



July 26, 2023

The Honourable Bill Blair
Minister of National Defence
Canada

Via e-mail: dnd_mdn@forces.gc.ca; bill.blair@parl.gc.ca

Dear Minister Blair:

Congratulations on your new appointment today as Canada's Minister of National Defence and thank you in advance for your time. I'm writing on behalf of People for the Ethical Treatment of Animals U.S.—PETA entities have more than 9 million members and supporters globally.

As you may know, a *Toronto Star* article published earlier this year reported, "The Department of National Defence (DND) used and euthanized more than 1,800 pigs aged between 10 and 12 weeks as part of Canadian Armed Forces training exercises at a facility in Suffield, Alberta between 2012 and 2022. The department estimates the cost at nearly \$1 million over that time."¹ Additionally, documents released by the DND in 2021, pursuant to an Access to Information (ATI) request, included a DND presentation slide titled, "History of NHM Training," regarding the use of animals (who DND refer to as a "non-human models" or "NHM") in military medical training. In this slide, DND confirmed that "[redacted] conducting NHM training since 2003," Defence R&D Canada (DRDC) in Suffield, Alberta "has been using NHM for [Chemical, Biological, Radiological and Nuclear] and ballistic testing," and one of the DND's "[c]urrent issues" regarding this topic is "PETA"²—the latter likely due to our online action alert.³

Based on the information presented below, we respectfully urge you to end the use of animals in the DND's live agent training (LAT) for chemical casualty care and live tissue training (LTT) for traumatic

¹Cribb R. Many NATO countries have stopped using animals for military training. Not Canada. New documents reveal the toll of violent training exercises. TheStar.com. Published January 6, 2023. Accessed January 16, 2023.

<https://www.thestar.com/news/investigations/2023/01/06/many-nato-countries-have-stopped-using-animals-for-military-training-not-canada-new-documents-reveal-the-toll-of-violent-training-exercises.html>

²Government of Canada. Informal Request for ATI Records Previously Released. Reference Number: A-2016-01674. Accessed July 26, 2023. <https://www.peta.org/wp-content/uploads/2023/07/ATI-A-2016-01674.pdf>

³PETA. Canadian Military's Bloody and Barbaric Training on Live Pigs Exposed. Accessed July 26, 2023. <https://support.peta.org/page/1592/action/1?locale=en-US>

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injury management in favour of human-relevant, non-animal methods.

I. Prior PETA Correspondence Regarding DND's LAT and LTT

On May 7, 2012, PETA and military medical experts sent a letter to then Minister of National Defence Peter MacKay,⁴ followed by a letter from PETA on July 29, 2013, to then Minister of National Defence Robert Nicholson,⁵ urging an end to the DND's use of animals in trauma and chemical casualty trainings. We pointed out advanced, animal-free, human-relevant methods that could afford superior training to DND personnel while aligning trainings with international best practices, whereby more than 70% of NATO nations do not use animals for military medical education.⁶

II. DND's Use of Animals in LAT and LTT Violates DAOD 8014-1; Simulators Are the Preferred Worldwide Standard

Section 3.2(a) of Defence Administrative Orders and Directives (DAOD) 8014-1 states that heads of DND organizations and commanding officers of Canadian Armed Forces units that use animals in research, teaching, or testing activities are responsible for ensuring that "the animals are only used when the best efforts of the researcher to find a suitable alternative have failed."⁷ Given the plethora of validated animal-free methods available for trauma training and chemical casualty management, described below, it appears that the Canadian military's use of animals in LAT and LTT is in violation of this directive. Non-animal simulators are the international standard for civilian and military trauma and chemical casualty trainings because they better prepare medical providers to treat patients.

III. Chemical Casualty Training/LAT

Background

During chemical casualty training, otherwise known as LAT, conducted at DRDC in Suffield, Alberta, live pigs are exposed to chemical agents (e.g., mustard gas, VX, sarin) and biological stimulants in an attempt to train participants in casualty recovery, triage, and treatment and decontamination procedures.⁸ We have obtained disturbing photos of these exercises showing pigs injected with toxic chemicals, doused by decontamination water guns, and suffering from bleeding wounds.⁹ During these exercises, pigs are forced to endure uncontrollable muscle twitching, irregular heartbeats, difficulty breathing, and possibly even death.

