SMART FEATURES for Older Drivers

MOBILITY, COMFORT, AND VALUE
Finding a vehicle to meet your needs

In collaboration with the Institute for Mobility, Activity and Participation at the University of Florida
How does driving change as we age?

Our ability to drive requires not only knowledge and experience, but healthy visual, physical and cognitive capabilities. While our knowledge and experience expand with age, changes to and possible losses in vision, physical health and mental capabilities require adjustments to help us remain safe, responsible drivers.

Natural age-related changes occur so subtly that we don’t notice them progressing. For example:

<table>
<thead>
<tr>
<th>Age</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>At age 40</td>
<td>Mental sharpness begins to diminish, thought processing slows, multitasking is more challenging, night vision worsens and recovery from glare is reduced.</td>
</tr>
<tr>
<td>At age 50</td>
<td>Nine in 10 people require bifocals, and reaction time slows.</td>
</tr>
<tr>
<td>Between ages 30 and 60</td>
<td>Muscle strength and range of motion can decrease up to 40 percent.</td>
</tr>
<tr>
<td>At age 70</td>
<td>Arthritic joints may make movement painful and restrict mobility, and conditions such as stroke, Parkinson’s disease, hypertension and diabetes may affect how we interpret and react to the driving environment.</td>
</tr>
</tbody>
</table>

Choosing a vehicle with the right features can help us adapt to these changes and improve safety and comfort behind the wheel.

So, which features should you look for? AAA worked with the University of Florida Institute for Mobility, Activity and Participation to help answer this question and identify vehicle features that optimize older driver comfort and safety in three steps.
STEP 1
Understand How Vehicle Features Can Keep Drivers Safer

Our expert team recommends you consider the following factors when evaluating a vehicle:

- **Safety features** such as seat belts and the positions and types of airbags.
- **Ergonomics** or design features, that reduce operator fatigue and discomfort.
- **Comfort** such as ease of entry and exit, leg room and size of control buttons.
- **Value** which incorporates the total cost of ownership including price, operating and maintenance costs, as well as reliability, fuel economy and resale value.

Regardless of your age and overall health, any vehicle you purchase should include:


- **Side and dual-stage/threshold airbags.** Side airbags protect the torso, pelvis and head. Dual-stage and dual-threshold airbags are recommended because senior drivers risk injury if airbags deploy with too much force. The force with which this type of airbag inflates depends on crash severity, distance from the driver and passenger and weight of the driver and passenger to ensure optimal protection for all vehicle occupants during a crash.

- **Head restraints and extra padding.** Head restraints move forward to cushion the head and reduce the risk of neck injuries when a car is hit from behind. Interior crash protection, such as extra padding, also can minimize injuries.

- **Antilock brakes.** An antilock braking system, or ABS, prevents wheels from locking and ensures better steering control during emergency braking. ABS automatically pumps the brakes, up to 18 times per second, to prevent the wheels from locking up.

- **Dynamic stability control.** This feature helps prevent loss of control in a turn, especially on slippery roads, to enable drivers to compensate for slower reaction times and make quick corrections.
# Smart Features for Older Drivers

The following pages recommend features that will help you adapt to changing visual, physical and cognitive needs. Features are listed in no particular order.

## Step 2: Tailor to Your Needs

The following pages recommend features that will help you adapt to changing visual, physical and cognitive needs. Features are listed in no particular order.

### Features to Look for if You Experience:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Feature Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hip or leg pain</td>
<td><strong>Six-way power adjustable seats</strong> (Seats that adjust forward, backward, up, down and seatback forward and backward) Ease entry and exit from vehicle and facilitate seat adjustment for leg room and reduction of hip or leg pain</td>
</tr>
<tr>
<td>Decreased leg strength</td>
<td><strong>Comfortable seats set between mid-thigh and lower buttocks</strong> Eases vehicle entry and exit</td>
</tr>
<tr>
<td>Limited knee range of motion</td>
<td><strong>Low door threshold</strong> Eases vehicle entry and exit</td>
</tr>
<tr>
<td>Diabetic neuropathy (numbness or tingling) in the legs, feet or toes</td>
<td><strong>Leather or faux leather seats</strong> Eases vehicle entry and exit</td>
</tr>
</tbody>
</table>

