the government and people of Nigeria. The panel recommended that Nigeria enact reforms to prevent a recurrence. Aspects of the affair remain mysterious, such as why the report remains confidential. They tracked one to a Nigerian government safe, but it was reported stolen, she said. Another copy was reported to have been held by an official who died. The current Nigerian health minister, Eyitayo Lambo, did not respond to calls and e-mail messages from a reporter. Dora Akunyili, director of the Nigerian drug control agency, said she did not know why the report remained confidential but added that her agency had independently concluded that "these people did not have authority to conduct the trial. After reviewing a copy, they responded in a two-page statement: Therefore it would be inappropriate for the company to respond to specific points in the document. Local nurses explained the experiment to Nigerian parents, it added, and obtained their "verbal" consent. The company said that Trovan demonstrated the highest survival rate of any treatment at the hospital. After being cleared for adult use in , the drug quickly became one of the most prescribed antibiotics in the United States. But Trovan was later associated with reports of liver damage and deaths, leading the FDA to severely restrict its use in European regulators banned the drug. Pfizer had told authorities that a Nigerian doctor directed the experiment. Pfizer used the letter as a key justification for the trial in discussions with reporters and submitted it to the FDA. In a statement last week, Pfizer said that after that article appeared, the company investigated and found that the letter was "incorrect. He told the panel that he "viewed the conduct of the trial by Pfizer as an act of deception and misuse of privilege. One was a year-old girl identified only as Patient No. She died without receiving any other antibiotic. Lantos said he expected to introduce a bill requiring U. The bill is similar to one his committee approved in that did not make it out of the House. The families sued Pfizer in federal court in New York in , alleging that the company had exposed the children to "cruel, inhuman and degrading treatment.

Chapter 5 : Pfizer Faulted Clinical Trials In Nigeria: Unapproved Drug Tested On Kids_WashPost - AHRPA

However, the drug failed in clinical trials, despite the fact that the set of animal experiments on this drug was considered the poster child for the new experimental standards. 24 Despite such vigorous efforts, the development of STAIR and other criteria has yet to make a recognizable impact in clinical translation.

Some of the main limitations of animal research are discussed in detail below: Animal Studies Do Not Reliably Predict Human Outcomes Both obvious and subtle differences between humans and animals, in terms of our physiology, anatomy, and metabolism, make it difficult to apply data derived from animal studies to human conditions. Many more such examples exist. Even within the same species, similar disparities can be found among different sexes, breeds, age and weight ranges, and ethnic backgrounds. As a result, accurately translating information from animal studies to human patients can be an exercise in speculation. Reliance On Animal Experimentation Can Impede and Delay Discovery Drugs and procedures that could be effective in humans may never be developed because they fail in animal studies. It is difficult to know how frequently this occurs, since drugs that fail in animals are rarely tested in humans. There have, however, been some notable cases. It was only then that its effectiveness was demonstrated. A classic example is the discovery that smoking significantly increases the risk of lung cancer. The finding was first reported in on the basis of an epidemiological study. The report was dismissed, however, because lung cancer due to inhalation of cigarette smoke could not be induced in animal models. Surgeon General finally issued the warning on cigarettes. Another noteworthy example concerns the development of the polio vaccine. Researchers spent decades infecting non-human primates with the disease, and conducting other animal experiments, but failed to produce a vaccine. The key event, which led directly to the vaccine and a Nobel Prize, occurred when researchers grew the virus in human cell cultures in vitro. Animal Studies are Flawed by Design We know that animals make poor surrogates for humans. On top of this, the design of animal experiments is often inherently flawed, making it that much less likely that results obtained from such studies will be useful. They do so by devising minor variations on a common theme, redefining previous work, subdividing one problem into multiple parts, or manipulating new technology and equipment to answer old or irrelevant questions. Yet, by their very design, these experiments do little to improve human or animal lives. Sources [1] Hackam, D. Journal of the American Medical Association, Retrieved March , from www. Drug Discovery and Development. The use of animal models in the study of complex disease:

Chapter 6 : 5 Science Experiments Gone Wrong - Neatorama

In February, a group of Food and Drug Administration scientists published a study finding that low-level exposure to the common plastic additive bisphenol A (BPA) is safe. The media, the chemical.

