

Leaning into the Curve: A Roundtable Discussion on the Future of Motorcyclist Safety

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**MOVING
MOUNTAINS:**

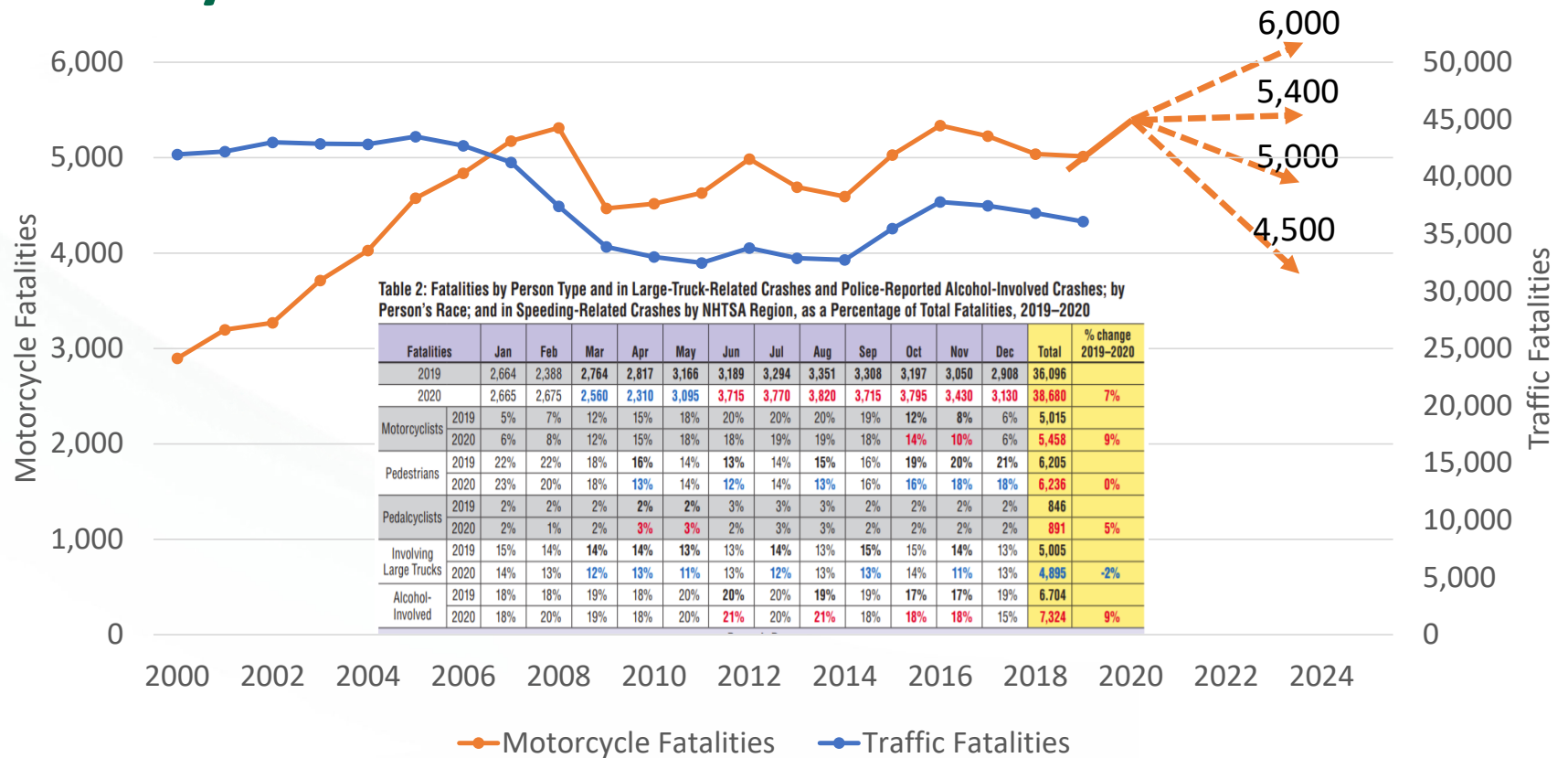
Forging a New Traffic Safety Landscape
Denver | Sept. 11-15

