

# The Ketogenic Diet as A First-line Treatment for Pediatric Drug-resistant Epilepsy

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**Background:** Drug-resistant epilepsy is a disorder in which an epileptic patient's seizures cannot be reduced or prevented with adequate trials of two anti-seizure medications. Up to 20% of pediatric epilepsy patients suffer from drug-resistant epilepsy. According to the current standard of care, the next step in treatment after failure of pharmaceutical therapy is invasive brain surgery. Lifestyle modifications are not routinely suggested when following the current standard of care.

**Purpose:** This research sought to explore the possibility of the ketogenic diet as a safe, non-invasive treatment option for pediatric epilepsy patients suffering from drug-resistant epilepsy.

**Methods:** The title and abstract review process began after each researcher performed a search of their assigned database, using specified inclusion and exclusion criteria, and recorded the results in the search log. An evidence-based clinical review was conducted to obtain high quality evidence regarding implementation of a ketogenic diet in pediatric drug-resistant epilepsy patients. Quality assessment tools from National Heart, Lung, and Blood Institute were used to evaluate research studies. Only studies rated as "good" were included in this review. A data extraction was performed on the 3 articles selected.

**Results:** Two systematic reviews and one meta-analysis were analyzed. The studies investigated rates of seizure frequency reduction and seizure freedom when pediatric drug-resistant epilepsy patients followed a ketogenic diet. Patients were 3 times more likely to achieve seizure freedom

when following a ketogenic diet. Patients also had over 50% reduction in seizures with a ketogenic diet.

**Conclusion:** While the current standard of care offers the ketogenic diet as a last-line alternative, research indicates that it significantly improves seizure frequency and freedom for patients who would like conservative treatments before surgery. The standard of care should be updated to allow a ketogenic diet to be offered to patients prior to invasive surgery.

