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Number Needed to Screen for Axial Spondyloarthritis: Preliminary Results from the FASTRAX Cohort.

Population prevalence estimates for axial spondyloarthritis (axSpA) is 1% [1], suggesting the number needed to screen (NNS) to identify one patient with axSpA is 100. The UHN Spondylitis Screening Clinic (SSC) at the Schroeder Arthritis Institute (Toronto, Canada) has implemented an interprofessional model of care, utilizing Advanced Clinician Practitioners in Arthritis Care (ACPAC)–trained extended scope providers as initial screeners for early detection of axSpA [2]. FASTRAX is a multi-centre research initiative, based on the UHN SSC, with sites located across Ontario (Toronto, Ottawa, and Thunder Bay.) The aim of this study is to determine the NNS to diagnose one patient with axSpA through the FASTRAX study.

Adults (≥ 18 years) with back pain > 3 months duration, onset age < 45 years were referred by their primary care provider, physician specialist or provincial low back pain program (<https://lowbackrac.ca>) to their FASTRAX site for axSpA screening. Screeners performed standard of care assessment (i.e. history, physical exam, imaging and laboratory investigations). All screened patients were reviewed by the attending rheumatologist with expertise in SpA. Screeners indicated risk of axSpA on a 11-point scale (-5, high confidence not axSpA to +5, high confidence axSpA). Risk assignment was dichotomized to negative or positive risk of axSpA. The rheumatologist provided final diagnosis for all patients. Data were collected from May 7, 2024, to December 3, 2025. Prevalence of axSpA was calculated as the number of axSpA diagnoses/total number of patients screened. Sensitivity (SE) and specificity (SP) were calculated for the screener's assignment of risk against the gold standard of the rheumatologist's diagnosis. NNS was calculated as $1/(\text{prevalence of the screening model} * \text{sensitivity of the screener})$.

In total, 269 patients completed the screening process across the 3 FASTRAX sites: mean (SD) age of 39.6 (10.5) years; 38 % were male; mean (SD) duration of back pain was 11.5 (11.1) years. Across all sites, 36 patients were diagnosed with axSpA, for a prevalence of 13.4%. Overall SE and SP of the screener's assignment of axSpA risk was 91.7% (95%CI 87.4% to 95.9%) and 75.0% (95%CI 68.3% to 81.7%) (Table 1). NNS was 9 people with chronic back pain to identify one patient with axSpA and ranged from 5 to 19, depending on site.

The FASTRAX study found a NNS of 9 to diagnose one patient with axSpA (range 5-19 by site), substantially lower than estimates based on current population prevalence, indicating an efficient screening pathway.