



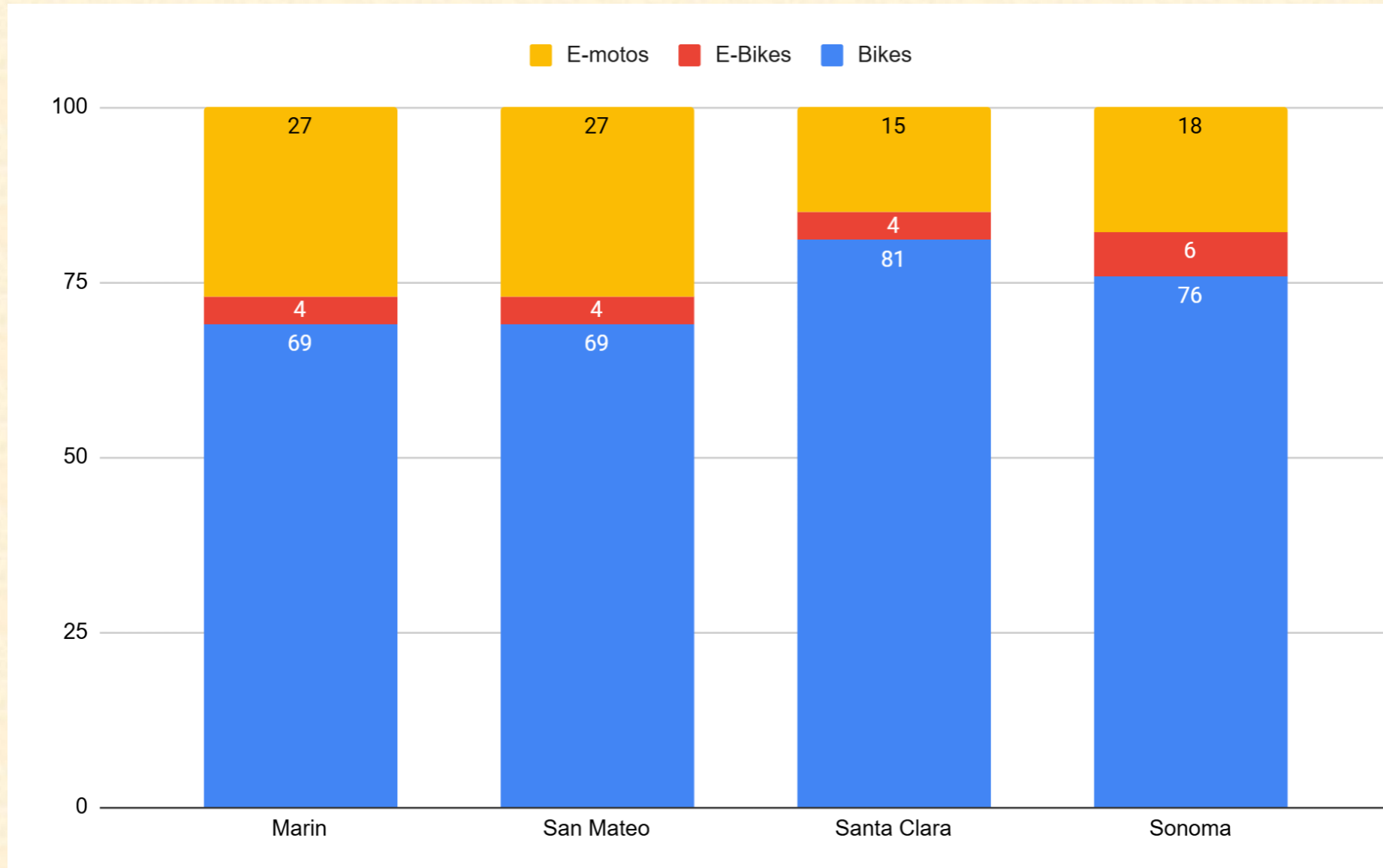
EDUCATION

Sarah Hadler
Education/Encouragement Program
Manager Safe Routes to Schools

18 years experience:

