

## Associations between antenatal organophosphate pesticide exposure and pregnancy outcomes: The Japan Environment and Children's Study (JECS)

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To examine the association between antenatal exposure to organophosphate (OP) pesticides, measured using urinary dialkyl phosphate (DAP) metabolite concentrations, and pregnancy outcomes in Japan's large nationwide birth cohort. We included 4444 pregnant women from the Japan Environment and Children's Study (JECS). Urinary concentrations of six DAP metabolites during the first trimester were measured. Multiple linear and logistic regression analyses were performed to examine the associations of DAP metabolites with gestational age at birth, birth weight, preterm birth (PTB), low birth weight (LBW), and small-for-gestational-age (SGA), adjusting for potential confounders. Non-linear associations were found between higher dimethylphosphate (DMP) and dimethylthiophosphate (DMTP) concentrations and the lower risk of PTB. A 10-fold increase in DMP and diethylphosphate (DEP) concentrations was associated with larger gestational weeks at birth: adjusted  $\beta$  =0.13 (95 %CI, 0.02–0.23) and 0.14 (95 %CI, 0.03–0.25), respectively. Higher DMP concentration was associated with a lower risk of LBW. These associations were not significant after applying the Bonferroni correction. The associations between DAP metabolites and gestational week were more evident among mothers who delivered male infants, mothers with higher education, higher household income, and higher fruit consumption. No metabolites showed associations with birth weight. Exposure to higher concentrations of OPs, measured by urinary DAP metabolites, had no robust association with gestational age at birth or birth weight. Further studies are warranted to investigate the effect of OP exposure on pregnancy outcomes.

## Descriptive epidemiology of supporting favorites ‘Oshikatsu’ in Japan: FAV-WELL Study

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**Background :** ‘Oshikatsu’ refers to activities that express support for one's favorite people or things. Oshikatsu is expected to play significant roles in people's health conditions, including wellbeing and mental health. We aimed to describe the characteristics of Oshikatsu in Japan.

**Methods :** We conducted nationwide descriptive study from March to April in 2025 (FAV-WELL Study). To obtain a representative sample of the Japanese general population, we performed the quota sampling method to ensure that gender, age group, and prefecture proportions of the people matched the results of the national census. The main measurement was the activities of enthusiastically supporting someone or something, Oshikatsu. This was measured by the response to the question, ‘Do you currently have a “Oshi”? (Are you currently supporting someone or something?)’ using three items: ‘Yes’, ‘I did in the past but not now,’ and ‘No, never.’ We defined participants who answered ‘Yes’ as Oshikatsu group and the others as non-Oshikatsu group. We also measured detailed information about Oshikatsu and sociodemographic characteristics of the participants. This study was approved by the Ethics Committee of Kyoto University Graduate School and Faculty of Medicine (R4885).

**Results :** In a total of 37,799 participants, women were 19,011 (50.3%) and men were 18,788 (49.7%). Among the participants, 14,187 (37.5%) enjoyed Oshikatsu: 8,070 (56.9%) women and 6,117 (43.1%) men. By age group, whilst the proportion of the Oshikatsu group decreased with increasing age, about 30% of those aged over 60 years enjoyed Oshikatsu. The most common subjects of Oshikatsu were Japanese musicians and singers, followed by Japanese idols and manga/anime characters. Among the Oshikatsu group, 4,751 (33.5%) enjoyed Oshikatsu for over 10 years.

**Discussion :** This study found that over 30% of the general population in Japan enjoy Oshikatsu. We plan to analyze the association of Oshikatsu with people's health conditions.

## Social Participation in Older Adults with Rheumatoid Arthritis Before and After COVID-19 Pandemic

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**Background :** While reduced social participation among older adults during the COVID-19 pandemic has been reported, its impact on those with rheumatoid arthritis (RA) remains unclear. This study examined changes in social participation among older adults with RA before and after the pandemic using large-scale population data.

**Methods :** We conducted a repeated cross-sectional study using data from the Japan Gerontological Evaluation Study (JAGES) collected in 2019 and 2022. Participants were community-dwelling adults aged  $\geq 65$  years without long-term care certification. Individuals who self-reported "currently receiving treatment for RA" were classified as the RA group, and those reporting "never diagnosed with RA" as the non-RA group. The primary outcome was social participation, defined as participating at least once per year in any of eight types of community organizations (binary variable). Missing data were imputed using multiple imputation, and multivariable logistic regression was used to assess RA  $\times$  survey year (2019/2022) on social participation, adjusting for age, sex, education, living alone, ADL, marital status, income, and residential area. Subgroup analyses by demographic and socioeconomic factors were also conducted.

