Appendix 1: items and scoring system

On-road tests (citations)	Items (number, categories and description)	Scoring system
Performance-Based Driving Evaluation (PBDE) (Odenheimer *et al.*, 1994)	7 tasks on closed road: (1) drive straight (2) back up (3) turn left (4) turn right (5) angle park (6) parallel park (7) drive between five cones in one direction, then in the other, as quickly and accurately as possible	Total score: 0-1 sum of tasks' scores (1: pass; 0: fail) divided by the number of completed tasks observed To pass a task = all relevant behaviors for that task have to be completed successfully
	68 tasks on open road (5 categories): (1) turns (2) merges (3) responses to traffic signs and signals (4) driving straight (5) performing complex maneuvers such as a 3-point turn. Several behaviors/task (5 categories): (1) scanning of the environment (2) lateral position of the vehicle (in the driving lane) (3) anterior/posterior position of the vehicle (e.g. following too closely) (4) speed (5) use of turn signals	Driving instructor's score: Global rating 4-point scale: (0) unsafe driver under any circumstance (1) safe only in optimal situations (i.e. familiar routes, daylight hours, good weather, and minimal traffic) (2) generally safe in situations of moderate driving difficulty but should avoid the most difficult circumstances, such as driving at dusk, in bad weather, in heavy traffic, or on unfamiliar roads (3) competent driver under any circumstance
Washington University Road Test (WURT) (Hunt *et al.*, 1997)	54 items (9 categories) (1) signals (2) needs prompting (3) checks traffic (4) stop sign observance (5) traffic light observance (6) reacts to others (7) speed control (8) keeps lane (9) qualitative judgments	Quantitative score: Items: 3-point scale or 2-point according to the item (0) moderate to severe impairment (1) mild impairment (2) no impairment or (0) impairment (2) no impairment Total score: 0-108 (high score = best performance) Global subjective 3-point scale: safe (driving behavior unlikely to result in crashes), marginal (small to moderate increased risk of crashes) and unsafe (substantial risk of crashes)
New Haven (Richardson & Marottoli, 2003)	36 items: (1) scans to sides (2) scan to rear/head check (3) uses mirrors (4) uses seatbelt (5) responds to traffic signals (6) responds to vehicles/pedestrians (7) grants right of way (8) centers car in lane (9) safe following distance (10) uses directional signals (11) position car for turns (12) proper lane selection (13) gas-to-brake reaction time (14) appropriate steering recovery (15) acceleration (16) braking (17) shifting (18) right turns (19) left turns (20) backing up (21) K turns (22) angle parking (23) low density traffic (24) simple traffic situations (25) medium traffic situations (26) limited access highway (27) enter (28) exit (29) merge (30) lane change (31) speed regulation (32) follows directions (33) judgment (34) decision making (35) memory (36) attitudes and emotions	3-point scale/item: (0) major errors, unsafe (1) minor errors (2) good, no errors Total score: 0-72 (high score = best performance)
Test Ride for Investigating Practical Fitness to Drive :	13 items and 49 subitems Items: (1) position on the road (<50km/h) (2) lane changing (3) distance from car ahead at <50km/h (4) speed in areas with limit (<50km/h) (5) anticipation	Quantitative score: 4-point scale/subitem (1) bad performance (2) insufficient performance

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Belgian Version (TRIP) (Akinwuntan *et al.*, 2003 ; Akinwuntan *et al.*, 2005)	and perception of signs (6) mechanical operations (7) joining the traffic stream (8) position on the road (>50km/h) (9) distance from car ahead at >50km/h (10) speed in areas with limit (>50km/h) (11) turning left on a major road (12) visual behavior and communication (13) quality of traffic participation	(3) sufficient performance (4) good performance Total score: 49-196 (high score = faultless performance) 3-point scale: (1) fit to drive (2) temporarily unfit to drive (3) definitely unfit to drive
