

REAEROSOLIZATION OF HAZARDOUS MATERIALS: WHAT GOES DOWN, CAN GO BACK UP AGAIN

Biological Risk Evaluation And Threat Hazard Effects (BREATHE)

Dylan Fudge US Army **Roberta Xega** US Army DEVCOM CBC **Tyler Goralski** US Army DEVCOM CBC **Desiree Harris** U.S. Army DEVCOM CBC/Excet **Morgan Minyard** US Army DEVCOM CBC **Bruce King** US Army DEVCOM CBC

Reaerosolization is the reintroduction of particles into the air that have settled onto a surface. Persistent and hydrophobic compounds present a unique risk that could be two-fold. First, there is the initial threat of breathing in the aerosol followed by the potential threat of reaerosolization for extended periods of time (weeks to months) following the aerosolization of a compound. Adrenergic and opioid compounds were investigated for efficacy after reaerosolization as these compounds are both persistent and hydrophobic leading them to remain in the environment over longer periods of time. The investigation determined an initial aerosol deposition of milligrams to micrograms per a meter square could present a reaerosolization concern (depending on the compound). This estimated amount of potentially available material is sufficient to reach a half maximal effective concentration (EC50) for adrenergic and/or opioid receptors during testing in commercially available receptor assays.

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