- ✓ Promoting more kids on bikes
- ✓ Teaching bicycle education to thousands of students
- ✓ League Certified Instructor - gold standard of cycling education in the U.S.
- ✓ Bicycling Champion – has cycled through US, Mexico and beyond

Conventional vs. E-Bike vs. E-Moto





Maximizing the Benefits

Mobility & Independence

Outdoor Recreation

Affordable Transportation

Sustainability



Preventing Serious Harm

E-bikes offer real benefits. Our goal is not to discourage safe use—our goal is to prevent serious, life-changing injuries through a systems approach.

A Shared Responsibility Across the Ecosystem



Parents & Families

Know the right questions to ask before purchase, set clear expectations, enforce helmet and proper usage: match devices to developmental age.



Schools & Law Enforcement

Provide consistent expectations, school-based safety education, and enforcement of existing laws.



Local Government & Planners

Build protected infrastructure, implement traffic calming, and establish safe routes.



Healthcare & Public Health

Improve data surveillance, provide clear messaging, and track injury trends to inform policy.

No single strategy and no single sector can solve this challenge alone. Creating a safer system requires active collaboration between parents, city planners, police, schools, and medical providers.

E-BIKE/E-MOTO INJURIES ARE PREDICTABLE, PATTERNED AND INCREASING

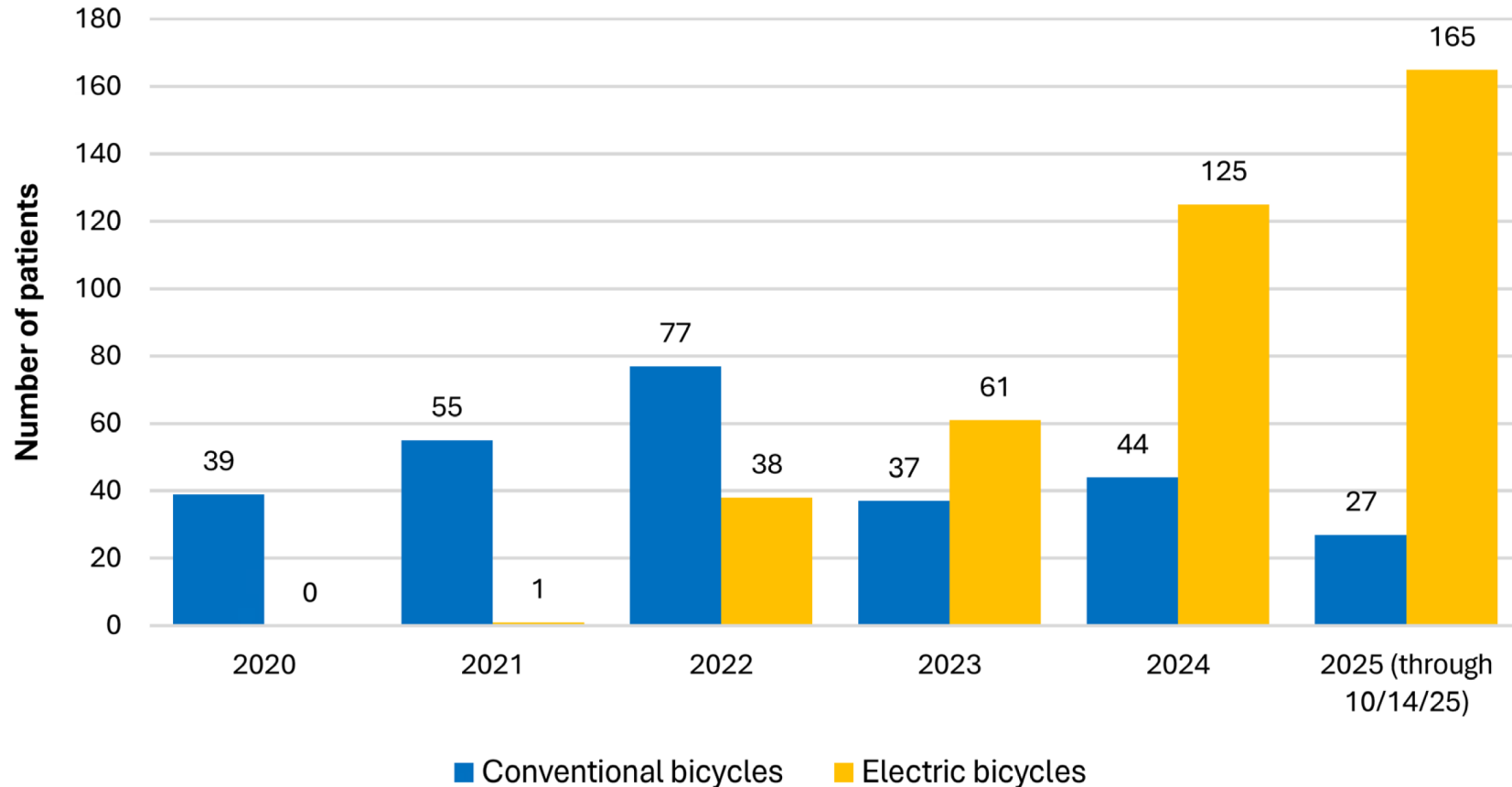


Figure 31. Number of electric and conventional bicycle trauma activation patients^a at Rady Children's Hospital of Orange County, 2020 – 2025^b

Source: Data from personal correspondence with Dr. Laura F. Goodman, Trauma Medical Director, Rady Children's Health of Orange County, on November 11, 2025.



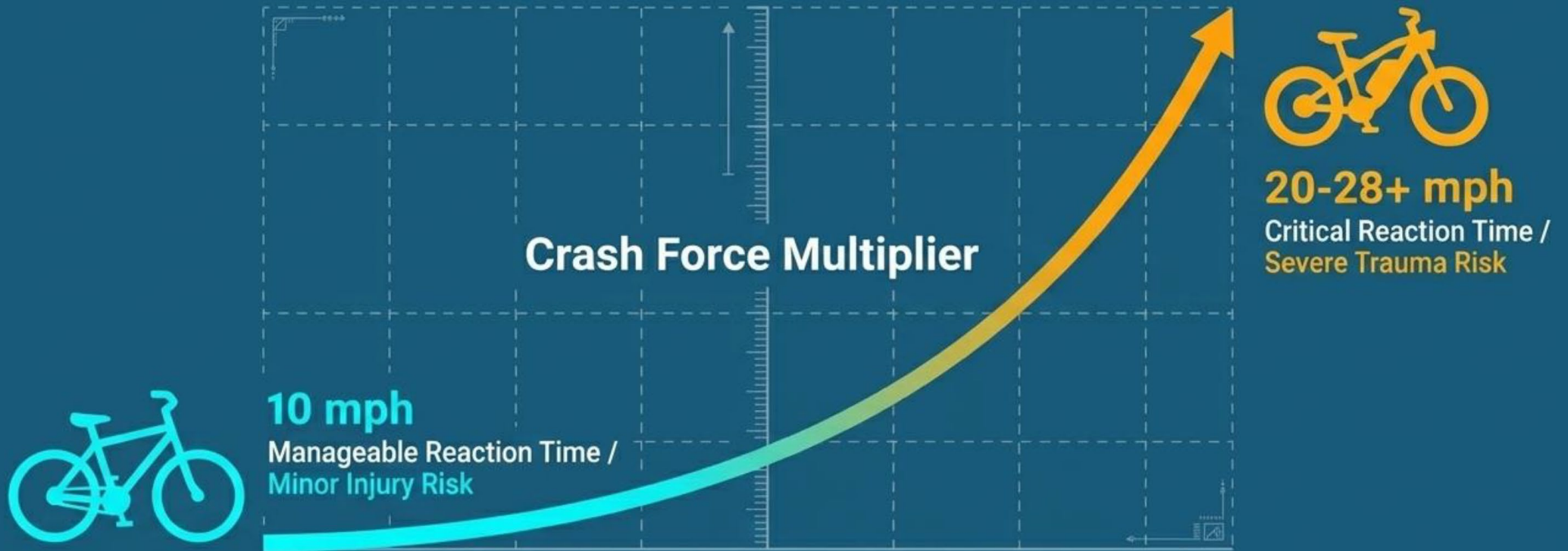
E-Bikes Are More Dangerous Than Conventional Bikes E-Motos Are More Dangerous Than E-Bikes EDUCATION IS REQUIRED

