



Evaluation of physical functional capacities according to occupational exposures encountered during the professional career in a construction sector

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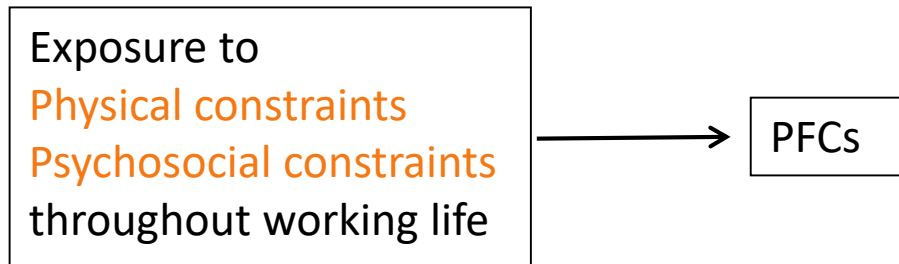
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Context

- Construction sector: strong physical and psychosocial constraints with the risk of damage to the musculoskeletal disorders
- Maintaining the work capacities of workers:
 - reducing work demands
 - maintaining their physical functional capacities (PFCs).

Objectives

- Increase knowledge on PFCs according to the occupational exposures encountered during the professional career



- Identify PFC tests related to certain occupational exposures: identify situations at risk and prevent professional wear and tear

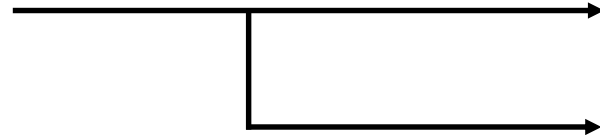
Methods

Collaboration with the prevention and occupational health service of the construction sector in east of France

Workers selection

Man between 20 and 50 years old with a particular professional background:

Workers having had a 1st job with **heavy** physical workload



Workers with a current job with **heavy** physical workload

Workers with a current job with **low** physical workload

Data collected

- Retrospective evaluation with questionnaires of 9 physical constraints (work intensity, manual handling, repetitive gesture, grip force, postures, vibrations, walking, shift work)
- For the current job, evaluation of psychosocial constraints using the Karasek questionnaire and specific questions on the possibilities of doing quality work

Methods Data collected

12 physical functional capacities tests



Maximum & Endurance strength
(grip, shoulder abduction)



Dexterity



Balance



Thigh endurance
strength



Cardiorespiratory capacity



UL motor coordination

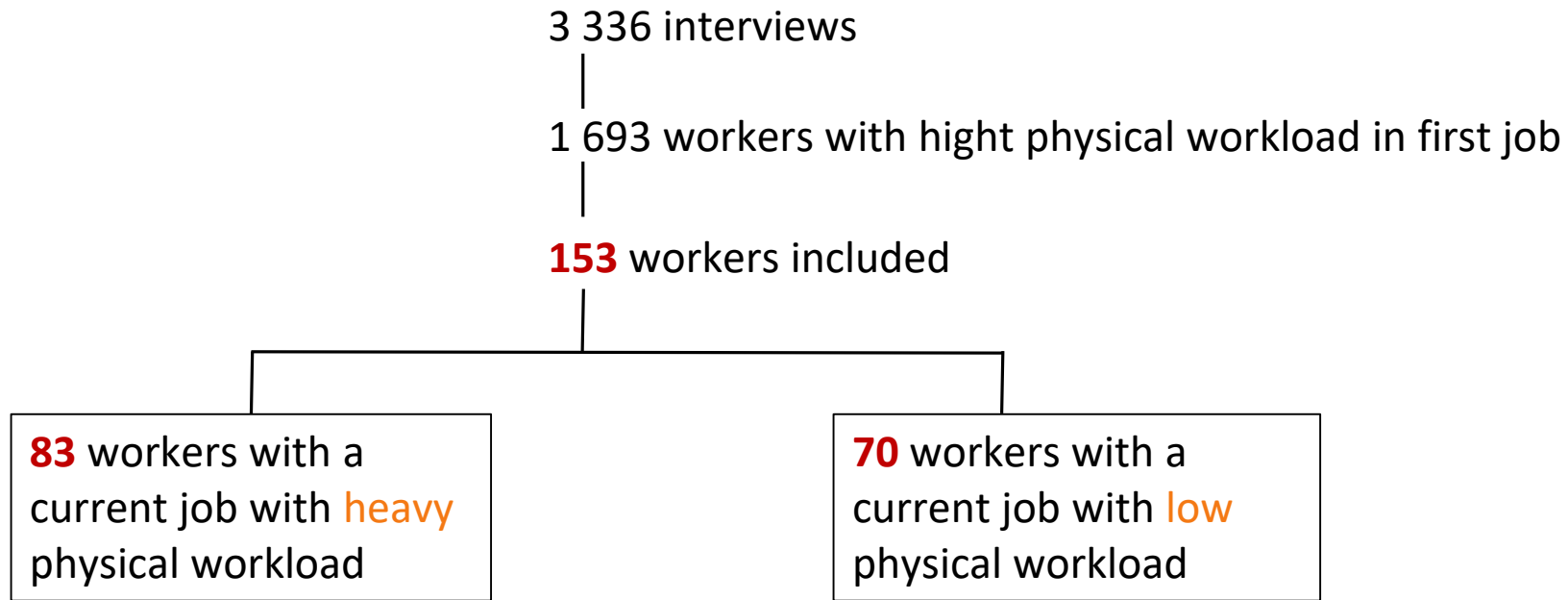


Flexibility (back)



Flexibility
(shoulder int. rot/ext. rot)

Results



Age range (years)	< 30	30 - 39	40 - 50
n = 153	43	50	60

Results

Physical constraints – PFCs

Squatting – weak thigh endurance

Whole body vibration – weak UL coordination

Grip effort – high maximum grip strength

Psychosocial constraints – PFCs

High demand – weak maximum shoulder strength

Lack of recognition – weak fitness

5 tests seem relevant to early warn about a decline of PFCs in connection with certain occupational exposures

Conclusion

- Highlights the impact of physical and psychosocial exposures during the professional career on the physical functional capacities of construction workers
- Offers physical functional capacities tests to occupational health teams in the construction sector in order to be alerted early to a work situation at risk

Perspective

An extension of this study over 5 additional years to:

- Check the validity of the associations obtained 5 years later
- Observe the evolution of physical functional capacities according to the constraints encountered over a period of 5 years

Publications:

- Références en Santé au Travail (RST 168), TF 292, 2021
- Arch. Mal. Prof. Env., 28 (5), 2020, 516
- Prévention BTP J., October 2021
- Préventica J., November 2021

Presentation:

- French National of Occup. Health Conf., June 2022



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