**Written submission to the 29th CWC Conference of States Parties,**
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**by**
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**on**
# Central Nervous System-Acting Chemical Agent (CNSAC) Weapons

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## 1. CNS-acting chemical agent weapons

Central nervous system (CNS)-acting chemical agents (CNSACs) are a disparate group of toxic chemicals whose purported purpose as weapons is to cause prolonged but non-permanent disability or incapacitation. They include centrally acting agents producing loss of consciousness, sedation, hallucination, incoherence, paralysis, and disorientation. Many putative agents have low safety margins, and inappropriate doses cause serious, sometimes permanent health effects, even death.[1]

Certain States have previously conducted research into a range of CNS-acting chemicals, including pharmaceutical chemicals and/or bioregulators, and related bioregulatory pathways, potentially for law enforcement and military purposes. [2]

Proponents of such weapons have long advocated their development and use in certain extreme law enforcement scenarios, where there is a need to incapacitate an individual or a group rapidly and completely without causing permanent disability or fatality. To date there has been one well documented case of their use in a largescale anti-terrorist operation. On 26 October 2002 Russian special forces, in their attempt to save 900 hostages held in a Moscow theatre by armed Chechen separatists, employed a secret CNSAC weapon believed to comprise derivatives of the anaesthetic fentanyl. Following mass sedation of the occupants, the special forces stormed the theatre and shot all the separatists. Although the bulk of the hostages were freed, more than 120 of them were killed by the chemical agent, and many more have suffered long-term health problems.[3]

Certain proponents of CNSAC weapons also have raised the possibility of using them as a tool in a variety of military operations, especially in locations where fighters and civilians are in close proximity or intermingled.

Scientific and medical professional associations, arms control organizations, international legal experts, and human rights and humanitarian organizations, as well as a number of States, have criticized research and development of such weapons, contending that their use presents potentially grave dangers to health and well-being. The British Medical Association concluded that "[t]he agent whereby people could be incapacitated without risk of death in a tactical situation does not exist and is unlikely to in the foreseeable future. In such a situation, it is and will continue to be almost impossible to deliver the right agent to the right people in the right dose without exposing the wrong people, or delivering the wrong dose."[4]

[1] This submission reflects the views and opinions of the authors and does not necessarily represent those of the authors' organization or its members.

Other concerns include the risk of a creeping acceptance and legitimization of CNSAC weapons, as the norm against the weaponization of toxicity is gradually eroded; the dangers of horizontal and vertical State proliferation (i.e., to increasing numbers of States and to more and more actors within each state -for example a CNSAC weapon may initially be developed and held only for a State's anti-terrorist forces but then spread to other police, security and military forces within that State); acquisition by non-state actors (private security forces, terrorists, criminals); their potential use together with firearms as a lethal force multiplier; their employment to facilitate torture and other ill-treatment including coercive interrogation; the further militarization and misuse of the life sciences; the potential for States to use law enforcement CNSAC weapons development as a cover for covert offensive chemical weapons programs; and the danger of creating a slippery slope that could lead to chemical warfare.

Disquiet about these weapons is further exacerbated by concern that rapid advances in relevant chemical and life sciences, particularly genomics, synthetic biology, medical pharmacology, and neuroscience, will be harnessed to the development of such weapons. In a 2012 study, the UK's Royal Society gave warning of "active interest in performance degradation applications of neuroscience for both military and law enforcement purposes" and highlighted "indications of interest among a number of States in the development and use of incapacitating chemical agents."[5] A 2013 study by Crowley and Dando highlighted pharmaceutical chemicals based CNSAC weapons development by certain States and also a broader range of dual use research of potential concern. [6] A 2022 study by Crowley and Dando highlighted dual use toxin and bioregulator research of potential concern including with regard to CNSAC weapons.[7]

**2. The Chemical Weapons Convention and CNS-acting chemicals**

Under the Chemical Weapons Convention, the weaponised use in armed conflict of the toxic properties of chemical agents – including CNS-acting chemical agents - is absolutely prohibited[8], as is their development (and by implication, associated research), production, acquisition, stockpiling, retention or transfer when intended for such purposes, under Articles I and II.[9] If States Parties have undertaken programmes to research and develop CNS-acting chemicals, and/or associated means of delivery for such purposes, they are required to halt such activities, declare any chemical weapons and chemical weapons production facilities (CWPFs) they possess (under Article III[10]) and ensure they are verifiably destroyed (under Article I, and in accordance with Articles IV and V respectively[11]).

In contrast, there has previously been some uncertainty and contested views surrounding application of Article II 1(a) and Article II.9(d) of the Convention. This has led to differing interpretations by States Parties as to whether certain toxic chemicals beyond riot control agents can legitimately be employed for law enforcement purposes, and if so under what circumstances, and with what constraints.

