Australian Association for Humane Research Inc.

Submission to the National Health and Hospitals Reform Commission
May 2008

Introduction
The Australian Association for Humane Research Inc. is a non-profit organization that challenges the use of animals in research and teaching and promotes the use of more ethical and scientifically-valid non-animal alternatives. While our focus is on the abolition of animal experiments, this is on the grounds of such methods of research being scientifically unsound, dangerous to human health and wasteful of valuable resources. While not covered specifically in your terms of reference we consider this issue to be an integral component of health improvement in Australia.

A snapshot of human health:
According to the Australian Bureau of Statistics, there were 132,508 deaths registered in 2004. (2004 has been considered for consistency across available resources). Cardiovascular disease was the underlying cause of death of 35.9%, cancer contributed a further 28.7%, and diseases of the respiratory system, 8.8%.[1]

The Australian Institute of Health and Welfare released a report in November 2006 titled "Chronic diseases and associated risk factors in Australia, 2006." In it, they list the following major chronic diseases:

Number of deaths and average age at death associated with major chronic diseases, 2004.

Cause of death	Number of deaths	Average age at death
Coronary heart disease	24,576	78.6
Cerebrovascular diseases	12,041	81.1
Lung cancer	7,264	71.6
Chronic obstructive pulmonary disease	5,199	77.8
Colorectal cancer	4,126	72.5
Diabetes	3,599	76.5
Chronic kidney disease	2,363	79.6
Asthma	313	68.1
Osteoporosis	176	85.3
Osteoarthritis	71	84.4

Source: AIHW GRIM Books.

They also report that:
54% of adult Australians are either overweight or obese.

[1] Australian Bureau of Statistics.
http://www.abs.gov.au/AUSSTATS/abs@.nsf/ProductsbyCatalogue/7C1813B6705656A2CA256F6A00777037?OpenDocument#

3.5 % of Australians suffer from chronic diabetes.[2]

After considering the associated risk factors of these diseases, they conclude that:
More than 85% of adults are not consuming enough vegetables
One in two adults are not getting sufficient physical activity
Almost 50% of adults are not consuming enough fruit
Around 21% of adults smoke tobacco.

Various sources including the Physicians Committee for Responsible Medicine also point to the consumption of animal products as a major contributing factor to the onset of heart disease, various forms of cancer, diabetes and osteoporosis.

For example:

A study published in the International Journal of Cancer evaluated the role of dietary nutrients and the risk of endometrial cancer among 1,204 newly diagnosed endometrial cancer patients and 1,212 women without cancer in China. Results showed that those who consumed the most animal products had nearly four times the risk of cancer, compared with those whose diets were derived primarily from plant sources. Cancer risk increased as protein and fat from animal products was increased.[3]

A second study, from the Journal of the National Cancer Institute, examined the association between the risk of postmenopausal breast cancer and dietary intake of plant lignans (a plant estrogen found in a variety of fruits, vegetables and cereal products). Among those who consumed the most plant lignan, incidence of breast cancer was 17 percent lower than those who consumed the least.[4]

A further study from the Journal of Nutrition finds that a single fatty meal can cause the heart to beat harder and blood pressure to rise. Researchers at the University of Calgary analysed the affects of either a high-fat fast-food meal (42 grams of fat) or a meal with no more than 1.3 grams of fat among 30 healthy participants. The results showed that when both groups were subjected to a series of standard stress tests, those who ate the high-fat meal saw their blood pressure go up 1.25 to 1.5 times higher than the participants who ate the low-fat meal.[5]

Environmental factors.
Even when we consider the habits of our species as a whole, our health has again been compromised.

The emergence of new diseases and resurgence of old ones such as tuberculosis and cholera has been reflected by changes in human-induced global changes, including widespread forest clearance and climate change.[6]

