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**Title:** Occupational exposure and lung function in a Dutch general population cohort

Ms. Kim 18746 de Jong k.de.jong@umcg.nl <sup>1,2</sup>, Prof. Dr H. Marike 18747 Boezen h.m.boezen@umcg.nl <sup>1,2</sup>, Prof. Dr Hans 18748 Kromhout h.kromhout@uu.nl <sup>3</sup>, Dr. Roel 18749 Vermeulen r.c.h.vermeulen@uu.nl <sup>3</sup>, Prof. Dr Dirkje S. 18750 Postma d.s.postma@umcg.nl MD <sup>4,2</sup> and Dr. Judith M. 18752 Vonk j.m.vonk@umcg.nl <sup>1,2</sup>. <sup>1</sup> Department of Epidemiology, University of Groningen, University Medical Center Groningen, Netherlands ; <sup>2</sup> GRIAC Research institute, University of Groningen, University Medical Center Groningen, Netherlands ; <sup>3</sup> Division of Environmental Epidemiology, Institute for Risk Assessment Sciences (IRAS), University of Utrecht, Netherlands and <sup>4</sup> Department of Pulmonary Diseases, University of Groningen, University Medical Center Groningen, Netherlands .

**Body:** Background: Occupational exposure to vapors, gases, dusts, fumes (VGDF) has been associated with lower lung function, with more pronounced effects in smokers. Less is known about occupational exposure to pesticides, solvents and heavy metals in relation to lung function. We assessed whether these agents negatively affect lung function in a general population cohort. Methods: We included 8,128 subjects aged 18-89 from the LifeLines cohort study (43% males). Occupational exposures (no/low/high) for current or last held job were estimated with the ALOHA+ Job Exposure Matrix. Associations between exposure and FEV1 were assessed using linear regression, adjusted for sex, age, height, weight, and smoking. Additionally we stratified for gender and smoking status. Results: Males were more often exposed than females. VGDF and pesticides had a negative dose-response effect on FEV1 (table 1). Effects were more pronounced in males and ever smokers. Conclusion: This study confirmed current knowledge on the detrimental effects of occupational VGDF exposure on lung function, especially in males and ever smokers. Additionally we show negative effects of pesticide exposure on lung function.

Associations between exposures and FEV1 (ml) (reference = no exposure)

Exposure	b (95% CI)	
	Low	High
Biological dust	-15 (-40;10)	-85 (141;-29)
Mineral dust	-40 (-70;-9)	-102 (-155;-49)
Gases/Fumes	-21 (-44;2)	-65 (-122;-17)
VGDF	-8 (-32;15)	-94 (-131;-58)
Pesticides	-90 (-154;-25)	-227 (-346;-108)

Herbicides	-128 (-235;-22)	-413 (-640;-185)
Insecticides	-93 (-164;-22)	-227 (-345;-108)
Aromatic solvents	6 (-34;46)	-55 (-172;61)
Chlorinated solvents	15 (-31;62)	-26 (-110;58)
Other solvents	18 (-9;44)	-40 (-121;41)
Metals	13 (-39;65)	-73 (-146;0)