Table S1. Participant Sociodemographic Characteristics

	RURAL	SUBURBAN	URBAN	Overall
	(N=485)	**(N=430)**	**(N=282)**	**(N=1197)**
Age				
65-69	184 (37.8%)	170 (39.5%)	108 (38.2%)	462 (38.5%)
70-74	191 (39.2%)	145 (33.7%)	106 (37.5%)	442 (36.8%)
75-79	112 (23.0%)	115 (26.7%)	69 (24.4%)	296 (24.7%)
Race				
Non-White	13 (2.7%)	44 (10.2%)	38 (13.4%)	95 (7.9%)
White	473 (97.1%)	384 (89.3%)	245 (86.6%)	1102 (91.8%)
Missing	1 (0.2%)	2 (0.5%)	0 (0%)	3 (0.3%)
Gender				
Female	263 (54.0%)	229 (53.3%)	173 (61.1%)	665 (55.4%)
Male	224 (46.0%)	201 (46.7%)	110 (38.9%)	535 (44.6%)
Education				
High School or less	118 (24.2%)	22 (5.1%)	17 (6.0%)	157 (13.1%)
Some College/Associate's Degree	137 (28.1%)	92 (21.4%)	69 (24.4%)	298 (24.8%)
Bachelor's Degree or above	230 (47.2%)	316 (73.5%)	197 (69.6%)	743 (61.9%)
Missing	2 (0.4%)	0 (0%)	0 (0%)	2 (0.2%)
Marriage Status				
Married or Partner	347 (71.3%)	308 (71.6%)	172 (60.8%)	827 (68.9%)
Never married	14 (2.9%)	9 (2.1%)	24 (8.5%)	47 (3.9%)
Separated or Divorced	50 (10.3%)	51 (11.9%)	53 (18.7%)	154 (12.8%)
Widowed	75 (15.4%)	57 (13.3%)	30 (10.6%)	162 (13.5%)
Missing	1 (0.2%)	5 (1.2%)	4 (1.4%)	10 (0.8%)
Work Status				
Not employed	357 (73.3%)	305 (70.9%)	210 (74.2%)	872 (72.7%)
Employed	130 (26.7%)	125 (29.1%)	72 (25.4%)	327 (27.3%)
Missing	0 (0%)	0 (0%)	1 (0.4%)	1 (0.1%)
Income				
Less than $20,000	38 (7.8%)	14 (3.3%)	12 (4.2%)	64 (5.3%)
$20,000 to $49,999	149 (30.6%)	56 (13.0%)	60 (21.2%)	265 (22.1%)
$50,000 to $79,999	124 (25.5%)	92 (21.4%)	42 (14.8%)	258 (21.5%)
$80,000 to $99,999	61 (12.5%)	66 (15.3%)	42 (14.8%)	169 (14.1%)
$100,000 or more	91 (18.7%)	181 (42.1%)	118 (41.7%)	390 (32.5%)
Missing	24 (4.9%)	21 (4.9%)	9 (3.2%)	54 (4.5%)

Cognitive Health	Cognitive fitness to drive: ability to complete Trails B test within 3 minutes and with no more than 3 errors[1]			
Completed	448 (92.0%)	399 (92.8%)	262 (92.6%)	1109 (92.4%)
Not able to complete	33 (6.8%)	20 (4.7%)	16 (5.7%)	69 (5.8%)
Missing	6 (1.2%)	11 (2.6%)	5 (1.8%)	22 (1.8%)
Physical Health	Physical function based on Patient- Reported Outcomes Measurement Information System (PROMIS)[2,3]			
Mean (SD)	51.0 (7.01)	51.4 (6.92)	51.0 (7.05)	51.1 (6.98)
Median [Min, Max]	56.9 [29.1, 56.9]	56.9 [30.7, 56.9]	56.9 [29.1, 56.9]	56.9 [29.1, 56.9]
Missing	3 (0.6%)	9 (2.1%)	5 (1.8%)	17 (1.4%)

