

# A Dead Cert

## Vivisection and the Horse Racing Industry



### Introduction



**Over the last seven years, Animal Aid has produced a series of detailed reports exposing the major welfare problems associated with Thoroughbred breeding, racing, training and the disposal of commercially 'unproductive' horses.**

Animals are highly in-bred for speed at the expense of skeletal strength and general robustness. Two-thirds of the 16,000 foals produced for racing every year are deemed unsuitable. Some go into other equestrian events but as many as 2,000 are sent for slaughter.

The formidable and unnatural challenges that racecourses present to horses result in about 130 on-course fatalities every year. An additional 250 Thoroughbreds die in training annually, or they are killed because they fail to pay their way. The pressure on modern race horses is so immense that, apart from the incidents of broken backs and legs and heart attacks and burst blood vessels, the vast majority suffer from two debilitating stress-related conditions: gastric ulcers and bleeding lungs (exercise-induced pulmonary haemorrhage).

Instead of reducing the pressure on the animals – and thereby reducing sickness and death – the industry commissions lethal experiments on

Thoroughbreds and other horses. The declared aim of this research is to understand why race horses damage their limbs and suffer other illnesses – and to deliver remedies. A principal practitioner of this black art is the Animal Health Trust (AHT), a veterinary charity based in the home of horse racing – Newmarket.

The summaries of experiments that follow are taken directly from the researchers' own accounts – published in equine veterinary and other scientific journals. They describe horses being deliberately infected with devastating viruses; pregnant animals undergoing abdominal surgery and subsequently aborting their young; other pregnant animals being deliberately under-fed; and newborn foals being subjected to stress experiments. Most of the 'procedures' end with the horses – Thoroughbreds or ponies – being killed and their tissues examined.

Such experiments are often justified by the claim that they are for the greater good: a few horses suffer so that many can benefit. That formulation is morally corrupt. The high levels of injury and developmental problems these invasive experiments are supposed to address, are the product of industry greed and callousness.

**Commissioning lethal 'scientific' experiments on horses is the industry's attempt to avoid its responsibility to the horses it so readily and systematically exploits.**

# Horse experiments

## 1. Pony mares abort following surgical manipulation

University of Cambridge,  
Department of Physiology

**A team of researchers at Cambridge used 23 pregnant pony mares to study sugar metabolism in the unborn foal. All of the pregnant animals – some of whom were very near to giving birth – were starved for 18 hours before undergoing invasive surgery. Intravenous anaesthesia was used, rather than the considerably safer inhalation anaesthesia.**

All of the mares underwent abdominal surgery to expose the uterus, in which a series of cuts were made so that the researchers could reach the unborn foals. A leg of each foal was exposed and a catheter inserted in a vein and artery, and then threaded towards the heart. The surgical incisions were sutured with the catheters remaining inside the foals. These catheters were then connected – through a small opening in the abdominal wall of the mare – to a bag secured to the flank of the mare. A week later, the actual experiment began, whereby two test substances (glucose and arginine – both involved in sugar metabolism and pancreatic function) were injected directly into the foals through the catheters. Blood samples were taken at various intervals and the data recorded.

Of the original 23 pregnant pony mares, nine produced dead or dying foals. The authors could not explain some of these events. The foals' response to the injected test substances produced no surprises and the authors merely documented the physiological responses that would normally be expected from the kind of intervention to which they had been subjected. However, the authors did conclude that the development of foetal pancreatic cells could be affected by over-exposure to steroid drugs. The fact that pregnant animals should not be given such drugs has long been documented and is already well known in veterinary medicine.

This research received financial support from the Horserace Betting Levy Board.

Fowden AL, Gardner DS, Ousey JC, Giussani DA, Forhead AJ. *Journal of Endocrinology* 2005, 186:467-473. Maturation of pancreatic B-cell function in the fetal horse during late gestation.



**A POSTMORTEM EXAMINATION SHOWS DAMAGE CAUSED BY USE OF THE BIT**

**The AHT has the strongest of bonds with the racing industry.** Much of its research is directly funded by industry bodies; an AHT Honorary Vice President, Sheikh Mohammed, is one of the world's most powerful race horse breeders and owners; and its recently-appointed chief executive, Peter Webbon, previously held senior positions with the Jockey Club and the Horseracing Regulatory Authority. Indicative of such links is the fact that several thousand pounds from one of the races staged at this year's Grand National meeting was donated to the AHT.