Faster = more dangerous

- Electric two-wheelers account for the same number of 911 calls as conventional bikes.
- **Even though** only 1 out of 5 two-wheelers are electric.
- And most of the electric two-wheelers are e-motos, not e-bikes!

Marin County Data: 911 Calls and “Bike” Counts at Middle Schools

The Physics of Speed Multiplies Crash Severity



Speed changes everything. As speed increases, stopping distance lengthens, reaction times disappear, and crash forces multiply exponentially. A fall that results in a scraped knee at traditional bicycle speeds can cause life-altering orthopedic or traumatic brain injuries at e-bike speeds.

Our Approach to E -bike Education



Awareness – Fit Needs & Ability

Needs:
What type
of bike?

Ability:
Physical &
Cognitive

Informed
Decisions



Choosing Your Bike

- How much should I spend?
- Where will I be riding?
- What do I want to use my bike for?

- ✓ Buy Pedal-Assist (no throttles)
- ✓ Buy Legal (no e -motos)
- ✓ Buy Local (don't order online)

If your child has not mastered riding a conventional bike, you should not get them an e-bike!

Awareness: Parents - First Line of Defense

Pros (benefits)

Teen / Parent
Independence
Overcome barriers to
biking
Safer Streets
Healthy for kids and planet

Cons (risks)

Speed
Heavy - Harder to
Control/Stop
Tandem Riding
Teen Brain –Helmets
Lack of Experience
Illegal e-motos

Informed Decisions



Be Aware, Don't Be Conned

THE GREAT E-BIKE CON

How Manufacturers are Pedaling E-Motos in Disguise

Parents are being duped. High-powered dangerous e-motos are sold as harmless "e-bikes," putting kids on machines built like motorcycles but marketed like toys — and putting kids in harm's way and parents at legal and financial risk.



E-MOTOS ARE NOT E-BIKES!

Send a clear message to manufacturers and retailers – the safety of your children cannot be bought!

THE CLASS 2 IMPOSTER ACT

Most throttle "Class 2 e-bikes" aren't e-bikes at all. Anything over 750 watts or able to exceed 20 mph without pedaling is an e-moto — illegal on public roads and paths and requiring registration, a license, and full motor-vehicle compliance.

WHO'S HOODWINKING PARENTS?

People for Bikes warns that manufacturers and retailers are skirting safety laws and targeting kids, selling e-motos, some with fake or non-working pedals, that can be easily "unlocked" to go even faster.



THE REAL COST

Kids in the ER and Parents Charged with Crimes

Marin Public Health has declared a youth e-mobility crisis. Local kids are suffering multiple fractures, concussions, and surgeries — while parents face criminal and liability charges, including child endangerment.

THE "MY KID CAN HANDLE IT" TRAP

The laws are clear to keep everyone safe. Even if your child seems capable, breaking the law pressures other parents and kids to follow — and they may not be as lucky. Unintended consequences reverberate throughout the community when tragedy strikes.

