

## Case Study I – A case study of the successful use of **betaquik®** to implement an MCT ketogenic diet in a child with Tuberous Sclerosis Complex (TSC).

**Patient A, a young girl, with a diagnosis of TSC associated epilepsy was being overseen by a tertiary referral centre. She was medically managed but still having daily, fairly minor seizures. Although her consultant was keen to explore further medications and initially resistant to her trying the ketogenic diet she was referred to Matthew's Friends Clinics for its consideration.**

Patient A had a few weeks with a general reduction in carbohydrate intake and saw an improvement in seizure control. Following this she was started on an MCT ketogenic diet which is more generous in carbohydrate than other ketogenic protocols<sup>1</sup>. This was chosen as she liked milk which could be incorporated into the diet. Her initial prescription was for 50% of dietary energy from MCT, built up over 10 days with 15% energy from carbohydrate which she tolerated well. She was given an allowance of 300ml semi-skimmed milk daily, which was mixed with 100ml of **betaquik®** and used throughout the day. Additional MCT as either oil or **betaquik®** was given at each meal.

This plan was followed without difficulty. However, over the next few months her diet was 'fine-tuned' to improve seizure control. This included reducing total carbohydrate intake and increasing her daily amount of MCT to 57% of dietary energy intake. These changes were again well tolerated.

The child has now been following the diet for a year. Despite her seizures improving when she started the diet, small episodes continued in the early hours of the morning. An additional volume of MCT, given as **betaquik®**, was taken before bed to increase ketosis overnight which helped control these. With the exception of one seizure during illness, the child has been seizure free for four months. Urine ketones are usually in the range of 1.5-4 mmol/l in the morning and 4-8 mmol/l in the evening. Serum biochemical monitoring has shown no problems. There has been a slight fall in weight and height centiles, but they are still both well above average for her age.

### **Background to condition**

TSC is a genetic disorder characterized by the development of non-malignant tumours, which can affect many organs in the body. 80-90% of individuals with TSC will develop epilepsy at some point in their lives<sup>2</sup>, commonly in childhood, when up to one third suffer intractable seizures. The effectiveness of the ketogenic diet in the successful management of medication-resistant epilepsy, as seen typically in TSC, has been demonstrated in many prospective studies, a randomised controlled trial<sup>3</sup> and retrospective reviews<sup>4</sup>.

Case study supported by  
Matthew's Friends Clinics



**References:**

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3. Neal EG, Chaffe HM, Schwartz R, et al (2008) The Ketogenic diet in the treatment of epilepsy: a randomised control trial. *Lancet Neurol* 7:500-6
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