

The diagnosis of osteoporosis can be anticipated, before the first fracture, thanks to the analysis of risk factors and the measurement of BMD, however many patients at risk are not detected and many fractures are not explained. This is where the FRAX tool has an interest. We do not have an age appropriate FRAX in Algeria. TBS which reflects the structural state of bone microarchitecture can be of great help, hence the usefulness of a national curve. This is a cross-sectional study carried out from May to August 2019 in two Douéa and CHU centers in Tizi Ouzou in women aged 20 y and over. At least 35 subjects per decade by central agency in order to establish a national curve for TBS.

Noninclusion criteria are early menopause, surgical menopause, osteoporotic fracture, osteoporosis treatment, cortisone treatment, treatment with aromatase inhibitors, diabetes, hyperthyroidism, hyperparathyroidism, lumbar scoliosis and intervention on the lumbar spine.

Results: 427 women were recruited, aged on average 50.9 ± 16.03 y

Average BMD at spine (L1-L4): 0.884 ± 0.159 g/cm² (0.478-1.446)

The average value of the GER is: 1.259 ± 0.110 (0.772-1.364)

Correlations of TBS with weight, size and duration of menopause is significant

The values obtained for TBS (L1-L4) decreased with age from 45 y. The decline in TBS between 45-85 y was on average 13.5%.

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AUTOMATIC OPPORTUNISTIC CT BASED RISK ASSESSMENT OF OSTEOPOROTIC FRACTURE: RESULTS FROM A 48,744 SUBJECT, 5-YEAR RETROSPECTIVE COHORT STUDY

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Methods for identifying patients at high-risk for osteoporotic fractures, including DXA and risk predictors like FRAX, are underutilized. We assessed the feasibility of automatic opportunistic fracture risk evaluation based on routine abdomen or chest computed tomography (CT) scans. A CT-based predictor was created using three automatically generated bone imaging biomarkers (vertebral compression fractures, simulated DXA T-scores, and lumbar trabecular density) and CT metadata of age and sex. A cohort of 48,227 individuals (51.8% women) aged 50-90 with available CTs prior to 2012 (index-date) were assessed for 5-y fracture risk using FRAX with no BMD input (FRAXnb) and the CT-based predictor. Predictions were compared to outcomes of major osteoporotic fractures (MOF) and hip fractures during 2012-2017 (follow-up period). Compared to FRAXnb, the MOF CT-based predictor presented better area under the receiver-operating-characteristic curve (AUC), sensitivity and positive predictive value (PPV) (+1.9%, +2.4% and +0.7%, respectively). The AUC, sensitivity, and PPV measures of the hip fracture CT-based predictor were noninferior to FRAXnb at a noninferiority margin of 1%. When FRAXnb inputs are not available, the initial evaluation of fracture risk can be done completely automatically based on a single abdomen or chest CT, which is often available for screening candidates.

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SENIOR PHYSICAL ACTIVITY CONTESTS IN NURSING HOMES: A FEASIBILITY STUDY

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Objective: Competition has been shown to improve motivation and physical performance in young people. This method has been rarely studied in older people. Our primary objective was to evaluate the feasibility of senior physical activity (PA) contests between two nursing homes. Our secondary objectives were to assess changes in the motivational level and physical performance of the residents over time.

Methods: Residents from two Belgian nursing homes were invited to participate in PA contests. A pretest and three contest sessions were organized over a period of 3 months. The activities proposed were body balance, gait speed, sit-to-stand performance, arm curl and address tests. Feasibility was measured by contest session adherence (expected score >80%), difficulty scores (expected score <40%) and appreciation scores (expected score >80%). Motivational questionnaires were administered: the Behavioral Regulation in Exercise Questionnaire-2 (BREQ-2) (assessing amotivation, introjected regulation, identified regulation, intrinsic motivation and external motivation) and the Abbreviated Perceived Motivational Climate in Exercise Questionnaire (A-PMCEQ) (assessing ego- and task-involving climates). Friedman's analysis of variance was performed to evaluate the changes in physical performance and motivational levels.

Results: Of the 24 participants, 7 did not complete all sessions because of medical or personal reasons not related to the study. During the 3 sessions, the adherence was 86%, the mean difficulty score was 30.8% and the satisfaction score was 87%. After three sessions, residents experienced a significant decrease in amotivation ($p=0.03$), external motivation ($p=0.03$) and ego-involving climate ($p=0.02$) and a significant improvement in gait speed ($p<0.001$), sit-to-stand performance ($p<0.001$) and arm curl scores ($p<0.001$).

Conclusion: In nursing home settings, senior PA contests are feasible and may improve the motivational climate and physical performance.

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MOTIVATIONAL CLIMATE OF GROUP EXERCISE SESSIONS IN NURSING HOMES

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