In the last decade, there have been concerted attempts by a significant group of CWC States Parties, led by Australia, Switzerland and the United States, to encourage the OPCW to resolve the ambiguities concerning the development and use of CNSAC weapons. Since 2018, discussions within the OPCW focused on whether use of *aerosolised* CNS-acting toxic chemicals for law enforcement purposes was permissible under the CWC. Certain States, notably Russia, have previously opposed such measures. In a November 2018 paper issued during the Fourth CWC Review Conference, Russia stated that use of aerosolised CNS-acting

chemicals for law enforcement purposes "is not regulated under the [Chemical Weapons] Convention."[12]

**3. CSP-26 "Understanding regarding the aerosolized use of central nervous system-acting chemicals for law enforcement purposes"**

On 1 December 2021, the 26th Conference of States Parties to the CWC (CSP-26) adopted an "Understanding" on the aerosolized use of CNS-acting chemical agents for law enforcement purposes, which "Decided that the aerosolised use of CNS-acting chemicals is understood to be inconsistent with law enforcement purposes as a 'purpose not prohibited' under the Convention." [13] This CSP Decision did not introduce a new prohibition but rather clarified the correct application of the existing prohibitions and rules of the CWC. The Decision also noted that "munitions and devices specifically designed to cause death or other harm" through the release of aerosolised CNS-acting chemicals would "constitute a 'chemical weapon'" [14], and consequently should be declared and verifiably destroyed. Whilst 85 States supported the Decision, 10 States – including China, Iran and Russia - voted against it. On 29 November 2021, China, Iran, Russia and Syria issued a joint statement declaring their rejection of the Decision which they considered to be "an *ultra vires* act" that "went beyond the powers and functions of the Policy-Making Organs of the OPCW", and "so could not have any legal effect(s) on the States Parties' rights and obligations under the Convention."[15]

In addition to the contested nature of its adoption and legal status, aspects of the Decision are ambiguous. Although it addresses "CNS acting chemicals", there is no definition of this phrase, nor an indication of the range of chemicals that would be covered by it. It is also limited in its scope - its prohibitions are specifically restricted to *CNS-acting* chemicals. Consequently, any existing or future law enforcement weapons that use toxic chemicals that act on other human physiological processes would not be covered by this prohibition. The Decision is further limited in the scope of the means of delivery addressed. It explicitly prohibits only *aerosolized* CNS weapons, excluding for example gaseous CNS-acting agents, as noted by the SAB in its report to the 5th Review Conference[16]; or CNS-acting agents delivered by non-aerosolized mechanisms such as dart guns or frangible projectiles. The Decision further restricts application to "munitions and devices *specifically designed* to cause death or other harm" and therefore the use of general-purpose munitions and delivery devices such as air blowers and aerosol delivery systems may not be covered.

In summary, although this Decision is a significant advance in constraining weaponised use of aerosolized CNS-acting chemicals, its full implications will only become apparent as States Parties further clarify outstanding areas of ambiguity in the text and attempt to implement it. Consequently, the permissibility under the CWC of research, development and use of law enforcement weapons employing pharmaceutical chemicals, toxins and bioregulators, is likely to remain contested.[17] The current lack of clarity with regard to the scope and impact of this "Understanding" is further exacerbated by the lack of a clear dedicated process to facilitate implementation by CWC States Parties and the OPCW as a whole.

**Conclusions and recommendations**

The possession and use of CNSAC weapons currently appears to be restricted to a small number of countries, whilst a broader range of States have engaged in potentially relevant research that could be applicable to the study or development of such weapons. Consequently, there is still time for the international community – in the form of the OPCW -

to act. And the forthcoming Conference of States Parties provides the opportunity to initiate such actions.

However, if the OPCW fails to agree a path forward, there is a danger that an ever-growing number of countries will seek to harness advances in relevant scientific disciplines for CNSAC weapons development programs or may be perceived—rightly or wrongly—of doing so. This, in turn, may convince further States to conduct their own CNSAC weapons research and development programs, or potentially explore an even broader range of chemical agents, with the danger of a consequent spiral of actions and reactions that could weaken or eventually erode the prohibition on chemical weapons.

**Recommendations**

With their adoption of the "Understanding" at the 26th CSP, CWC States Parties have clarified that aerosolised use of CNS-acting chemical agents for law enforcement purposes is effectively prohibited under the Convention.

- Consequently, all CWC States Parties should now ensure that their national policies and practices are in line with this "Understanding". In addition to the central prohibition on use, they should also terminate and prohibit practices essential for and enabling such use i.e., research, development, manufacture, transfer, stockpiling of aerosolised CNSAC weapons, and should destroy any existing stockpiles of such weapons on their territory.

