Tulsa team makes discovery

Professor, graduate students connect imagery, depression to cause of pain.

By Diane Clay, Staff Writer

Just how much can your mood affect pain?

Research by a professor and graduate students at the University of Tulsa showed that the more positive a person's mood, the less pain he or she felt.

In the recent study, Jamie Rhudy, an assistant professor of clinical psychology at Tulsa, showed subjects different photos while administering an electric pulse that felt like a carpet shock or pin prick.

A third of the images were positive, a third neutral with objects such as a fork and a third negative with images of anger and violence.

To test the level of pain felt by the test subjects, the research team monitored the automatic reflex that occurs in the hamstring when pain is felt. They also asked the undergraduate students to rate the pain.

For all 28 students, the automatic reflex and reported pain level was less when subjects were shown positive images and worse when viewing negative images.

"Other studies have shown that states like depression can lead to pain. It could be moods and even transient emotions can alter the perceived sensation of painful events," Rhudy said.

Rhudy said mood may affect what signals are sent to the brain in the first place. He said gating mechanisms in the spinal cord can open or shut the gates and allow pain or keep pain from going to the brain.

"What we are suggesting is emotion can communicate with the spinal cord. It can allow more or less of the pain methods to lead up to the brain," he said.

Rhudy has been working on the subject since he attended graduate school in 1996. He said the latest study, which ended in September, is one of many his team will conduct and report.

He said his team is working on a follow-up study where participants know when the shock is coming half of the time. He said so far, subjects are reporting greater pain with negative images, but the automatic reflex is staying the same.

Rhudy said once these responses can be observed several times through frequent studies, psychologists may be able to use a test based on the Tulsa team's findings to determine whether someone's "pain system" is abnormal or not working properly.

The method could be a diagnostic tool for pain disorders.

Until then, Rhudy suggests people stay as positive and optimistic as possible.

"It may help."

Jamie Rhudy, an assistant professor of clinical psychology at the University of Tulsa, poses with his laboratory team of graduate students (from left) Amy Williams, Klanci McCabe, Mary Nguyen, Vijay Uppalapati and Philip Rambo.