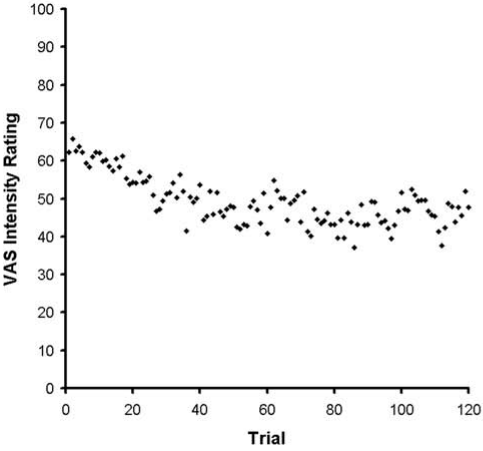
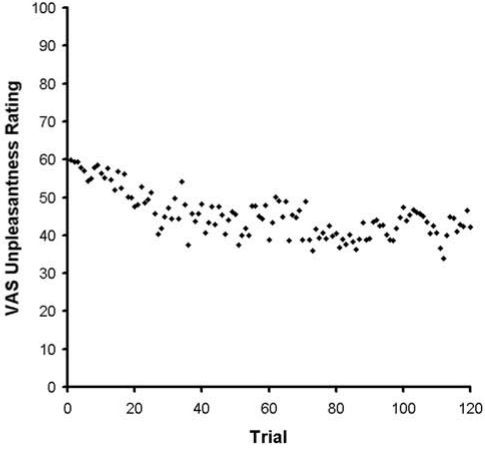

VAS Intensity Rating
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120
Trial


VAS Unpleasantness Rating
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120
Trial

Supplemental Materials

Results involving condition order and temporal effects

Experiment 1

Subjective ratings of pain. There were no main effects of counterbalance group, either for intensity, $F(1, 12) = .21$, or unpleasantness, $F(1, 12) = .05$. There were, however, significant interactions between condition (i.e., hand vs. object) and counterbalance group both for judgments of pain intensity, $F(1,12) = 12.36$, $p < .005$, and unpleasantness, $F(1, 12) = 14.22$, $p < .005$. These effects revealed that pain was higher in whichever condition was administered first, a classic habituation effect. For participants who completed an object block first, pain was reduced in the hand blocks relative to the object blocks (intensity: 48.1 vs. 55.5; unpleasantness: 43.7 vs. 49.2). In contrast, for participants who completed a hand block first, pain was higher in the hand than the object blocks, though by a smaller amount (intensity: 46.0 vs. 45.2; unpleasantness: 43.6 vs. 42.3). Supplemental Figure 1 shows the time-course of intensity (left panel) and unpleasantness (right panel) ratings across the 120 trials of the experiment, collapsing across hand vs. object. These results demonstrate clear habituation effects of laser pain, as reported by previous studies (e.g., Valeriani et al. 2003). Since the study was completely counterbalanced, such habituation effects do not affect the interpretation of the main effects of seeing the hand vs. the object reported in the main paper.

Laser-evoked potentials. There was no main effect of counterbalance group on N2/P2 amplitude, $F(1, 12) = 1.04$. There was, however, a significant interaction of condition and counterbalance group, $F(1, 12) = 15.98$, $p < .002$. Amplitude was lower in

hand than object conditions for both counterbalance groups, but this effect was larger for participants who saw the object in the first block (46.1 vs. 58.0 μV) than for those who saw the hand first (38.8 vs. 40.6 μV).

For N1 peak amplitude, there was no main effect of counterbalance group, $F(1, 12) = .49$, nor an interaction with condition, $F(1, 12) = 2.99$.

Experiment 2

Subjective ratings of pain. There we no significant main effects of counterbalance group for intensity, $F(1, 14) = .85$, or unpleasantness, $F(1, 14) = 1.31$, ratings. Nor were there significant interactions of condition and counterbalance group, either for intensity, $F(1, 14) = .00$, or unpleasantness, $F(1, 14) = .83$, ratings.

Laser-evoked potentials. For N2/P2 amplitude, there was no main effect of counterbalance group, $F(1, 14) = .00$, nor an interaction with condition, $F(1, 14) = .02$. Similarly, for N1 amplitude there was no main effect of counterbalance group, $F(1, 14) = .11$, nor an interaction with condition, $F(1, 14) = .02$.

The absence of significant habituation effects in this experiment, compared to Experiment 1, suggests that the procedure of giving participants 10 laser pulses before the beginning of the experiment (see main text) successfully reduced the prevalence of habituation effects.

Experiment 3

Subjective ratings of pain. There were no main effects of counterbalance group, either for pain intensity, $F(5, 10) = 1.07$, or unpleasantness, $F(5, 10) = 1.65$, ratings. Nor

were there interactions of condition and counterbalance group, either for intensity, $F(10, 10) = 1.05$, or unpleasantness, $F(10, 10) = .65$.

Laser-evoked potentials. For N2/P2 amplitude, there was no main effect of counterbalance group, $F(5, 10) = .40$, nor an interaction of condition and counterbalance group, $F(10, 10) = .94$. For N1 amplitude, there was no main effect of counterbalance group, $F(5, 10) = .18$, nor an interaction with condition, $F(10, 10) = 1.19$.

References

Valeriani, M, de Tomasso M, Restuccia D, Le Pera D, Guido M, Iannetti GD, Libro G, Truini A, Di Trapini G, Puca F, Tonali P, Cruccu G (2003) Reduced habituation to experimental pain in migraine patients: A CO2 laser evoked potential study. Pain 105: 57-64.

Figure Captions

Figure 1) Time course of VAS intensity (left panel) and unpleasantness (right panel) ratings across the 120 trials of Experiment 1. Data for all participants have been averaged together, thus averaging over all conditions. Clear, but rapid, habituation effects can be seen for both types of ratings.