Children’s Safety Network

Traumatic Brain Injury: Resource Guide

February 2020

This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under the Child and Adolescent Injury and Violence Prevention Resource Centers Cooperative Agreement (U49MC28422) for $5,000,000 with 0 percent financed with non-governmental sources. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.
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Traumatic brain injury (TBI), a condition caused by a bump, blow or jolt to the head which disrupts normal brain function, is a major cause of death and disability in the United States. Nearly 700,000 TBI-related emergency department visits, hospitalizations, and deaths occur annually in US children and adolescents ages 0-19 years.\(^1\) \(^2\) From 2006 to 2014, the number of TBI-related emergency department visits, hospitalizations, and deaths increased by 53%. The primary causes of TBI in children and youth include falls, being struck by or against an object, motor vehicle-related crashes, and assaults. While most TBIs are mild (concussions), a TBI can also result in impairments related to thinking, memory, movement, sensation (e.g., vision or hearing), or emotional functioning (e.g., personality changes, depression).\(^3\)

TBI can be prevented in many cases. This guide divides selected resources on preventing TBI among children and adolescents into seven sections:

1. National Organizations;
2. Prevention Programs and Interventions;
3. Children’s Safety Network Webinars;
4. Data Sources;
5. Fact Sheets and Infographics;
6. Policy and Legislation; and
7. Research and Reports.

The list of resources included in this guide is not meant to be comprehensive nor are the listings intended as endorsements.

\(^1\) Healthcare Cost and Utilization Project Databases, 2014
\(^2\) Multiple Cause of Death, 2014
\(^3\) Centers for Disease Control and Prevention, 2019
NATIONAL ORGANIZATIONS

American Academy of Pediatrics

Brain Injury Association of America
https://www.biausa.org/

Brain Trauma Foundation
https://www.braintrauma.org/

Brain Trust Canada
https://braintrustcanada.com/

Centers for Disease Control and Prevention (CDC)
https://www.cdc.gov/headsup/index.html

Consumer Product Safety Commission (CPSC)
https://www.cpsc.gov/

Dana Foundation
http://dana.org/

International Brain Injury Association (IBIA)
https://www.internationalbrain.org/

National Association of State Head Injury Administrators (NASHIA)
http://www.nashia.org/default.asp

National Athletic Trainers’ Association

National Center for Sports Safety
https://sportssafety.org/

National Center on Shaken Baby Syndrome
https://dontshake.org/

National Council of Youth Sports
https://www.ncys.org/

National Highway Traffic Safety Administration (NHTSA)
https://www.nhtsa.gov/
National Institute of Neurological Disorders and Stroke  
https://www.ninds.nih.gov/

National Park and Recreation Association (NPRA)  
https://www.nrpa.org/

National Program for Playground Safety (NPPS)  
https://www.playgroundsafety.org/

Prevent Child Abuse America  
https://preventchildabuse.org/

Safe Kids WorldWide  
https://www.safekids.org/

PREVENTION PROGRAMS AND INTERVENTIONS

Bicycle Helmet Safety Institute  
http://www.bhsi.org

Brain 101: The Concussion Playbook  

BrainLine  
http://www.brainline.org

Concussion Legacy Foundation  
https://concussionfoundation.org/

Connecting the Dots: An Overview of the Links Among Multiple Forms of Violence | CDC  

Heads Up: Concussion in Youth Sports | CDC  
https://www.cdc.gov/headsup/youthsports/index.html

Heads Up Initiative | CDC  
https://www.cdc.gov/headsup/index.html

Heads Up to Clinicians: Addressing Concussion in Sports Among Kids and Teens | CDC  
https://www.cdc.gov/headsup/providers/training/index.html

Heads Up to Schools: Know Your Concussion ABCs | CDC  
https://www.cdc.gov/headsup/schools/index.html

MomsTeam.com  
https://momsteam.com/health-safety/concussion-safety
National Center on Shaken Baby Syndrome: Period of Purple Crying Program
http://dontshake.org/purple-crying