**Results :** We analyzed 34,744 participants (2019: 433 RA, 16,958 non-RA; 2022: 472 RA, 16,881 non-RA). The proportion of participants with social participation decreased from 2019 to 2022 in both groups (RA: 72.3% to 58.4%; non-RA: 73.6% to 66.6%). Social participation was consistently lower in the RA group, and the gap widened over time (RA  $\times$  survey year: OR = 0.72, 95% CI = 0.53–0.98,  $p = 0.039$ ). Subgroup analyses showed greater declines in social participation among RA patients who were aged  $\geq 75$ , lived alone, or lived in non-urban areas.

**Conclusions :** Older adults with RA showed a greater decline in social participation after the pandemic, especially among socially vulnerable subgroups, indicating a n

## Determinants of Presenteeism Among Physicians and Nurses in Mongolia: A Multi-Center Study

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**Background :** Presenteeism, working despite poor physical or mental health, is a critical yet underexamined occupational health issue that jeopardizes both healthcare worker well-being and patient safety, especially in low-resource settings. Despite global emphasis on workplace well-being, empirical data on presenteeism remain scarce. This study assessed the prevalence and determinants of presenteeism among doctors and nurses in Mongolia.

**Methods :** An explanatory sequential mixed-methods design was used. In the quantitative phase, a cross-sectional online survey was conducted with 465 healthcare professionals from three referral hospitals. Measures included the Work Functioning Impairment Scale (WFun), Brief Job Stress Questionnaire, and contextual variables. Descriptive statistics and logistic regression were used to identify key factors. In the qualitative phase, semi-structured interviews with 14 professionals explored contextual drivers. After thematic analysis, findings were integrated through triangulation.

**Results :** Presenteeism prevalence was 64.5%, notably higher among nurses and mid-career professionals. Significant predictors included high workload (OR = 2.05), psycho-physical health complaints (OR = 1.91), lack of a superior (OR = 2.17), and coworker support (OR = 1.88), while over 10 years of work experience was protective (OR = 0.58). Qualitative findings identified 5 themes, highlighting hierarchical work culture, moral obligation, and weak leadership support. Finally, integrated analysis revealed that presenteeism is shaped by the organizational and sociocultural drivers.

**Conclusions :** Presenteeism in Mongolian healthcare is driven primarily by psychosocial and organizational dynamics rather than personal traits. Addressing it requires leadership reform, a supportive workplace culture, and targeted policies. These findings support the decent work and occupational health agenda. Keywords: Presenteeism, Healthcare worker, Psychosocial factors

## Prediction of creatinine excretion in urine of schoolchildren in Japan and its application

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Urinary creatinine (Cre) concentration is commonly utilized to adjust for measurements in evaluations of chemical exposure and nutrient intake. Because Cre excretion differs according to sex, age, ethnicity, and anthropometric factors like height and weight, a method for estimating daily Cre excretion in Japanese schoolchildren is required. Our aim is to propose a predictive equation for individual one-day Cre excretion in Japanese children. We analyzed urine samples collected from 113 boys and 91 girls (aged 6–12 years) who were free from diseases affecting Cre levels in Aichi Prefecture, Japan. Then we compared measured one-day excreted amounts of Cre and the values that were obtained using previously reported equations or a fixed value. Subsequently, we developed a new equation using machine learning for feature selection and multiple regression analyses. Additionally, we compared the estimated one-day sodium excretion value calculated using the equation and the measured value. Out of the 11 methods to predict Cre excretion, 10 showed fixed errors, proportional errors, or both in Bland–Altman analyses. Through machine learning, a model using sex, age, and body surface area as features yielded the most accurate prediction. Multiple regression analysis demonstrated that the most accurate prediction was one using sex, age, and body surface area as independent variables with or without the first void Cre concentration divided by urination duration from last night urination to first void. Using our newly developed Cre equation, we further estimated the one-day sodium excretion from first-void urine, and found that it exhibited a proportional error but not a fixed error upon comparison with the measured value. This study demonstrates that our new equation for estimation of one-day Cre excretion is most appropriate for Japanese schoolchildren. To estimate one-day sodium excretion using the equation, however, further development of the method is necessary.