⁴Gala S. PETA. Letter to Canadian DND from PETA. May 7, 2012. Accessed February 16, 2023.

<https://www.peta.org/wp-content/uploads/2023/02/Letter-to-Canada-DND-from-PETA.pdf>

⁵Chandna A. PETA. Request to Canadian DND to ban using live animals in trainings. July 29, 2013. Accessed January 10, 2023.

<https://www.peta.org/wp-content/uploads/2022/10/Letter-to-Minister-Nicholson-from-PETA-July-29-2013.pdf>

⁶Gala SG, Goodman JR, Murphy MP, Balsam MJ. Use of animals by NATO countries in military medical training exercises: An international survey. *Military Medicine*. 2012;177(8):907-910.

⁷Government of Canada. DAOD 8014-1, Management of animal use in research, teaching and testing. Accessed February 16, 2023. <https://www.canada.ca/en/department-national-defence/corporate/policies-standards/defence-administrative-orders-directives/8000-series/8014/8014-1-management-animal-use-research-teaching-testing.html>

⁸Defence R&D Canada. CTTC live agent training study report. Accessed February 16, 2023.

<https://www.peta.org/wp-content/uploads/2023/02/Live-Agent-Training-Study-Report-Mar-2005.pdf>

⁹Defence Research and Development Canada. Domestic swine model: Use in training at DRDC Suffield. Casualty Management Section. Accessed February 16, 2023. <https://www.peta.org/wp-content/uploads/2023/02/DRDC-document-with-pig-photos.pdf>

Animal Laboratories Irrelevant for Diagnosing Human Nerve Agent Victims

Not only are these exercises extremely cruel, using pigs for this program also provides a suboptimal training experience due to drastic differences between contrived animal laboratories and the actual conditions in which military personnel would treat human victims of a chemical attack.

Most importantly—unlike experience with human-patient simulators and other human-based methods—practicing on pigs causes trainees to miss major clinical signs of nerve agent poisoning in humans, since pigs cannot speak in order to communicate key initial symptoms of chemical agent exposure, including chest tightness, nausea, dizziness, confusion, agitation, and eye pain. In humans, by the time a nerve agent causes observable seizures, nerve damage could already be severe and soldiers and others could suffer more than they would have if the trainees had learned to use methods that prepared them to identify the first subtle symptoms of human exposure, which can't be identified in animals because they don't speak our language.

U.S. Army Ends Animal Use for Chemical Casualty Training Courses

In his e-mail to PETA dated June 25, 2012, Mr. MacKay attempted to dismiss the numerous viable alternatives to the use of animals in chemical casualty live agent training by arguing that DRDC's training is unique in that it is for specialists with the Canadian Armed Forces and civilian first responders and focuses on scenarios that would exist in field conditions and would be encountered on specific missions. However, this is precisely the advanced type of training that the U.S. Army now offers without any use of animals to physicians, nurses, physician assistants, senior medical NCOs, and many other kinds of medical professionals and civilians in its fully accredited Medical Management of Chemical and Biological Casualties (MCBC) course that is taught at the U.S. Army Medical Research Institute of Chemical Defense located at Aberdeen Proving Ground and at the U.S. Army Medical Research Institute of Infectious Diseases located at Fort Detrick, Maryland.

In 2011, the U.S. Army decided to end all animal use for the MCBC course, publicly stating on the White House website, "On September 20th, 2011, the Army stated that it would no longer use monkeys as part of life-saving training at Aberdeen Proving Ground. This change was long planned and was made possible by improved technology, the development of alternative training methods, shifting chemical threat environments, and changes in the medical competencies required of first responders during a chemical incident."¹⁰ Because other U.S. military facilities already used simulators and other non-animal methods for this training, this change marked the end of animal use for chemical casualty training across the entire U.S. military.

As this course was very comparable to DRDC's chemical casualty training program, it's clear that your goals could now be met without the use of animals. Further examples of non-animal methods used for chemical casualty training are described below.