Professor W R 'Twink' Allen, of Cambridge University's Equine Fertility Unit, is another long-standing and prominent practitioner of laboratory research on horses. Allen was involved in two of the ten experiments that we feature in this report. One was funded by the Horseracing Betting Levy Board, the industry body that boosts breeder and racecourse profitability by distributing the money it collects from bookmakers. In 2001, Allen was reported to have produced the world's first test-tube foals and is now engaged in horse cloning experiments. His son-in-law is jockey Frankie Dettori.





## 2. Invasive experiments conducted on unborn foals

**University of Cambridge,  
Department of Physiology**

**Several of the researchers involved in experiment 1 'prepared' 13 pregnant pony mares in a similar manner for another set of invasive experiments.**

In this case, five days after abdominal surgery, the actual experiments began. This study looked at the blood flow in the hind leg of the unborn foal. Three different stimulant drugs were injected into the foals through catheters, which were connected to a bag secured to the flank of the mare. In all, there were three test sessions, each of which typically lasted for two days. In all of the trials, the drugs had the effect of significantly increasing the blood pressure of the foal. Blood samples were taken at various intervals and the data recorded.

Following the conclusion of the experiments, the animals were re-homed. However, based on the authors' wording, it would appear that not all of the foals survived the experiments. Although the hind limbs are the driving force of the race horse, the research team offered no practical applications of this research. They did, however, acknowledge that the principles underlying their work had already been documented by other researchers, some as far back as 1972.

O'Connor SJ, Ousey JC, Gardner DS, Fowden AL, Giussani DA. *J Physiol*, 2006; 572.1:155-164. Development of baroreflex function and hind limb vascular reactivity in the horse fetus

## 3. Horses and ponies experimentally infected with equine herpes virus

**Animal Health Trust (Newmarket)  
and the Institute for Animal  
Health (Newbury)**

**In a collaborative study, scientists experimentally infected four Welsh Mountain ponies with equine herpes virus, while their US counterparts at Cornell University similarly infected four Thoroughbred horses.**

Symptoms associated with this infection include respiratory and neurological disease as well as abortion in pregnant mares. The authors noted that one of the thoroughbreds suffered from loss of muscle coordination as a result of the experimental infection.

Blood samples were taken from all the animals for laboratory study. No mention was made in the article as to the fate of the animals after the study was completed.

Comment: It should be noted that equine herpes virus is easily spread when infected horses come into close contact with each other, e.g. at stud, sales or training establishments. The virus is easily killed by disinfectant. However, once infected, the virus may be shed by a latent carrier during periods of stress, a condition common to all race horses. Even vaccinated horses can present a risk to other equines. This is because 'vaccinated animals which are clinically immune may shed significant quantities of virus from the respiratory tract' (ref. Mumford JA, 'Equine Influenza: The risks and challenges', *7th Int Congress on Equine Infectious Diseases, Tokyo*).

This research received financial support from the Horserace Betting Levy Board.

Kydd JH, Davis-Poynter NJ, Birch J, Hannant D, Minke J, Audonneet J-C, Antczak DF, Ellis SA. *Journal of General Virology*. 2006; 87:2507-2515. A molecular approach to the identification of cytotoxic T-lymphocyte epitopes within equine herpesvirus 1.



## 4. Horses killed to study grass sickness

### **Animal Health Trust (Newmarket)**

**Researchers at the Animal Health Trust used 24 horses to study grass sickness. Fourteen suffered from the condition, while the other ten horses were used for comparative purposes.**

It is unclear whether the sick animals were made experimentally ill, or whether they were referred clinical cases. Although the study was conducted on their body tissues after death, the authors do not state whether any of the horses died from the disease, or if some or all were intentionally killed. This omission is particularly relevant to the ten 'control' horses that did not suffer from grass sickness.

The study was performed at the Animal Health Trust and part-funded by a clinical training scholarship provided by the Home of Rest for Horses (now renamed The Horse Trust). Originally established in 1886 as a retirement home for

working horses, donkeys and ponies, the Trust – in addition to catering for the needs of retired equines – now awards grants to UK veterinarians and scientific institutions for disease research.

