



## **Physical activity assessment for use in population-based international osteoarthritis cohort studies**

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**Purpose:** Physical Activity (PA) is increasingly recognised as an important factor within studies of osteoarthritis. However, subjective methods used to assess PA are varied and have primarily been developed for use within other disease areas such as cardiovascular disease, which creates difficulties when comparing and interpreting PA data across studies.

**Methods:** An international collaboration of population-based osteoarthritis cohorts was established to produce an Individual Patient Data (IPD) meta-analysis on the association of PA with osteoarthritis. As part of this research, an expert consensus study was carried out using a multidisciplinary, geographically diverse committee selected on the basis of individual expertise in physical activity, exercise medicine and osteoarthritis. The committee examined existing PA assessments used in osteoarthritis studies for their level of detail in addition to their comparability between cohorts. PA questionnaires and PA-related questions were assessed in 17 international cohort studies.

**Results:** Experts came to an agreement on a number of key issues: 1) The use of Metabolic Equivalent of Task (MET) minutes per week as a key method for harmonising PA variables between cohorts (requiring both intensity and time per week of an activity) 2) The determination of methods for treating missing components of MET minutes per week calculation; Instead of using a standard 30 minutes when duration of activity is missing, a value will be produced from comparable activities within a representative cohort 3) Exclusion of the domain of 'occupation' from total MET mins/wk. This was due both to the overestimation of MET mins/wk when including occupation as a PA domain, as well as the known risk relationship between manual labour and osteoarthritis 4) The need for a specific measure of 'joint loading' of an activity in addition to intensity and time, in studies of bone diseases such as osteoarthritis

**Conclusion:** This consensus study has provided a method to classify and harmonize PA in existing epidemiological osteoarthritis cohorts. It also provides minimum requirements for future studies intending to include subjective PA measures.