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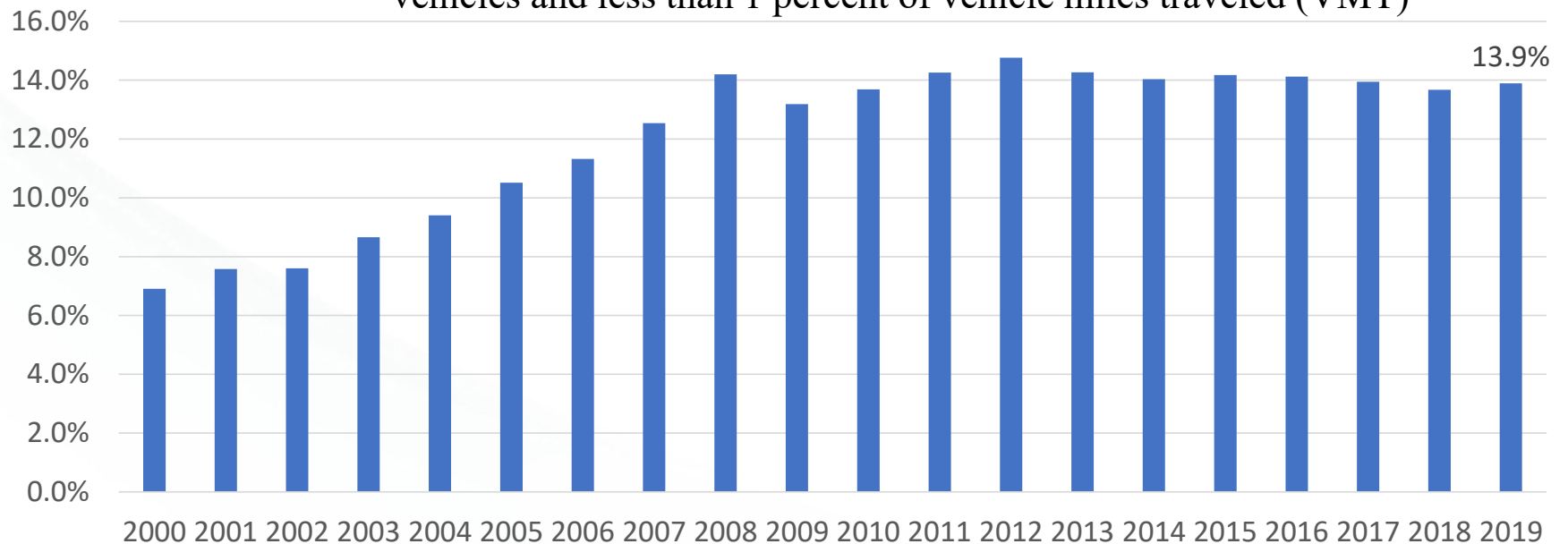
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Motorcycle Fatalities vs. Traffic Fatalities



Proportion(%) of Motorcycle Fatalities in Traffic Fatalities

Motorcycles accounted for about 3 percent of all registered motor vehicles and less than 1 percent of vehicle miles traveled (VMT)



Motorcycles

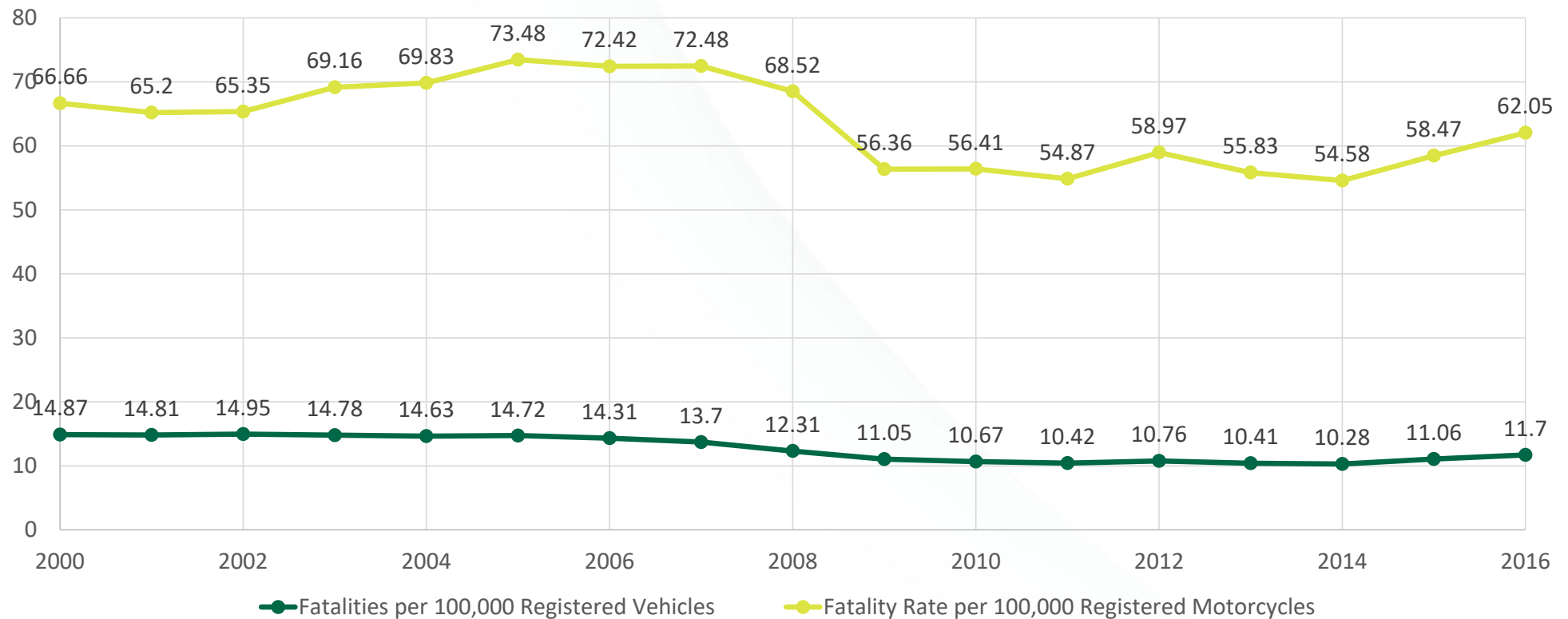


- Motorcycles pose unique risks to riders in terms of their crashworthiness for the following factors:
 - The absence of external protection that an enclosed vehicle structure provides
 - The lack of internal restraints such as seat belts and air bags
 - The propensity for riders to be thrown in a crash
 - Acceleration and speed capability
 - The relative instability of a two-wheeled vehicle.

