Behavioural and MRI Session Instructions

**1) Behavioral session**

*a) General Instructions [experimenter administers]*

- This is the first out of the two sessions. It will take approximately 60 minutes.
- It will include
    - Instructions
    - Introduction to the equipment and task
    - Demo of the task with few trials of practice (without stimulation)
- Present PIS
- Questions answered
- Consent form
- MRI screening form/questions

*b) Calibration [participant reads, printed separately]*

Before we start the task, we will calibrate the electrical stimulation machine. This means that we will identify your personal 8/10 pain level that will later be used throughout the task. The procedure has 2 steps: 1) In the first part, we will manually find a 1/10 level. This is defined as a level where sensation shifts from being neutral or pleasant to being slightly negative. The sensation should be similar to a pin prick. 2) The second part will be done just before the start of the task and at a few random times during the task. Here, we will try to find your personal 8/10 pain level that will be used throughout the task. This should be a moderately painful sensation rated as '8' on a scale from 0 - 'not painful at all' to 10 - 'very painful'. The 10/10 level would be something for which you would want to stop the task, so the 8/10 level is something slightly lower than that. There will be few re-calibrations throughout the task to ensure that your perception of pain is stable at 8/10. The procedure involves a stimulation being delivered and you rating it on a scale from 1 to 10. The reason we conduct the calibration on several occasions is that people's perception of the stimulus changes over time and we would like to make sure that the 8/10 level is quite stable.

*c) Task description [participant reads, printed separately]*

The task itself will involve going through a series of trials. In the beginning of each trial you will be presented with an image and asked to indicate how likely it is to be followed by pain on this particular trial. There will be several images, not just one, in the entire task, however, only one on a particular trial. In the beginning of the task you will of course have no information about the relationship of the shapes and whether they are followed by pain or not, however, as you go through more and more trials you should be able to identify the likelihood of a particular shape being followed by pain on a given trial. The probability of pain for a particular shape might also change, so you need to keep paying attention all through the task. Try to be as fast and as accurate as possible.

Occasionally, you will be presented with two shapes and asked ‘Which shape would you prefer?’. In those instances, please indicate the shape that you would prefer to occur. This should be the shape that you believe has a lower probability in resulting in pain.

Importantly, you should treat all of the trials as a single continuous run. The occasional events such as breaks, calibrations or preference questions have no impact on the task and are inserted randomly.

*d) Actual session*

- Start demo task and demonstrate, let practice
- Calibrate to 1/10
- Start task - oversee automated calibration
- When done, ask if there are any questions and confirm the 2nd session date

**2) MRI session**

*a) General Instructions*

- This is the second out of the two sessions. It will take approximately 2 hrs.
- It will include
    - Instructions
    - Introduction to the equipment and task
    - Demo of the task with few trials of practice (without stimulation)
    - Doing some questionnaires
    - Screening by radiographer
    - 1/10 calibration just before going to scanner
    - Being put to a scanner
    - Task start (cca 1 hr)
- Present PIS
- Any questions?
- Consent form 2

*b) Calibration [participant reads, printed separately]*

Before we start the task, we will calibrate the electrical stimulation machine. This means that we will identify your personal 8/10 pain level that will later be used throughout the task. The procedure has 2 steps: 1) In the first part, we will manually find a 1/10 level. This is defined as a level where sensation shifts from being neutral or pleasant to being slightly negative. The sensation should be similar to a pin prick. 2) The second part will be done just before the start of the task and at a few random times during the task. Here, we will try to find your personal 8/10 pain level that will be used throughout the task. This should be a moderately painful sensation rated as ‘8’ on a scale from 0 - ‘not painful at all’ to 10 - ‘very painful’. The 10/10 level would be something for which you would want to stop the task, so the 8/10 level

is something slightly lower than that. There will be few re-calibrations throughout the task to ensure that your perception of pain is stable at 8/10. The procedure involves a stimulation being delivered and you rating it on a scale from 1 to 10. The reason we conduct the calibration on several occasions is that people's perception of the stimulus changes over time and we would like to make sure that the 8/10 level is quite stable.

*c) Task description [participant reads, printed separately]*

The task itself will involve going through a series of trials. In the beginning of each trial you will be presented with an image and asked to indicate how likely it is to be followed by pain on this particular trial. There will be several images, not just one, in the entire task, however, only one on a particular trial. In the beginning of the task you will of course have no information about the relationship of the shapes and whether they are followed by pain or not, however, as you go through more and more trials you should be able to identify the likelihood of a particular shape being followed by pain on a given trial. The probability of pain for a particular shape might also change, so you need to keep paying attention all through the task. Try to be as fast and as accurate as possible.

Occasionally, you will be presented with two shapes and asked 'Which shape would you prefer?'. In those instances, please indicate the shape that you would prefer to occur. This should be the shape that you believe has a lower probability in resulting in pain.

Importantly, you should treat all of the trials as a single continuous run. The occasional events such as breaks, calibrations or preference questions have no impact on the task and are inserted randomly.

*d) Actual session*

- Start demo task and demonstrate, let practice
- Questionnaires (15-20 min) and set up in the scanner meanwhile
- Calibrate to 1/10
- Put to scanner
- Run the task
- Check in brakes that everything is going alright
- Questionnaires at the end (cue rating, etc.)