### Features to Look for if You Are:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Feature Description</th>
</tr>
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<tbody>
<tr>
<td>Small-statured</td>
<td><strong>Adjustable brake and accelerator foot pedals</strong> Help drivers reach pedals, yet maintain a safe distance from the steering wheel airbag</td>
</tr>
<tr>
<td>Overweight/obese</td>
<td><strong>Tilt and telescoping steering wheel</strong> Helps drivers maintain at least 10 inches between their chest and the front airbag</td>
</tr>
<tr>
<td></td>
<td><strong>Six-way adjustable seats</strong> Help drivers obtain a line of sight above the steering wheel and sit comfortably</td>
</tr>
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</table>
**FEATURES TO LOOK FOR IF YOU EXPERIENCE:**

<table>
<thead>
<tr>
<th>Arthritis in the hands</th>
<th>Four-door models Require less strength to open and close doors than two-door models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger pain or stiffness</td>
<td>Thick steering wheel Requires less hand and wrist strength to grip and handle</td>
</tr>
<tr>
<td>Diminished fine motor skills, such as the ability to manipulate small objects</td>
<td>Keyless entry Eliminates pain or difficulty associated with turning a key</td>
</tr>
<tr>
<td></td>
<td>Power mirrors and seats Ease adjustment for drivers with limited strength or arthritis</td>
</tr>
<tr>
<td></td>
<td>Larger dashboard controls with buttons Easier to manipulate than knobs, especially as drivers age and fine motor skills diminish</td>
</tr>
<tr>
<td></td>
<td>Dashboard-mounted push-button ignition Reduces pain or difficulty associated with turning a key</td>
</tr>
<tr>
<td></td>
<td>Automatic tailgate closer Requires no strength to open and close trunk or rear door</td>
</tr>
<tr>
<td></td>
<td>Automatic side door openers Require no strength to open and close doors</td>
</tr>
<tr>
<td></td>
<td>Heated side mirrors Eliminate need to scrape ice</td>
</tr>
<tr>
<td></td>
<td>Sliding channel gear selector Eliminates need to press selector button when changing gears</td>
</tr>
<tr>
<td></td>
<td>Rain sensor Eliminates need to manually turn wipers on and off</td>
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Four-door models

Four-door models require less strength to open and close doors than two-door models, making it easier for drivers with limited strength or arthritis to manage their vehicle.

**Thick steering wheel**

A thick steering wheel requires less hand and wrist strength to grip and handle, reducing the strain on drivers with arthritis or limited hand strength.

**Keyless entry**

Keyless entry eliminates the pain or difficulty associated with turning a key, which is especially beneficial for drivers experiencing finger pain or stiffness.

**Power mirrors and seats**

Power mirrors and seats make it easier to adjust the position of the mirrors and seats for drivers with limited strength or arthritis, improving comfort and control.

**Larger dashboard controls with buttons**

Larger dashboard controls with buttons are easier to manipulate than knobs, especially as drivers age and fine motor skills diminish.

**Dashboard-mounted push-button ignition**

Dashboard-mounted push-button ignition reduces pain or difficulty associated with turning a key, providing a smoother and more comfortable driving experience.

**Automatic tailgate closer**

Automatic tailgate closer requires no strength to open and close the trunk or rear door, eliminating the need for manual effort.

**Automatic side door openers**

Automatic side door openers require no strength to open and close doors, making it easier for drivers with limited strength to access the vehicle.

**Heated side mirrors**

Heated side mirrors eliminate the need to scrape ice, keeping the mirrors clear and improving visibility during cold weather.

**Sliding channel gear selector**

Sliding channel gear selector eliminates the need to press the selector button when changing gears, reducing the strain on drivers with arthritis or limited hand strength.