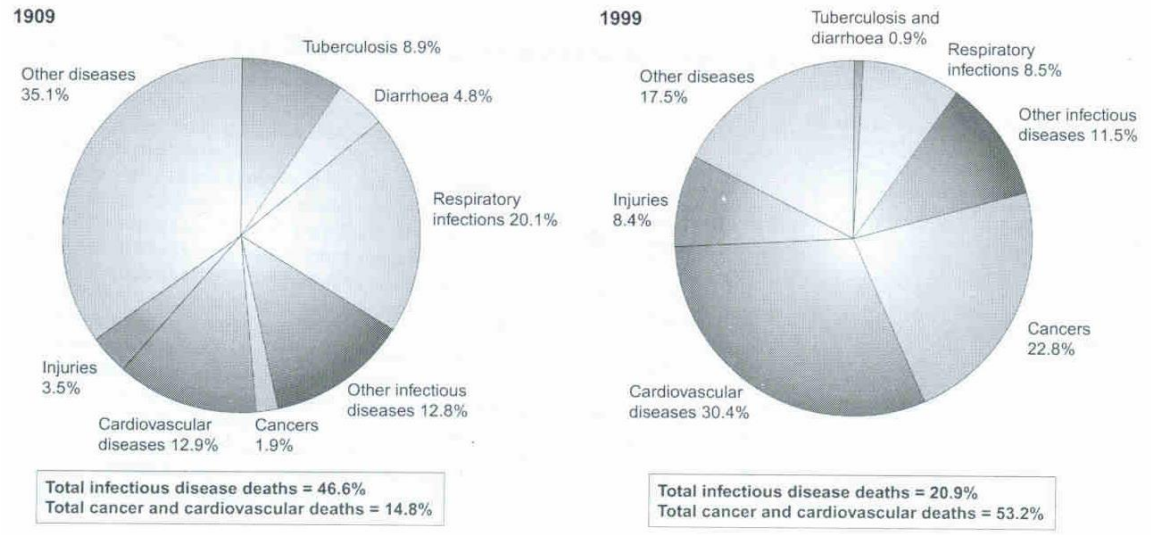
An estimated 61% of the 1,415 species of infectious organisms known to be pathogenic in humans are transmitted by animals.[7] Yet we continue to intensify production of meat and meat products, resulting in such diseases as mad cow disease and foot and mouth.

---

[2] Chronic Diseases and Associated Risk Factors in Australia, 2006. Australian Institute of Health & Welfare.
[3] Physicians Committee for Responsible Medicine, Breaking News 21 April 2007
[4] Ibid
[5] Physicians Committee for Responsible Medicine, Breaking News 27 April 2007
[6] Social and environmental risk factors in the emergence of infectious diseases, Robin a Weiss & Anthony J McMichael, *Nature Magazine*, Volume 10, Number 12, December 2004.
[7] Ibid

Human encroachment onto previously uncultivated environments increases further contact between humans, wildlife and livestock which again increases the risk of cross-species infection. An example is the establishment of piggeries close to the tropical forest in Northern Malaysia where the Nipah virus was first transmitted from flying foxes to pigs and then to humans in 1998. Then further destruction of the natural forest encouraged the flying foxes to relocate closer to humans.[8]

If we consider a comparison of infectious disease, cancer and cardiovascular deaths in 1909 to 1999 we can see a shift in causes. The following shows proportions of total deaths from major cause-of-death categories in Chile. This country illustrates the full transition from developing to developed status during the twentieth century.[9]



It seems apparent that the shift in causes of death is attributable to changes in lifestyle choices.

Financial burden on our health care system.
Cardiovascular disease now takes up $1.47 billion of our health care resources, with the major component being hospital care.[10] The associated risk factors include tobacco smoking, high blood pressure, high cholesterol, physical inactivity, excess weight, poor diet and excessive alcohol use. Similarly, cerebrovascular disease (stroke) has the same associated risk factors and uses up $894 million of our health care resources. In fact, almost every category of chronic disease in Australia, including diabetes, osteoporosis, colorectal cancer and even depression has the same or similar associated risk factors.

So why, if we can greatly reduce the incidence of these diseases through lifestyle modification, do we waste vast amounts of financial resources on animal experiments in an attempt to cure our problems?

We have other ways of addressing these issues:

Prevention – education about smoking, healthy eating, exercise, safe sex.

Rehabilitation – for users of drugs and alcohol, which would subsequently decrease the rate of depression and suicide.

---

[8] Ibid
[9] Ibid
[10] Chronic Diseases and Associated Risk Factors in Australia, 2006. Australian Institute of Health & Welfare.

