

# TBI as a Risk Factor for Incarceration

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## Abstract

Traumatic brain injury (TBI) can lead to significant post-traumatic disturbances in mood and behavior. Injury to the frontal lobe can result in aggression, which can then result in police intervention and/or incarceration. Damage to the frontal lobe can cause a sudden release of amygdala-generated signals that can lead to behaviors resulting in a lack of control and heightened aggression. Research has demonstrated a clear association between TBIs involving the frontal lobe, aggressive behaviors and an increased likelihood of police intervention and/or incarceration. Considering individuals with TBI who have committed aggressive acts leading to police intervention and/or incarceration, it is important to acknowledge the complex relationships that exist between brain injury and prior psychosocial factors to prevent recurrence of aggression and incarceration by adequately treating TBI.

## Definitions

- **Aggression:** Verbal outbursts and physical violence toward objects and others.
- **Traumatic Brain Injury (TBI):** An alteration in brain physiology or anatomy caused by an external force.
- **Incarceration:** Imprisonment or placement in jail, prison, a correctional facility, or juvenile detention center as a result of committing an illegal act.



## Research Findings

- Traumatic brain injury (TBI) can lead to significant post-traumatic disturbances in mood and behavior (Lane et al., 2016). Injury to the frontal lobe can result in aggression, which can then result in police intervention and/or incarceration (Lane et al., 2016).
- The frontal lobe is one area of the brain responsible for inhibiting impulses and suppressing aggression (Palijan et al., 2010; Wortzel et al., 2013).
- The limbic system, especially the amygdala, plays a crucial role in relaying signals between prefrontal cortex and the hypothalamus. Damage to the frontal lobe can cause a sudden release of amygdala-generated signals that can lead to behaviors that may no longer be controlled (Williams et al., 2010).
- Prior studies noted that 25 to 87 percent of inmates report a history of traumatic brain injury, in contrast to a TBI prevalence rate of 10 to 38 percent in the general U.S. population (Farrer & Hedges, 2011, 2012; Shiroma et al., 2010; Williams et al., 2010).

## Research Findings (cont.)

- Research has demonstrated a clear association between traumatic brain injuries involving the frontal lobe and aggressive behaviors and an increased likelihood of police intervention and/or incarceration (Farrer & Hedges, 2011; Silver et al., 2011; Tateno et al., 2003; Wortzel et al., 2013).
- In a meta-analysis, roughly 51% (2079 cases) of 5049 incarcerated subjects had a history of TBI (Farrer & Hedges, 2011). The researchers argued that the prevalence of TBI was significantly higher in their incarcerated sample compared to that in the general population. Specifically, in the group of survivors of severe TBI, 7% had some kind of legal involvement in the first year post-TBI and 31% had a legal involvement within 5 years post-injury.
- Research conducted by Tateno and colleagues (2003) found that patients with frontal lobe lesions had higher aggression scores measured by the Overt Aggression Scale.
- In a sample of 60 subjects in a county jail, those who had suffered a TBI in the prior year had significantly greater anger and aggression than those who had not suffered a TBI (Slaughter et al., 2003).

## Implications

- The effects of brain injury on behavior may go unnoticed (McClure, 2011). When aggression leads to police intervention and/or incarceration, the assumption often is that the brain-injured individual has a personality flaw which leads to criminal behavior.

## Implications (cont.)

- The influence of TBI and pre-TBI history of the individual may be overlooked. Because of such omissions, courtroom decisions made by judges and influenced by attorneys would benefit from the knowledge of the individual's history of injury and the effect on their decision-making skills and behaviors.
- Proper recording and assessment of aggressive behaviors should be a goal in both hospitals and outpatient settings to determine the causal factors for such episodes.
- A recent study of over 4000 aggressive episodes in chronically hospitalized patients has shown that hospital records failed to document 50–75% of episodes (Silver et al., 2011).
- Forensic psychologists would benefit from this knowledge of potential increased risk-taking and aggressive behaviors when assisting in decision-making tactics.
- Forensic psychologists can use this information to alert caregivers to specific conditions and situations which may lead to aggressive behaviors and can enable them to formulate actionable plans in hopes of preventing aggression and recidivism.

## Conclusions

When considering individuals with TBI who have committed aggressive acts, it is important to acknowledge the complex relationships that exist between brain injury and prior psychiatric and psychosocial factors to prevent recurrence of aggression and maximize rehabilitation potential.