

Updating the Foodomics Database for Precision Ketogenic Therapy

In 2022, more than a quarter of patients diagnosed with epilepsy do not respond adequately to usual antiseizure protocols and are therefore diagnosed with refractory epilepsy. More than 100 years ago, reports in the literature documented the beneficial use of low carbohydrate diets in seizure control. Our Precision Ketogenic Therapy (PKT) Program is the 21st century precision medicine approach to ketogenic diet treatment of epilepsy. Precise quantitation of nutrient content of each food prescribed for PKT and available to patients at local markets is required and presented in the Foodomics Database which is the foundation of PKT. It is crucial to know the chemical identity and quantity of nutrients in the food being consumed at that moment so the right dosages can be administered to patients. We manually collected nutrition facts data from products available at the grocery store, entered these data into the Foodomics Database and conducted two audits. This process is tedious and time consuming, so it would be ideal to minimize the frequency with which it needs to be done while also maintaining current, accurate data in the database. The goal of this project was to compare nutrient data collected in January 2022 with previous data for the same products that were collected over the past several years. A difference in fats, carbohydrates, or proteins was recorded as 1 and no change as 0. Column sums indicated how much each category changed. We found differences, especially in carbohydrates, which are most important to monitor for PKT.

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