



Clarification: Sporty driving does not protect the battery

The recent study 'Dynamic Cycling Enhances Battery Lifetime' (Nature Energy, December 2024) has led to misinterpretations regarding the link between sporty driving and extended EV battery life. AVILOO sets the record straight.

Wiener Neudorf, August 5th 2025 – Several media outlets recently reported that “dynamic” or sporty driving may extend the lifespan of electric vehicle (EV) batteries. These claims were based on the study *Dynamic Cycling Enhances Battery Lifetime*, published in *Nature Energy* in December 2024. However, this interpretation is misleading - both technically incorrect and unsupported by real-world data. As a leading provider of battery diagnostics, AVILOO sees it as its responsibility to correct this misconception and clarify what the study actually reveals, especially in the interest of promoting sustainable EV usage.

What the study actually shows

The scientific article compares two types of battery stress tests conducted in laboratory settings:

- **Constant current cycling**, which occurs only under lab conditions
- **Dynamic cycling**, involving variable charge and discharge profiles similar to real-world driving

The core finding: Laboratory tests using constant current tend to overestimate battery aging, because real-world usage involves more dynamic current flows. This insight is crucial for battery research, but irrelevant to actual driving behavior. AVILOO supports this conclusion with real-world data. To investigate the practical impact of driving style on battery aging, AVILOO conducted a large-scale field study involving **402 vehicles of the same brand and battery type**, measuring energy consumption in kWh per 100 km.

Key findings from AVILOO's field study:

- **Moderate driving behavior:** 16–18 kWh/100 km
- **Aggressive driving:** nearly double the consumption (~30 kWh/100 km)
- **SUV category:** additional consumption of up to 9 kWh/100 km

AVILOO CTO **Nikolaus Mayerhofer** explains: *"As our study shows, moderate driving behavior reduces energy consumption by 10% over the battery's lifecycle. In practical terms, this means that driving 100,000 kilometers with an efficient driving style is comparable to 110,000*



kilometers driven aggressively."

Sporty driving = faster battery degradation

Recent media coverage has incorrectly suggested that sporty—or so-called “dynamic”—driving could help preserve EV batteries. This interpretation is simply incorrect. The reason is explained by **Peter Bednarik**, Head of Research & Data Science at AVILOO: *"The study was not about everyday driving behavior, but about laboratory testing methods."*

In real-world conditions, sporty driving leads to:

- up to twice the energy consumption
- significantly more charging cycles
- accelerated battery aging

AVILOO Recommendation: drive efficiently, not aggressively

- To significantly reduce energy consumption and charging cycles, EV drivers should follow these best practices for sustainable battery usage:
- **Driving style:** smooth, anticipatory, and energy-efficient driving
- **Preconditioning:** only when plugged in – optimize both in summer and winter
- **State of charge:** avoid long idle periods with high charge levels (>80%)
- **Fast charging:** use only when necessary
- **Temperature management:** avoid parking in extremely high or low temperatures

Conclusion

As AVILOO's analysis shows, the media interpretation that sporty driving benefits battery health is unfounded. The referenced study merely suggests that laboratory testing methods tend to overestimate real-world battery aging—it does not imply that sporty driving protects the battery. On the contrary: higher energy consumption puts greater strain on the battery and accelerates its degradation. As Peter Bednarik concludes: "The fact is: higher energy consumption places more stress on the battery—there's no way to reinterpret that."

Further details on the field study can be found in the following article:

[Saving Electricity on the Road: Driving Behaviour In The Battery Aging - AVILOO](#)

About AVILOO

AVILOO is the global leader in battery diagnostics for electric and plug-in hybrid vehicles. The company develops and markets precise, fast, and manufacturer-independent tests to detect the State of Health (SoH) and defects in drive batteries of used vehicles.



Test results are provided in detailed reports and certificates. All analysis methods and certificates are TÜV and CARA certified, ensuring complete transparency and safety for used car buyers, sellers, and users—both commercial and private. The AVILOO FLASH Test is currently the fastest comprehensive diagnostic solution on the global market, offering a cost-effective and easy-to-use process that takes just three minutes. AVILOO currently covers over 96% of all available brands.

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