NHTSA Motorcycle Safety 5-Year Plan

https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/13507-motorcycle_safety_plan_050919_v8-tag.pdf

Fatalities per 100,000 Registered Vehicles



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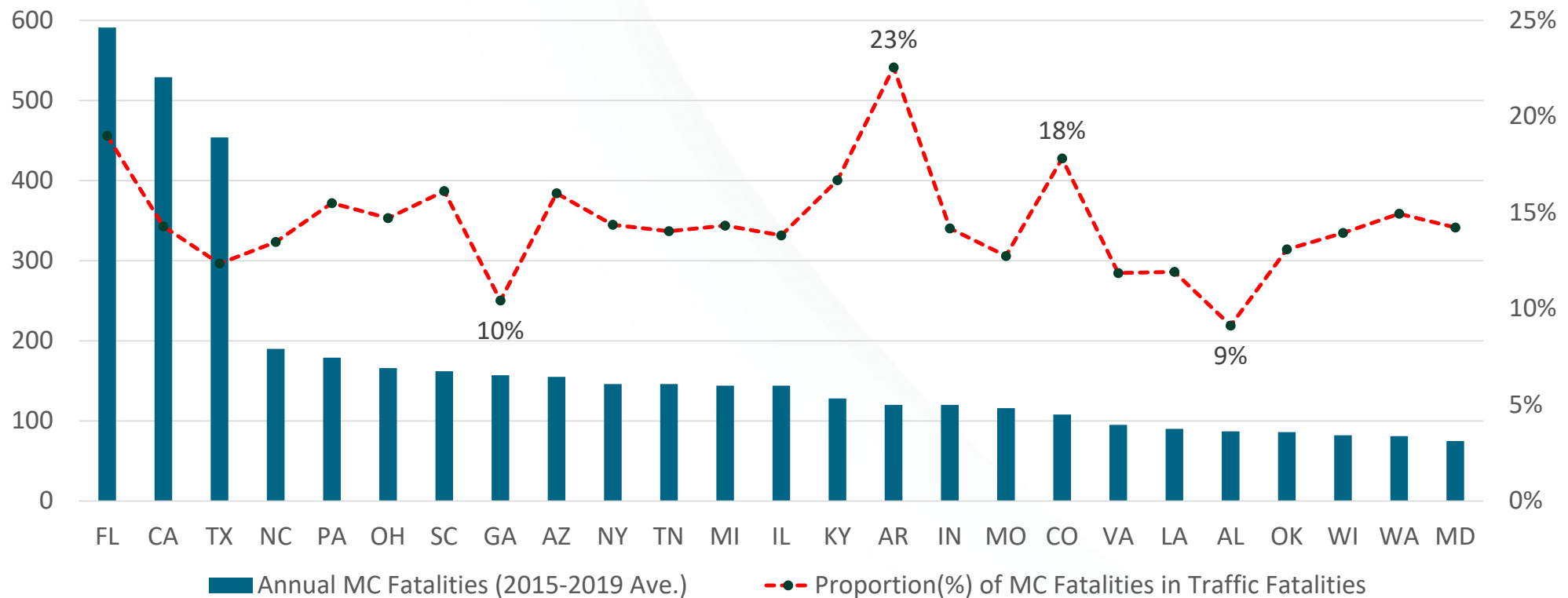
Source: <https://www-fars.nhtsa.dot.gov/Main/index.aspx>
https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/13507-motorcycle_safety_plan_050919_v8-tag.pdf

So, there is a problem...Which is not small



Annual Motorcycle Fatalities by State (2015-2019 Ave.)

(Source: NHTSA <https://cdan.nhtsa.gov/SASStoredProcess/guest>)



Motorcycles: CBR 1000RR, Fat Boy 114, and Vespa 150



<https://powersports.honda.com/street/supersport/cbr1000rr-r-fireblade-sp/gallery>



<https://www.harley-davidson.com/us/en/motorcycles/fat-boy.html>



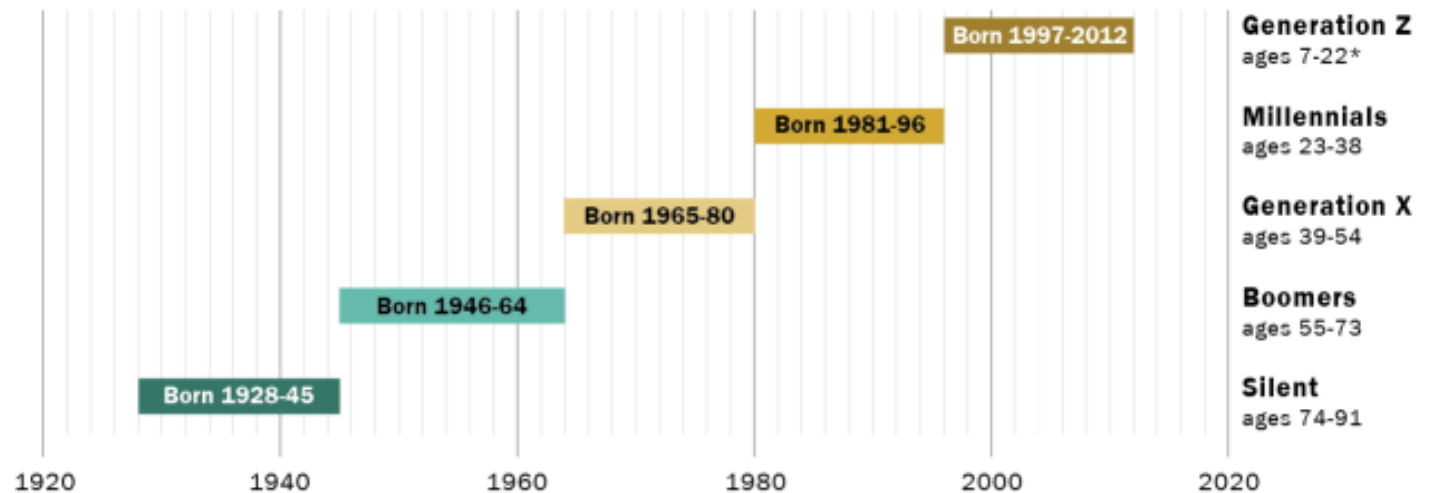
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Motorcyclists represent a small portion of the motoring public in the United States; however, it is a group that has a well-developed and diverse subgroup culture