Nine out of ten statistics are taken out of context 23 January Category: They then go on to suggest that this shows that animal research does not work, or that it is proof that animals are not accurate models for humans. However, this is misleading without an understanding of the relevant context and the reasons for the animal safety tests. Ironically, the figures cited by many animal rights activists are actually drawn from industry and are intended to explain the expense of developing safe and useful medicines. To help break down these statistics, it is useful to look at the success rates at each stage. This is almost certainly a good thing as it avoids humans being given drugs which are likely to be toxic to them. So the failure rate is actually higher than even the animal rights organisations suggest since they are using data from before Is this damning for animal research? Yet, we do not hear activists suggesting that humans are an entirely inappropriate model for drug development though we should note that one human is not a perfect model for another. Facts with context Here is where it is important to understand a little about the drug development process. Before the preclinical animal tests there are a large number of pre-preclinical non-animal tests done on all manner of research tools including computer models, automatic screening, cell cultures, microbial studies and more. These methods are used to relatively cheaply remove many potentially toxic, or obviously non-starting drugs from reaching the more expensive animal testing stage â€" greatly reducing the amount of animal research required for a drug to reach market. So rather than damn just the animal tests, have animal rights activists managed to damn all of preclinical research? The role of preclinical animal tests is to check if the drug offers any potential therapeutic value and, importantly, if it is safe enough to move to Phase 1 trials in humans. This does not even mean free of all side effects, but to learn whether a drug can safely be given to humans and at what approximate dosage. If you want to know how truly successful animal tests are, consider that in over 30 years there has not been a single death in a Phase 1 clinical trial in the UK. The last major incident was in in the Northwick Park trials where 6 people suffered extreme side effects in a Phase 1 clinical trial â€" though it should be noted that TGN was a very novel type of molecule which was poorly understood. Considering that there are normally over Phase I clinical trials each year in the UK each involving multiple people , animal testing has been exceptionally effective at keeping dangerous drugs away from people. Even Phase 1 clinical trials in humans are not intended to check for efficacy, but rather to assess whether a drug is safe enough to be tried in a larger number of patients who are suffering from an illness the drug is intended to treat. Furthermore, when a drug is licensed for use, it is on the basis of the clinical trials in humans, not the preclinical animal tests which exist to ensure that a drug is safe enough to move into Phase 1 trials. So when animal rights activists claim that adverse drug reactions can be blamed on animal tests approving the drug, remember that it is the clinical trials in thousands of people which provide the evidence of its safety.

Chapter 7 : Another failed drug-test experiment | MSNBC

The U.S. FDA continues to fail to meet that standard. 2. No labeling Failure to label GMOs forces consumers to serve as test subjects for a massive GMO experiment.

Starting The Fabulous Five side quest is a prerequisite. After speaking to Mendius to trigger The Fabulous Five , you need to go upstairs in the legion headquarters to speak to Arhu, who has polymorphed himself into a cat. Ask him about his failed experiment to trigger this quest. He asks that you stop his robot which is your first assignment from the Fabulous Five anyway. Arhu gives you a remote control, then tells you to grab the manual on how to use it. Hold ALT to bring up tool tips of all the items in the room. Look for the manual near the top-right of the screen. You can see its location in the screenshot at the top of this wiki page. Read it, and be sure to keep it in your inventory for later. Exit out the north gate, then proceed northeast all the way to the edge of the map, following the road as you go. Click it to enter. Whoever is the fastest member of your team should be carrying the Arhu SparkMaster Universal Controller. Generally, their turn is the one that has always been coming up first in every battle. When everything is ready, proceed forward down the ramp. In order, press the buttons for Sleepy, Sleepy, Happy. Note that when you activate the remote, you will be taken out of combat. If you dally too long, the SparkMaster or his undead escorts may make some headway. Edit Note This quest, and the remote itself, is slightly bugged. Regardless, if all three members of the Fabulous Five die during this battle, you may not be able to be rewarded for it. Try to keep them alive. The status ailment generally lasts six turns, which should be more than enough to defeat him. In fact, the SparkMaster will be so weak that you may wish to ignore him at first to kill the undead, who will actually be able to do some damage. The three members of the Fabulous Five can do some serious and accurate damage, though their defense is sorely lacking. Keep them alive or you run the risk of not being rewarded for the quest. After destroying the SparkMaster , the Fabulous Five will run off back the way you came. You can do the same, but there is some loot to be had in the cave, as well as an alternate exit. Either way, head back to town, then visit the Legion Headquarters. Head downstairs, then speak to Viscous to learn that he and his other Fabulous Five friends joined the legion instead. This resolves the quest, though you can speak to him again if you wish to convince him into letting you enter and take everything in the treasure room.