Better sanitation / living conditions - In industrialising countries during the nineteenth century, a major reduction in enteric infections was achieved by separating drinking water from sewage – considered to have saved more lives than all the twentieth century vaccines and antibiotics together.[11]

Improved traffic conditions - driving skills, road conditions, signage and policing of speeding and drug and alcohol users would help reduce the road toll. On average, four to five people are killed every day in crashes on Australian roads. A great many more are seriously injured and permanently incapacitated. In addition to the burden of personal suffering, the monetary cost of road crashes is an estimated $15 billion annually (1996 data).[12]

Higher investment into these strategies collectively has the potential for saving many more lives than medical research could ever achieve.

If our government is truly concerned about achieving a healthy society then our taxes would clearly be better utilised on the above. A healthier society would also be far less of a burden on our hospital and health care systems.

Animal research however, is big business and absorbs vast amounts of government funding. It builds scientists careers, it feeds the pharmaceutical conglomerates, and it employs animal technicians, animal suppliers, cage suppliers etc. But business and profits should not be the basis of our decisions concerning health care. Medical research and public health cannot afford such impaired judgement that is inevitable where profits are concerned.

Animal experiments – life saving?
Animal experimentation is generally considered a "necessary evil." While many dislike the notion that it happens, they accept that it is necessary to save human lives. However an extremely high volume of animal experiments conducted today cannot be considered "life-saving."

AAHR has recently questioned the justification of some research protocols – funded by Australian taxpayers through the NHMRC.

Marmoset Vision Experiments.
The first involved eighteen marmosets who were anaesthetised and had their heads mounted in a steroetaxic head device. Their skulls were sawn open so that brain recordings could be made while their eyes received visual signals. Typical recording sessions lasted 72 hours, during which the animals received intravenous fluids and a muscle paralysing drug. At the end of the recording session all the animals were killed with an overdose of barbiturates.

We had this research critiqued by a scientific consultant. He concluded that "the authors do not present any clear-cut conclusion at the end of the paper. Instead, they present a long discussion, which raises more questions than it answers." The experiment does not appear to be applicable to human or animal health and could certainly not be considered life-saving research."[13]

Pregnant ewes used in alcohol experiments

[11] Social and environmental risk factors in the emergence of infectious diseases, Robin a Weiss & Anthony J McMichael, *Nature Magazine*, Volume 10, Number 12, December 2004.
[12] Australian Transport Safety Bureau (http://www.atsb.gov.au/publications/2006/Road_safety_in_Aust.aspx)
[13] Dr Andre Menache, Scientific Consultant, Animal Aid UK, 22 June 2006. (Personal correspondence)

Although evidence shows that consumption of alcohol during pregnancy impairs the fetus and leads to lifelong facial and brain abnormalities in the child, researchers have been attempting to mimic binge drinking in pregnant sheep to observe the results in the unborn lamb.[14]

Twelve twin-bearing ewes had catheters inserted into their arteries and veins and into the amniotic sac of each fetus. The ewes were then housed individually and after 5 days were infused with 40% ethanol for 3 consecutive days. On the fourth day each sheep and her fetus was killed.

Sadly there are children in Australia who suffer the neurological effects of FAS and there are women who continue to binge drink whilst pregnant. Both the sufferers and those at risk are in desperate need of support and help. We strongly therefore argue that vital resources should be provided to assist those with the condition and to provide Australia-wide education programs instead of wasting precious resources in a futile attempt to replicate the condition in an animal model.

The researchers themselves acknowledge in their publication that they were already aware that chronic ethanol consumption in pregnant women reduces birth weight and further that the 'sensitivity of fetal growth to ethanol may vary between species'. One then wonders what the point of such an experiment was.

Forcing rats to consume ecstasy and speed.
In an attempt to recreate the effects of the party drugs methylenedioxymethamphetamine, MDMA (ecstasy) and methamphetamine (ice/speed) in animals, researchers are trying to replicate the lasting social behavioural effects of repeated doses of these drugs in rats.

After 7 weeks of this drug inducement the researchers noted a decrease in social interaction in the chronically drug-treated rats. Then to induce stress and depression in these animals they forced them to swim for extended lengths of time.

In their publication, the experimenters acknowledge the already well-known results of using both drugs (ecstasy and ice together) in humans and the severe long term cognitive behavioural and neurological changes.[15]

These examples are common to many experiments and it would be interesting to determine, of the approximate 5 million animals used in research in Australia each year, how many actually led to an improvement in human health? If this figure could be calculated it would certainly dispel the myth that animal research is conducted to cure human disease.