The Generations Defined

- Gen Z is estimated to soon become the largest US consumer population
- “Generational cutoff points aren’t an exact science”

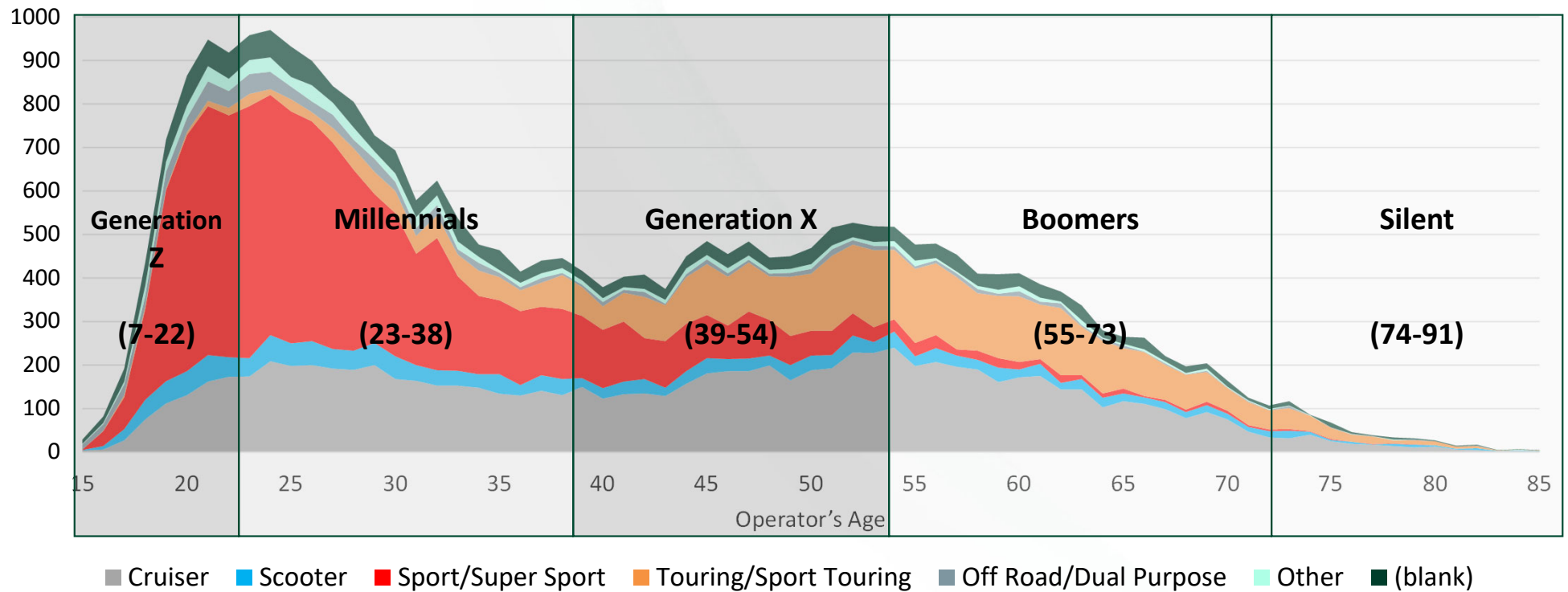
The generations defined



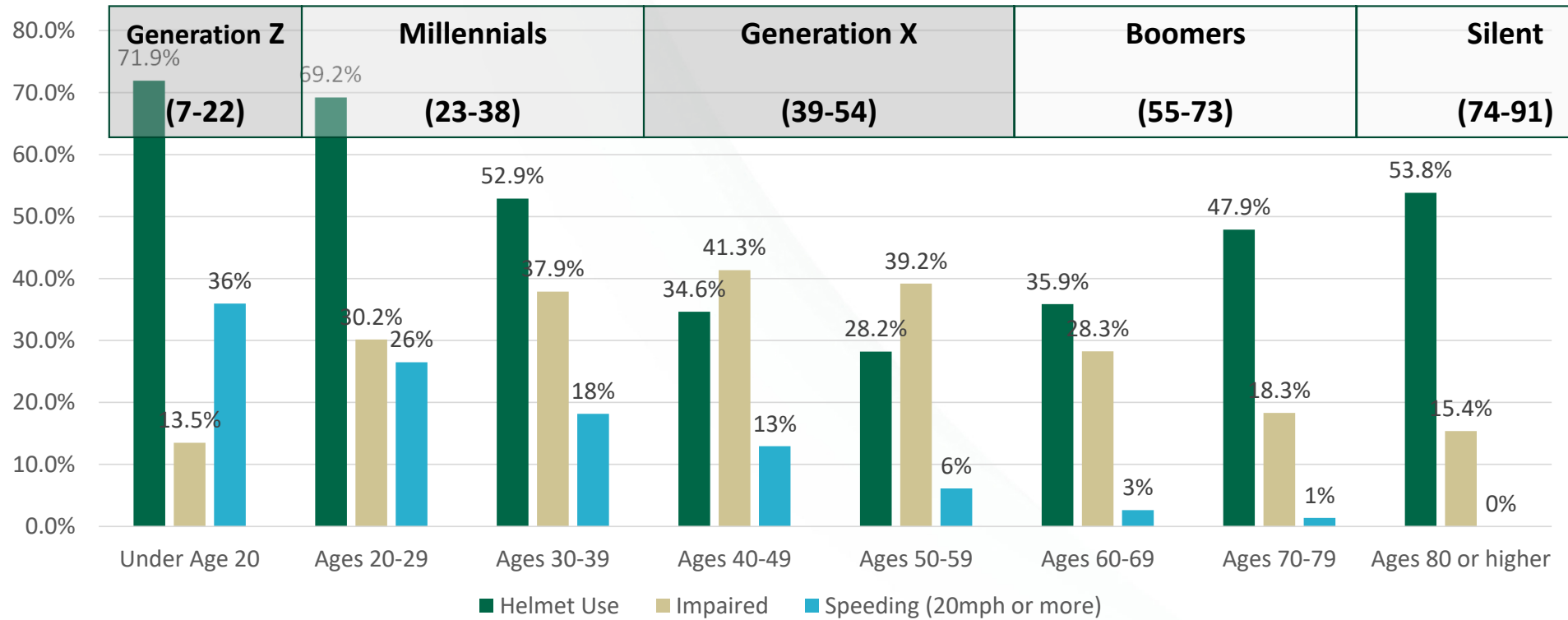
*No chronological endpoint has been set for this group. For this analysis, Generation Z is defined as those ages 7 to 22 in 2019.