Chapter 8 : The Flaws and Human Harms of Animal Experimentation

FDA supports the development and use of alternatives to whole-animal testing as well as adherence to the most humane methods available within the limits of scientific capability when animals are.

More In the late s and early s, the drug thalidomide caused an estimated 10, birth defects and thousands of fetal deaths worldwide. The affected babies typically suffered from phocomelia, a failure of the limbs to develop. These unfortunate children were cruelly referred to as "flipper babies. Responding to a public outcry regarding drug safety, the U. Congress passed the previously unpopular Kefauver-Harris Act in October of , which, among other things, mandated that all drugs undergo preclinical testing to demonstrate their safety and effectiveness. The FDA has interpreted these preclinical standards as a call for mandatory animal testing. The politician mistakenly argued that thalidomide had never been tested on animals and that it was this lack of animal testing that had led to its disastrous clinical use. In fact, extensive animal testing had failed to predict any hazards from thalidomide, and the drug was made available to doctors largely because of the existing animal data. According to James L. Schardein, an expert in teratogens birth defect-causing substances , "In approximately 10 strains of rats, 15 strains of mice, 11 breeds of rabbits, 2 breeds of dogs, 3 strains of hamsters, 8 species of primates and in other such varied species as cats, armadillos, guinea pigs, swine and ferrets in which thalidomide has been tested, teratogenic effects have been induced only occasionally. For example, causing deformities in New Zealand white rabbits required drug concentrations between 75 and times the level of human exposure. It is unquestionable that thalidomide is not a teratogen in the vast majority of species and that animal data did not predict the human response. Sadly, the Drug Amendments are still interpreted as mandating animal testing, despite advances in other toxicology technologies that render animal tests increasingly obsolete. It has been shown conclusively that testing on human tissue in vitro could have predicted the danger that thalidomide posed. In vitro testing, computer modeling, and other technologies are increasingly surpassing animal models in both accuracy and efficiency, but the U. Instead, the continuing mandate on animal testing serves to entrench ineffective and anachronistic testing methods and to stifle the development of new testing methods. As a result, the animal research industry has grown, health-care costs have risen, and medical progress has slowed. And despite the vast expenditure on animal toxicity testing, drugs remain unsafe, and tragedies continue to occur. On September 30, , the drug company Merck recalled its popular pain reliever Vioxx from the market because it was found to increase the risk of blood clots in patients. Evidence suggests that human observational data predicted these effects as early as , and human clinical data confirmed the danger in Because Vioxx remained on the market, the FDA has estimated that as many as 27, patients may have died. The Vioxx debacle is not an isolated incident or the result of a failure of individuals. Like the thalidomide disaster, the Vioxx fiasco can be attributed not to a lack of animal tests, but to inadequate human in vitro and clinical testing. More than , people die every year from adverse reactions to animal-tested drugs, and another 2. Such reactions make animal-tested drugs the fourth leading cause of death and cost the U. These numbers suggest that the FDA and the medical profession do not adequately understand the way drugs will affect individuals, groups, or the population in general. The role of animal tests in this ignorance is highlighted by the fact that 92 percent of animal-tested drugs are rejected in clinical trials, and more than 50 percent of those few drugs that do reach the market are removed or relabeled because of unforeseen harm to patients. Thus animal testing fails to catch more than 96 percent of the problems with drugs, and clinical trials remain too brief and narrow to fully compensate for the failures of animal experimentation. Moreover, it is reasonable to assume that animal testing fails to uncover an equally large percentage of the actual benefits to humans that drugs offer. Therefore, the American public is losing out on both ends, and we are paying for these losses with our health problems, rising health-care costs, and high taxes. Despite the wealth of evidence against animal experimentation, a fearful public demands a tangible response to episodes like the thalidomide disaster. Unfortunately, many members of Congress, researchers, and drug companies find blanket animal testing to be a simple, if crude, way to reassure the public that American medicine is completely safe. Animal testing also provides liability coverage for drug companies and