Rhode Island Road Test (RIRT) (Brown *et al.*, 2005 ; Ott *et al.*, 2012)	28 behaviors observable several times (in total 480 behaviors) Behaviors: (1) awareness of signs (2) light awareness (3) approaches intersection at appropriate speed (4) brakes smoothly and accurately (5) comes to a complete stop (6) aware of traffic situations (7) responds appropriately to signal (8) scans (9) uses mirrors (10) positions for turn (11) yields right of way (12) proceeds timely (13) accelerates smoothly and accurately (14) signal use (15) attends to task (16) awareness of pedestrians (17) spatial awareness (18) lane selection (19) lane keeping (20) awareness of environment (21) speed control (22) steering control (23) uses mirrors for lane change (24) checks blind spots (25) changes lanes without verbal cue (26) scans while in motion (27) shifts for park (28) turns vehicle engine off	Quantitative score: 3-point scale/item (0) unimpaired (1) mildly impaired (2) moderately to severely impaired Total score: 0-960 (high score = best performance) Mean score: 0-1, total score divided by the number of completed tasks observed 3-point global rating scale: safe, marginal or unsafe
Sum of Maneuvers Score (SMS) (Justiss *et al.*, 2006 ; Shechtman *et al.*, 2010)	91 maneuvers (e.g.: turn, straight line, lane change, etc.) and 8 types of errors: (1) vehicle positioning (anterior) (2) vehicle positioning (posterior) (3) lane maintenance (4) speed regulation (5) yielding (6) signaling (7) adjustment to stimuli or traffic signs (8) gap acceptance	Quantitative score: 3-point scale/maneuver (3) zero errors for any associated behaviors (2) any errors in any behavior for the given maneuver (1) if the evaluator has to use verbal cues or repeat instructions (not hearing-related) to modify of change behavior (0) if physical intervention (such as grabbing the steering wheel, using the auxiliary brake) Total score: 0-273 (high score = best performance) Global Rating Scale (4-point scale): (1) pass (2) pass with recommendation (3) fail with recommendation (4) fail
Performance Analysis of Driving Ability (P-Drive) (Patomella & Bundy, 2015 ; Patomella *et al.*, 2010 ; Selander *et al.*, 2011 ; Vaucher *et al.*, 2015)	27 items (4 categories) (1) maneuver (2) orientate oneself (3) comply with traffic regulation (4) be attentive to and respond to external stimuli in traffic Items: (1) steering (2) changing gears (3) using pedals (4) controlling speed, too slow (5) controlling speed, too fast (6) using turn signals (7) reversing (8) following instructions (9) way finding (10) positioning (11) keeping distance (12) planning (13) yielding right-of-way (14) yielding (15) obeying stop regulation (16) following speed regulation (17) attending and acting straight ahead (18) attending and acting to left (19) attending and acting to right (20) attending and acting to mirrors (21) attending and acting to warn signs (22) attending and acting to regulation signs (23) attending and acting to	Items: 4-point scale (1) incompetent driving ability (2) problematic (3) questionable (4) competent driving ability Scoring by the worst behaviors on each item Total score: 27-108 (high score = best performance)

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	information signs (24) attending and acting to fellow road users (25) reacting (26) focusing (27) problem solving	
Composite Driving Assessment Scale (CDAS) (Ott *et al.*, 2012)	30 items (2 categories): discreate behaviors (1-19) and global evaluations (awareness, attitude, reaction time, 20-30) (1) follows directions from other occupant (2) responds appropriately to traffic signs, lights, and road markings (3) demonstrates appropriate response during emergency situations (4) starting (5) backing (6) parking (horizontal) (7) uses turn signal (8) left turn (9) right turn (10) proceeds without hesitation (11) accelerates smoothly, accurately, and timely (12) stops completely at sign (13) checks blind spots (14) centers vehicle in travel lane (15) brakes smoothly with adequate time and space (16) demonstrates appropriate steering recovery (17) speed control (18) lane keeping (19) awareness of pedestrians (20) scans timely and comprehensively (21) uses mirrors properly (22) maintains safe distance from other vehicles while in motion (23) able to judge spatial positioning for turns and parkin (24) demonstrates proper use of vehicle equipment (25) attention (26) attitude (27) awareness of how driving affects others (28) anticipation of traffic situations (29) reaction time (30) response to other vehicle's brake lights, signals, etc.	Quantitative score: 3 point scale/item (0) unimpaired (1) mildly impaired and (2) moderately to severely impaired Several items not always scored, because non-standardized road Total score: 0-60 (high score = less good performance) Mean score: 0-1, sum of observed behavioral ratings divided by their number Global rating 3-point scale: pass, marginal or fail
