



TRAUMATIC BRAIN INJURY (TBI) is caused by a bump, blow, or jolt to the head, or a penetrating head injury, that disrupts the normal function of the brain. The severity of TBI ranges from mild (a brief change in mental status or consciousness) to severe (an extended period of unconsciousness or amnesia after the injury).

Since 2007, the state's Rules and Regulations Pertaining to the Rhode Island Traumatic Brain Injury and Spinal Cord Injury Registry require hospitals to report all cases of TBI diagnosed through inpatient and emergency departments to the Rhode Island Department of Health within 14 days of diagnosis.

With the passage of reporting requirements, the number of reported cases of TBI increased dramatically from 147 cases in 2006 to 6,585 cases in 2009. This resulted in increased insight into the demographics, incidence, diagnosis, and causes of TBI in Rhode Island. Reporting requirements include principal diagnosis, cause of injury, place of incident, type of discharge, dates of admission/discharge, and patient demographics including name, address, social security number, race and ethnicity, date of birth, and gender.

Traumatic Brain Injury in Rhode Island



PRINCIPAL DIAGNOSIS OF TBI

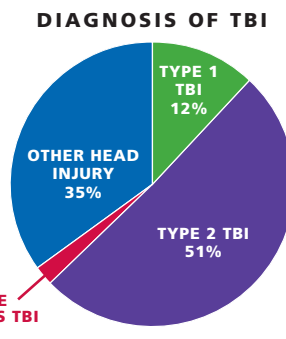
In 2009, 6,585 TBI cases were reported to the Rhode Island Department of Health.

- » 12% (797 cases) were classified as the most severe, **Type 1 TBI**, an intracranial injury or a moderate to prolonged loss of consciousness.
- » 51% (3,332 cases) were classified as severe, **Type 2 TBI**, a loss of consciousness (LOC) of less than one hour, a LOC of unknown duration, or an unspecified level of consciousness.
- » 2% (131 cases) were classified as **Late Effects TBI**, conditions occurring at any time after the onset of the causal condition.
- » 35% (2,325 cases) were classified as **Other Head Injury**, an unspecified injury to the head.

RATE OF TBI

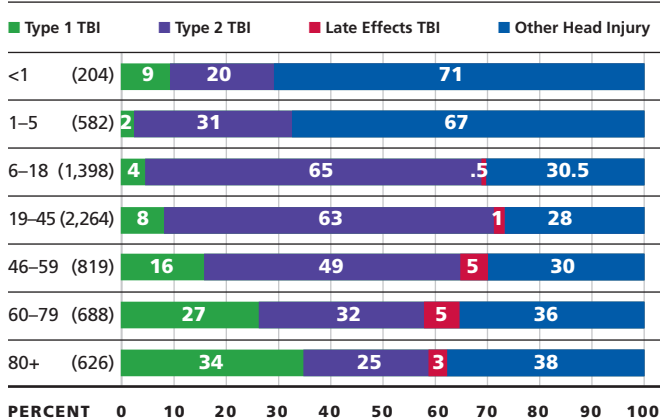
In 2009, infants had the highest rate of TBI (1,617 per 100,000) followed by adults 80 years old and older (1,249 per 100,000). The lowest rate of TBI was found among adults 46–59 years old (387 per 100,000). Among those aged 6–79 years old, teens 13–18 years old had the highest rates of TBI followed by young adults 19–25 years old.

Males had higher rates of TBI than females in all age categories except for infants and adults 80 years old and older. The differences between males and females were most apparent in children through young adults 6–25 years old.



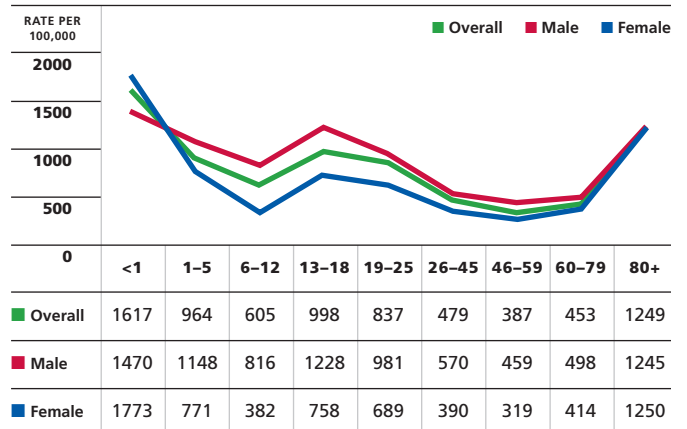
PRINCIPAL DIAGNOSIS OF TBI BY AGE

RHODE ISLAND, 2009



RATE OF TBI BY AGE AND GENDER

RHODE ISLAND, 2009





CAUSES OF TBI

In 2009, unintentional falls were the leading cause of TBI in Rhode Island (45% or 2,925 cases) followed by motor vehicle traffic accidents (15% or 1,008 cases), striking against/being struck accidentally (15% or 984 cases), and assault (8% or 549 cases). Overall, males had a higher rate of TBI than females.

