Hot Wheels

Arthur L. Kellermann, MD, MPH, Ricardo Martinez, MD

What started as a routine meeting came to an abrupt halt when my cell phone vibrated. It was my teenaged son. Because he rarely calls in the middle of the afternoon, I answered it.

A torrent of words poured into my ear. "Dad, she came out of nowhere! The car's totaled! Oh God! It's a mess! I didn't see her, Dad! Oh my G . . ."

I broke in. "Are you OK?"

"I think so," he replied, "but the car's a mess! It's totaled. She came out of nowhere!"

"Was anyone in the car with you?" I anxiously probed.

"I was alone. The car's destroyed."

"I don't care about the car. Is the other driver OK? Is anyone hurt?"

"The other driver is OK. She's standing beside her car, talking on a cell phone. No one was with her. Her car is smashed up, too."

"Tell me where you are. I'm on my way."

As a father, an emergency physician, and director of an injury prevention center, I had anticipated my son's 16th birthday with dread. I understood, better than most parents, the risks involved.

My wife fretted every time our baby boy got a fever. She took care to make sure he got his immunizations on time. But once he reached his first birthday, I knew that the greatest threat to his health was from injuries. "Death by car" was the most likely catastrophe.

My concern mounted as he approached driving age. I knew that Georgia had one of our nation's most effective graduated drivers licensing laws, aimed directly at teens as they progress to full independence behind the wheel. But this provided small comfort compared to the realization that I was about to hand over control of an incredibly powerful machine to a middle adolescent.

Thanks to careful instruction, diligent practice, parental nagging, and state law, the first few months of my son's driving career passed uneventfully. His mother and I worked intensively to ensure that he mastered the basic skills of driving. My son and I logged countless hours together tackling progressively challenging streets. Several Sunday mornings, we practiced freeway driving by circling Atlanta.

Georgia's Teenage and Adult Driver Responsibility Act (TADRA) was a big help.[1] For the first 6 months of his conditional license, my son could drive only with another family member in the car. After that, he was limited to three other teens until his 18th birthday. He knew that if he drove with so much as a trace of alcohol in his system, the state would convict him of driving under the influence (DUI) and yank his license. He also knew that he would forfeit his license if he was caught driving more than 25 miles per hour over the speed limit. I frequently reminded him that Georgia enforces its seatbelt law. If he failed to buckle up, or allowed his passengers to ride without buckling up, he could be stopped and fined. The goal of these laws is to reduce risky exposures while young drivers (and their passengers) acquire the driving experience and maturity they need to become safe(er) drivers.

Then one day, my son upped the ante. My wife was the messenger.

"I think we should get Tyler his own car," she said. "He and I have discussed it."

"And why would we do that?" I asked.

"He's a good student, he's stayed out of trouble, and he promises to be careful," she replied. "And besides, I'm sick and tired of schlepping him around."

My son chimed in, "Would you rather I drive my own car, or depend on the driving skills of my friends?"

Initially I resisted, but it was two to one. Then, the real struggle began: What kind of car would we buy?

I asked my son to write down his five most important criteria for a motor vehicle. They differed markedly from mine (Table 1).

Needing backup, I called two fellow emergency physicians. Fortunately for me, both are also former National Highway Traffic Safety Administration (NHTSA) administrators.

Dr. Ricardo Martinez (coauthor of this commentary and the NHTSA Administrator from 1994 to 1999), stressed the importance of picking a safe vehicle, and finding one that "fit" my son's tall height. Adjustable seatbelts, head protection, and multiple airbag systems were high on his list. "Regardless of how good a driver he is, you'll want a car that will protect him in a crash," he said. "This is not the time to buy anything old and cheap. And whatever you do, don't let him talk you into buying a hot ride. All that will do is get him arrested or killed."

From the Center for Injury Control, Department of Emergency Medicine, Emory School of Medicine (Kellermann, Martinez), Atlanta, Georgia; and The Schumacher Group (Martinez), Lafayette, Louisiana

Address correspondence and reprint requests to Arthur L. Kellermann, MD, MPH, 1648 Pierce Drive NE, Suite 445, Atlanta GA 30322. E-mail: akell01@emory.edu.

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Table 1. Top five criteria for the vehicle

Son	Father
1. Performance	1. Crash rating
2. Looks	2. Curtain airbags
3. Sound system	3. Reliability
4. Modifiable	4. Mileage
5. Coupe	5. Emissions

Comforting advice, I thought.

