

## Position Statement on Safety of Electric Bicycles and Scooters

### Background

Electric bicycles (e-bikes) and electric scooters (e-scooters), collectively referred to as electric micro-mobility, have become increasingly popular modes of transportation. The high visibility, convenience and affordability of these two-wheeled vehicles have led to widespread adoption by consumers in recent years.

Commensurate with their increasing popularity, studies have shown a significant increase in the number of emergency department visits related to e-bike and e-scooter injuries. Several case series describe a wide range of injury severity related to these accidents, some of which require neurosurgical intervention. Specifically, e-bike and e-scooter accidents have resulted in intracranial hemorrhage, central cord syndrome and vertebral body compression fractures. One such study found that among e-scooter injuries requiring neurosurgical consultation, the average hospital length of stay was 8.3 days, 22% of patients required craniectomy or craniotomy, and 8% died as a result of their injuries. Moreover, none of the patients in the study was wearing a helmet.

### Position Statement

In the midst of a public safety issue, collaboration between medical organizations and legislators is paramount. The American Association of Neurological Surgeons (AANS) and the Congress of Neurological Surgeons (CNS) support legislation and regulations aimed at improving electric micro-mobility safety. Specific recommendations include:

1. Foster policies that promote the use of helmets by all e-bike and e-scooter riders.
2. Limit the top speed of electric micro-mobility devices.
3. Enforce safe-riding practices to protect pedestrians, including prohibiting their use outside of streets and bike lanes.
4. Encourage licensure and registration for these vehicles.
5. Prohibit the use of electric micro-mobility devices while under the influence of alcohol or drugs.

### Rationale

Despite the rapid growth of the electric micro-mobility market, there has been a lack of accompanying safety regulations. Riders of these vehicles are at pronounced vulnerability due to high speeds, crowded environments and a lack of personal protective equipment use. Powered by an electric battery, e-bikes and e-scooters can reach top speeds exceeding 20 miles per hour. Given users can reach these top speeds with minimal physical effort, the AANS and the CNS suggest licensing and registration policies and procedures similar to those needed for operating motorcycles. Without consistent regulations on helmet use and the areas where

riders may operate these vehicles (roads, shared bicycle lanes and pedestrian sidewalks), the growing electric micro-mobility market poses a serious health and safety risk to riders and pedestrians alike.

## References

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