

RSS SESSION SIGN-IN SHEET

Pediatric Care Echo Series

Pedestrian Injuries

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**RSS Global Objective(s): Assess pediatric trauma given the new skills and guidelines determined to be safe for children.
Identify proper tool and standardized measurement practices to improve diagnosis and treatment of pediatric patients.**

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Pediatric Pedestrian Injuries

Introductions

- Ben Eithun, MSN, CRNP, RN,
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Objectives

- To understand pediatric anatomic and physiologic factors relevant to pediatric trauma resuscitation, with specific attention to head, abdominal and thoracic trauma
- To describe the treatment of pediatric pedestrian injuries.

10 Leading Causes of Death by Age Group, United States – 2013

Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Congenital Anomalies 4,758	Unintentional Injury 1,316	Unintentional Injury 746	Unintentional Injury 775	Unintentional Injury 11,619	Unintentional Injury 16,209	Unintentional Injury 15,354	Malignant Neoplasms 46,185	Malignant Neoplasms 113,324	Heart Disease 488,156	Heart Disease 611,105
2	Short Gestation 4,202	Congenital Anomalies 476	Malignant Neoplasms 447	Malignant Neoplasms 448	Suicide 4,878	Suicide 6,348	Malignant Neoplasms 11,349	Heart Disease 35,167	Heart Disease 72,568	Malignant Neoplasms 407,558	Malignant Neoplasms 584,881
3	Maternal Pregnancy Comp. 1,595	Homicide 337	Congenital Anomalies 179	Suicide 386	Homicide 4,329	Homicide 4,236	Heart Disease 10,341	Unintentional Injury 20,357	Unintentional Injury 17,057	Chronic Low. Respiratory Disease 127,194	Chronic Low. Respiratory Disease 149,205
4	SIDS 1,563	Malignant Neoplasms 328	Homicide 125	Congenital Anomalies 161	Malignant Neoplasms 1,496	Malignant Neoplasms 3,673	Suicide 6,551	Liver Disease 8,785	Chronic Low. Respiratory Disease 15,942	Cerebro-vascular 109,602	Unintentional Injury 130,557
5	Unintentional Injury 1,156	Heart Disease 169	Chronic Low. Respiratory Disease 75	Homicide 152	Heart Disease 941	Heart Disease 3,258	Homicide 2,581	Suicide 8,621	Diabetes Mellitus 13,061	Alzheimer's Disease 83,786	Cerebro-vascular 128,978
6	Placenta Cord. Membranes 953	Influenza & Pneumonia 102	Heart Disease 73	Heart Disease 100	Congenital Anomalies 362	Diabetes Mellitus 684	Liver Disease 2,491	Diabetes Mellitus 5,899	Liver Disease 11,951	Diabetes Mellitus 53,751	Alzheimer's Disease 84,767
7	Bacterial Sepsis 578	Chronic Low. Respiratory Disease 64	Influenza & Pneumonia 67	Chronic Low Respiratory Disease 80	Influenza & Pneumonia 197	Liver Disease 676	Diabetes Mellitus 1,952	Cerebro-vascular 5,425	Cerebro-vascular 11,364	Influenza & Pneumonia 48,031	Diabetes Mellitus 75,578
8	Respiratory Distress 522	Septicemia 53	Cerebro-vascular 41	Influenza & Pneumonia 61	Diabetes Mellitus 193	HIV 631	Cerebro-vascular 1,687	Chronic Low. Respiratory Disease 4,619	Suicide 7,135	Unintentional Injury 45,942	Influenza & Pneumonia 56,979
9	Circulatory System Disease 458	Benign Neoplasms 47	Septicemia 35	Cerebro-Vascular 48	Complicated Pregnancy 178	Cerebro-vascular 508	HIV 1,246	Septicemia 2,445	Septicemia 5,345	Nephritis 39,080	Nephritis 47,112
10	Neonatal Hemorrhage 389	Perinatal Period 45	Benign Neoplasms 34	Benign Neoplasms 31	Chronic Low. Respiratory Disease 155	Influenza & Pneumonia 449	Influenza & Pneumonia 881	HIV 2,378	Nephritis 4,947	Septicemia 28,815	Suicide 41,149

Data Source: National Vital Statistics System, National Center for Health Statistics, CDC.
Produced by: National Center for Injury Prevention and Control, CDC using WISQARS™.