Nottingham Neurological Driving Assessment (NNDA) (Lincoln *et al.*, 2012)	25 items: (1) starting precautions (2) moving off (3) observation at junctions (4) observation to rear (5) using signals (6) road positioning (7) cornering (8) braking (9) accelerating (10) overtaking (11) roundabouts (12) traffic lanes (13) passing vehicles (14) merging (15) pedestrian behavior (16) road users (17) use of speed (18) obeying road signs (19) obeying speed limit (20) courtesy (21) emergency stop (22) reversing (23) parking (24) turning right (25) following too close	Items: 3-point scale; correct, minor error (not compromising safety) and major error (compromising safety) Global 4-point rating scale: definitively safe, probably safe, probably unsafe and definitively unsafe
Driving Observation Schedule (DOS) (Vlahodimitrakou *et al.*, 2013)	Specific errors (6 behavior's categories): (1) observation of road environment (no mirror use; no head checking) (2) signaling (incorrect use of indicator signal or failure to use signals) (3) speed regulation (too fast; too slow) (4) gap acceptance (missed opportunity; unsafe gap; failure to yield) (5) road rule compliance (non-compliance with relevant signage (e.g. stop sign)) (6) vehicle/lane position (lane drifting; hits curb; following too close)	Total score: 0-100 (the total number of driving behaviors completed appropriately, divided by the total number observed) -1 point for each error performed during maneuver-free driving - 2 points for each critical error, multiplied by 100 Critical errors: (1) observer terminating the DOS (2) crash or near-crash (3) observer using verbal prompts either to prevent an error escalating in severity or to correct the error
Record of Driving Errors (RODE) (Barco *et al.*, 2015)	Recorded errors during the course according to: (1) traffic condition (closed lot, low traffic, moderate high traffic) (2) driving situation (parking backing, right turn, left turn, straightaway, lane change) (3) driving behavior : operational (use of controls, gears, signals, pedals, steering), tactical (scanning, distance judging, lane, usage/position, stopping, speed, yielding), information processing (anticipates, attention, decision making, memory, rules of the road, processing speed) Evaluator's intervention recorded as following: wheel/brake intervention, verbal cueing, dangerous actions	Presence or absence of error according to the above-mentioned criteria (difficulty, situation and type)

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Western University's (UWO) on-road assessment (Classen *et al.*, 2016a ; Classen *et al.*, 2016b)	45 maneuvers (including straight lines and controlled intersections with left or right turns) et 7 types of driving errors: (1) visual scanning (scanning the driving environment) (2) lane maintenance (the ability to maintain steering control during turns, straight driving and lane changes) (3) speeding (following and maintaining speed limits, having adequate control of acceleration and braking) (4) vehicle positioning (anterior and posterior position of the vehicle in relation to other vehicles and/or objects and pavement markings) (5) adjustment to stimuli (ability to respond appropriately to driving situations, including adjusting to traffic or pedestrian movements and changing road sign information, recognizing potential hazards, and giving right-of-way when appropriate) (6) gap acceptance (choosing an appropriate safe time and/or space to cross in front of oncoming traffic or from approaching traffic (7) signaling (improper use of turn signals, such as leaving the turn signal on unnecessarily after making a turn)	Quantitative score: dichotomous score (yes/no) for type of error/maneuver Severity score with a 5-point scale: (0) no errors (1) 1≥ noncritical errors (2) 1≥ critical errors (errors increasing crash potential) (3) requires verbal cues or minor physical intervention to modify behaviors or maneuvers (4) error that requires a critical physical intervention Total score: total sum of the maneuver errors Global rating 2-point scale: fail / pass and 4-point scale: pass / pass with recommendations / fail remediable / fail PERS: most frequently 3 types of errors occurring on-road in priority order