

**Measure of Intermittent and  
Constant Osteoarthritis Pain:  
ICOAP**

**User's Guide**

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

### **Background and Measurement Properties**

This 11-item tool is designed to assess pain in individuals with hip or knee osteoarthritis taking into account both constant and intermittent pain experiences. There are two versions of this tool; one to assess pain in the knee joint and another assessing pain in the hip joint.

### **Administration Instructions**

This tool is designed to be interviewer administered, in person or by telephone, and takes less than 10 minutes to complete. The formatting of the questionnaire is user-friendly and thus the measure could also be self-completed by subjects.

Subjects should respond to the questionnaire items based on their *worst/most troublesome hip or knee in the past week* (i.e. past 7-day period). Subjects should respond to all questions for the same joint.

As this tool is intended to be responsive to change in OA pain over time, or with treatment, subjects are asked to report on their recent pain experience *taking into consideration any medications that they may be using* (i.e. subject should provide level of pain with the use of medications). For example, if a subject'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 subject 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.

***Definition of "Constant Pain"***: Constant pain is pain that is there all the time, although it may vary in intensity. Constant pain includes pain, aching or discomfort experienced consistently.

***Definition of "Pain That Comes and Goes"***: Pain that comes and goes is pain that is not there all the time. This includes hip or knee pain that is brought on predictably by a specific activity or movement (such as walking or stair climbing) but is relieved by rest, as well as pain that may spontaneously occur and then resolve completely.

### **Scoring Guidelines**

There are 11 items on the questionnaire. Items are numbered according to the order they appear in the questionnaire.

Items are scored from 0 to 4 as follows:

Items 1, 2, 3, 4, 5, 6, 8, 9, 10, 11

0 = not at all/I don't have <constant pain/pain that comes and goes>

1 = mildly

2 = moderately

3 = severely

4 = extremely

Item 7

0 = never/I don't have <constant pain/pain that comes and goes>

1 = rarely

2 = sometimes

3 = often

4 = very often

**Constant pain subscale:**

To calculate the constant pain subscale, sum the scores for items 1 through 5. If subject did not report constant pain, assign a score of 0. This score can be transformed to a score out of 100 using the following formula:

$$(\text{Total pain score} / 20) \times 100$$

**Intermittent pain subscale:**

To calculate the intermittent pain subscale, sum the scores for items 6 through 11. If subject did not report intermittent pain, assign a score of 0. This score can be transformed to a score out of 100 using the following formula:

$$(\text{Total pain score} / 24) \times 100$$

**Total pain score:**

To calculate the total pain score, sum the constant and intermittent pain subscales.

Maximum total pain score ranges from 0-44.

This score can be transformed to a score out of 100 using the following formula:

$$(\text{Total pain score} / 44) \times 100$$

***Missing data:*** If a mark is placed outside the box, the closest box is used. If two boxes are marked, the item is marked as missing. If there are three or more items missing, 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.

**Validity and Reliability**

To ensure content validity, items on this tool were derived from comments in focus group discussions of the OA pain experience. Test-retest reliability has been assessed in subjects with hip and knee osteoarthritis, aged 40 years and older.

**Cross-cultural Adaptation**

Cross-culture translation and validation has also been conducted. The tool has been translated into the following languages: English (North America and United Kingdom), Spanish (Spain and Mexico), Dutch, German, Norwegian, Italian, Swedish, French (France), Portuguese, Greek, Romanian and Russian.

### **Predictability of Pain**

The unpredictable nature of pain is important to consider when assessing OA pain as people with OA have told us it is an extremely bothersome feature of their symptoms. The predictability of intermittent pain can be assessed by the use of two new supplementary questions (Items 12 and 13 below) administered at the end of the intermittent pain section. *Please note: Further evaluation of the performance of these two items is ongoing. Responses to these two items are NOT included in the current scoring algorithm for intermittent pain.*

#### **12. How often does your knee pain that comes and goes come on without warning?**

<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>
Never	Rarely	Sometimes	Often	Very often

#### **13. How often does your knee pain that comes and goes occur after a specific trigger? Triggers might include specific activities, weather, or joint positions.**

<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>
Never	Rarely	Sometimes	Often	Very often

### **Use of this instrument**

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

### **For more information, contact:**

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