Examples of drugs which have failed after being considered successful in animal tests

1. In 2006, six men took a drug (known as **TGN1412**) in a clinical trial at **Northwick Park** Hospital in London, which caused life threatening and disastrous side effects in less than 2 hours ,including organ failure and brain swelling . The same drug had previously been given to monkeys at a 500 fold higher dose. The monkeys showed no ill effects and the drug was therefore considered safe to proceed to human trials [1] Since the Northwick park disaster, an alternative, human based toxicity test has been developed and when TGN1412 was tested, the method was shown to predict and therefore avoid the side effects seen in the volunteers [2]

2. In 2004, a new anti inflammatory drug called rofecoxib (also known under the brand name **Vioxx**) was withdrawn from the market over safety concerns, after a reported 88,000-140,000 people suffered heart attacks from taking the drug[3.] Vioxx and similar drugs had previously been considered not only safe, but protective in animal tests [4]

3. 150 potential treatments for **stroke**, considered successful following animal tests have gone onto fail in human clinical trials [5]

4. Decades of **HIV** testing in animals have yet to result in a successful vaccine and global prevention programmes have proved far more effective. In 2013, human trials of an experimental HIV vaccine – that were expanded based on experiments in monkeys – were halted when it was discovered that the vaccine did not prevent HIV infection or reduce viral load in those already infected.[6] This is one of over 80 preventive HIV and therapeutic AIDS vaccines that have progressed through animal tests, only to fail in more than 100 human clinical trials [7]

5. In 2007, a new drug to treat **Parkinson's** disease known as CEP-1347 [8] failed clinical trial in humans after being considered successful in animal tests and further recent examples include Cogane, a trial drug which appeared to be effective against Parkinson's disease in animals, but failed to show clinical effect in human trials and was announced a failure in 2013. [9]

6. Many potential treatments for **Alzheimer's** diease have failed in recent years, with the rate of attrition recently being announced as an '*astounding 99.6%*' [10.] A recent study looked at how 244 compounds in 413 clinical trials fared for Alzheimer's disease between 2002 and 2012. Of those 244 compounds, only one was approved. [11] One recent example is the drug Dimebon, which failed to prove effective in human trials which were halted [12] [13], despite being considered successful in earlier animal tests [14]

7. A recent US study concluded that of every eight drugs which enter clinical trials, only one will be approved, with 80% of new drugs being abandoned by drugs companies [15.] These findings are supported by other studies on the failure of animal models to translate into success in clinical trials [16]

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Research compiled by Rebecca Ram (Clinical Data Scientist and Research Consultant- Animal Welfare) for the Lush Prize in April 2015.