It also makes it very difficult to justify animal experiments to cure ailments that we are often guilty of causing ourselves.

The need for non-animal methods:
I'd like to make it clear that AAHR is certainly not opposed to medical research. We acknowledge that there are many illnesses that stem from a genetic defect or by accident, and that not all are attributable to our lifestyle choices. We do consider it essential however, that we turn our focus away from animal experiments and toward studying our own species – through epidemiological studies, clinical studies and autopsies.

---

[14] Gatford, K.L., Dalitz, PA., Cock, M.L., Harding R, Owens, J.A. (2007) Acute ethanol exposure in pregnancy alters the insulin-like growth factor axis of fetal and maternal sheep. Am J Physiol Endocrinol Metab 292: E494-E500

[15] Clements, KJ, Cornish JL, Hunt, GE & McGregor, IS, Repeated weekly exposure to MDMA, methamphetamine or their combination: Long-term behavioural and neurochemical effects in rats *Drug & Alcohol Dependence* (2007) Vol 86 Issues2-3, 12.1.2007 pp 183-190

Extrapolation of data from one species to another can be (and indeed has been) dangerously misleading. The drug Vioxx is a good example to illustrate species differences. Vioxx has caused thousands of heart attacks in humans, however the lawyers who defended the manufacturers of Vioxx argued that it was completely safe in mice. In fact it was even cardio-protective in mice. We see the same example with seroxat which is an anti-depressant. Again, seroxat was considered safe after passing animal experiments but in humans, especially teenagers, it caused an increase in suicide. And of course there was the tragic TGN1412 trial in the UK which attracted enormous media attention and caused alarm throughout the research industry. These examples however are far from isolated incidences and I refer you to the appendix which lists further examples of where animal research has failed to identify human reactions.

It's therefore essential that we focus specifically on human conditions rather than on artificially-induced replicas of a disease in a totally different species - species that differ from us anatomically, genetically and metabolically.

Conclusion:
This analysis leads us to question the allocation of our healthcare budget. Are we wasting precious resources – time and millions of dollars – and at the same time causing rather than eliminating illness and suffering? Certainly this is the case for the 5 million laboratory animals used each year, but so too, it seems, is the case for our unhealthy society.

Animal experimentation is a major business taking up enormous resources that would clearly be better spent on our healthcare system – health education, hospital resources and treatments that are already available yet unaffordable to many. Medical research and public health simply cannot afford to waste such vast resources on futile animal experiments.

Yours sincerely,

Helen Rosser
Chief Executive Officer

APPENDIX

Think that animal testing is a reliable means to determine the safety and efficacy of drugs? Think again!

Here are some examples of where animal research has failed to identify human reactions. The following drugs were 'successfully' tested on animals:

Drug	Purpose	Result
Amrinone	To treat heart failure	Caused thrombocytopenia - a lack of blood cells needed for clotting in 20% of patients taking the drug on a long term basis.
Ariprazole	An antipsychotic	Caused neuroleptic malignant syndrome – fever, confusion, disorientation, muscle rigidity, profuse sweating and autonomic instability.
Atenolol	Beta blocker, treatment for high blood pressure.	Associated with 26% higher risk of stroke compared to newer drugs.
Avandia	Type 2 diabetes	Caused weight gain, bone fractures and heart disease.
Benoxaprofen	A non steroidal anti-inflammatory analgesic agent.	Potent phototoxic drug in elderly persons.
Benziodarone	A coronary vasodilator	Acute uric acid build up in the kidneys.
Celebrex	Cox 2 inhibitor, arthritis painkiller	Risk of heart attack, weight gain, abdominal pain, headache, dyspepsia, diarhhoea, nausea, kidney failure, fainting, blurred vision, allergic reactions, chest pain, ringing in ears, intestinal bleeding etc
Cerivastatin	Treatment for high blood chloresterol,	Muscle toxicity
Cisapride	Gastrointestinal stimulant	Disorders of heart rhythm, headaches, diarhhoea, constipation, nausea and abdominal pain.
Clioquinol	Ingredient in anti-diarrhoea drugs	At least 10,000 people, and possibly up to 30,000, fell victim to SMON (subacute myelo-optic neuropathy), a disease that causes numbness, weakness in the legs, paralysis, eye problems including blindness, all due to nerve damage.
Clozapine	Anti psychotic	Seizures, shaking hands, fainting, loss of bladder control, confusion, changes in vision, fever, severe muscle stiffness, sweating, changes in behaviour, sore throat, unusual bleeding or bruising, loss of appetite, upset stomach, yellowing of skin or eyes, flu like symptoms, lack of energy.
Dexfenfluramine	Weight loss	Cardiovascular side effects
Diethylstillbestrol (DES)	A synthetic estrogen prescribed to pregnant women to prevent miscarriage	Increased spontaneous abortions, premature births and neonatal deaths. Increased risk of vaginal cancer in daughters and granddaughters of users.

