

September Educational Seminar

The Rady Children's September Educational Seminar featured Dr. Justin Assioun, MD FAAP, Pediatric Emergency Medicine Fellow, San Diego Rady Children's Hospital. Dr. Assioun grew up locally in Encinitas, where he developed his passion for serving the community and learned the art of shaping and blasting surfboards. He moved to Berkeley to complete his undergraduate degree in Integrative Biology at the University of California. He then attended medical school internationally at St. George's University School of Medicine, followed by a pediatric residency at the University of Buffalo. His academic interests lie in medical resuscitation and ultrasound. Justin continues to enjoy surfing and looks forward to combining his love for surfing with his passion for emergency medicine by teaching children about ocean safety and giving lessons to kids.

Dr. Assioun spoke to the auxiliary about the team's injury prevention and advocacy efforts. Within the last two years, he has focused on applying his expertise and knowledge in medicine to injury prevention and advocacy efforts, particularly in the surf and skate community where he grew up. He discussed recent trends in injury prevention, focusing on what the team is currently observing at Rady Children's Hospital. He highlighted some of the data they collected regarding injuries and trauma. In addition, he introduced the current efforts he is undertaking in the local community and at the state level.

What many people don't know, and he is discovering as parents come into the emergency department, is that while everyone knows what an e-bike is, they do not know that there are different classes of e-bikes with varying capabilities. He went over this briefly, introducing classes one, two, and three, and also talked about zero-emission motorcycles, or "e-motorcycles." These sleek bikes or motorcycles look like dirt bikes with pedals, off-road tires, and full suspension systems. In 2021 and 2022, we mostly saw the first three classes of e-bikes, but now these e-motorcycles are becoming popular.

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Returning to the e-bike classes, classes one, two, and three are pedal-assisted, meaning the motor kicks in as you pedal. Only class two has a throttle that allows you to control the power while pedaling lightly. The maximum speed for class one and two is around 20 mph, while class three can reach 28-30 mph, and e-motorcycles can go over 60 mph. Many families do not realize these differences or that there are currently minimal regulations around these e-bikes, especially for younger children. For example, no driver's license is required for class one and two e-bikes so local students can ride them to school like regular bikes. However, e-motorcycles do require a license. Law enforcement often struggles to distinguish between these types visually, as e-motorcycles often resemble e-bikes, making regulation difficult. Moreover, families may not realize that some e-bikes, particularly class three and e-motorcycles, have a minimum age requirement, but class one and two do not.

The issue is further complicated by the fact that hacking e-bikes to bypass speed limiters has become popular among teenagers. Many online tutorials show how to increase e-bike speeds easily, making them far more dangerous than intended. These hacks can involve disconnecting electrical panels, adding magnets to wheels, or replacing batteries, allowing the bike to exceed its regulated speed. Not many families would give their child a dirt bike that goes 60 mph, but many think providing their child with an e-bike is fine, not realizing the potential for similar speeds. To better understand the significance of this issue, it is essential to examine the trends and injuries we see in the community.

In addition, he shared a story to illustrate this issue. This past summer, a teenage boy came into the emergency department after an accident involving one of these e-motorcycles. He was riding through the canyons in the San Diego region, flew down a hill, and attempted to clear a gap and land on a ramp. He didn't understand the capabilities and speed of the bike, was not wearing a helmet, and overshot the landing by a large margin. Fortunately, he only suffered a

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few minor broken bones and some scrapes and was discharged that day. When he spoke to the boy about the importance of safety equipment, he replied, "When you fly like the wind, sometimes you crash like thunder." This response highlights the mindset of teenage boys and underscores the need for education and regulation around these vehicles.

The doctor shared specific data from Rady Children's Hospital from 2020 to 2023. Looking at the e-bike data, we see that trauma activations have increased significantly, from zero cases in 2020 to 75 cases by 2023, and we are only partway through 2024. He frequently sees three to five e-bike-related injuries per shift, and while not all require trauma activation, many involve road rash, broken bones, or cuts requiring sutures.

In contrast, data on injuries involving pedestrians, bicyclists, skateboarders, and other types have remained relatively stable. The increase in injuries we are seeing is mainly related to e-bikes, and this trend is not limited to Rady Children's Hospital but is observed across San Diego County. By analyzing this data and understanding the patterns, we aim to address the growing issue of e-bike injuries through education, regulation, and community outreach. Our goal is not to restrict children's participation in wheeled activities, as these have many benefits, but to ensure their safety and minimize the risk of severe injuries.