**Rain sensor**

Rain sensor eliminates the need to manually turn wipers on and off, providing a more convenient and comfortable driving experience during rainy conditions.
### FEATURES TO LOOK FOR IF YOU EXPERIENCE:

<table>
<thead>
<tr>
<th>Limited range of motion in your upper body</th>
<th>Tilt and telescoping steering wheel</th>
</tr>
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<tbody>
<tr>
<td>Back, neck, arm or shoulder pain or stiffness</td>
<td>Large, wide-angle mirrors</td>
</tr>
<tr>
<td>Decreased or limited balance</td>
<td>Comfortable, heated seats with lumbar support</td>
</tr>
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</table>

- **Tilt and telescoping steering wheel**: Helps drivers find a comfortable position to alleviate neck and shoulder pain.
- **Large, wide-angle mirrors**: Compensate for limited range of motion or difficulties turning to check for blind spots while merging or backing up.
- **Comfortable, heated seats with lumbar support**: Alleviate back pain.
- **Adjustable seat belts**: Assist drivers in reaching for buckling/unbuckling.
- **Automatic tailgate closer**: Requires no strength or balance to open and close trunk or rear door.
- **Automatic side door openers**: Require no strength or balance to open and close doors.
- **Heated side mirrors**: Eliminate the need to scrape ice.
- **Large rear window**: Increases overall visibility and reduces turning required for backing up.
- **Rear backup camera**\*: Increases visibility of objects behind the vehicle and reduces turning required for backing up.
- **Active parallel park assistance**\*: Requires less twisting of the upper body.
- **Front and rear sensors and warning systems**\*: Monitor immediate space ahead of and behind vehicle to minimize driver twisting and upper body rotation.
- **Foot-engaged emergency brake**: Easier to engage than a hand-operated brake.

*These systems are intended to supplement a driver’s visual checks. They are NOT replacements for mirrors and should not be used as such.
Large dashboard controls with buttons

Active parallel park assistance

Rear backup camera

Automatic tailgate closer

Glare-reducing side mirrors

Large rear window

Keyless entry
FEATURES TO LOOK FOR IF YOU EXPERIENCE:

**Diminished night vision due to glaucoma, cataracts or other conditions**
- Visors, including extendable sun visors
  - Help drivers adjust to and prevent glare from the sun
- Larger audio and climate controls with contrasting text
  - Easier to see and make drivers more confident and less distracted
- High-contrast instrument panel with large number and letter displays
  - Allows for better visibility with quick glances
- Auto-dimming rearview mirror and glare-reducing side mirrors
  - Reduce blinding glare from headlights of other vehicles

**Problems with visual contrast or depth perception**
- Larger audio and climate controls with contrasting text
  - Easier to see and make drivers more confident and less distracted
- High-contrast instrument panel with large number and letter displays
  - Allows for better visibility with quick glances

**Slow recovery from glare**
- “Classic Car” designs – limited technology or added features
  - Lessen distractions and improve familiarity with controls
- High-contrast instrument panel with large number and letter displays
  - Allows for better visibility with quick glances
- Auto-dimming rearview mirror and glare-reducing side mirrors
  - Reduce blinding glare from headlights of other vehicles

**Cognitive decline or reduced mental capabilities**
- “Classic Car” designs – limited technology or added features
  - Lessen distractions and improve familiarity with controls
- High-contrast instrument panel with large number and letter displays
  - Allows for better visibility with quick glances
- Rain sensor
  - Turns wipers on and off automatically and lessens driver distraction

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**Additional Features**

- Large climate controls
- Extendable sun visors
- High-contrast instrument panel
Inexpensive assistive devices can be added to your car to further address your specific needs.

