

Feasibility and Validity of Functional Movement Screen (FMS) in Assessing Postural Control of Operative Firefighters Aged 22-59

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Background

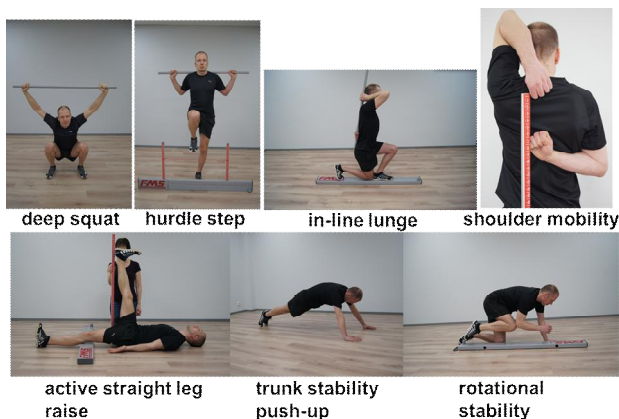
- E.g. roof work, working in moving emergency vehicles and rescuing victims in changeable environments demand good postural and movement control for firefighters (FFs).

Aim

- To examine the feasibility and work- and health-related validity of the FMS assessing postural and movement control as part of the evaluation of the work ability of operative FFs.

Methods

- 97 male FFs in the age groups of 20–29, 30–39, 40–49 and 50–59 years.
- The FMS included following tests:



- The participants performed each test one to three times, and scored 0–3. The final score was the sum of the seven items.
- Work-related dynamic balance was measured by a functional test in which the subjects wore fire-protective clothing and equipment. The modified agility T-test was also performed.



- A questionnaire elicited perceived work ability (WA) and balance (PB) and musculoskeletal pain (MSP) in the last year.

Results

- FMS was significantly related to age ($r=-.64$, $p<.0001$):

Age, years	20-29 (n=23)	30-39 (n=25)	40-49 (n=24)	50-59 (n=25)
FMS, mean (range)	17.1 (11-19)	15.2 (9-21)	14.3 (7-20)	10.6 (7-15)

- Good FMS results adjusted for age were associated significantly with fast performance in the agility T-test ($r=-.23$, $p=.023$) and almost significantly connected with efficient performance in the dynamic balance test ($r=-.19$, $p=.064$).

The subjects with **FMS ≤ 14** were at:

2.9- and 3.1-fold risks (95% CIs 1.0-8.4 and 1.2-8.0) **for decreased WA and MSP** in 1-7 sites compared to the subjects with FMS > 14.

Conclusions

- The FMS was suitable for FFs of different ages, and took a reasonable amount of time performed by a well-qualified tester.
- Our results support the feasibility, work- and health-related validity of the use of FMS among operative FFs during their periodic health examinations.
- A longitudinal study is needed to evaluate the predictive value of FMS in respect to WA, MSP and injuries.