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Motorcycle Types in Traffic Crashes By Age of the Operator (Florida)



Risk Factors in Fatal MC Crashes in Florida



Likelihood of Behaviors

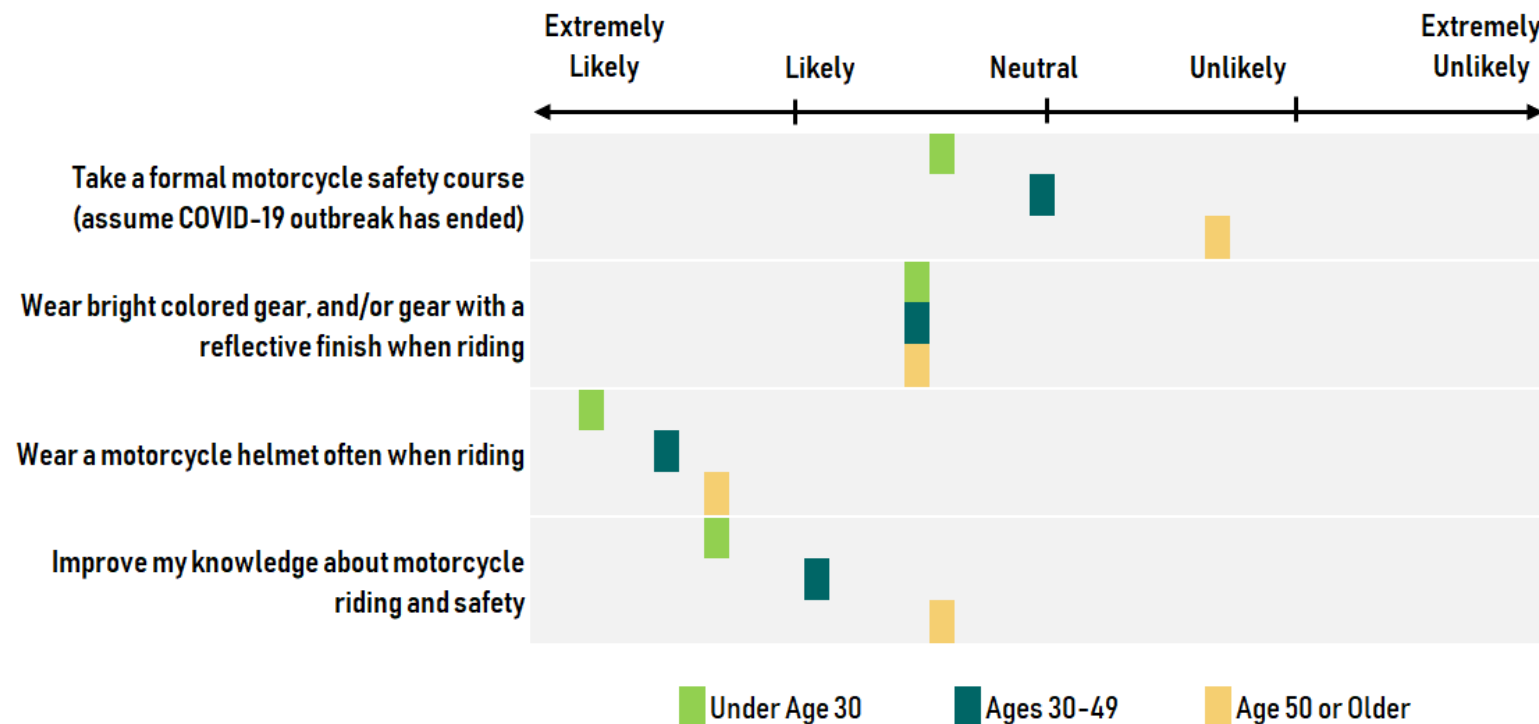


Figure 1. "For each of the following statements, please indicate the likelihood that you would engage in the described activity or behavior."