Centers for Disease Control and Prevention
National Center for Injury Prevention and Control



**INFANTS ARE
NOT LITTLE ADULTS**

Adult Pedestrian Crashes

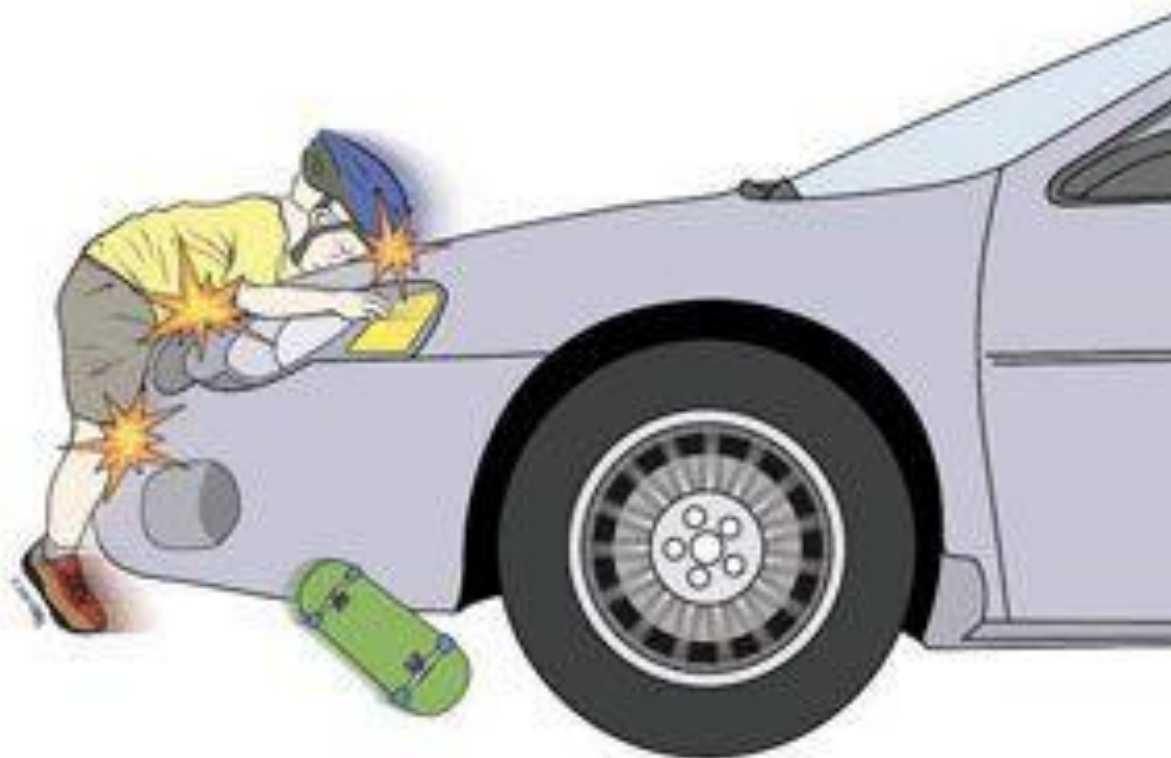


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Source: Strange GR, Ahrens WR, Schafermeyer RW, Wiebe RA: *Pediatric Emergency Medicine, 3rd Edition*: <http://www.accessemergencymedicine.com>

