

Spine Health in Older Adults

Spinal health is critical to maintaining **mobility**, **postural stability**, and **independence** in older adults. Aging affects vertebral bodies, intervertebral discs, ligaments, muscles, and the spinal cord itself.

□ Age-Related Changes in the Spine

- **Disc degeneration:** reduced hydration and height → loss of flexibility.
- **Facet joint arthritis:** cartilage loss and osteophyte formation → stiffness, pain.
- **Vertebral compression:** due to osteoporosis or trauma.
- **Kyphosis:** exaggerated thoracic curvature, often from compression fractures or muscle weakness.
- **Ligamentous calcification:** reduced elasticity of spinal ligaments.
- **Spinal canal narrowing (stenosis):** from disc bulging, facet hypertrophy, or ligamentum flavum thickening.

⚠ Common Spine-Related Disorders in the Elderly

- **Osteoporotic vertebral fractures.**
- **Lumbar spinal stenosis** → neurogenic claudication.
- **Degenerative disc disease (DDD).**
- **Cervical spondylotic myelopathy.**
- **Chronic low back pain** and axial spine pain.

□ Risk Factors

- **Age >65 years.**
- **Sedentary lifestyle.**
- **Vitamin D / calcium deficiency.**
- **Smoking and alcohol abuse.**
- **Poor posture and ergonomics.**
- **History of osteoporosis or spinal trauma.**

□ Prevention and Maintenance Strategies

- **Weight-bearing exercise:** walking, Tai Chi, resistance training.
- **Postural correction:** stretching, yoga, physiotherapy.
- **Core strengthening:** improves lumbar spine support.
- **Adequate intake of calcium and vitamin D.**
- **Avoid tobacco and excessive alcohol.**
- **Fall prevention:** home safety, balance training.

□ Diagnostic and Monitoring Tools

- **DEXA scan:** for bone mineral density.
- **MRI / CT:** to evaluate stenosis, disc herniation, or fractures.
- **X-ray:** alignment, vertebral collapse, scoliosis or kyphosis.

□ Treatment Options

- **Pharmacologic:**
 - Bisphosphonates for osteoporosis.
 - NSAIDs or acetaminophen for pain control.
 - Muscle relaxants cautiously.
- **Non-pharmacologic:**
 - Physical therapy and posture training.
 - Heat/cold therapy, TENS units.
 - Bracing for vertebral compression fractures (short term).
- **Surgical** (selected cases):
 - Decompression (e.g., laminectomy) for stenosis.
 - Kyphoplasty or vertebroplasty for fractures.
 - Instrumented fusion for instability or deformity.

□ Patient Education and Counseling

- Promote **self-efficacy** in pain management.
- Encourage regular **physical activity** and safe movement.
- Provide resources for **assistive devices** and home modifications.
- Address **fear of falling** and educate on **spine-sparing techniques**.

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