Propofol is an anesthetic that puts individuals to sleep before surgical procedures. One of the main problems that this study is seeking out to understand is the pathway of the burning pain that comes along with this agent when injected into patients. A benefit of this research is the possibility to understand the underlying mechanism of propofol and the ability to change the pain a patient gets during surgical procedures.

The method this study used was calcium imaging. This method uses a fluorescent dye to detect calcium. The strategy the researchers used was isolating the DNA of choice, which was TRPV1. Then they injected it in HEK293T cells. They then allowed for the DNA to replicate in the cell. They ran an experiment for both capsaicin and propofol because the two are similar. However, it was detected that propofol activates the TRPV1 channel and causes in increase of calcium that diffuses out of the cell. Capsaicin was similar, however propofol had more increase in calcium. It was also thought that propofol could possibly be binding to a different receptor than capsaicin.

A potential problem of this study is that it still doesn’t tell us why patients are feeling this burning sensation. They should study to see what calcium has to do with pain and see exactly where propofol is binding. Alternate strategies that can be used are running these tests again and each time block different receptors on the HEK293T cell to see where propofol is binding. A benchmark for success is seeing where the calcium is coming from and how it is causing pain.