Frequency of Unsafe Rider Behaviors

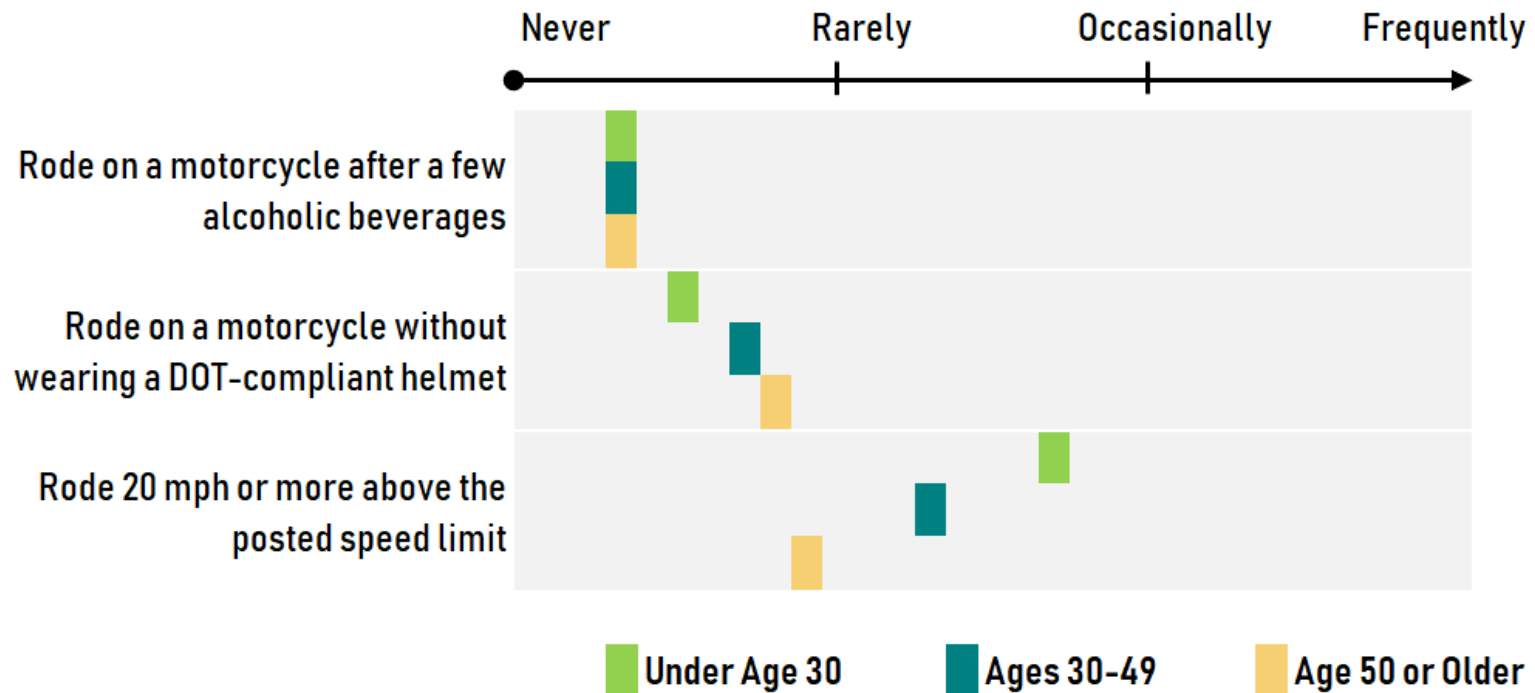


Figure 2. “In the past 12 months, how often have you engaged in the following activities?”

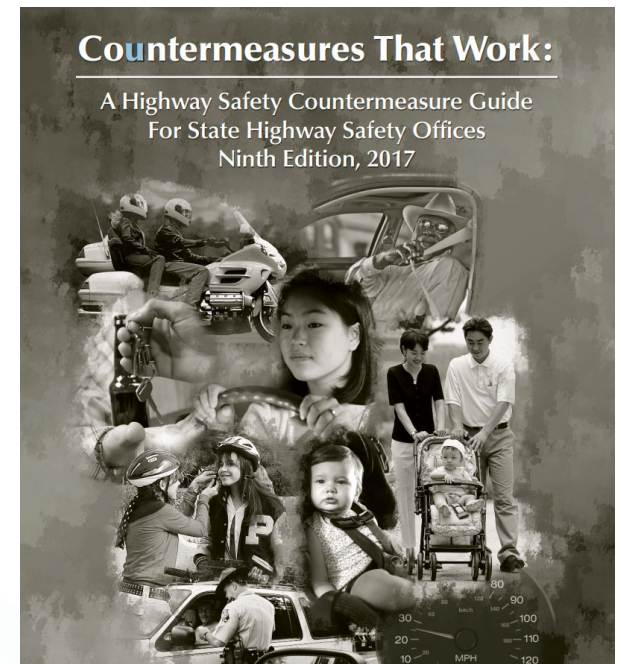
Countermeasures That Work

5. Motorcycle Safety

Overview

A motorcycle is inherently more difficult to operate than a passenger vehicle because it requires more physical skill and strength. The relationship of motorcycle speed and stability is also a critical consideration when riding a motorcycle, as the stability of a motorcycle is relative to speed. As speed increases, the motorcycle becomes more stable, requiring less effort from the operator to maintain its balance, even as it becomes less maneuverable. At very low speeds, the motorcycle becomes less stable, requiring greater effort from the operator to balance it.