- To facilitate effective and consistent implementation by all States Parties, further guidance is needed *inter alia* to define "CNS-acting chemicals" and the range of chemicals that are covered by the "Understanding". An indicative list of CNSACs and chemical families of concern and covered by the "Understanding" should be developed, including CNSACs previously developed or explored as aerosolised CNSAC weapons. The Director General and Technical Secretariat, with the assistance of the SAB, should be tasked with developing guidance in this area. The Technical Secretariat should also be tasked with monitoring scientific and technological advances of potential of concern in this area. To aid this work, the Director General should establish an SAB TWG to study current developments concerning CNSACs, as was recommended by the SAB in its report to the 5th CWC Review Conference.[18]

- As currently worded, the "Understanding" relates only to weapons employing CNSACs. States should consider adopting additional guidance to ensure that any existing or future law enforcement weapons employing toxic chemicals (including toxins and bioregulators) that act on other *core* human physiological processes beyond the CNS are also prohibited.

- As currently worded, the "Understanding" relates only to aerosolised CNSACs. States should consider adopting additional guidance clarifying that not only aerosolised but all weaponised use of toxic chemicals effecting the CNS or other core human physiological processes, for law enforcement purposes, no matter how they could be delivered, are also prohibited.

[1] See for example: OPCW Conference of the States Parties, *Report of the Scientific Advisory Board on Developments in Science and Technology for the Third Special Session of the Conference of the States Parties to Review the Operation of the Chemical Weapons Convention*, RC-3/DG.1, 29 October 2012; OPCW Conference of the States Parties, *Report of the Scientific Advisory Board on Developments in Science and Technology for the Fourth Special Session of the Conference of the States Parties to Review the Operation of the Chemical Weapons Convention*, RC-4, DG-1, 30 April 2018; OPCW, Conference of the States Parties, *Report of the Scientific Advisory Board on Developments in Science and Technology to the Fifth Special Session of the Conference of the States Parties to Review the Operations of the Chemical Weapons Convention.* RC-5/DG.1, OPCW, 22 February 2022.
[2] Crowley, M. & Dando, M. *Down the slippery slope? A study of contemporary dual-use chemical and life science research potentially applicable to incapacitating chemical agent weapons*, Bath University, 2014; Crowley, M. and Dando, M. *Toxin and bioregulator weapons: preventing the misuse of the chemical and life science research*, Palgrave Macmillan, November 2022; Dando, M. and Furmanski, M. Midspectrum Incapacitant Programs, in: Wheelis, M., Rózsa, L. and Dando, M. (eds), *Deadly Cultures: Biological Weapons Since 1945*, 2006; Perry Robinson, J., Incapacitating chemical agents in context: an historical overview of States' policy, pp.89-96 in: International Committee of the Red Cross (ICRC), *"Incapacitating chemical agents": Law enforcement, human rights law and policy perspectives* Montreux, Switzerland, 24-26 April 2012, January 2013.
[3] Crowley, M. *Chemical Control: Regulation of Incapacitating Chemical Agent Weapons, Riot Control Agents and Their Means of Delivery*, Palgrave Macmillan, 2016.
[4] British Medication Association Board of Science, *The Use of Drugs as Weapons: The Concerns and Responsibilities of Healthcare Professionals, BMA*, May 2007.
[5] Royal Society, *Brain Waves Module 3: Neuroscience, Conflict and Security,* February 2012.
[6] Crowley, M. & Dando, M. (2014) *op.cit.*
[7] Crowley, M. and Dando, M. (2022) *op.cit*.
[8] In addition to the Chemical Weapons Convention, the use of these agents in armed conflict is prohibited under the 1925 Geneva Protocol and customary international humanitarian law.
[9] Organisation for the Prohibition of Chemical Weapons, *Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction* (Chemical Weapons Convention), 1993.
[10] OPCW, CWC (*1993) op.cit.*, Article III (1)a-c.
[11] OPCW, CWC (*1993) op.cit.*, Article I (2) and (4); Article IV and Article V.
[12] OPCW, Russian Federation *Aerosolisation of Central Nervous System-Acting Chemicals for Law Enforcement Purposes*, RC-4/NAT.9, p. 3. OPCW, The Hague, 21 November 2018
[13] OPCW, Conference of States Parties, *Decision: Understanding regarding the aerosolized use of central nervous system-acting-chemicals for law enforcement purposes*, C-26/DEC.10. OPCW, The Hague, 1 December 2021.
[14] OPCW, Conference of States Parties (December 2021) *op. cit*.
[15] Iran, *Joint Statement on behalf of 4 Delegations*. Delivered by the Delegation of the Islamic Republic of Iran at the 26th Session of the Conference of States Parties of the OPCW under the Subitem 26.1 "Any Other Business" on the Draft Decision entitled "Understanding Regarding the Aerosolized Use of Central Nervous System-Acting Chemicals for Law Enforcement Purposes". OPCW, The Hague, 29 November 2021.
[16] OPCW, SAB Report (22 February 2022) *op cit.*, paragraph 12.
[17] Crowley, M. and Dando, M. Central nervous system weapons dealt a blow, *Science*, volume 375, issue 6577, 14 January 2022, pp.153-154.
[18] OPCW, SAB Report (22 February 2022) *op. cit.* paragraph 31.