Comment: Grass sickness is not commonly found among racehorses as they tend to be stabled up most of the time and not out at pasture. However, the high profile stallion and former racehorse *Dubai Millenium* died from grass sickness, prompting his owner Sheikh Mohammed to set up the Dubai Millenium Research Foundation, specifically to study this condition. The Sheikh currently holds the position of honorary vice president of the Animal Health Trust.

Wales AD, Whitwell KE. *The Veterinary Record* 2006; 158:372-377. Potential role of multiple rectal biopsies in the diagnosis of equine grass sickness.



## 5. Horses killed to demonstrate that non-invasive imaging is useful

### **Animal Health Trust (Newmarket)**

**Researchers at the Animal Health Trust examined the feet of 32 horses with the aid of magnetic resonance imaging (MRI).**

Eighteen of these animals had been euthanased because of two months' lameness in one or both forelimbs. The other 14 horses had no foot-related lameness, but were nevertheless killed and used for comparative purposes. It is not clear whether some, or all, of the 14 suffered from conditions that warranted them being euthanased. The animals ranged in age from four to 15 years and included Thoroughbreds, Thoroughbred crosses and Warmbloods.

The authors carried out MRI scans in several of the horses before they were euthanased for clinical reasons. They found the results to be just as reliable as the foot scans that were carried out in the same horses after they were killed. The researchers concluded that MRI images were useful in evaluating foot pain in horses.

Comment: Limb injuries leading to foot problems such as lameness and laminitis relate to stress on limbs from racing and training regimes. A study of cause, rather than effect, would have been more relevant.

This study was funded by the Home of Rest for Horses (now renamed The Horse Trust).

Murray RC, Schramme MC, Dyson SJ, Branch MV, Blunden TS. *Veterinary Radiology & Ultrasound*, 2006; 47 (1): 1-16. Magnetic resonance imaging characteristics of the foot in horses with palmar foot pain and control horses.

## 6. Ponies deliberately infected with equine influenza

### **Animal Health Trust (Newmarket)**

**In a collaborative study, scientists in the UK and France exposed 24 Welsh Mountain ponies to a new genetically engineered equine influenza vaccine.**

Twelve ponies received two doses of vaccine, while the other 12 did not. All of the animals were subsequently exposed to an aerosol spray containing equine influenza virus.

The unvaccinated ponies showed more overt and severe signs of an immune response. This manifested itself as fever, coughing, nasal discharge, breathing difficulties, loss of appetite and depression.

Viruses are easily spread when infected horses come into close contact with each other, e.g. during racing, at stud, at sales or in training yards. Vaccinated animals can also shed virus and infect other animals.

Paillot R, Kydd JH, Sindle T, Hannant D, Toulemonde CE, Audonnet JC, Minke JM, Daly JM. *Veterinary immunology and immunopathology*, 2006; 112:225-233. Antibody and IFN responses induced by a recombinant canarypox vaccine and challenge infection with equine influenza virus.



## 7. Newborn animals subjected to stress experiments, then killed

**Cambridge, Newmarket and London**

**In a collaborative study, researchers from Cambridge, Newmarket and London subjected seven Welsh ponies and six Welsh Mountain lambs to surgery and stressful experiments soon after birth and again two weeks later.**

Two to three days after birth, these newborn animals were anaesthetised and had a catheter inserted into a hind limb artery and vein, which was secured in place. Two days after surgery, the animals were placed in a custom-made sling for more than an hour, during which time they were injected with two different drugs. The first drug caused their blood pressure to rise suddenly and remain high for ten minutes. Blood pressure and heart rate were recorded. Once the blood pressure had returned to normal, the animals were given a second drug, which caused a sudden lowering of blood pressure. Blood samples were collected via the inserted catheters over a 30-minute period.

Two weeks later, the entire procedure was repeated on all of the animals. At the end of these experiments, the foals were re-homed with their mothers while the lambs were killed.

The authors note that the stress response in lambs is quite different to that seen in foals.

This study was supported by the Horserace Betting Levy Board.

O'Connor SJ, Gardner DS, Ousey JC, Holdstock N, Rosedale P, Edwards CMB, Fowden AL, Giussani DA. *Pflugers Arch – Eur J Physiol* 2005; 450:298-306. Development of baroreflex and endocrine responses to hypotensive stress in newborn foals and lambs.