¹⁰Collins T. Army no longer using monkeys as part of training at Aberdeen Proving Ground. The White House. September 20, 2011. Accessed February 16, 2023. <https://web.archive.org/web/20121129222951/https://petitions.whitehouse.gov/response/army-no-longer-using-monkeys-part-training-aberdeen-proving-ground>

Madigan Army Medical Center Employs an Effective Simulation-Based Curriculum for Nerve Agent Training

Researchers at the Madigan Army Medical Center in Tacoma, Washington, developed a simulation-based crisis-management program using an advanced human-patient simulation (HPS) model. In a study of this program, one of the simulation training exercises involved nerve agent intoxication in an emergency department, and another simulation exercise involved a combined injury (gunshot wound *and* nerve agent intoxication) in an austere field environment (battalion aid station). The Madigan researchers concluded, “The participants overwhelmingly found the training valuable. Simulation can be adapted to and is useful for training a range of healthcare providers working together in vastly differing settings.”¹¹

U.S. Military Medical School Uses Non-Animal Models for WMD/T and Nerve Agent Exposure Training

Using HPS models and human actors, researchers at the U.S. military’s Uniformed Services University of the Health Sciences (USUHS) in Bethesda, Maryland, developed an immersive scenario to train civilian and military clinicians in how to respond to a weapons of mass destruction and terrorism (WMD/T) attack. HPS models were made to accurately depict symptoms associated with poisonous nerve agent exposure—including bronchospasm, worsening pulmonary compliance, and increased body secretions—after which the HPS models responded to atropine treatment. The USUHS researchers concluded, “Large-scale multimodality patient simulation can be used to train both clinicians and nonclinicians for future events of WMD/T. Students accepted the simulation experience and thought that scenario was appropriately realistic, complex, and overwhelming.”¹²

U.S. FEMA ‘Live Agent’ Chemical Poisoning Training Does Not Use Animals

The U.S. Federal Emergency Management Agency’s Center for Domestic Preparedness (CDP) has a Chemical, Ordnance, Biological, and Radiological Training Facility (COBRATF) in Anniston, Alabama, that offers the only program in the U.S. allowing emergency responders to train in an environment using live nerve agents (e.g., GB and VX), similar to the DND’s LAT program. Joining the COBRATF facility in the same city is the Noble Training Facility, which trains hospital and healthcare professionals in disaster preparedness and response, featuring two prototype mass casualty decontamination training lanes. On October 4, 2011, the CDP wrote to PETA, highlighting a key difference with the DND’s programs: “[T]he CDP’s training programs do not use animals. The CDP uses human patient simulators and training mannequins. Our training ... teaches human emergency responders the proper techniques and equipment needed to protect themselves while responding to a chemical incident, and gives them the opportunity to safely validate their skills.”¹³

y AM, Mongan PD. A multidisciplinary approach to teach responses to weapons of mass destruction and terrorism using combined simulation modalities. *J. Clin. Anesth.* 2004;16(2):152-158.

<https://pubmed.ncbi.nlm.nih.gov/15110382/>

¹²Kyle RR, Via DK, Lowy RJ, Madsen JM, Marty AM, Mongan PD. A multidisciplinary approach to teach responses to weapons of mass destruction and terrorism using combined simulation modalities. *J. Clin. Anesth.* 2004;16(2):152-158. <https://pubmed.ncbi.nlm.nih.gov/15110382/>
[/12120469/](https://pubmed.ncbi.nlm.nih.gov/12120469/)

¹³Vardi A, Levin I, Berkenstadt H, et al. Simulation-based training of medical teams to manage chemical warfare casualties. *Isr Med Assoc J.* 2002;4(7):540-544. <https://pubmed.ncbi.nlm.nih.gov/12120468/>

Johns Hopkins University Promotes Non-Animal, Simulation-Based Dirty Resuscitation Training

The Johns Hopkins Office of Critical Event Preparedness and Response in Baltimore successfully developed an award-winning chemical casualty non-animal simulation training course and found in a study that “video clinical vignettes and HFMB [high-fidelity mannequin-based] simulation are effective methods of CBRNE [chemical, biological, radiological, nuclear, and explosive] training and evaluation. ... The advantage of employing HFMB simulation as an educational modality for CBRNE education is to gain a practical, ‘hands-on’ competency in the skills of dirty resuscitation. The training task is similar to the real world transfer task. Training conditions are improved with repetition and problem-solving.”¹⁴

