

# Understanding and supporting neurological conditions among the incarcerated

---

 [openaccessgovernment.org/article/understanding-and-supporting-neurological-conditions-among-the-incarcerated/173821/](https://openaccessgovernment.org/article/understanding-and-supporting-neurological-conditions-among-the-incarcerated/173821/)

## Samuel Han and Audrey Nath discuss neurological conditions among the incarcerated, who they argue are a medically underserved population

---

In prisons, jails, and immigration detention, neurological complaints are common, accounting for around 10% of medical complaints in this marginalized population. <sup>(1)</sup> Additionally, there are neurological conditions that present a higher prevalence within the population of incarcerated people than the general population, and these conditions may affect rates of false confessions, prison violence, deaths, and decreased functioning after release.

### Intellectual disabilities among the incarcerated

---

Within the incarcerated population, there is a higher prevalence of intellectual disabilities (ID) compared to the general population. <sup>(2-6)</sup> Prisoners with intellectual disability may also experience other negative health outcomes, such as higher rates of heart disease, obesity, and hearing problems, plus fewer preventative care interventions and immunizations. <sup>(7)</sup>

Even after release, prisoners with developmental disabilities have more emergency department visits and hospitalizations than the general population does. <sup>(8)</sup>

Intellectual disability may also increase the risk of false confessions in an interrogation setting. <sup>(9)</sup>

### Epilepsy in prison populations

---

Epilepsy has up to four times greater incidence in jail and prison populations than in the general population. <sup>(10)</sup> Uncontrolled epilepsy, which occurs at about double the rate in incarcerated people compared to the general population <sup>(11,12)</sup>, may be an underlying risk factor for sudden unexplained death in epilepsy patients (SUDEP), as are inadequate antiepileptic drug treatment and the prone position at the time of death. <sup>(13)</sup> While the exact rate of SUDEP deaths in incarcerated populations is unclear, these factors may be risk factors for epilepsy patients who are incarcerated. <sup>(14)</sup>

### Sleep disorders

---

Sleep disorders and overall difficulties with obtaining adequate sleep are common problems within detention facilities and prisons. <sup>(15-17)</sup> The circumstances of incarceration itself may predispose people to have difficulty falling and staying asleep. Complaints of noise, excessive lights, uncomfortable bedding, or even lack of bedding all contribute to difficulties with sleep for detained people. <sup>(18)</sup>

Other circumstances in prisons, such as beds being co-opted as living places to eat and watch television, also disrupt sleep hygiene. <sup>(19)</sup>

Within immigrant child detention, there are reports of a lack of beds entirely, freezing cold conditions, and lights kept on throughout the night. <sup>(20)</sup> The resulting sleep deprivation from these austere conditions may result in increased rates of depression, <sup>(21)</sup> neurobehavioral problems, <sup>(22)</sup> aggression, <sup>(19)</sup> and type 2 diabetes. <sup>(23)</sup>

In adults, lack of quality sleep may be associated with increased rates of aggressive behaviors <sup>(24)</sup>, and an international standard of giving incarcerated people at least six hours of sleep per night has been proposed. <sup>(25)</sup>

## **Neuroinfectious diseases**

---

Infectious diseases with neurological sequelae are a unique set of conditions in the incarcerated population, as distancing measures to decrease transmission of communicable diseases are difficult to implement in facilities. For example, in a study of acquired immunodeficiency syndrome (AIDS), it was found that complications arising from opportunistic central nervous system (CNS) bacterial infections from *Mycobacterium tuberculosis* (TB) were more common in the incarcerated population. <sup>(26)</sup>

More recently, the spread of COVID-19 within prisons and immigrant detention has resulted in significant morbidity and mortality <sup>(27)</sup>, inclusive of neurological complications including strokes, new-onset seizures, cerebral venous sinus thrombosis, meningoencephalitis, Guillain-Barre syndrome, and olfactory changes.

The prevalence of COVID-19 within incarcerated populations was more than five times higher than that of non-incarcerated Americans. <sup>(28)</sup> In particular, prison crowding has been found to increase rates of COVID-19. <sup>(29)</sup> To this end, there have been efforts by various states and organizations to release non-violent offenders and pre-trial detainees to mitigate the spread of COVID-19. <sup>(30)</sup>

## **Nutritional deficiencies**

---

Undernutrition is a prevalent problem in incarcerated individuals throughout the world <sup>(31)</sup>, which may cause neurological problems. Investigation of nutrition provided in county jail has shown evidence of inadequate daily intake of micronutrients, such as vitamin D, magnesium, and omega-3 fatty acids. <sup>(32)</sup>

Furthermore, even amongst inmates who are provided with adequate nutrition through the provided meals, hunger strikes are a common mechanism for inadequate nutrition among incarcerated people. <sup>(33)</sup> Resulting thiamine deficiency has been linked to peripheral neuropathy amongst incarcerated people. <sup>(34)</sup>

Even in the community, for people who are not currently incarcerated, a history of incarceration may predispose adults to be undernourished. A history of previous incarceration, as well as the duration of imprisonment, are factors that correlate with undernutrition. <sup>(35)</sup>

Nutritional deficiencies themselves may contribute to violent behavior (55 Shoenthaler). A reduction in violent offenses has been found in prisoners who received vitamin supplementation. <sup>(36)</sup>

## **Toxicology**

---

Both during incarceration and upon release, overdoses of both prescription and illicit substances may cause neurological changes. <sup>(37, 38)</sup> In one study of 130 incarcerated adults in Ohio, there were a total of 107 overdoses (100 intentional and seven unintentional), with phenytoin as the most commonly overdosed drug (22% of cases). <sup>(39)</sup> Interestingly, co-morbid ADHD that is adequately treated with prescription stimulants may decrease rates of illegal substance abuse among incarcerated adults. <sup>(40)</sup>

Following release from incarceration, adults are at a high risk of overdose, as early as two weeks following release <sup>(41)</sup>, and with increased risk up to one year after release from prison. <sup>(42)</sup> The risk of overdose deaths is higher in adults who have been incarcerated within the past two years <sup>(43)</sup> to five years. <sup>(44)</sup> To help prevent opioid-related fatalities in people recently released from prison, both naloxone kits <sup>(45)</sup> and naloxone prescription with education <sup>(46)</sup> given upon release have shown promise in decreasing mortality rates.

## Traumatic brain injury

---

There may be higher rates of traumatic brain injury (TBI) amongst incarcerated people compared to the general population, at approximately 51% among the incarcerated group compared with 38% in the general population. <sup>(47)</sup>

The lifetime prevalence of TBI may be as high as 87% in incarcerated individuals, with 36% of TBI sustained over the preceding year. <sup>(48)</sup> In one study of female inmates in the United Kingdom, there was a prevalence of 79% of lifetime TBI, with 38% having a history of six or more injuries. <sup>(49)</sup>

[CLICK HERE](#) for references

Please Note: This is a Commercial Profile



This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.