# Exploring, Identifying, and Predicting the Effects of Anesthetics in Trauma

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## CURRENT RESEARCH

### By understanding how genetics and anesthetics interplay to affect outcomes from trauma, we can improve preoperative care of individual patients

Dr. Misha Perouansky, Professor in the Department of Anesthesiology at University of Wisconsin-Madison School of Medicine and Public Health, uses a novel fruit fly model to elucidate the ways anesthesia affects outcomes from trauma. This topic is highly relevant for both public and individual health because trauma is an important cause of morbidity, mortality and health resource utilization and almost every victim of severe trauma will undergo (frequently multiple and prolonged) anesthetics during the critical illness that follows life-threatening injury. Therefore learning whether modulation of outcome by anesthetics exists (as suggested by preliminary data) and manipulating this modulation to benefit trauma victims is of substantial importance for society.

In addition to characterizing the effect of different anesthetics on trauma he and his collaborators aim to develop genetic markers that will predict whether specific anesthetic drugs will either beneficially or detrimentally affect the outcome in individual trauma victims. They will explore conventional and novel anesthetics as well as non drug-related factors (such as age, sex and timing of the exposure to anesthetics) that may influence this interaction. Most importantly, they will examine whether naturally occurring variations in the genetic makeup of individuals affect the interaction between trauma and anesthesia. The goal is to identify the most effective and beneficial anesthetics for use in trauma patient as well as to predict which trauma patients will benefit and which may be harmed by exposure to individual anesthetics during recovery from trauma.

It is well-known that general anesthetics interact with many molecular targets...

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## AFFILIATION

University of Wisconsin-Madison

## EDUCATION

- M.D.,Ludwig-Maximilians University, Munich Germany

## AWARDS

- Doctor of Medicine (Dr. med.), Ludwig-Maximilians University, Munich
1986
- Postdoctoral Fellowship, German-Israeli Minerva Foundation
1991
- Research fellowship for physicians in postgraduate training, Foulkes Foundation
1994
- Research Award, Hebrew University's "Hadassah" Medical Organization, Jerusalem
1995
- First Prize, Resident's Research Contest at the 50th Post-Graduate Assembly, New York State Society of Anesthesiology
1996
- and 2 more...

## RESEARCH AREAS

Life Science, Diagnostics, Genomics / Congenital, Immunology / Inflammatory

## FUNDING REQUEST

Your contribution will help fund Dr. Perouansky's continued research exploring the effects of anesthetics in a trauma model which is currently and for a limited time only supported by his clinical department. Costs include $5K/per genome sequencing run, $30-$50K/year for reagents, drugs, and maintenance of multiple fly colonies, $40-$70K/year for one student, and $60K/year for one laboratory technician. If funded, they expect to reach important milestones within 1-3 years. Every one of us can become a trauma victim. Play a role in improving surgical trauma care; fund Dr. Perouansky.