Sport Concussion Library from the Canadian Medical Association: Sport Concussion Education Program
http://www.sportconcussionlibrary.com

ThinkFirst
http://thinkfirst.org/

CHILDREN’S SAFETY NETWORK (CSN) WEBINARS

Distracted Driving Among Teens (2017)
https://www.childrenssafetynetwork.org/webinar/distracted-driving-among-teens-what-we-know-about-it-how-prevent-it

Keeping Children 8-14 Years Old Safe as Motor Vehicle Occupants (2017)
https://www.childrenssafetynetwork.org/webinar/keeping-children-8-14-years-old-safe-motor-vehicle-occupants

Reducing the Risks to Child Pedestrians (2018)
https://www.childrenssafetynetwork.org/webinar/reducing-risks-child-pedestrians

Traumatic Brain Injury among Children and Youth: Understanding TBI and One Model State Program (2019)

Working “Upstream” to Prevent Adverse Childhood Experiences (ACEs) (2018)
https://www.childrenssafetynetwork.org/webinar/working-upstream-prevent-adverse-childhood-experiences-aces

DATA SOURCES

CDC WONDER | CDC
https://wonder.cdc.gov/

Consumer Product Safety Commission | CPSC
Healthcare Cost and Utilization Project (HCUP) Databases
https://www.ahrq.gov/data/hcup/index.html

National Center for Catastrophic Sport Injury Research
http://nccsir.unc.edu/

National Center for Child Fatality Review and Prevention
https://www.ncfrp.org/

National Electronic Injury Surveillance System (NEISS) | CPSC
https://www.cpsc.gov/Research--Statistics/NEISS-Injury-Data

National Electronic Injury Surveillance System – All Injury Program (NEISS-AIP)
https://www.icpsr.umich.edu/icpsrweb/NACJD/series/198

TBI Data and Statistics | CDC
https://www.cdc.gov/traumaticbraininjury/data/

Youth Risk Behavior Surveillance System (YRBSS)

FACT SHEETS AND INFOGRAPHICS

A Journalist’s Guide to Shaken Baby Syndrome:
A Preventable Tragedy – Part of CDC’s “Heads Up” Series | CDC

Facts about Concussion and Brain Injury | CDC

Falls Prevention Tip Sheet (Safe Kids WorldWide)
https://www.safekids.org/tip/falls-prevention-tips

National Institute of Neurological Disorders and Stroke
https://www.ninds.nih.gov/Disorders/All-Disorders/Traumatic-Brain-Injury-Information-Page

North American Brain Injury Society (NABIS)
www.internationalbrain.org

Pediatric Traumatic Brain Injury | ASHA
Preventing Abusive Head Trauma in Children | CDC
https://www.cdc.gov/violenceprevention/childabuseandneglect/Abusive-Head-Trauma.html

Preventing Child Abuse and Neglect | CDC

TBI: Get the Facts | CDC
https://www.cdc.gov/traumaticbraininjury/get_the_facts.html

TBIs and Injuries | CDC

The Medical Costs of Childhood Injuries: Deaths | CSN
https://www.childrenssafetynetwork.org/infographics/cost-deaths

The Medical Costs of Childhood Injuries: Emergency Department Visits | CSN
https://www.childrenssafetynetwork.org/infographics/cost-edvisits

The Medical Costs of Childhood Injuries: Hospitalizations | CSN
https://www.childrenssafetynetwork.org/infographics/cost-hospitalizations

Traumatic Brain Injury in the United States: A Fact Sheet for Public Health Professionals | CDC
https://www.cdc.gov/traumaticbraininjury/pdf/TBIInTheUnitedStates-PublicHealthProfessionals.pdf


