Whole-Body MRI Reveals Advanced Spine Pathology and Clinically Actionable Findings in Retired Military Personnel.

Mia A. Ramos, M.D.[1], Christy L. Hunt, D.O., M.S.[1]

[1]Department of Pain Medicine, Mayo Clinic, Jacksonville, Florida



MAYO CLINIC

28
PATIENTS

100%
SIGNIFICANT SPINE PATHOLOGY

93%
ADVANCED CERVICAL FINDINGS

96%
ADVANCED LUMBAR FINDINGS

Comprehensive screening allows for early identification of actionable health findings during transition to civilian care.

INTRODUCTION:

- Military personnel are exposed to cumulative spinal loading and stress through occupational demands.
  - Heavy loads, airborne operations and blast exposure.
  - Limited rehab and recovery opportunities during career.
- Whole-body MRI enables comprehensive evaluation of both spinal and extra-spinal pathology.
- Early detection may improve care coordination during transition to civilian healthcare.

COHORT:

2 MILITARY BRANCHES

27 MALES **1** FEMALE

52 MEAN AGE (YEARS)

METHODS:

- Retrospective review of recently retired military personnel.
- Enrolled in comprehensive health evaluation program.
- Non-contrast 3T MRI of head, neck, chest, abdomen & pelvis.
- Specialty consultation records were reviewed to determine the clinical significance of incidental actionable findings.
- Actionable findings were defined as those that prompted additional diagnostic testing, specialty referral, longitudinal follow-up and/or management recommendations.

RESULTS:

- Interventional spine procedures were performed in five (5) patients.
- Surgical referral for three (3) patients.
- Twelve (12) patients referred for substance abuse and/or mental health evaluation.
- Spine-focused physical therapy was provided to individualize home exercise programs, optimize function, and reduce further injury.

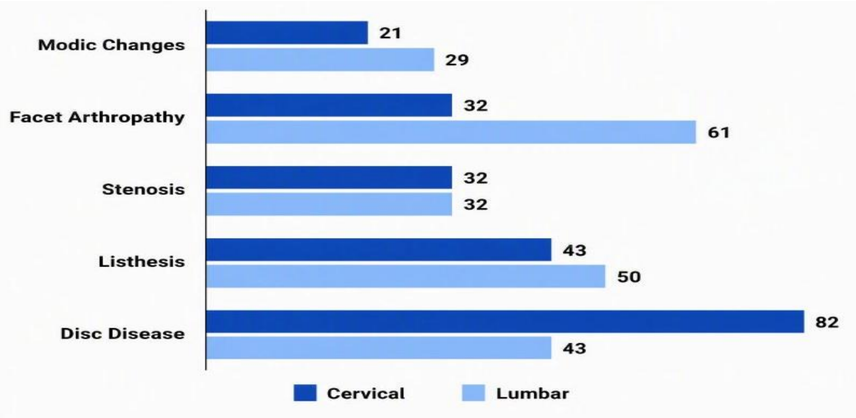
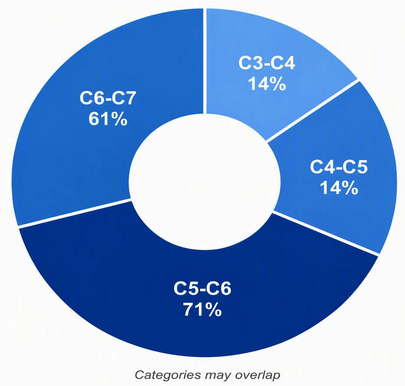


Figure 1: CERVICAL & LUMBAR FINDINGS



Categories may overlap

Figure 2: CERVICAL PATHOLOGY

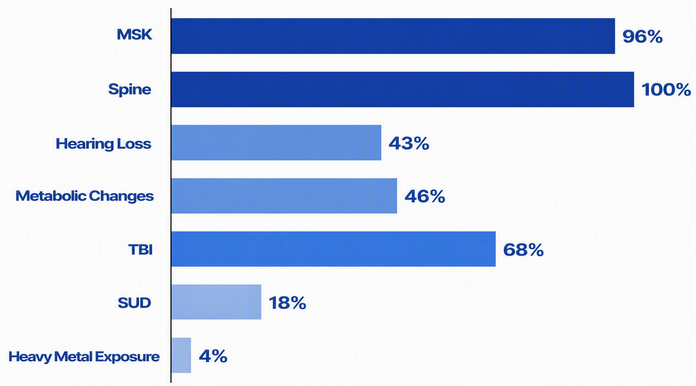


Figure 3: ADDITIONAL RELEVANT FINDINGS

DISCUSSION:

- Whole-body MRI revealed a high prevalence of advanced axial spine pathology, most notable at the C5-C6 level.
- Clinically actionable findings were identified across multiple organ systems.
- Results suggest a substantial cumulative occupational health burden associated with military service.

CONCLUSION:

- Findings support the value of comprehensive post-service screening programs in military personnel.
- Facilitates early detection of degenerative and systemic disease.
- Enables timely multidisciplinary evaluation and subsequent intervention.
- Promotes continuity of care during transition to civilian life and workforce.

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