

# Smoking is Associated with Poor Outcomes and Return to Work Following Opening Wedge High Tibial and Distal Femoral Osteotomy

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## BACKGROUND

- High Tibial Osteotomy (HTO) and Distal Femoral Osteotomy (DFO) are well-established treatments for coronal plane knee malalignment and unicompartmental osteoarthritis
- Tobacco use has been linked to postoperative complications, but its effects on functional recovery and PROs in this population are poorly characterized
- This study evaluates the impact of smoking status and quantity on long-term patient-reported outcomes (PROs) and return to work/sport following HTO or DFO

## OBJECTIVE

To assess the effects of tobacco use analyzed as both a dichotomous and continuous variable on postoperative functional outcomes and return to work/sports in patients undergoing HTO or DFO

## METHODS

- Design: Retrospective cohort study
- Outcomes: PROs: Tegner, IKDC, Lysholm, VAS Satisfaction, VAS Pain, KOOS, Return to Work (RTW), Return to Sport (RTS)
- Analysis: independent t-tests, chi-square, and linear regression (P < 0.05)

Cohort Data			
Test:	P Value	Smoking Cohort	Non-Smoking
Tegner	0.04	3.70 ± 2.01	4.62 ± 2.10
IKDC	0.034	57.53 ± 20.58	66.54 ± 20.49
Lysholm	0.126	67.18 ± 21.26	74.52 ± 23.81
KOOS	0.528	61.45 ± 24.65	64.95 ± 27.95
VAS Satisfaction Score	0.023	65.32 ± 39.35	79.77 ± 29.32
VAS Pain Score	0.214	34.21 ± 25.07	27.87 ± 24.79
Return to Work (%)	0.024	63.3%	84.1%
Return to Sport (%)	0.589	52.4%	45.5%
Continuous Variable Data			
Test:		P Value	
Tegner		0.019	
IKDC		0.006	
Lysholm		0.032	
KOOS Total		0.25	
VAS Satisfaction Score		0.004	
VAS Pain Score		0.085	

Table 1: Smoking Versus Patient Reported Outcomes

## RESULTS

- Cohort: 170 patients (HTO: 71.76%; DFO: 28.24%)
- Follow-up: Median 5.41 years (IQR: 3.61–7.83)
- Smoking status breakdown:
  - Smokers: 46 (27%)
  - Non-smokers: 124 (73%)
- Tobacco consumption was significantly associated with:
  - ↓ Tegner
  - ↓ IKDC
  - ↓ Lysholm
  - ↓ VAS Satisfaction
  - ↓ Return to Work

## CONCLUSIONS

- Smoking is significantly associated with worse PROs and a lower likelihood of return to work after HTO/DFO
- There is a dose-dependent relationship, with greater tobacco use correlating with progressively poorer outcomes
- These findings support the importance of preoperative smoking cessation to optimize recovery, function, and work reintegration following coronal plane osteotomy