## 8. Pregnant mares deliberately infected with abortion-causing virus

**Animal Health Trust (Newmarket)**

**A team of researchers based at the Animal Health Trust studied the immune responses of Welsh Mountain ponies – some of whom were known to be in advanced pregnancy – to infection with equine herpes virus (EHV-1). This virus is known to cause respiratory disease, affect the nervous system and may also lead to abortion.**

Eleven foals and ten pregnant mares were used. Six of the foals, and five of the pregnant mares, were deliberately infected with the virus. A further 14 adult ponies were also infected. Some of these ponies had been previously experimentally infected once or even twice with EHV-1.

Blood samples were taken from all the ponies at regular intervals over a period of four months. The authors describe their results only in terms of the data revealed in the blood tests. There is no description of the clinical symptoms experienced by the ponies and no mention of whether any of the animals aborted during the study.

Comment: EHV-1 is easily spread between horses and, once infected, an animal may shed the virus during periods of stress.

Pallot R, Daly JM, Luce R, Montesso F, Davis-Poynter N, Hannant D, Kydd JH. *Developmental & Comparative Immunology*, 2007; 31:202-214. Frequency and phenotype of EHV-1 specific, IFN synthesising lymphocytes in ponies: the effects of age, pregnancy and infection.



## 9. Mares given drug to improve outcome of pregnancy by embryo transfer – and then deliberately aborted

### **Equine Fertility Unit, Cambridge**

**Researchers in Cambridge studied the effect of a prostaglandin-inhibiting drug on the pregnancy rate of mares made pregnant through embryo transfer.**

Prostaglandins are hormone-like substances that stimulate heat cycles. A total of 72 recipient mares – half of whom were given the experimental drug – each had one embryo flushed into her womb. All of the animals used in this study (i.e. donor and recipient mares) were young, healthy, fertile mares who had been resident at the Equine Fertility Unit for more than a year.

Blood samples were taken from all the recipient animals on a regular basis throughout the entire experiment. Two weeks after the embryo transfer, pregnancy was confirmed using ultrasound. At this point, all of the pregnancies were deliberately terminated by the administration of an aborting drug, with the exception of four mares, who were aborted 10 -14 days later.

Comment: While embryo transfer and similar artificial reproductive methods are currently not allowed for race horses, one of the authors (WR Allen) is an outspoken advocate for the ban to be lifted.

Wilsher S, Kolling M, Allen WR. *Equine Veterinary Journal*, 2006; 38(5): 428-432. Meclofenamic acid extends donor-recipient asynchrony in equine embryo transfer.





## 10. Pregnant animals deliberately under-fed

### **Equine Fertility Unit, Cambridge**

**Researchers conducted a study on 20 out-of-training Thoroughbred pregnant mares at the Equine Fertility Unit at Cambridge. The aim of the experiments was to assess the effects of a reduced diet on the development of the unborn foal.**

A major setback occurred when all of the mares unexpectedly contracted a disease part-way through the study. The disease – known as ‘strangles’ – is usually associated with poor management, especially poor sanitation, crowded conditions and stress.

Prior to being mated, all of the animals were given access to pasture during the day and housed at night. When housed, they were fed individually-adjusted amounts of feed aimed at maintaining a ‘body condition score’ of ‘moderately thin’ or ‘moderate’. Once mated, the mares were divided into two groups. Nine animals were given a ‘moderate food intake’ – including poor quality grazing – while the other 11 received a ‘high food intake’.

At the end of the first trimester of pregnancy, all of the pregnant mares unexpectedly became infected with ‘strangles’.

The disease is characterised by high fever, significant nasal discharge and severe inflammation of the neck and its lymph nodes, some of which may rupture, releasing large amounts of thick, creamy pus. The animals were said to have gradually recovered from the disease over a period of one to four weeks without treatment. All of the mares gave birth at the end of their pregnancy to underweight foals.

In their conclusion, the authors state that their experiment failed to show any difference between the two groups. The fact that the pregnant mares became ill during the study is described by the authors as ‘*an unexpected and fascinating insight into the effects of disease-mediated weight loss*’ on pregnancy in the mare.

This study was sponsored by the Horseracing Betting Levy Board (Project No. 689).

Wilsher S, Allen WR. *Equine Veterinary Journal* 2006; 38(6):549-557. Effects of a *Streptococcus equi* infection-mediated nutritional insult during mid-gestation in primiparous Thoroughbred fillies. Part 1: placental and fetal development.