abundant grants for the research community. Clearly, many interest groups benefit from the continued use of animals in medical research. However, animal testing does little to protect public health or to advance the cause of medicine.

Chapter 9 : Antidepressants and the Placebo Effect

The American public was failed by the FDA's drug approval procedures. Like the thalidomide disaster, the Vioxx fiasco can be attributed not to a lack of animal tests, but to inadequate human in vitro and clinical testing.

ETTX , a clinical-stage biopharmaceutical company focused on the discovery and development of novel antibacterial products, announced that The New England journal of Medicine NEJM published results from a Phase 2 clinical trial evaluating the safety and efficacy of zoliflodacin in patients with uncomplicated gonorrhea. The study, conducted by ViiV Healthcare, showed long-acting rilpivirine and cabotegravir, injected once a month, had similar e Two-year data for Novartis brolucizumab reaffirm superiority versus aflibercept in reducing retinal fluid in patients with nAMD Posted 2 weeks ago in Clinical Trials Basel, 27 October, - Novartis announced additional brolucizumab Phase III results from year two that reaffirmed its positive year one findings. Brolucizumab met its primary endpoint of non-inferiority versus aflibercept in best corrected visual acuity BCVA and exhibited superiority in key retinal outcomes at year one 48 weeks [1],[2]. Secondary endpoints at year two 96 weeks reaffirmed superiority of Darolutamide significantly extended metastasis-free survival MFS compared to placebo. The safety profile and the tolerability of darolutamide Amgen Makes Repatha evolocumab Available in the U. LLY today announced complete results from a Phase 3 study evaluating the efficacy and safety of subcutaneous administration of tanezumab, an investigational humanized monoclonal antibody, in patients with osteoarthritis OA pain treated for 16 weeks. The study met all three co-primary efficacy CMTA , a clinical-stage biopharmaceutical company innovating treatments for people with ultra-rare bone disorders and other diseases, today announced that it plans to submit a New Drug Application NDA for palovarotene to the U. Based on recent interactions between The data were presented UCB and Biogen Inc. BIIB announced top-line results from a Phase 2b study evaluating the safety and efficacy of dapirolizumab pegol DZP , an anti-CD40L pegylated Fab, in adults with moderately-to-severely active systemic lupus erythematosus SLE despite receiving standard-of-care treatment such as ONC , currently developing pelareorep, an intravenously delivered immuno-oncolytic virus turning cold tumors hot, today announced positive clinical trial results for pelareorep in the treatment of patients with KRAS mutant metastatic colorectal cancer. Patients receiving treatment with the recommended EPZM , a clinical-stage company developing novel epigenetic therapies, today announced positive interim data from the fully enrolled epithelioid sarcoma cohort of its ongoing Phase 2 study of its lead candidate tazemetostat, a potent, selective, orally available EZH2 inhibitor. GLPG today announced that detailed results from two clinical trials evaluating filgotinib, an investigational, selective JAK1 inhibitor, for the treatment of psoriatic arthritis and ankylosing spondylitis were both published in The Lancet. LOXO , today announced updated clinical data for larotrectinib in adult and pediatric patients with TRK fusion cancer across 24 unique tumor types. The update included approximately one year of additional follow-up for a primary dataset of 55 patients as well as results from a supplementary dataset of 67 patients.