A motorcycle offers the rider little protection in a crash. Crash data confirm this observation. NHTSA estimates that per vehicle mile traveled, motorcyclists are about 29 times more likely than passenger car occupants to die in traffic crashes. Motorcyclists are killed at a rate of 25.38 per 100 million vehicle miles traveled (VMT) as compared to 0.89 fatalities per 100 million VMT for passenger cars (NCSA, 2017).



https://www.ghsa.org/sites/default/files/publications/files/countermeasures_9.pdf



Motorcycle Safety in Countermeasures That Work (9th edition)

1. Motorcycle Helmets
2. Alcohol Impairment
3. Motorcycle Rider Licensing and Training
4. Communications and Outreach



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The flaw of averages

When U.S. air force discovered the flaw of averages

TR By Todd Rose
▲ Sat., Jan. 16, 2016 | 11 min. read



Before he crunched his numbers, the consensus among his fellow air force researchers was that the vast majority of pilots would be within the average range on most dimensions. After all, these pilots had already been pre-selected because they appeared to be average sized. (If you were, say, six foot seven, you would never have been recruited in the first place.) The scientists also expected that a sizable number of pilots would be within the average range on all 10 dimensions. But even Daniels was stunned when he tabulated the actual number.

Zero.

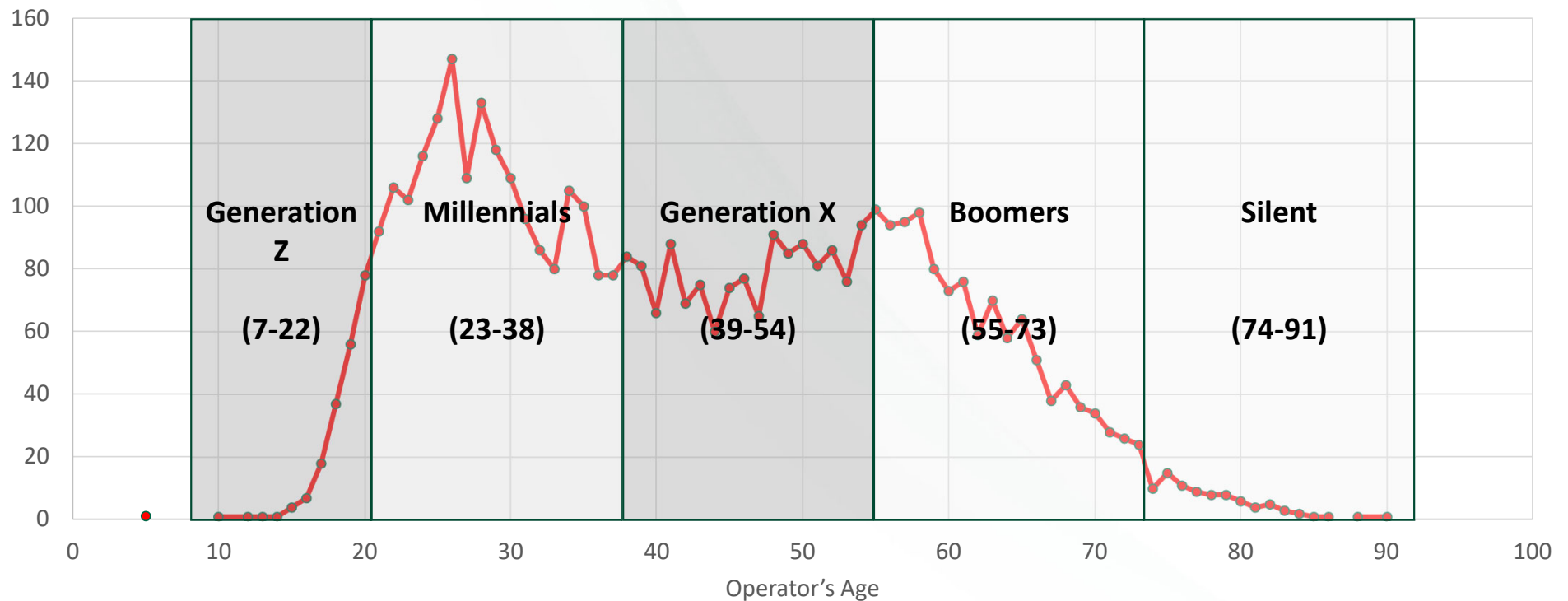
Out of 4,063 pilots, not a single airman fit within the average range on all 10 dimensions. One pilot might have a longer-than-average arm length, but a shorter-than-average leg length. Another pilot might have a big chest but small hips. Even more astonishing, Daniels discovered that if you picked out just three of the ten dimensions of size — say, neck circumference, thigh circumference and wrist circumference — less than 3.5 per cent of pilots would be average sized on all three dimensions. Daniels's findings were clear and incontrovertible.

There was no such thing as an average pilot. If you've designed a cockpit to fit the average pilot, you've actually designed it to fit no one.