Domperidone	Treat symptoms of stomach disorders	Headaches, dizziness, dry mouth, nervousness, flushing, irritability, hot flushes, trouble sleeping, leg cramps, chest pain, slow/fast heart beat, discharge from breasts, swelling of feet and ankles, difficulty urinating, menstrual changes, sexual difficulties.
Droperidol	Antiemetic & anti psychotic	Spasms of the face, disorders of heart rhythm.
Enbrel	Treat rheumatoid arthritis, psoriasis, psoriatic arthritis, ankylosing spondylitis, juvenile rheumatoid arthritis.	Hypersensitivity reaction, sepsis, tuberculosis, reactivation of hepatitis B, malignancy, haematological reactions, autoimmunity, seizures and heart failure
Enzyme-inducing antiepileptic medicines	Epilepsy	Reduced bone mineral density and subsequent increased risk of fractures.
Eraldin	Treatment for heart conditions	Found to cause serious eye damage, including blindness. 23 deaths. Over a 1000 patients received compensation for the damage it caused.
Exanta	Blood thinner to treat thrombosis	Causes long term liver damage.
Ezetimibe	Reduces the amount of cholesterol and fatty substances in the blood.	Rapid onset of depression, hives, rashes, difficulty breathing or swallowing, hoarseness, swelling of the face, lips, ankles, throat, legs, hands eyes and tongue, upset stomach, tiredness, unusual bleeding and bruising, lack of energy, loss of appetite, chills, chest pain.
Fenfluramine	Anti obesity medication	Heart valve disease, pulmonary hypertension.
Grepafloxacin	Anti biotic	Caused disorders of heart rhythm
Humira	Rheumatoid arthritis treatment	Hypersensitivity reaction, sepsis, severe reactions occurred with patients who had tuberculosis or hep B or lupus, can cause swelling, shortness of breath, chills, flu symptoms, weight loss, fever, patchy skin, chest pain, coughing up blood, easy bruising, pale skin, unusual weakness.
Ibufenac	Non steroidal Anti inflammatory (Ibuprofen)	Caused severe liver damage.
Kava kava	Herbal remedy for stress and anxiety	Liver toxicity
Leflunomide	Anti inflammatory disease modifying anti rheumatic	Hepatotoxicity, nausea, diarrhea, hair loss, flu like symptoms, mild dizziness, chest pain, back pain, sore mouth, muscle cramping, numbness / tingling sensations.
Levacetylmethadol	Treatment for opium addiction	Withdrawn, caused severe cardiac disorders.
Methandrostenolone	Anabolic Steroid	Enlargement of male breasts, water retention, oily skin, acne, unwanted body hair, aggression, male pattern baldness, liver damage.