---

[1] Betz, M. E., Hyde, H., DiGuiseppi, C., Platts-Mills, T. F., Hoppe, J., Strogatz, D., Andrews, H. F., Mielenz, T. J., Hill, L. L., Jones, V., Molnar, L. J., Eby, D. W., & Li, G. (2020). Self-Reported Opioid Use and Driving Outcomes among Older Adults: The AAA LongROAD Study. *The Journal of the American Board of Family Medicine*, *33*(4), 521–528. https://doi.org/10.3122/jabfm.2020.04.190429

[2] Craig, B. M., Reeve, B. B., Brown, P. M., Cella, D., Hays, R. D., Lipscomb, J., Pickard, A. S., & Revicki, D. A. (2014). US valuation of health outcomes measured using the PROMIS-29. *Value in Health*, *17*(8), 846–853. http://dx.doi.org/10.1016/j.jval.2014.09.005

[3] Roy, M., & Molnar, F. (2013). Systematic review of the evidence for Trails B cut-off scores in assessing fitness-to-drive. *Canadian Geriatrics Journal*, *16*(3), 120–142. https://doi.org/10.5770/cgj.16.76

Table S2. Mediation Analysis on Urbanicity using SEM for Very High-Speed Driving, Rapid Deceleration, and Right-to-Left Turn Ratio.

	Very High-Speed Driving		Rapid Deceleration		Right-to-Left Turn	
	Coef.	p	Coef.	p	Coef.	p
Urbanicity						
Direct Effect	0.338	<0.001	0.070	0.031	0.016	0.007
Indirect Effect						
- % Trips at night	0.030	0.001	0.021	<0.001	0.001	0.140
- % Trips on high-speed road	0.184	<0.001	0.106	<0.001	0.009	<0.001
- Trip distance	-0.019	0.264	0.075	<0.001	0.008	<0.001
- Trip within 15 miles	-0.007	0.626	0.019	0.049	-0.003	0.073
Total	0.524	<0.001	0.290	<0.001	0.031	<0.001
R^2	27.5%		28.2%		8.5%	

Table S3. Multiple Mediation Analysis on Built Environment Features using SEM for Very High-Speed Driving, Rapid Deceleration, and Right-to-Left Turn Ratio.

	Very High-Speed Driving		Rapid Deceleration		Right-to-Left Turn	
	Coef.	p	Coef.	p	Coef.	p
Auto-oriented Road Density						
Direct Effect	-0.032	0.054	0.008	0.398	0.004	0.022
Indirect Effect						
- % Trips at night	0.001	0.581	0.001	0.581	0.001	0.673
- % Trips on high-speed road	0.055	<0.001	0.026	<0.001	0.002	<0.001
- Trip distance	0.003	0.090	0.007	0.005	0.001	0.010
- Trips within 15 miles	-0.001	0.918	0.002	0.069	-0.001	0.090
Nighttime Destinations						
Direct Effect	0.042	0.005	-0.002	0.828	-0.001	0.502
Indirect Effect						
- % Trips at night	0.007	0.004	0.005	0.003	0.001	0.086
- % Trips on high-speed road	0.030	0.636	0.001	0.642	0.001	0.648
- Trip distance	0.004	0.061	0.011	<0.001	0.001	<0.001
- Trips within 15 miles	-0.001	0.918	0.001	0.152	-0.001	0.072
Daytime Destinations						
Direct Effect	-0.017	0.075	-0.001	0.899	0.002	0.045
Indirect Effect						
- % Trips at night	-0.002	0.206	-0.001	0.204	-0.001	0.288
- % Trips on high-speed road	0.002	0.642	0.001	0.642	0.001	0.638
- Trip distance	-0.001	0.789	-0.001	0.787	-0.001	0.073
- Trips within 15 miles	-0.001	0.920	0.001	0.689	-0.001	0.684
Health Facilities						
Direct Effect	0.029	0.019	0.003	0.719	-0.001	0.480
Indirect Effect						
- % Trips at night	0.002	0.309	0.001	0.307	0.001	0.401
- % Trips on high-speed road	0.004	0.416	0.002	0.416	0.001	0.437
- Trip distance	0.001	0.396	0.002	0.353	0.001	0.379
- Trips within 15 miles	0.001	0.943	-0.001	0.922	0.001	0.889
Total	0.073	0.001	0.064	<0.001	0.01	<0.001
R^2	26.9%		26.9%		9.1%	