POLICY AND LEGISLATION

Governor’s Highway Safety Association: Helmet Laws

National Conference of State Legislatures: Shaken Baby Syndrome Prevention

National Conference of State Legislatures: TBI

RESEARCH AND REPORTS

Reviews and Epidemiology of TBI
CDC’s Efforts to Improve Traumatic Brain Injury Surveillance | Journal of Safety Research (2017)
Bell JM, Breiding MJ, DePadilla L

Evidence-Based Strategies and Readings in Five Injury Topics | CSN (2017)
Children’s Safety Network
https://www.childrenssafetynetwork.org/sites/childrenssafetynetwork.org/files/Evidence-Based%20Strategies%20and%20Readings%20in%205%20topic%20areas_0.pdf


Haarbauer-Krupa J, Lee AH, Bitsko RH, Zhang X, Kresnow-Sedacca MJ
https://doi.org/10.1001/jamapediatrics.2018.2740
Ali B, Lawrence B, Miller T, Allison J

Frieden TR, Houry D, Baldwin G
https://www.cdc.gov/traumaticbraininjury/pubs/congress_epi_rehab.html

Schuchat A, Houra D, Baldwin G

Li L, Liu J

Taylor CA, Bell JM, Breiding MJ, Likang X
http://dx.doi.org/10.15585/mmwr.ss6609a1

Haarbauer-Krupa J, Arbogast KB, Metzger KB, Greenspan AI, Kessler R, Curry AE, Bell JM, DePadilla L, Pfeiffer MR, Zonfrillo MR, Master CL
https://doi.org/10.1016/j.jpeds.2018.01.075

Abusive Head Trauma (Shaken Baby Syndrome)

Berthold O, Witt A, Clemens V, Brähler E, Plener PL, Fegert JM
https://doi.org/10.1007/s00431-018-3273-0
Effectiveness of a Pediatric Abusive Head Trauma Prevention Program Among Spanish-Speaking Mothers | Hispanic Health Care International (2018)
Duzinski SV, Guevara LM, Barczyk AN, Garcia NM, Cassel JL, Lawson KA
https://doi.org/10.1177/1540415318756859

Eight-year Outcome of Implementation of Abusive Head Trauma Prevention | Child Abuse and Neglect (2018)
Barr RG, Barr M, Rajabali F, Humphreys C, Pike I, Brant R, Hlady J, Colbourne M, Fujiwara T, Singhal A
https://doi.org/10.1016/j.chiabu.2018.07.004

Eismann EA, Pearl ES, Theuerling J, Folger AT, Hutton JS, Makoroff K

Lifetime Cost of Abusive Head Trauma at Ages 0-4, USA | Prevention Sciences (2018)
Miller TR, Steinbeigle R, Lawrence BA, Peterson C, Florence C, Barr M, Barr RG
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5756522/

Pediatric Abusive Head Trauma: Recommended Definitions for Public Health Surveillance and Research | CDC (2012)
Parks SE, Annest JL, Hill HA, Karch DL
https://www.cdc.gov/violenceprevention/pdf/PedHeadTrauma-a.pdf

Preventing Child Abuse and Neglect: A Technical Package for Policy, Norm, and Programmatic Activities | CDC (2016)
Fortson B, Klevens J, Merrick M, Gilbert L, Alexander S

When Soothing Succeeds: Simulating a Risk for Repeated Shaking in Abusive Head Trauma in Infants | Infant Behavior and Development (2018)
Chen M, Barr RG, Miller E, Fairbrother N, Antle A, Brant R
https://doi.org/10.1016/j.infbeh.2018.02.004
Falls

Consumer Products Contributing to Fall Injuries in Children Aged <1 to 19 Years Treated in US Emergency Departments, 2010 to 2013: An Observational Study | Global Pediatric Health (2019)
Ali B, Lawrence B, Miller T, Swedler D, Allison J
https://journals.sagepub.com/doi/10.1177/2333794X18821941

Injuries Associated With Infant Walkers | Pediatrics (2001)
https://pediatrics.aappublications.org/content/108/3/790