Metipranolol	Treatment of Glaucoma	Severe eye irritation or inflammation, slow heart beat or chest pain.
Mibefradil	Treatment of high blood pressure	Abdominal pain, belching, heartburn, stomach discomfort, flushing, headache, nausea, vomiting, pounding heart, stuffy nose, dizziness, lightheadedness, swelling legs, unusual tiredness.
Mumps vaccine	Prevention of mumps	Allergic reactions – difficulty in breathing or swallowing, hives, itching, reddening of skin, swelling of eyes, face or inside of nose, unusual tiredness or weakness. Other side effects include bruising or purple spots on skin, confusion, fever, headache, irritability, pain, tenderness, swelling of testicles, stiffneck and vomiting.
Naftidrofuryl oxalate injection	Treatment for disorder of blood flow to the brain	Cardio toxicity, rash, inflammation of liver, nausea, stomach pain.
Nomifensine	Anti depressant	Linked to kidney failure, anemia and death
Olanzapine	Anti psychotic	Confusion, sluggishness, fever, disorientation, muscle rigidity, spasms, profuse sweating, autonomic instability, swelling of face, breathing problems, uncontrollable chewing and arm and leg movements, loss of memory, nervousness.
Opren	Arthritis drug.	Found to be highly toxic in humans, with 3,500 reports of harmful effects including 61 British deaths, mainly through liver damage in the elderly.
Osmosin	Non steroidal anti inflammatory	Stomach ulceration and death
Paroxetine	Anti depressant and anxiety treatment	Suicidal ideation, serotonin syndrome, bipolar mania or hypomania, schizophrenia, jaw / neck and back muscle spasms, fever, chills, sore throat and flu like symptoms, jaundice, GI bleeding, fetal defects, withdrawal syndrome, headache, weight loss, nausea, dry mouth, sweating, drowsiness, insomnia, constipation or diarrhea, erectile dysfunction, tremor, vertigo, dizziness.
Pemoline	ADHD, and narcolepsy	Liver toxicity
phenylbutazone and oxyphenbutazone	Non steroidal anti inflammatory	Gastrointestinal ulcers, kidney damage, oral lesions, internal heamorrhage, decreased appetite, excessive thirst, suppression of white blood cell production, aplastic aenemia.
Prenylamine	Angina pectoris	Depletes myocardial catecholamine stores
Propanidid	Short acting general anaesthetic	Withdrawn due to causing anaphylactic reactions
Pulmonary surfactant	To increase pulmonary compliance	Increased mortality.

Ritalin and Dexamphetamine	Treatment of ADHD, especially in children.	Children as young as 5 suffered strokes, heart attacks, hallucinations and convulsions, shortness of breath, heart palpitations, hair loss, muscle spasms, severe abdominal pain, tremors, insomnia, severe weight loss, depression and paranoia.
Sertindole	Anti psychotic	Cardiac arrhythmias, also caused some deaths
Simvastatin	Control hypercholesterolemia & prevent cardio vascular disease	17 % patients died between December 2005 and February 2006. Common side effects include, diarrhea, abdominal pain, indigestion, weakness. Less common – joint pain, memory loss and muscle cramps
Suprofen	Non steroidal anti inflammatory.	Caused kidney toxicity, withdrawn from the market.
Temafloxacin	Anti biotics	Death, low blood sugar, hemolytic anemia, other blood cell abnormalities, kidney dysfunction resulting in renal dialysis, liver dysfunction, allergic reactions causing life threatening respiratory distress.
Terodiline	Treatment of urinary incontinence	Cardiac arrhythmias
Thalidomide	A sedative and to treat morning sickness in pregnant women.	Found to cause damage to the human foetus, resulting in 10,000 children born crippled and deformed with missing limbs.
TGN1412	Treatment of inflammatory conditions (especially rheumatism) and leukemia	Volunteers in a clinical trial suffered poor breathing, heavy swelling of neck and head, organ failure
Tolcapone	Treatment of parkinsons disease	Life threatening liver disease
Torcetrapib	Treatment of hypercholesterolemia	Up to 82 known deaths reported worldwide.
Trasylol	Used to prevent blood loss during surgery	Kidney problems, heart attacks and strokes
Triazolam	Sedative	Neuropsychiatric
Troglitazone	Diabetes	Causes liver damage, resulted in 28 deaths and 7 liver transplants.
Trovan	Anti biotic	Acute liver failures and deaths.
Vioxx	Painkiller for rheumatoid and osteoarthritis	Increased risk of cardiovascular events.
Voltaren	Non steroidal Anti inflammatory	Life threatening heart or circulation problems, including heart attack or stroke.
Zelmac	Treatment for irritable bowel syndrome	Studies have shown a link to heart attacks and strokes.
Zelmid	Anti depressant	Linked to Guillain Barre syndrome, liver damage
Zolpidem	Short term treatment of insomnia	Possible death or coma from overdose, anterograde amnesia, hallucinations, delusions, ataxia and poor motor coordination, increased appetite, decreased libido, altered thought patterns, extroversion.
Zomax	Arthritis treatment & anti inflammatory drug to treat post operative pain	Deaths and severe allergic reactions.

This list is by no means exhaustive but represents some examples in which literally millions of lives may not have been harmed or even lost had we not relied on the dangerously misleading results from animal experiments. Had we instead looked more closely at human conditions, we can only wonder how much further we may have progressed by now.