**Larger, angled rear and side mirrors**
Improve visibility and minimize blind spots

**Leveraging devices**
Allow driver to use upper body to ease vehicle entry and exit

**Pedal extenders**
Help drivers obtain a safe distance from the steering wheel/airbag and optimize visibility

**Seat belt adjuster**
Improves seat belt positioning

**Steering wheel covers**
Improve grip for drivers with arthritic hand joints

**Seat belt pull**
Reduces distance in reaching for the seat belt and improves ease of grasping seat belt

**Cushions and seat pads**
Improve line of sight and can help alleviate back or hip pain

**Shear seat covers**
Decrease resistance when adjusting seated position

**Key extenders**
Offer more leverage for turning keys in locks or the ignition and reduce stress on finger joints

**Flat swivel seat**
Eases vehicle entry and exit

**Leg lift straps**
Allow the driver to use upper body strength to lift legs into and out of the vehicle

**Rain-repelling glass treatment**
Sheds water on exterior glass and improves visibility

**Hand controls**
Allow the driver to perform all vehicle maneuvers and functions without the use of lower extremities

**Anti-glare film for side mirrors**
Reduces glare from other vehicle headlights

Aftermarket vehicle adaptations or those offered by manufacturers—such as lumbar supports, door openers, hand controls, lifts and steering devices—also can help.

Never purchase or install these features without first consulting an occupational therapy-driver rehabilitation specialist (OT-DRS). Some aftermarket products can alter the effectiveness of seat belts, airbags or other safety features. Along with properly installing new features in your vehicle and providing training for proper use if needed, an OT-DRS can recommend vehicle modifications to adapt your vehicle to individual needs.
To find an OT-DRS, visit the American Occupational Therapy Association online at www.aota.org/olderdriver.

To find adaptive devices offered by specific manufacturers, visit the National Mobility Equipment Dealers Association online at www.nmeda.com.

Some expensive, high-tech solutions marketed to mature drivers do not have enough current research support to earn a place on our recommendations list.

**High-tech options to weigh carefully:**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Lane deviation prevention systems</td>
</tr>
<tr>
<td>Navigation systems</td>
</tr>
<tr>
<td>Head-up displays that project speed and other data onto the windshield</td>
</tr>
<tr>
<td>Adaptive cruise control to help drivers maintain a consistent following distance</td>
</tr>
<tr>
<td>Collision warning systems that signal the potential for a crash</td>
</tr>
<tr>
<td>Lane change assist that signals to drivers when it is unsafe to make a lane change</td>
</tr>
</tbody>
</table>

**Want help selecting a vehicle that fits your needs?**

Visit the interactive SeniorDriving.AAA.com/SmartFeatures website, where you can find a vehicle that meets your mobility, comfort and financial needs.
Additional resources for mature drivers

AAA’s SeniorDriving.AAA.com website provides expert advice, science-based resources and interactive tools to help older drivers assess their skills and keep them driving as long as safely possible.

**CarFit** is a free, individualized safety check to help drivers increase vehicle control and comfort. Discover easy adjustments that can protect you behind the wheel.

The CarFit program was developed by the American Society on Aging in partnership with AAA, AARP and American Occupational Therapy Association.

**Roadwise Review** is an easy-to-use computer program that helps identify age-related changes that could put drivers at risk behind the wheel. Test your driving abilities—confidentially, and in the comfort of your home.

**Roadwise Rx**, developed by the AAA Foundation for Traffic Safety, is a free online tool that enables you to check how prescription and over-the-counter medications can affect driving. Your confidential results can be saved to your computer and printed to share with your health care provider or pharmacist.

**AAA’s Safe Driving for Mature Operators Driver Improvement Program** is packed with up-to-date safe driving techniques that can help sharpen your skills to make you as safe as possible behind the wheel. Courses may be offered through the classroom, online or both. Contact your local AAA club for more information.

**The Fitness-to-Drive Screening Measure**, available at [http://fitnesstodrive.phhp.ufl.edu](http://fitnesstodrive.phhp.ufl.edu), is a free tool developed by the University of Florida to help caregivers or loved ones to assess an older adult’s driving fitness.

**UF College of Public Health and Health Professions**

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_UNIVERSITY of FLORIDA_