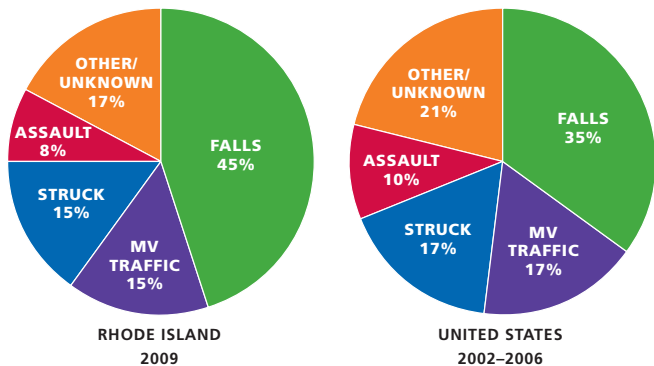
Falls: Although unintentional falls were the leading cause of TBI in Rhode Island, the percentage of TBI caused by falls varied significantly by age group, ranging from 25% for those 19-45 years old and 87% for those 80 years old and older.

Motor Vehicle Traffic Accidents: Adults 19-45 years old had the highest percentage of TBI caused by motor vehicle traffic accidents (27%).

Striking Against/Being Struck Accidentally: Children 6-18 years old had the highest percentage of TBI caused by striking against/being struck accidentally (33%).

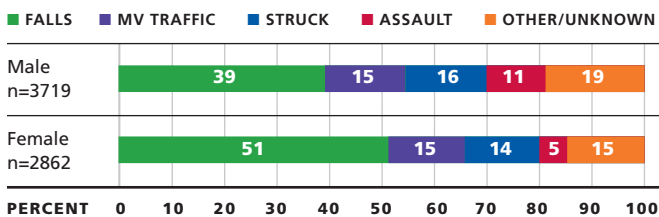
Assault: Adults 19-45 years old had the highest percentage of TBI caused by assault (16%).

Rhode Island had a higher rate of TBI caused by falls than the United States, but had a slightly lower rate of TBI caused by motor vehicle traffic accidents, striking against/being struck accidentally, and assault than the United States.



LEADING CAUSES OF TBI BY GENDER

RHODE ISLAND, 2009



LEADING CAUSES OF TBI BY AGE

In 2009, the leading causes of TBI in Rhode Island varied by age.

Infants <1 year old: The leading cause of TBI was falls (81%), specifically falls from bed (29%) and falls from one level to another (18%).

Children 1-5 years old: The leading cause of TBI was falls (75%), specifically falls from stairs or steps (12%).

Children 6-18 years old: The leading cause of TBI was striking against or being struck accidentally (33%), specifically by objects during sports (14%) or by objects or persons not during sports (13%).

Adults 19-45 years old: The leading cause of TBI was motor vehicle traffic accidents (27%), specifically those involving motor vehicle collisions (13%).

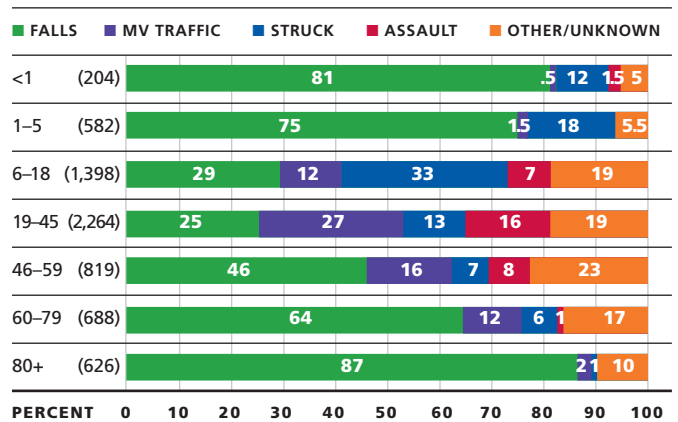
Adults 46-59 years old: The leading cause of TBI was falls (46%), specifically falls from slipping, tripping, or stumbling (15%) and falls on or from stairs or steps (10%).

Adults 60-79 years old: The leading cause of TBI was falls (64%), specifically falls from slipping, tripping, or stumbling (23%) and falls on or from stairs or steps (9%).

Adults 80 years old and older: The leading cause of TBI was falls (87%), specifically falls from slipping, tripping, or stumbling (33%) and falls on or from stairs or steps (7%).

LEADING CAUSES OF TBI BY AGE

RHODE ISLAND, 2009



DISCUSSION

This report identifies high-risk populations for TBI, including seniors, infants, teens, and males, and suggests that age-specific TBI intervention programs are necessary.

The data highlighted in this report will be used to inform policy discussions and intervention planning concerning early childhood safety, athletics, violence, elderly falls, and general injury prevention.