

## User's Guide for the Measure of Intermittent and Constant Osteoarthritis Pain: ICOAP Version 7

### **Background**

To enhance understanding of the osteoarthritis (OA) pain experience, we conducted focus groups of people living with hip and knee OA under the auspices of an OARSI/OMERACT initiative<sup>1,2</sup>.

Participants identified two distinct types of OA pain – pain that was intermittent and generally severe or intense, and a more persistent ‘background’ pain or aching. Participants also told us that intermittent knee pain might occur predictably ‘after a trigger’, e.g. physical activity, or unpredictably ‘without warning’. While they considered all intense OA pain distressing, intense unpredictable pain was felt to be most distressing. They could plan for and pre-emptively manage predictable knee pain, but pain that occurred without warning left them exhausted and was a barrier to activity, particularly valuing social activities. Based on these findings, the Intermittent and Constant Osteoarthritis Pain measure (ICOAP) was developed to assess pain (including aching and discomfort) in individuals with hip or knee osteoarthritis. *ICOAP assesses the impact of hip/knee pain on behaviour and feelings as opposed to function.*

ICOAP is comprised of two subscales and two standalone intermittent pain predictability items to be completed in those reporting any intermittent pain.

The 6-item **intermittent pain subscale** assesses the impact of “*pain that comes and goes*”. By this, we mean hip/knee pain that is not there all the time.

For those who report any intermittent pain, there are two additional standalone **predictability items**, which assess the frequencies with which intermittent pain comes on *after a trigger* (is predictable) versus *without warning* (is unpredictable). Examples of triggers for predictable pain are activities such as walking or stair climbing; predictable intermittent pain is generally relieved by rest. Unpredictable pain occurs spontaneously, without warning, then resolves completely.

The 5-item **constant pain subscale** assesses the impact of “*pain that is there most or all the time*”, although it may vary in intensity. Constant pain includes pain, aching or discomfort experienced consistently.

### **Measurement Properties**

The reliability, validity and responsiveness of the ICOAP intermittent and constant pain subscales and predictability items have been demonstrated<sup>3-5</sup>. ICOAP has been cross-culturally translated and validated into more than a dozen languages<sup>6</sup>. Please visit the [OARSI website](#) for the list of available translations.

### **Administration Instructions**

This tool may be interviewer administered, in person or by telephone, completed online, e.g., using REDCap remotely or using a hand-held device, or self-completed in a paper format.

It takes less than 10 minutes to complete.

Participants should complete the ICOAP for a single hip or knee joint based on their pain experience over the **past week** (i.e. past 7-day period). Participants should respond to all questions for this joint. If more than one joint is troublesome, ICOAP may be completed separately for each troublesome joint.

Participants are asked to report on their recent pain experience **taking into consideration any medications that they may be using** (i.e. participant should provide level of pain with the use of medications). For example, if a participant's pain intensity would be "severe" but they take NSAIDs every day that reduce the intensity of pain to "mild", they should respond "mild".

All questions are mandatory. If a participant does not have one type of pain, they are asked to check the response option indicating that they do not have that type of pain.

### **Scoring Guidelines**

All items are scored from 0 to 4 with response options either 0 = not at all/I don't have <constant pain/pain that comes and goes>, 1 = mildly, 2 = moderately, 3 = severely, or 4 = extremely, or as 0 = never/I don't have <constant pain/pain that comes and goes>, 1 = rarely, 2 = sometimes, 3 = often, or 4 = very often.

#### **Intermittent pain subscale:**

To calculate the intermittent pain subscale, sum the 6 item scores. If the participant reported they do not have pain that comes and goes, they should be assigned an intermittent pain score of 0. This score can be transformed to a score out of 100 using the following formula: (Total pain score / 24) x 100

#### **Predictability of intermittent pain:**

Each of the two items should be reported as the item score (x / 4) to represent the frequency with which the participant is experiencing intermittent pain predictably and unpredictably.

#### **Constant pain subscale:**

To calculate the constant pain subscale, sum the 5 item scores. As for the intermittent pain subscale, if the participant reports they do not have constant pain, they should be assigned a constant pain subscale score of 0. This score can be transformed to a score out of 100 using the following formula: (Total pain score / 20) x 100

**Missing data:** If there are three or more items missing for either the intermittent or constant subscales, the response is considered invalid. If there are less than 3 items missing, the missing item can be replaced with the mean of the responses to other items within the same subscale.

### **Use of this instrument**

The ICOAP can be used free of charge for research and/or clinical purposes. However, the developers would appreciate knowing who is using this new tool, in which settings/populations and for which purposes.

### **For more information and translated versions of the ICOAP, contact:**

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## **References**

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