Similarly, a team of emergency physicians at a different U.S. institution wrote about their own simulation-based program: “By using dynamic HPSs, patient physiology can be simulated to include respiratory arrest from botulinum toxin or tachycardia from an anticholinergic chemical poisoning. Properly assessing these physiologic changes and relaying them to an on-scene medical commander is critical so that the general class of toxin might be clarified, thus facilitating appropriate decontamination and containment procedures.”¹⁵

Israel Defense Forces Use Simulation-Based Chemical Training, Consider Animal Lab ‘Unacceptable’

Researchers working with the Israel Defense Forces have developed and validated a complete and effective chemical attack preparedness course that uses didactics, moulage scenarios with human actors, manikins, and high-fidelity HPS models, and they explicitly state, “An animal laboratory session is viewed as unacceptable.”^{16,17} Similarly, researchers at the Chaim Sheba Medical Center in Israel developed a non-animal chemical attack training program and found that by “[u]sing advanced simulation, we were able to train anesthesiologists to treat nerve gas intoxication casualties and to learn about the limitations of providing medical care in this setting.”¹⁸

IV. Trauma Training/LTT

Background

A 2013 *Postmedia News* article confirmed from the DND that the Canadian military uses “animals for training battlefield doctors on how to treat gunshot wounds, blast injuries and other

¹⁴Subbarao I, Bond WF, Johnson C, Hsu EB, Wasser TE. Using innovative simulation modalities for civilian-based, chemical, biological, radiological, nuclear, and explosive training in the acute management of terrorist victims: A pilot study. *Prehosp Disaster Med.* 2006;21(4):272-275. doi:10.1017/s1049023x00003824

¹⁵Nicholes A, Rupert R, Bond W, McCarthy J. When man meets machine: Using computerized human patient simulators in tactical scenarios. *JEMS.* June 28, 2006. Accessed February 16, 2023. <https://www.jems.com/operations/when-man-meets-machine-using-c/>

¹⁶Rubinshtein R, Robenshtok E, Eisenkraft A, Vidan A, Hourvitz A. Training Israeli medical personnel to treat casualties of nuclear, biologic and chemical warfare. *Isr Med Assoc J.* 2002;4(7):545-548. <https://pubmed.ncbi.nlm.nih.gov/12120469/>

¹⁷Vardi A, Levin I, Berkenstadt H, et al. Simulation-based training of medical teams to manage chemical warfare casualties. *Isr Med Assoc J.* 2002;4(7):540-544. <https://pubmed.ncbi.nlm.nih.gov/12120468/>

tee for Responsible Medicine. Survey of trauma training programs. Updated February 15, 2022. Accessed February 16, 2023. <https://www.pcrm.org/ethical-science/ethical-education-and-training/survey-of-trauma-training-programs>

trauma.”¹⁹ More recent records obtained through access to information about legislation by the Animal Alliance of Canada confirm that animals used in the DND’s LTT program endure “life threatening wounding,” “facial lacerations,” and “sucking chest wounds” sustained from the use of “objects for impalement.”¹

Non-Animal Trauma Training Methods Are More Effective Than Animal Laboratories

Peer-reviewed comparative studies have repeatedly found that when compared to animal laboratories, non-animal trauma training models—such as lifelike human-patient simulators—better equip civilian and military medical providers with the technical skills and psychological preparedness necessary to treat traumatic injuries in austere environments. This is because unlike pigs—who are commonly used in DND training exercises—these human simulators faithfully replicate human anatomy and physiology and allow trainees to repeat procedures until they’re confident and proficient.

All Civilian Trauma Training Programs in Canada Use Only Non-Animal Training

In 2012, researchers in the Department of Surgery at the University of Toronto published a study that found simulator-based trauma training was superior to animal-based training and that the simulator-based training was overwhelmingly preferred by students and instructors. As a result, the researchers ended animal use in their trauma program, stating, “[W]e could not justify identifying animals as the only suitable source for providing the necessary training in our ethics application for renewal.”²⁰ Today, every civilian trauma training program across Canada uses non-animal simulation methods instead of animals.²¹

Human Worn Partial Task Surgical Simulator (Cut Suit)

A 2015 review article found that the Human Worn Partial Task Surgical Simulator (Cut Suit) “is a realistic surgical training tool that allows for the simulated performance of actual surgical procedures” and that “[i]n addition to perfused extremities, the Cut Suit also has perfused internal organs that may be accessed through the abdominal wall and can be incised to bleed and repaired or excised to control hemorrhage.”²²

A 2017 study stated the following:

Remote damage control resuscitation (RDCR) endeavours to rescue the most catastrophically injured, but has not focused on prehospital surgical torso

¹⁹Berthiaume L. Military uses thousands of live animals every year for training, testing. *Postmedia News*, July 23, 2013. Accessed February 16, 2023.

