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RESOURCES

[Department of Industrial Relations, Easy Ergonomics](#)

[Title 8, California Code of Regulations, Section 5100](#)

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Best Practices for Vehicle Ergonomics

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Driving is an essential job function for many California public agency employees, including those in transportation, inspections, law enforcement, emergency response, and public works. Although often considered routine, prolonged or repetitive driving may expose employees to ergonomic risk factors such as sustained postures, awkward positioning, and limited movement. When these risk factors are not adequately addressed, they can contribute to work-related musculoskeletal disorders (MSDs).

Ergonomics is the science of fitting the job to the worker. Applying ergonomic principles to driving tasks helps identify and control workplace hazards that may lead to MSDs.

By integrating ergonomic practices into daily vehicle use, agencies can promote employee health, reduce preventable injuries, and support safe and efficient operations.

Key ergonomic principles include:

Vehicle Entry and Exit

- Wallets, cell phones, and other items should be removed from back pockets prior to entering the vehicle to drive. The added pressure of something as small as a wallet can cause the lower back, hips, and pelvis to be uneven, which can cause back pain over time while driving.

Seat Adjustment

- **Seat height:** The seat height should be adjusted so that the hips are level with or slightly higher than the knees. This position helps reduce pressure on the lower back and improves circulation in the legs. The thighs should be fully supported by the seat cushion and the feet should rest flat on the floor or pedals.

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- **Seat cushion:** The seat cushion should support most of the thigh length without pressing against the back of the knees. Pressure behind the knees can restrict circulation and increase discomfort during extended driving.
- **Distance from the pedals:** Position the seat so that the pedals can be fully depressed without the need to stretch or lock the knees. The knees should remain slightly bent during driving, which reduces strain on the hips and legs. If adjusting the seat close enough to reach the pedals would compromise proper posture, the use of an agency-approved pedal extender is recommended.
- **Backrest:** The backrest should be slightly reclined, ideally the angle should be between 100 and 110 degrees to support the natural curve of the spine.
- **Lumbar support:** If lumbar support is available, it should be adjusted to support the natural curve of the lower back. If the vehicle does not have built-in lumbar support, an agency-approved lumbar cushion may help reduce strain and improve comfort.

Steering Wheel Position

- The steering wheel should be adjusted so that hands rest comfortably at the 9 and 3 o'clock positions while keeping the shoulder relaxed. Maintain a slight bend in the elbows to reduce shoulder strain and prevent overreaching. If the steering wheel does not adjust, the seat should be adjusted as much as possible to achieve a comfortable reach while still maintaining full control of the pedals. Driving with arms fully extended or shoulders lifted can contribute to upper back, neck, and shoulder discomfort over time.



Mirror Alignment

- Adjust all mirrors before starting the vehicle to minimize blind spots. Proper mirror alignment reduces the need for excessive head, neck, and upper-body movement while driving.

Head and Neck Position

- Keep the head aligned with the spine, avoiding a forward-leaning posture.
- The headrest should be positioned so the center of the back and head rests against it, helping to prevent whiplash injuries in the event of a collision.

Cabin Environment

- Prolonged exposure to vehicle vibration can contribute to muscle fatigue and lower back discomfort. Agencies can help reduce vibration exposure through routine vehicle maintenance, including tires, suspension, and shocks.

Taking Breaks

- In extended driving situations, breaks should be scheduled at least every two hours to stretch, walk, and change posture. Simple stretching exercises during breaks can help improve circulation and reduce muscle tension.

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Agencies should support vehicle ergonomics by implementing training and evaluation programs for employees who operate vehicles as part of their job duties for extended periods of time. These programs should include instruction on proper seat, mirror, and steering wheel adjustment; education on healthy driving posture and techniques to reduce discomfort; and vehicle-specific ergonomic guidance when specialized or non-standard vehicles are used. Agencies should also conduct periodic ergonomic evaluations to identify risk factors, recommend corrective measures, and provide opportunities for employee feedback to address recurring concerns.

Promoting proper vehicle setup, healthy driving posture and regular movement breaks helps agencies reduce ergonomic risk factors associated with driving. Ongoing training, ergonomic evaluations and employee involvement support injury prevention and continuous improvement. Prioritizing driving ergonomics protects employee health and supports safe job performance. For questions regarding best practices for vehicle ergonomics, contact [PRISM Risk Control](#).