Preventing Childhood Falls within The Home: Overview of Systematic Reviews and A Systematic Review of Primary Studies | Accident Analysis and Prevention (2013)
Young B, Wynn PM, He Z, Kendrick D

Preventing Newborn Falls and Drops | The Joint Commission, Division of Healthcare Improvement (2018)
https://www.jointcommission.org/assets/1/23/Quick_Safety_Issue_40_2018_Newborn_falls_drops.pdf

Protecting Children By Preventing Falls (2012)
Messmer P, Williams A
Sports and Recreation

A Description and Evaluation of the Concussion Education Application HEADS UP Rocket Blades | Health Promotion Practice (2019)
Daugherty J, Miles I, Sarmiento K, Sansone C, Kroshus E, Bethea B
https://doi.org/10.1177/1524839918764670

Concussion Attitudes, Behaviors, and Education among Youth Ages 12-17: Results from the 2014 YouthStyles Survey | Journal of Safety Research (2018)
Donnell Z, Hoffman R, Sarmiento K, Hays C
https://doi.org/10.1016/j.jsr.2017.12.001

http://dx.doi.org/10.15585/mmwr.mm6810a2

Head Impact Exposure in Youth Soccer and Variation by Age and Sex | Clinical Journal of Sport Medicine (2019)
Chrisman SPD, Ebel BE, Stein E, Lowry SJ, Rivara FP
https://doi.org/10.1097/JSM.0000000000000497

Healthcare Professional Involvement and RTP Compliance in High School Athletes with Concussion | Brain Injury (2018)
https://doi.org/10.1080/02699052.2018.1482426

Scoping Review to Address the Culture of Concussion in Youth and High School Sports | Journal of School Health (2017)
Sarmiento K, Donnell Z, Hoffman RA
https://doi.org/10.1111/josh.12552
Self-Reported Concussions from Playing a Sport or Being Physically Active Among High School Students — United States, 2017 | CDC MMWR (2018)
DePadilla L, Miller GF, Jones SE, Peterson AB, Breiding MJ
http://dx.doi.org/10.15585/mmwr.mm6724a3


Summers Z, Teague WJ, Hutson JM, Palmer CS, Jowett HE, King SK
https://doi.org/10.1016/j.jpedsurg.2017.08.038

Kroshus E, Babkes Stellino M, Chrisman SPD, Rivara FP
https://doi.org/10.1177/1090198117715669

http://dx.doi.org/10.15585/mmwr.mm6552a2

Using Opinion Leaders to Address Intervention Gaps in Concussion Prevention in Youth Sports: Key Concepts and Foundational Theory | Injury Epidemiology (2018)
https://doi.org/10.1186/s40621-018-0158-7

Haarbaucer-Krupa J, Arbogast KB, Metzger KB, Greenspan Al, Kessler R, Curry AE, Bell JM, DePadilla L, Pfeiffer MR, Zonfrillo MR, Master CL
https://doi.org/10.1016/j.jpeds.2018.01.075

Waltzman, D, Sarmiento, K
https://doi.org/10.1016/j.jsr.2018.11.005
Traffic (Pedestrian, Bicycle, Motor Vehicle, ETC.)

Head Injuries (TBI) to Adults and Children in Motor Vehicle Crashes | Injury Prevention (2017)
Viano DC, Parenteau CS, Xu L, Faul M
https://doi.org/10.1080/15389588.2017.1285023

Helmet Use in Preventing Acute Concussive Symptoms in Recreational Vehicle Related Head Trauma | Brain Injury (2018)
Daverio M, Babl FE, Barker R, Gregori D, Da Dalt L, Bressan S
https://doi.org/10.1080/02699052.2018.1426107

Williams C, Weston R, Feinglass J, Crandall M
https://doi.org/10.1016/j.jss.2017.11.006

Pediatric Emergency Department Visits for Pedestrian and Bicyclist Injuries in the US | Injury Epidemiology (2017)
Wheeler-Martin K, Mooney SJ, Lee DC, Rundle A, DiMaggio C