<https://www.thestar.com/news/insight/2016/01/16/when-us-air-force-discovered-the-flaw-of-averages.html>

U.S. Motorcycle Fatalities in 2019

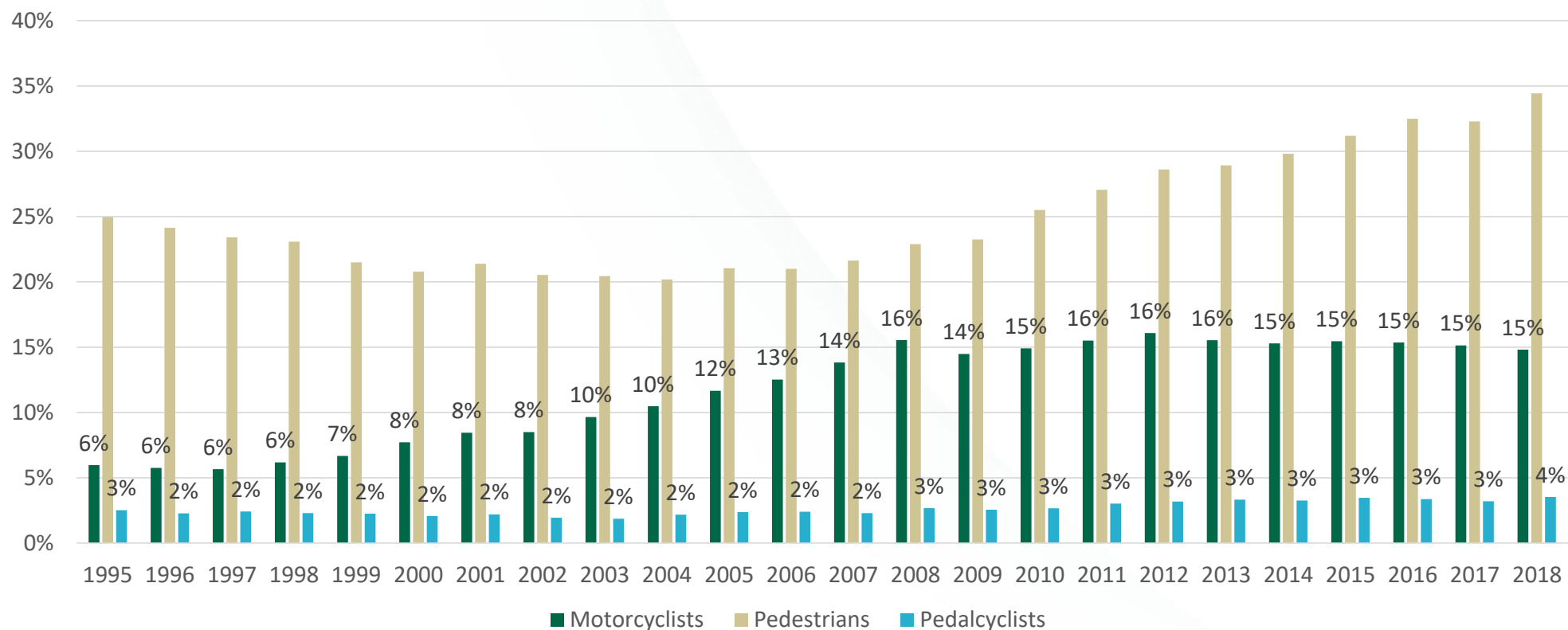
“Generational cohorts give researchers a tool to analyze changes in views over time.” *



if we have “ ? ” the size of a mustard seed...



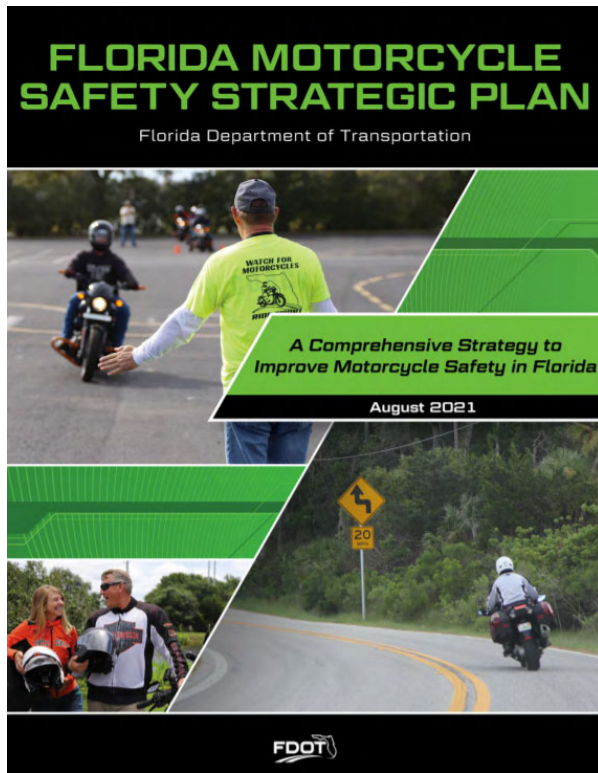
Proportion of Fatalities: Motorcyclists, Pedestrians, Pedalcyclists



Segmentation Approach



Motorcycle Safety Strategic Plan (MSSP)



- The process of developing the MSSP in itself is VERY rewarding
 - Learn from the development process
 - Work with stakeholders for better collaboration
 - Coalition plays a key role and members will own the plan
- Allows state to further prioritize efforts
- Measure and monitor the progress

Conclusion

- There is an inherent risk-level tied to motorcycling
- Understand your motorcycling population and be strategic to target a certain segment of motorcycling population
- Collect/analyze information beyond crash data
- Create correct messages
- Get the messages in front of the targeted motorcycling population
- Find a way to measure your impacts

Questions?

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