BUY LEGAL, BUY LOCAL IN MARIN!

Class 1 pedal-assist is the only legal option for riders under 16. It sits higher and is more visible to drivers, pedaling gives better control when slowing, and local shops can keep up with fast-wearing brakes.



Behavior Management / Compliance

"The kids know the laws but ... are deliberately breaking them." Chief of Police

Why Needed?

Online Influencers: Promoting e -motos' illegal use on roads, reckless endangerment

Videos on speed alterations, street takeovers, law enforcement evasion



Classroom Education

**Most crashes can be avoided if you are visible,
predictable and follow laws**



Wear a Helmet and Wear it Properly

You're more likely to have a crash, resulting in a brain injury.



Practice Passenger Safety

E-bikes are heavier and harder to control with or without a



Be Responsible, Predictable, and Visible

E-bike crashes are more likely to lead to severe injury and hospitalization compared to crashes involving regular bikes.



SLOW Your Speed

The higher the speed, the higher the risk of severe injury. At 20 MPH, it could take you almost four school bus lengths to fully stop to avoid an obstacle. Take your time when riding and don't exceed the manufacturer's top speeds.



Experiential Education

Skills Drills and On -Road Classes

“On-bike education” taught by experienced instructors who are certified to teach cycling education based upon age and ability of students.

**Cycling Instructors are NOT INSURED
TO TEACH ANYONE ON E -MOTOS*



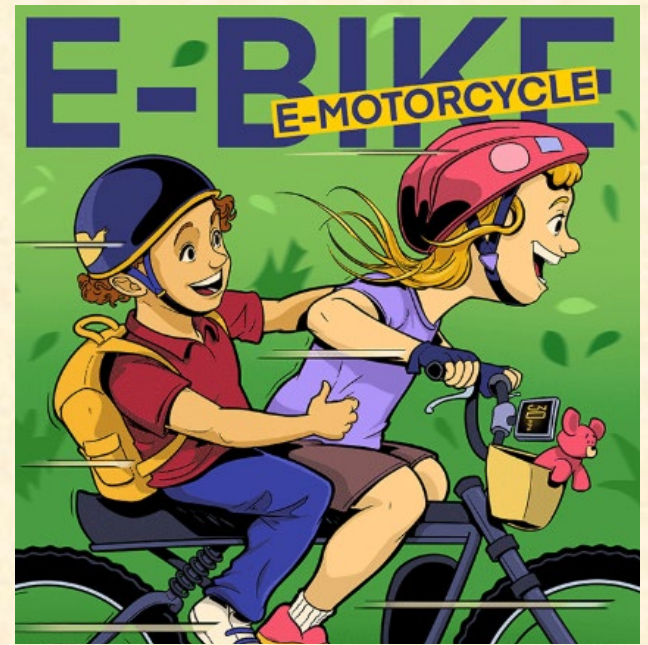
Summary

Awareness: know before you buy:
E-bikes are not toys – they must fit need
and ability of the rider

Behavior Compliance: Address the
human condition for following or breaking
laws

Classroom and On -Bike Education is
Imperative: Learn and practice the
nuances of road behavior

** You should know how to ride a regular
bike competently before you “graduate” to
an e-bike.*



EMERGENCY



On-line Education

Many available resources



www.sonomasaferoutes.org

Instagram & Facebook:
[@sonomacountysaferoutes](https://www.instagram.com/sonomacountysaferoutes)



RESOURCES



Sonoma County SRTS E-Bike FAQ
includes information for parents, students, and school administrators



12 Minute E-Bike Safety Video from Pedal Ahead An easy to follow introductory video all about e-bike safety, including including maintenance needs for batteries & brakes



E-Bike Safety Training by CHP 1 hour, comprehensive training, highly recommend youth complete this training with an adult



The Caring Parent's E-Bike Survival Guide by Beth Black (available for purchase)



Thank you!

