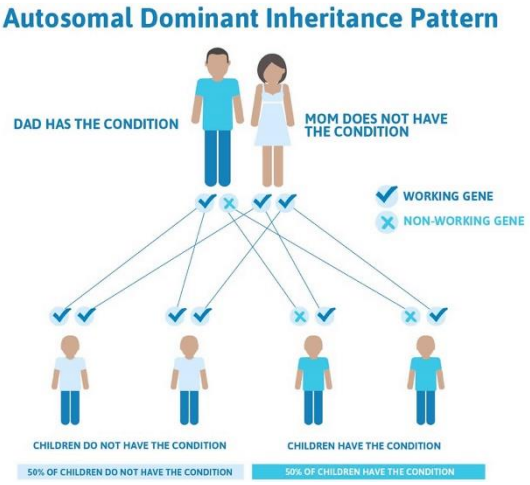
Malignant Hyperthermia and Dentistry

Malignant hyperthermia (**MH**) is a disorder in genetically susceptible patients, characterized by a hypermetabolic state (abnormal elevation in body temperature, increased heart rate, muscle rigidity, increased oxygen demand, to mention a few), triggered by agents commonly used during general anesthesia (isoflurane, sevoflurane, desflurane, halothane, enflurane, succinylcholine; thankfully local anesthetics commonly used in dental offices (i.e. Lidocaine, Septocaine) are not a triggering agent).



According to the Malignant Hyperthermia Association of the United States (**MHAUS**) the following agents are considered safe for use with **MHS** individuals (there are many additional agents that are safe, those listed here are relevant to dentistry): diazepam, ketamine, midazolam, phentobarbital, propofol, nitrous oxide (yay…giggly/happy gas is safe), fentanyl, meperidine, morphine, lorazepam, halcion, and amide local anesthetics that dentists use to numb specific areas of the mouth (sleepy juice). From this list, in our office we only use nitrous oxide and amide local anesthetics.

MH-susceptible (**MHS**) patients have abnormal receptors on their skeletal muscles that allow for too much calcium accumulation in the presence of certain anesthetics. During an episode of MH, the skeletal muscles experience a sustained contraction and increased skeletal muscle breakdown.

The clinical signs of **MH** typically occur within one hour of anesthesia induction, the onset of **MH** can occur any time during the administration of the triggering agents. The onset of **MH** after the surgery is completed is extremely rare.

Following an **MH** event, patients should have supportive care in an intensive care unit for at least 24 hours and be closely monitored for recurrence. Following an acute event, the patient should receive only non-triggering anesthetics, should limit exposure to excessive heat and humidity, and should inform family members of the diagnosis.

Non-anesthesia-related MH. **MH-like** events unrelated to anesthesia have occurred in **MHS** patients. Events that could be related to/leading to **MH** include (but not limited to) unexplained stress-induced fever, muscle cramping, and rigidity of skeletal muscles. Individuals that have developed non-anesthesia related **MH** were usually, but not always, exposed to heat stress (febrile illness), or exercise in the absence of triggering anesthetic agents.

Visalia Pediatric Dentistry
500 S. Chinowth St., Suite 201
Visalia, CA 93277
Office: 559-624-1177 * Fax: 559-747-2370


Visalia
PEDIATRIC DENTISTRY
Dental Group of Taylor Rawson, DDS, MNS