With this information in hand, I asked Dr. Jeff Runge (the NHTSA Administrator at the time) what kind of vehicle he recommended. "If safety is your overriding objective," Jeff intoned, "buy a minivan. But since I also believe in teen suicide prevention, go for a sedan with modern safety technology. That's the best you can hope for."

Armed with this information, I turned to the worldwide web. While my son perused the websites of manufacturers and automotive publications, I scoured the websites of NHTSA, the Insurance Institute for Highway Safety (IIHS), and Consumer Report. At the end of the week, we shared our top five picks with each other (Table 2).

After protracted negotiations, we settled on a 2005 Honda Accord coupe. My son was happy to get a new car with stylish looks. I was happy that it came with a 4-cylinder engine, curtain airbags, and 5-star NHTSA crash rating.

Eleven months later, he called on his cell phone from the intersection of Brookhaven Drive and Peachtree Road.

The crash scene was pretty much as he'd described. Emerging from a side street near a blind curve, he had attempted to make a left turn while crossing two lanes of a major arterial. Before he could clear the second lane, a car came around the curve and smashed into his left rear wheel well. Both vehicles were extensively damaged. Fortunately, neither driver was hurt. I glanced inside my son's car, and noted that his side torso and curtain airbags had deployed. With the exception of a mild headache, he was fine.

My son's car did what I bought it to do—protect him from the force of a crash. A few days later, the owner of the body shop called to report the extent of the damage. "Given the force of the impact," he said, "It's a miracle your son isn't in a hospital, or worse." It wasn't a miracle. It was an example of preventive thinking enacted. To this day, I am deeply grateful to all who had input into the design, manufacture, testing, and regulation of this vehicle, as well as those who made it easy for me to find the information I needed to select it.

The articles in this supplement[2–13] to the *American Journal of Preventive Medicine* are devoted to preventing teen crashes. They are drawn from background papers prepared for a joint National Research Council (NRC)/IOM workshop on this topic. As the papers clearly demonstrate, we've learned a great deal about adolescent risk-taking and neurocognitive development, the dynamics of peer–peer influence, the importance of parental involvement, the value of driving experience, and the beneficial effects of public policies such as graduated driver's licensing. But practitioners of injury control generally speak of "three Es," not two. Education and enforcement are important, but so is the third E—engineering.

Compared to the extensive literature on adolescent risk-taking behavior, we know little about the types of cars teens drive. The IIHS has done more to highlight this issue than any other organization. For example, surveys funded by them suggest that teens are much more likely than adults to drive older and smaller vehicles.[14,15] Although small vehicles look sporty and are easy to park, they provide less crash protection, on average, than larger vehicles. And older cars have fewer safety features than modern ones. Like Dr. Martinez and Dr. Runge, both the IIHS[16] and Consumer Report[17] urge parents to put safety first when purchasing a car for a teenaged driver. They advise parents to avoid high performance vehicles that encourage speeding. They also discourage the purchase of vehicles that are inherently unstable due to a high center of gravity.

The same considerations apply when loaning a family car. The next time your 16 year old asks for the keys, which set will you provide? The ones that start your 15 year-old compact, or the set to your gorgeous new sedan with the latest safety features? Think before you decide. Will the decision you make be one you can live with if you get a phone call like mine?

The papers[2–13] in this issue of *AJPM* offer valuable insights into the adolescent mind. Some explore the constraints that come from social, mental, and physical immaturity. Others emphasize the importance of teaching sound skills, good judgment, and responsible driving behavior. All of this work is important, but safe driving is only part of the story.

At one point in the 20th century, government officials spent large sums of money attempting to fix "the nut behind the wheel." Although they weren't successful, great advances in highway safety were achieved anyway.[18] The lion's share of progress came from promoting and ultimately enforcing the use of occupant restraints, engineering safer vehicles, and con-

Table 2. Top five vehicle choices by brand

Son	Father
1. Nissan 350Z	1. Subaru Forester
2. Mazda RX8	2. Honda CRV-EX
3. Honda Civic SI	3. Honda Accord-EX (4-cylinder)
4. Mitsubishi Eclipse	4. Ford Focus
5. Audi A4 or TT	5. Chevy Malibu

structing safer roadways. This is why we endorse an integrated, holistic approach—one that draws on the best of what we know about education, enforcement, and engineering—to safeguard our youngest drivers.

Can teens become better drivers? Absolutely. But no matter how hard we try, not every crash can be prevented. And when they occur, as they surely will, the human consequences of the event will be determined largely by how effectively the vehicle mitigates the forces involved. To this end, we offer the following advice—when selecting a car for a teen driver, whether to buy or to loan, pick the safest one available.

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