

# **MANAGING ILLNESS WHILE ON KETOGENIC DIETARY THERAPY**

**THIS DOCUMENT IS ONLY A GUIDE**

**IF YOU ARE WORRIED ABOUT YOUR OR YOUR CHILDS HEALTH IN  
ANYWAY, THEN YOU MUST CALL YOUR LOCAL DOCTOR OR VISIT  
YOUR LOCAL EMERGENCY ROOM.**

**APPROVED BY MATTHEW'S FRIENDS CANADA**

*Content by Canadian Ketogenic Registered Dietitians*

## **Vomiting and / or Diarrhea**

With this type of illness your child won't want to eat as much as usual. It is essential to ensure that plenty of clear, low carbohydrate fluids are offered and consumed regularly to avoid dehydration. Examples of fluids to provide your child include water, weak herbal tea, carbohydrate free Ginger Ale, PowerAde Zero or diluted oral rehydration fluid, such as Pedialyte.

It may happen that meals are not completed or missed altogether. It is essential to monitor your child for signs of low blood glucose (hypoglycemia) and/or excess ketosis (hyperketosis) and treat as required as per the advice of your ketogenic diet team.

If the symptoms continue for over 24 hours, you will need to contact your keto team or local physician, as it may be the case that a low glucose oral rehydration fluid will be required to replenish the body's electrolyte levels (your keto team will advise you of what is suitable to give on the diet).

## **Tube Feeds**

When a patient with a gastro enteric infection is fed a Ketogenic formula feed, they may not be able to tolerate their prescribed feed.

The same principles apply to the feed as to the oral diet, it should be stopped and replaced with clear carbohydrate free fluids to avoid dehydration. Pedialyte may be required, but discuss with your ketogenic diet team first. Should there be no improvement or the symptoms persist for 24 hours, call your ketogenic diet team or your local physician. This is especially important if your child cannot tolerate clear fluids or the re-introduction of their tube feed at half strength. Medical help in these circumstances is essential.

When the vomiting and / or diarrhea have stopped, re-introduce food or formula gradually as tolerated by your child.

## **Re-introducing Solid Food**

When re-introducing meals, start with a third of the usual amounts for the first day or two. You could also use an 'all in one' recipe or make a favourite meal and mix it all together. This means that every mouthful consumed is in the correct balance of fat, protein and carbohydrate. When your child is tolerating a third of their usual ketogenic diet, you may then offer half of their usual diet. Continue to increase the food provided as tolerated, up to the full ketogenic diet. If food is not well tolerated, you can try offering a KetoShake, as discussed on the next page.

If your child has difficulty in tolerating their full fat meals due to continued vomiting and/or diarrhea, it may be necessary to only use half the amount of fat prescribed in each meal to start off with. Fat content can then be built back up over the next couple of days.

On the MCT diet, you will likely have to reduce the MCT oil/liquigen amount provided and then build it back up slowly. For example, if providing a third of a MCT milk shake, then the amount of MCT/Liquigen added will be a third of the usual volume.

### **Tube Feeds**

When reintroducing tube feeds, initially use a half strength recipe for 24-48 hours, then gradually build up to full strength as tolerated over a few days.

Alternatively, a small amount of full strength formula can be provided followed by a water flush as per your ketogenic diet team. The amount of full strength formula can be built up gradually to goal volume over a few days.

If feeds are not tolerated, then get medical advice.

***YOU SHOULD CONTACT YOUR REGISTERED DIETITIAN AND WORK WITH HIM/HER DURING THIS TIME AS HE/SHE WILL ADVISE YOU ACCORDINGLY.***

## **Ketogenic Meal Replacement (Ketoshake)**

Every patient should have a 'Ketoshake' recipe calculated by their dietitian to replace a meal for when they are unable to eat.

Fluid intake must be monitored during illness and any shortfall in requirements be made up with suitable carbohydrate free clear fluids to ensure adequate hydration. Ketoshakes may replace the meals not eaten and contribute to fluid intake, but cannot replace all the fluids normally consumed throughout the day.

## **Fever (Colds, Viruses, etc.)**

When your child is ill and you would like to provide a medication for pain and fever, read the labels as much as you can regarding carbohydrate content and use the lowest one that is available to you. Ask your ketogenic diet teams which medications are appropriate during times of illness.