<https://web.archive.org/web/20130727001331/http://www.canada.com/news/Military+uses+thousands+live+animals+every+year+training+testing/8698068/story.html>

²⁰Ali J, Sorvari A, Pandya A. Teaching emergency surgical skills for trauma resuscitation-mechanical simulator versus animal model, *International Scholarly Research Notices*. October 15, 2012.

<https://doi.org/10.5402/2012/259864>

²¹Physicians Committee for Responsible Medicine. Survey of trauma training programs. Updated February 15, 2022. Accessed February 16, 2023. <https://www.pcrm.org/ethical-science/ethical-education-and-training/survey-of-trauma-training-programs>

²²Kirkpatrick AW, et al. Technical innovations that may facilitate real-time telerobotics of damage control surgery in austere environments: A proof of concept comparative evaluation of the importance of surgical experience, telepresence, gravity and mentoring in the conduct of damage control laparotomies. *Canadian Journal of Surgery*. 2015;58(3):S88-90. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4467498/>

hemorrhage control (HC). ... A surgical simulator was customized with high-fidelity intraperitoneal anatomy, a “blood” pump and flowmeter. A standardized HC task was to explore the simulator, identify “bleeding” from a previously unknown liver injury perfused at 80 mm Hg, and pack to gain hemostasis. ... Performing laparotomies with packing of a simulated torso hemorrhage in a high-fidelity surgical simulator was feasible onboard a research aircraft in both normal and weightless conditions.²³

High-Fidelity Human Cadaver Models

The Major Incident Surgical and Trauma Teams (MISTT) Trauma Course held at Queen Elizabeth Hospital Birmingham in the U.K. states that “[d]elegates will benefit from a three day cadaveric course, focusing on damage control of all cavities and extremities in Trauma, together with two days of discussion, lively debate and case studies.”²⁴ The course uses the Surgical Anatomical Model (SAM), of which Surgeon Vice Admiral Alasdair Walker (former surgeon-general of the U.K. Defence Medical Services) and his colleagues in the Royal Army Medical Corps and the Royal Navy stated in a 2016 study, “During damage-control surgery using the SAM, the materials and anatomical details have simulated human blast injury with fidelity that may be superior to cadaveric and animal models.”²⁵

A 2018 study from the U.S. Navy Trauma Training Center stated the following:

[O]ur military trauma training site now utilizes a novel ventilated and pressurized cadaver model for training and evaluation of forward surgical teams (FST). FSTs attend a 4-day damage control course including didactics and cadaveric dissection focused on trauma exposures, damage control vascular and orthopedic procedures. A capstone half-day simulation pairs the perfused cadaver model with conventional simulation to involve the entire surgical team in four sequential surgical scenarios that involve the chest, abdomen, and extremities, as well as airway management and resuscitation. Initial evaluations support the use of this novel perfused cadaver model for the training and evaluation of military FSTs. Preliminary data highlights the utility for open vascular, thoracic and other high acuity/low volume procedures critical to combat casualty care.²⁶

Human Simulation Models Can Provide Realistic Adrenergic Response in Trainees

A 2018 study stated the following:

ical skills training? *Mil Med.* 2016;181(11):1407-1409. doi:10.7205/MILMED-D-16-00008

²³Polk TM, Grabo D, Minneti M, et al. Initial report on a damage control surgery course for military forward surgical teams utilizing a novel perfused cadaver model for training and evaluation. *J. Am. Coll. Surg.* 2018;227(4):e40. doi:10.1016/j.jamcollsurg.2018.08.106

²⁴Major Incident Surgical and Trauma Teams: “The MISTT Trauma Course.” Accessed January 12, 2023. <https://www.mistt.co.uk>

