workplace health promotion program. Information on type of pension until December 2019 was obtained from the Finnish Centre for Pension and was dichotomized as normal vs. disability retirement. Work-related information of the participants was obtained from the questionnaire.

Results: In total 51 employees (19.2%) retired on disability pension (24% in controls compared to 14% in the senior program). In multivariable model, work ability was associated with disability pension, so that those with good work ability had 70% lower risk of disability pension as compared to those with poor work ability. Multisite pain was associated with increased risk of disability pension in a crude model.

Conclusions: Workplace interventions targeted at older workers can be useful in reducing accessing the disability pension.

Sp2-3

Disability free life expectancy and working conditions

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Introduction: Increasing life expectancy does not always go along with an increasing healthy life expectancy (HLE). The life expectancy without and with disability by occupational exposure helps to gain insight into health inequalities in later life. The objective of this study was to examine differences in life expectancy without and with disability by occupational exposures.

Materials and Methods: Longitudinal data on disability, and physical and psychosocial work demands and resources of 2,513 (former) workers aged ≥55 years participating in the Longitudinal Aging Study Amsterdam between 1992 and 2016 were used. Life expectancies without and with disability by occupational exposures were calculated using multistate survival models.

Results: Women aged 55 years with high physical work demands could expect to live fewer years without disability than those with low exposure (1.02-1.57 years), whereas there was no difference for men. Men and women with high psychosocial demands and resources at work had a longer life expectancy without disability than those with low exposure (1.19-2.14 years). Life expectancy with disability did not significantly differ across occupational exposures.

Conclusions: Workplace interventions targeted at older workers can be useful in reducing accessing the disability pension.

Sp2-4

Future health prior to state pension age – explorations for the Netherlands 2040

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Introduction: In many Western countries, the state pension age is being raised to stimulate the extension of working lives. In the Netherlands, the state pension age is expected to be raised to 68 years in 2040. It is not yet well understood whether health of the 60+ permits this increase. In this study, the future health of Dutch adults aged 60 to 68 is explored up to 2040.

Materials and Methods: Data are from the Dutch Health Interview Survey 1990-2017 (N10,000 yearly) and the Dutch Public Health Monitor 2016 (N~205,151). Health is operationalized using combined scores of self-reported health and limitations in mobility, hearing or seeing. Categories are: good, moderate and poor health. Based on historical health trends, two scenarios are explored that are likely for the Dutch situation: a stable health trend (neither improving nor declining) and an improving health trend.

Results: In 2040, the health distribution among men aged 60-68 is estimated to be 63-71% in good, 17-28% in moderate and 9-12% in poor health. Among women this is estimated to be 64-69%, 17-24% and 12-14%, respectively.

Conclusions: This study's explorations suggest that the majority of the older working-age population will be in good health and thus should be capable to extend their working lives. However, also a substantial share of people will be in moderate or poor health and thus may have difficulty continuing working. Policy aiming at sustainable employability will therefore remain important, even in the case of the most favourable health trends.

Special Session 3 Immunotoxicology in workplaces: Prevention, Early detection and Treatment

Chair: Claudia Petrarcha and Hiroo Wada

Session introduction

Particulate/fibrous respirable (nano)materials in occupational settings, either purposely manufactured or occasionally aerogenerated, represent potential elicitors of immuno-mediated and neoplastic diseases. Monitoring of non-reported effects, even below TLV-TWA limits, and molecular biomarkers of exposure and early damage might improve risk assessment and workers protection. Learning outcomes include clues for better risk assessment, prevention and biomonitoring through evaluation of environmental nanoparticles and measurement of new molecular biomarkers in workers.

Sp3-1

Asbestos-caused key events of altered expression of gene in mesothelioma patients

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Introduction: Asbestos-related disease is a global problem, where malignant mesothelioma is characteristic. Our previous studies clarified that asbestos exposure causes altered characteristics in immune cells, some of which were also confirmed in mesothelioma patients. Additionally, our recent study found that long-term