# DEBRIEFING FORM

**Chronic Pain and Body Image**

Thank you for your participation in this study. It is people like you who make research possible. Information regarding the study is listed below, and please do not hesitate to contact Megan Purser (mp1389@txstate.edu) if you have any questions or wish to obtain further information.

## PURPOSE

The purpose of this study was to assess differences in susceptibility to the rubber hand illusion between individuals with chronic pain and those without chronic pain. The two main questions of this study were: (1) Are patients with chronic pain more susceptible to the rubber hand illusion than individuals without chronic pain and (2) Is susceptibility to the rubber hand illusion greater in chronic pain patients with a higher level of pain than those with a lower level of pain? The purpose of using the two Body Image Questionnaires was to determine if the rubber hand illusion was a measure of body image distortions. My hypotheses were (1) that those with chronic pain will experience the illusion more strongly than those without chronic pain, and (2) susceptibility to the rubber hand illusion will be higher in chronic pain patients indicating a higher level of pain than those indicating a lower level of pain.

## BACKGROUND

The research I found that led me to investigate this area of study is shown below:

It is suggested that pain is the most common reason for seeking medical care and is estimated that 80% of hospital visits involve a pain component (Hadjistavropoulos & Craig, 2004). A specific type of pain known as chronic pain is one of the most challenging problems faced by health care consumers as well as health care providers and practitioners. Current evidence suggests that chronic pain is often inadequately treated. An estimated 75 to 80 million people in the United States alone suffer from some sort of chronic pain, and the cost of chronic pain is extreme with an annual cost of $65 to $70 billion for treatment (Winterowd, Beck & Gruener, 2003).

One factor that has been suggested to influence chronic pain is body image distortions. Research suggests that people in pain often report a distorted body image (Lotze & Moseley, 2007). Distortions in body image have been seen in patients with phantom limb pain, chronic regional pain syndrome, chronic pain in an arm, and chronic back pain. In particular, Moseley, Parsons and Spence (2008) demonstrated that visual distortions of body image in patients with chronic pain significantly affected their perception of painful sensations. The authors also found that manipulating a patient's body image lead to a decrease in pain. By making subjects perceive that their affected limb was smaller than actually perceived, pain was lessened (Moseley et al., 2008). Similarly, decreased tactile acuity has been observed in patients with chronic back pain (Moseley, 2008). Moseley (2008) also demonstrated that patients with chronic back pain perceived the affected area of the back to be smaller than it actually was.

In order to determine if patients with chronic pain actually have distortions in body image, a consistent method needs to be employed. One measure used to assess the presence of body image distortions is the rubber hand illusion Mussap and Salton (2006) found that the rubber hand illusion indicated body image distortions in participants showing signs of eating disorders. Mussap and Salton (2006) suggest that individual differences in susceptibility to the illusion may reflect

differences of perceptual body image. They further suggest that the less stable one's body image, the more malleable it will be in response to conflicting sensory inputs. Supporting this interpretation, Ehrrson, Spense and Passingham (2004) found that cortical regions where activity is correlated with the subjective strength of the illusion are localized in parietal areas involved in the multi-sensory construction of body image, and premotor areas involved in representing self-attributions. Overall, research supports the rubber hand illusion as an acceptable measure of body image distortions.

## CONFIDENTIALITY

Any records that identify you will be kept confidential as required by law. Federal Privacy Regulations provide safeguards for privacy, security and authorized access to any information that you give. Except when required by law, you will not be identified by name, social security number, or any other direct personal identifier on any study records disclosed outside of Texas State University, you will be assigned a unique code that will not identify you in any way. The key to this code will be kept in a locked file in the Health Psychophysiology Lab (PSY 314) at Texas State University. Your data will be kept in a locked file for 3 years, after which time it will be destroyed. Questions about the study and results of this research may be directed to Megan Purser (mp1389@txstate.edu). For questions regarding your rights as a research participant, contact the Texas State University Institutional Review Board: Dr. Jon Lasser (512-245-3413; lasser@txstate.edu) or Ms. Becky Northcut, Compliance Specialist (512-245-2102; sn10@txstate.edu).

## FINAL REPORT

If you are interested, the results of this study will be available to you. Please contact Megan Purser (mp1389@txstate.edu) or Dr. Reiko Graham (rg30@txstate.edu, 512-245-6806, PSY LB24, Department of Psychology, Texas State University) if you would like to be sent the results of the study after it is completed.

## CONTACT

If you have *any* questions regarding this study, its purpose or procedures, please feel free to contact the primary investigator Megan Purser, at mp1389@txstate.edu or Dr. Reiko Graham (rg30@txstate.edu, 512-245-6806, PSY LB24, Department of Psychology, Texas State University.

## FOR FURTHER READING

If you would like to obtain information on chronic pain, the rubber hand illusion, or body image distortions, the references listed below provide adequate information.

Ehrsson, H. Spence, C. & Passingham, R. (2004). That's my hand! Activity in the premotor cortex reflects feelings of ownership of a limb. *Science, 305(5685)*, 875-877.

Hadjistavropoulos, T. & Craig, K. (2004). An Introduction to Pain: Psychological Perspectives. *Pain: Psychological Perspectives* (pp. 1-12) Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.

Lotze, M. & Moseley, L. (1998). Role of distorted body image in pain. *Current Rheumatology Reports, 9*, p. 488-496.

Moseley, G. L. (2008). I can't find it! Distorted body image and tactile dysfunction in patients with chronic back pain. *Pain, 140*, p. 239-243.

Moseley, G. L., Olthof, N., Venema, A., Don, S., Wijers, M., Gallace, A. & Spence, C. (2008). Pscyhologically induced cooling of a specific body part caused by the illusory ownership of an artificial counterpart. *Proceedings of the National Academy of Sciences of the United States of America, 105(35)*, p. 13169-13173.

Moseley, G. L., Parsons, T. J. & Spence, C. (2008). Visual distortion of a limb modulates the the pain and swelling evoked by movement. *Current Biology*, *18(22)*, p. 1047-1048.

Mussap, A. J. & Salton, N. (2006). A 'rubber-hand' illusion reveals a relationship between perceptual body image and unhealthy body change. *Journal of Health Psychology, 11(4)*, p. 627-639.

Winterowd, C., Beck, A. T. & Gruener, T. (2003). *Cognitive therapy with chronic pain patients*. Springer Publishing Company.