²⁵Naumann DN, Bowley DM, Midwinter MJ, Walker A, Pallister I. High-fidelity simulation model of pelvic hemorrhagic trauma: The future for military surgical skills training? *Mil Med.* 2016;181(11):1407-1409. doi:10.7205/MILMED-D-16-00008

²⁶Polk TM, Grabo D, Minneti M, et al. Initial report on a damage control surgery course for military forward surgical teams utilizing a novel perfused cadaver model for training and evaluation. *J. Am. Coll. Surg.* 2018;227(4):e40. doi:10.1016/j.jamcollsurg.2018.08.106

High-fidelity simulation offers many advantages, including broad exposure to procedures, their complications, and the opportunity for repetitious learning in a non-clinical setting. The stress of learners undergoing simulation events is a growing field of interest. Proponents of training with live-anesthetized animals argue the associated stress response cannot be equated with inanimate models, and therefore leads to an inferior learning experience with negative implications for future performance. ... A randomized controlled study of 277 army combat medics was performed comparing procedural training and assessment on a live tissue (LT) goat model versus the best-in-class synthetic training models (STM). ... No significant differences were seen for peak stress response of salivary cortisol or amylase, regardless of LT or STM method for training or assessment. In addition, the stress response did not correlate significantly with total performance score. ... Synthetic models can produce a stress response equivalent to that of live tissue during simulation training. This is the largest study to date indicating synthetic models produce a sufficient immersive and realistic experience for trainees. ... Stress inoculation while learning critical medical procedures can be achieved with synthetic models. Training programs may be able to reduce the use of live animals for training without sacrificing educational quality.²⁷

Animal-Free Training Models Are as Good as, if Not Better Than, Using Animals

A 2021 study conducted by Brooke Army Medical Center's U.S. Army Institute of Surgical Research, among others, compared the performances in scenarios between a synthetic trainer and live tissue models. Researchers concluded that "objective performances were similar among both animal and simulation labs. Task completion times were quicker with simulation model."²⁸ Furthermore, a 2018 study stated, "A close examination of the evidence base for the presumed advantages of LTT showed that it is not superior to simulation-based methods in terms of educational benefit. Since credible alternatives that do not cause harm to animals are available, we conclude that LTT on animal models is ethically unjustified."²⁹

Request for Action

There is no scientific, ethical, or legal justification for harming and killing animals in military trauma training exercises. The literature is clear about the superiority of non-animal training methods, and the use of these humane training methods instead of live animals by more than 70% of NATO countries is evidence of their viability as full replacements for the use of animals in LAT and LTT. This is not a choice between saving animals and saving humans. Instead, we are advocating for a switch to more modern and effective training tools that will better train surgeons, medics, and first responders to save lives on the battlefield.

²⁷Keller J. The physiologic stress response of learners during critical care procedures: Live tissue vs. synthetic models. *CHEST Journal*. October 1, 2018. Accessed January 16, 2023. [https://journal.chestnet.org/article/S0012-3692\(18\)31402-8/fulltext#articleInformation](https://journal.chestnet.org/article/S0012-3692(18)31402-8/fulltext#articleInformation)

²⁸Mu T, Garcia-Choudary T, Staudt A, et al. Simulation versus live tissue training randomised trial for ECMO proficiency: Is one better than the other?. *BMJ Simul Technol Enhanc Learn*. 2020;7(4):223-229. doi:10.1136/bmjstel-2020-000682

²⁹Rubeis G, Steger F. Is live-tissue training ethically justified? An evidence-based ethical analysis. *Altern Lab Anim*. 2018;46(2):65-71. doi:10.1177/026119291804600206

Therefore, we urge you to abide by DAOD 8014-1 and end the Canadian military's use of animals for LAT and LTT in favour of advanced, animal-free, human-relevant methods. As we have emphasized in our prior correspondence with the DND, we would be happy to connect you with civilian and military medical experts who can offer advice on the advantages offered by animal-free simulation technology.

You can contact me directly at ShriyaS@peta.org. Thank you for your consideration of this important matter. We look forward to your response.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Shriya Swaminathan', with a stylized flourish at the end.

Shriya Swaminathan
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