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# Vertebral Fractures in Ireland: A sub-analysis of the DXA HIP Project

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Ireland has one of the highest rates of hip fracture in the world but data on vertebral fractures (VF) are limited. In this study we examined the prevalence of VF and associated major risk factors, using a sample of subjects who underwent vertebral fracture assessment (VFA) performed on 2 dual-energy X-ray absorptiometry (DXA) machines.



1296

subjects



40+

years old



254

men



1042

women

62%

prior fractures

-1.4

mean spine T-score

15.4%

mean FRAX MOF

70

mean age

-1.2

mean total hip T-score

4.8%

mean FRAX Hip

Table 1. Prevalence of Vertebral Fracture by Age and Gender

Prevalence: % (N)	Age					P value <sup>b</sup>
	40-49	50-59	60-69	70-79	≥ 80	
All	11.5% (6)	16.0% (25)	16.9% (67)	22.9% (99)	33.2% (86)	
Female	3.2% (1)	16.3% (20)	16.3% (53)	22.3% (79)	34.1% (71)	<0.001
Male	23.8% (5)	15.2% (5)	19.4% (14)	26.0% (20)	29.4% (15)	0.175
P value <sup>a</sup>	0.034	1	0.639	0.579	0.634	

<sup>a</sup> Comparison between genders within age groups using t test

<sup>b</sup> Comparison within gender by age groups using ANCOVA

Table 2. Comparison of Subjects Stratified by Presence of VF

Variable	With VF (N=283)	Without VF (N=1013)	P value
Height (cm)	160.39 ± 8.85 <sup>a</sup>	161.84 ± 9.36	0.016
Weight (kg)	69.17 ± 15.37	72.22 ± 16.05	0.004
BMI (kg/m <sup>2</sup> )	26.84 ± 5.36	27.47 ± 5.46	0.086
Prior Fracture	240 (84.8%)	565 (55.8%)	<0.001
Osteoporosis Treatment	147 (51.9%)	313 (30.9%)	<0.001
Corticosteroid Use	45 (15.9%)	267 (26.4%)	<0.001
Family History	53 (18.7%)	197 (19.5%)	0.853
Height Loss	46 (16.3%)	73 (7.3%)	<0.001
Rheumatoid Arthritis	40 (14.1%)	147 (14.5%)	0.949
Secondary Osteoporosis	91 (32.2%)	440 (43.4%)	<0.001
Smoking	33 (11.6%)	87 (8.6%)	0.144
Spine T-score	-1.88 ± 1.51	-1.31 ± 1.51	<0.001
Femur Neck T-score	-1.89 ± 0.94	-1.43 ± 0.95	<0.001
Total Hip T-score	-1.72 ± 1.13	-1.08 ± 1.17	<0.001
Lowest T-score ≤ -2.5	122 (43.1%)	287 (28.3%)	<0.001
FRAX MOF (%)	19.3 ± 9.3	14.3 ± 8.0	<0.001
FRAX Hip (%)	7.0 ± 6.9	4.2 ± 4.6	<0.001

<sup>a</sup> Value presented using mean ± standard deviation or number (percentage)

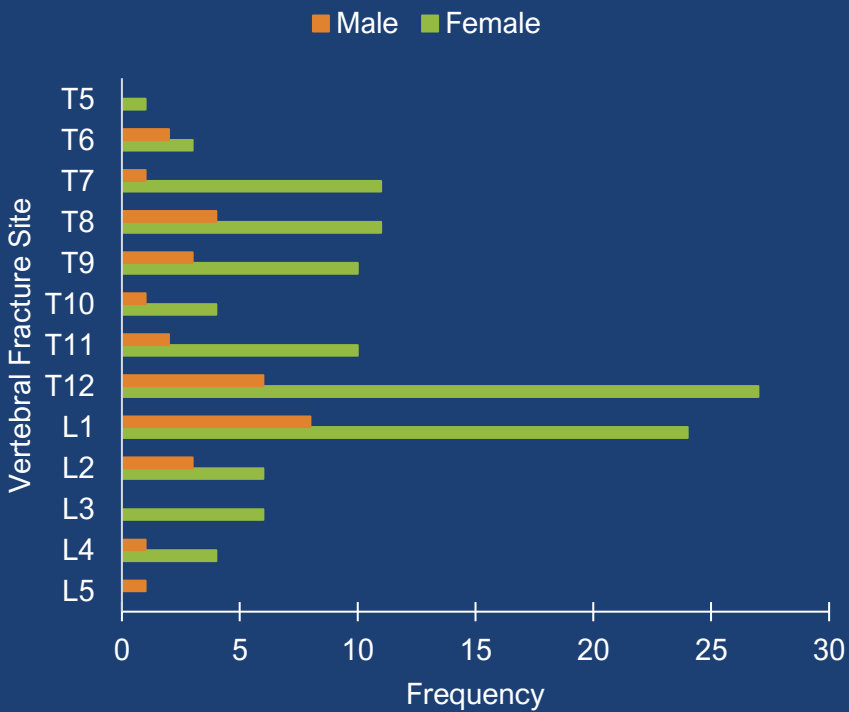


Figure 1. VF Sites of Study Subjects with 1 Fracture Site



In this study, we show that VF are common in high risk Irish adults, many of whom are unaware of their presence or who do not meet a DXA threshold for osteoporosis. Careful consideration should be given to performing VFA scans in high risk populations such as this.

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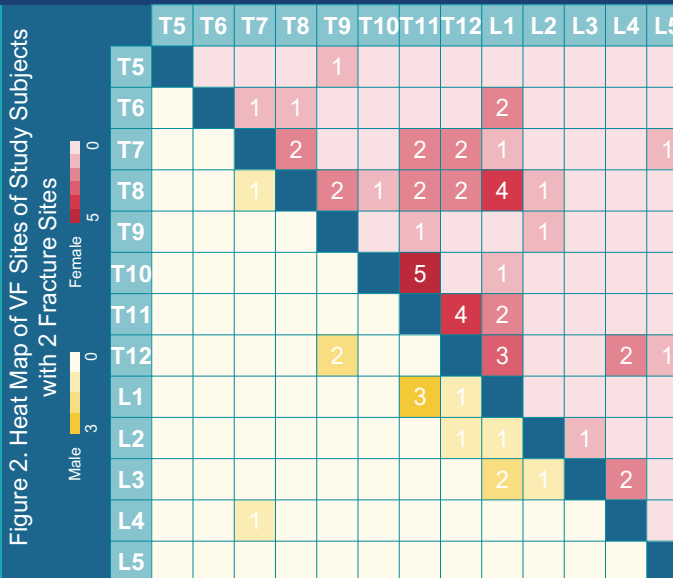


Figure 2. Heat Map of VF Sites of Study Subjects with 2 Fracture Sites