

---

# Nutrition and Hydration in Mitochondrial Disease

Catherine Feeney

Mitochondrial Nurse Specialist

---

wellcome trust centre for  
Mitochondrial Research

MRC

Medical  
Research  
Council

**NHS**

Lily<sub>x</sub>



**Newcastle  
University**

# General food guidance for adults and children

- Mitochondrial disease results in lower energy production due to damaged mitochondria. The remaining mitochondria have to work extra hard to produce energy.
- Carbohydrate is the main fuel used by the mitochondria to make energy.
- Carbohydrate should be eaten often every day because of this.
- It is recommended that people with mitochondrial disease eat food every 3 hours (six small meals rather than 3 large ones for example), and try not to leave gaps between meals of more than 4 hours

# Top Tips

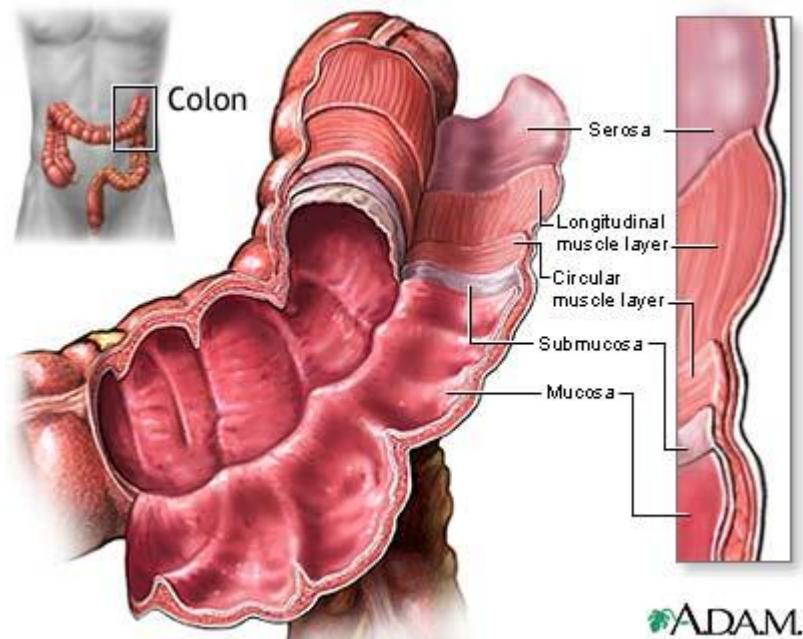
---

- Bedtime snacks
- Carbohydrate breakfasts
- Drink plenty of fluids
- Avoid too many sweets and fizzy drinks
- Avoid too much time in the sun

# Low Energy Levels

- Low energy is a frequent issue for patients with mitochondrial disease.
- Keep healthy, high protein meals frozen and ready to use when needed.
- Always combine protein with your complex carbohydrate for a good meal/snack.
- Fat is a useful source of energy and vitamins and some types are healthier than others. Spread fats in small amounts over the day rather than all in one meal.

# Mitochondria and Muscle



# Impact of Dysmotility

- Loss of appetite
- Feeling of fullness
- Inability to gain weight
- Weight loss
- Change of bowel habit
- Fatigue

# Low Residue Diet

- Residue or fibre is the part of foods which is left over following digestion.
- It normally assists the passage of foods and fluids through the digestive tract.
- A low residue diet involves the amount of fibre or residue in your diet.
- May be a temporary measure.
- Check with the Doctor or Dietitian how long to remain on this diet.
- If you need to remain on a low residue diet for longer than 4 weeks a multivitamin and mineral supplement may be required.

# Foods to Avoid

- **Fruit and Vegetables:** Anything with skins seeds or pips
- **Cereals:** Wholemeal, granary and soya flour, oats, bran. All granary, wholemeal, soft grain breads. Avoid pastry, biscuits or crispbreads
- **Meat:** Meat pies or dishes containing vegetables such as peas, onions, mushrooms should be avoided.
- **Fish:** Bones and skins. Fish dishes with vegetables.
- **Eggs:** Egg dishes which include vegetables e.g. Spanish omelette/ tortilla
- **Cheese:** Cheese containing fruit, nuts or vegetables e.g. Cottage Cheese with pineapple, chives, and onions.
- **Fats:** -all are ok
- **Milk:** Yoghurt containing fruit pieces or pips.



# Foods Allowed

- **Breakfast** Cornflakes, Frosted cornflakes, Crispy cereal rice frosted or chocolate.
- **White Rice & Pasta**
- **Pulses** Semolina, tapioca, sago.
- **Potatoes** May be taken in any form without skins. Potato crisps.
- **Fruit & Vegetables** 1 small portion (40g) well cooked allowed a day.
- **Puddings & Cakes** Milk puddings (rice, tapioca, sago) & sponge cakes

# Summary

---

- Eat small and often
- Drink plenty of fluids
- Structured and planned exercise
- Low fibre diet
- Regular Laxatives
- Take your medication

Talk to your Specialist Nurse/Dietician!!

---

Thank you for your attention

Any Questions?