Products such as Vicks VapoRub are good to clear airways, but be careful with these, as some families have reported their children not being able to tolerate the very strong varieties – so it may be advisable to use a milder formulation. Electric vaporisers have been recommended by some families.

Saline nasal sprays are very useful – especially for young children.

Maintain an adequate fluid intake by offering carbohydrate free fluids without restriction while your child is unwell. If your child will eat as usual, then the diet can be maintained or you may prefer to use the Ketoshake recipe – this can be sipped throughout the day.

It is important to contact your local Doctor, as you would normally, if you are worried in any way about your child's health.

Any new medication, such as antibiotics, should be given as a carbohydrate free preparation if possible. Liquids, elixirs, and enteric coated medications should be avoided.

## **Constipation**

As well as being a common side effect of the Ketogenic diet, after a diarrhea illness it may be a little while before bowels open on a regular basis. If however, this carries on too long then discuss with your dietitian as some dietary changes may be possible. If constipation continues, then your center may prescribe a suitable medication. Be careful with Lactulose as the sugar / carbohydrate content can be quite high and is not recommended for use with the Ketogenic diet. Polyethylene Glycol 3350 (PEG flakes) is commonly recommended with the Ketogenic Diet.

## **Low Blood Sugar (Hypoglycemia)**

Ketogenic diets contain very little carbohydrate, so there is a possibility that the blood glucose may go too low. Symptoms of hypoglycemia and/or blood sugar should be monitored when the diet is started, at times of illness or even when food is not being eaten very well.

If you have access to a glucometer, It is recommended to monitor blood glucose every 6 to 12 hours during illness. If testing blood sugars with a glucometer, treat hypoglycemia as per your ketogenic diet team.

## **High Ketones (Hyper Ketosis)**

This is when the blood and/or urine ketones are too high. Check with your ketogenic diet team to determine acceptable values for ketones.

High ketones may be due to a diet change, weight loss or an illness. Should there be symptoms of hyper ketosis and high levels of ketones in the blood and/or urine, you should treat this in the same way as you would low blood glucose (Hypoglycemia). Provide 100% apple juice in an amount recommended by your ketogenic diet team. If your child is showing high blood and/or ketones but with no symptoms of hyper ketosis, check the ketones again 1 hour later and only treat if they remain high.

## **Common Symptoms of Hypoglycemia and Hyper Ketosis**

Hypoglycemia (low blood glucose) and Hyper Ketosis have the following similar symptoms:

Lethargy

Fatigue

Irritability

### **Additional Symptoms:**

#### **Hypoglycemia:**

Dizziness  
Aggressive Behaviour  
Sweating  
Headache  
Confusion  
Cold and clammy

#### **Hyper Ketosis:**

Facial Flushing  
Nausea  
Vomiting  
Rapid Breathing/Panting

## **OTHER THINGS TO REMEMBER**

### **Seizures**

Worsening of seizures is common during periods of illness. Check the ketones and contact your local pediatric team if concerned about seizure control.

Emergency rescue treatment can be given as prescribed by your physician e.g. rectal diazepam or buccal midazolam.

### **Intravenous Fluids**

If taken to hospital and intravenous (IV) fluids are required, a carbohydrate containing solution should be avoided (unless treating hypoglycemia). Normal saline and other types of infusions can be used. Blood sugar should be monitored to make sure that it does not go too low and blood/urine ketones to ensure they do not rise too high. In both cases this must be treated appropriately.

**If hospital treatment is required, take your ketogenic file with you so that you have all the information on hand.**

### **Carbohydrates in Medications**

All medications that are given must be **sugar and carbohydrate free**, whenever possible. Consult a pharmacist to review carbohydrate content when beginning new medications.

Sugar free does not necessarily mean carbohydrate free.

**Check products regularly** as manufacturers change their formulations at times.

When a new medication is necessary, and this means an increase/decrease in carbohydrate, the diet may need to be adjusted to accommodate the change.

### **Emergency Protocol**

Speak to your ketogenic diet team regarding an agreed upon emergency protocol to help reduce confusion should a hospital admission be required or you need to deal with members of the medical profession who are unfamiliar with ketogenic diet therapy.



If you have any questions please connect with your ketogenic diet team or Matthew's Friends Canada. Other publications are available to support you. Feel free to contact us:

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