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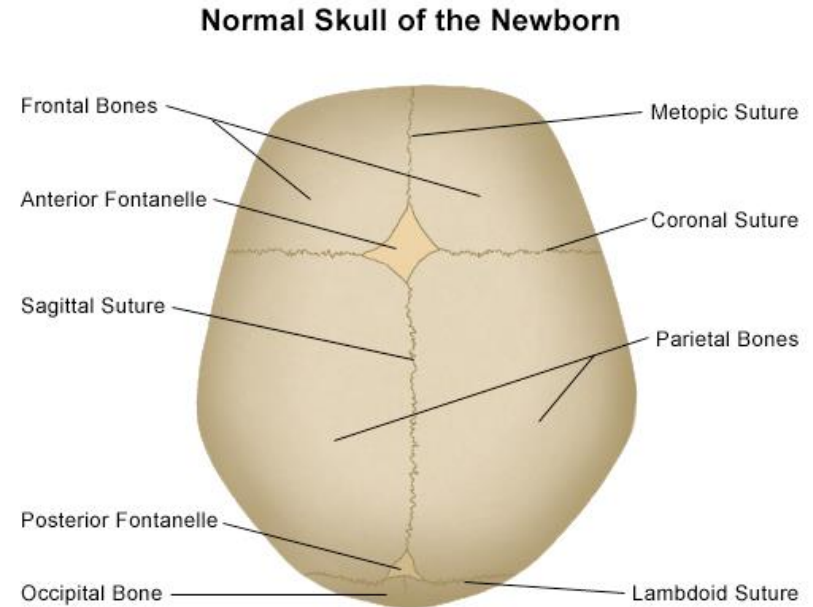
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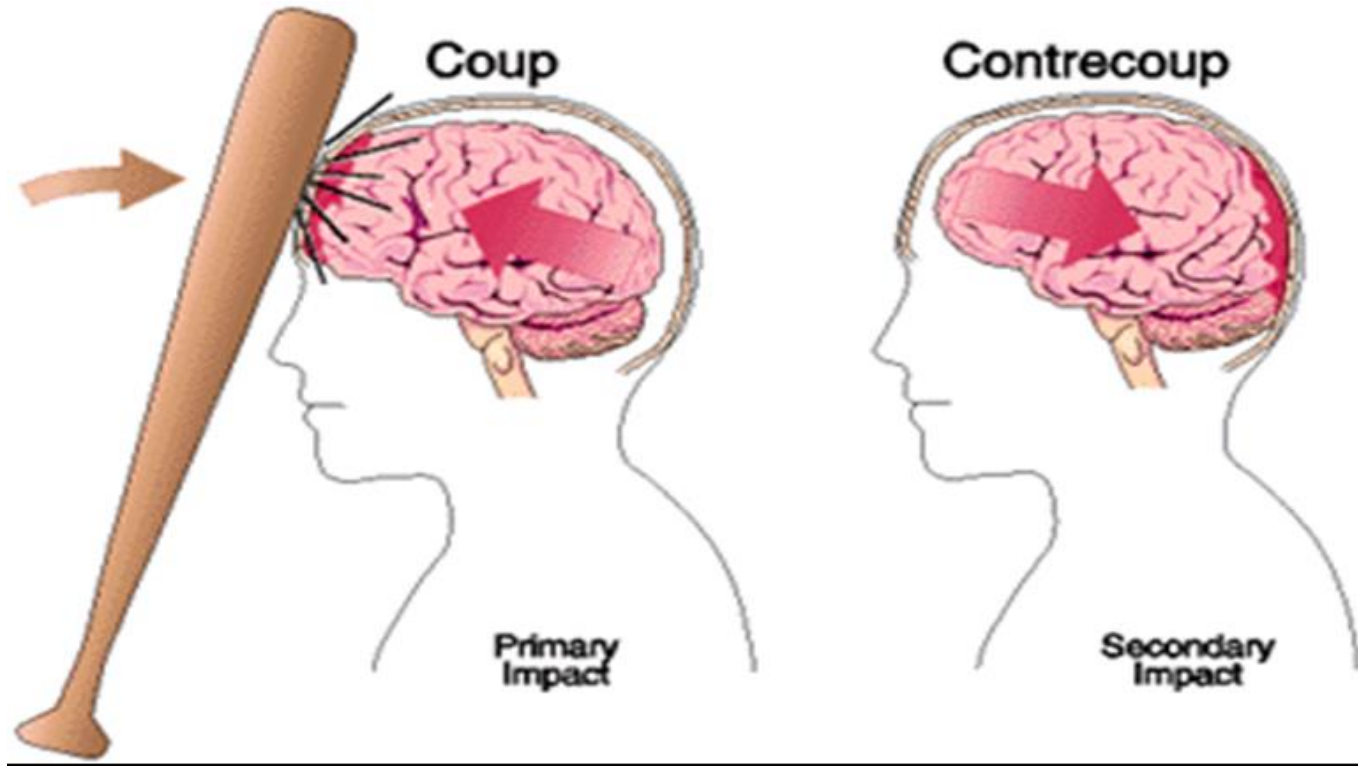


Anatomy - Head

- Soft cranium
- Open fontanelle
 - Close at 12-18 months
 - Estimate of fluid status/intracranial pressure
- Increased incidence of Brain Injury



Head Injuries



Anatomy - Spine

- Flexible ligaments
 - Angular momentum from large head
- Pseudo-subluxation
- SCIWORA



Anatomy - Chest



- Soft, flexible chest wall
- Weak intercostal muscles
- Tension pneumothorax due to mobile mediastinum

Anatomy- Chest Continued

- Trachea is narrow, short and more compressible
 - More susceptible to compression by hemopneumothorax
- Pulmonary Contusion are most common thoracic injury in pediatrics

Cardiac and Great Vessel injury

- Great vessel and cardiac injury are rare in children
 - However hemodynamic instability in the face of euvolemia should raise concern for myocardial contusion and/or mediastinal injury

Anatomy - Abdomen

- Thin abdominal wall
- Liver and spleen project farther below the costal margin
- Bladder is intra-abdominal
- Multiple injuries common (small target)

