

# Injuries and Deaths Proximate to Oleoresin Capsicum Spray

*OC spray is operationally effective and is typically associated with decreased odds of subject and “deployer” injury.*

## Why we did this study

The primary goal of this literature review was to assess research (both published and unpublished) related to injuries and death proximate to Oleoresin Capsicum (OC) spray deployment. OC spray contains the active ingredient oleoresin capsicum which can be produced synthetically, but is also a naturally occurring substance found in some peppers. OC spray is often used as a pain compliance technique to control subjects when they are being actively resistant or assaultive. OC spray is frequently used in military, law enforcement, and correctional settings.

## What we did

The review includes the following sections: (1) A review of research related to the operational effectiveness of OC spray, when that research has also examined injuries or deaths; (2) A review of research related to specific injuries and deaths, which are potentially associated with OC spray deployment; and, (3) A review of research pertaining to factors associated with OC spray and injuries or death. A search of several databases and search engines produced 22 documents that were deemed relevant.

## What we found

Research has demonstrated that the impact of OC spray will vary as a function of numerous factors, including: its concentration, its physiochemical properties, the deployment device used, and a range of subject (e.g., clothing) and environmental (e.g., weather) factors.

A number of studies have examined the operational effectiveness of OC spray (i.e., to control resistant subjects). This research demonstrates that OC spray is often effective and it is typically associated with decreased odds of both subject and “deployer” injury. This finding is relatively consistent across jurisdictions and conditions. Although there are exceptions, when OC-associated injuries do occur, they consistently appear to be relatively minor and individuals targeted by OC spray rarely require serious medical attention.

The vast majority of reported injuries involve eye and skin irritation or pain, altered vision, corneal abrasions, and respiratory symptoms. It appears to be very uncommon for OC-associated injuries to have a long-term, negative impact on the affected individual. There is evidence that

certain factors, including Excited Delirium Syndrome, positional asphyxia, pre-existing health conditions, and drug use, are associated with OC spray deployment, and in some cases, injuries or death.

## What it means

The majority of research we reviewed suggests that OC spray is relatively safe and typically decreases the likelihood of injury, for both the subject and the person deploying the spray. That being said, there is always the potential for harm when using any Use of Force (UoF) intervention option, and evidence suggests that OC spray has occurred proximate to both injuries and deaths. In the vast majority of these cases, the deployment of OC spray has not been deemed a contributory or sole factor in causing the injuries or death. Other factors, such as other UoF intervention options or various subject characteristics (e.g., drug use) are more commonly at the root of those outcomes. When OC spray does cause injuries, the damage is usually minor and not long-lasting. Of course, this will vary as a function of many factors, including the OC concentration used and various environmental and subject variables (e.g., distance, clothing, etc.). Future research is required to determine whether certain factors directly amplify the negative effects of OC spray.

## For more information

Semple, T., & Bennell, C. (2017). *Injuries and Deaths Proximate to Oleoresin Capsicum Spray Deployment: A Literature Review* (Research Report R-405). Ottawa, Ontario: Correctional Service of Canada.

To obtain a PDF version of the full report, or for other inquiries, please e-mail the [Research Branch](#) or contact us by phone at (613) 995-3975.

You can also visit the [Research Publications](#) section for a full list of reports and one-page summaries.