

# Dietary advice for young people with Cystic Fibrosis

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# Overview

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- Nutritional Requirements in CF
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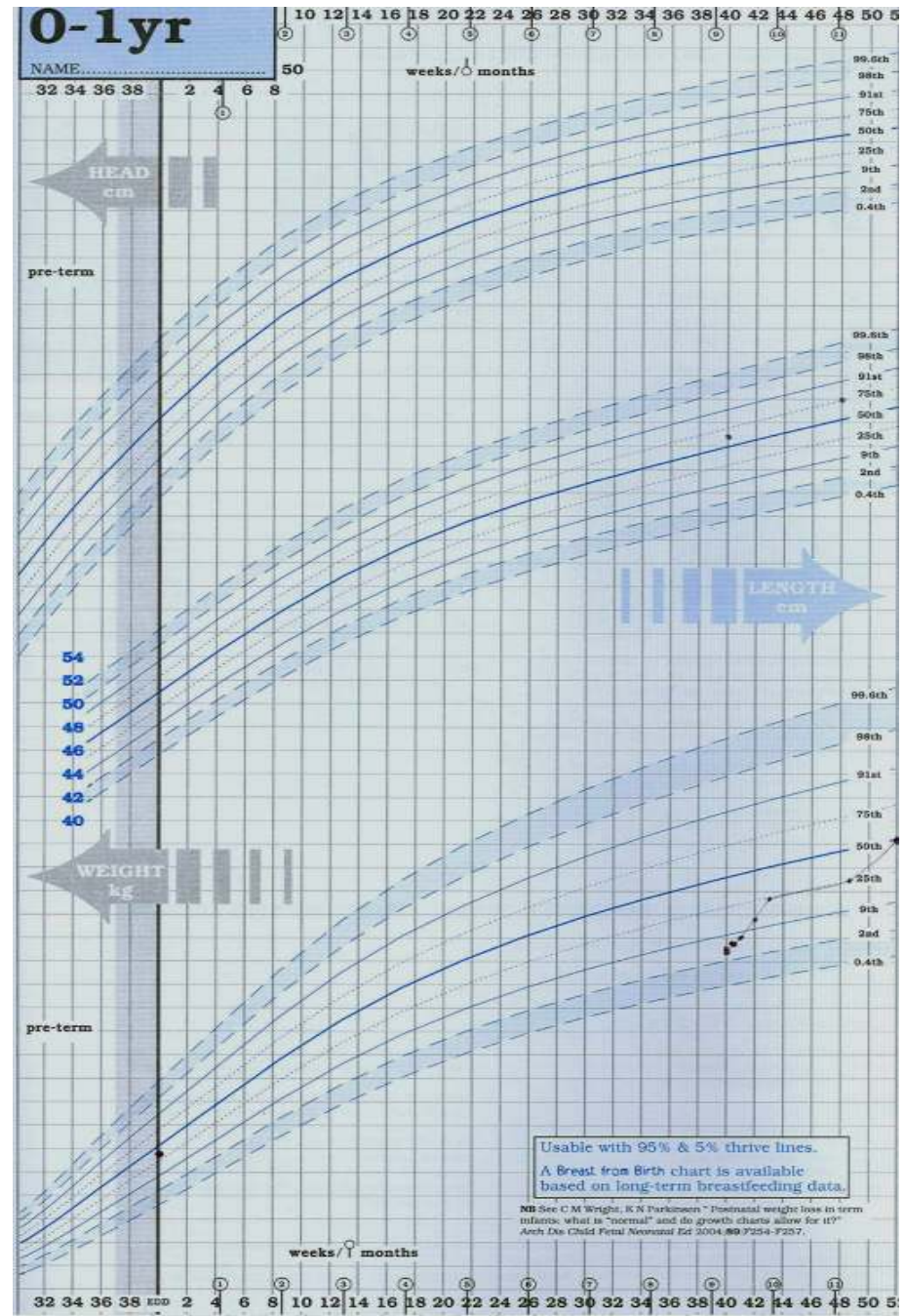
# Nutrition and Cystic Fibrosis

Children with CF often have poor nutritional status due to:

1. **Lower energy intake** (poor appetite, nausea, reflux pain, behavioural problems)
  2. **Malabsorption** (especially of fat, a nutrient very high in energy)
  3. **Increased energy expenditure** from being unwell and increased work of breathing
- Chronic malnutrition can lead to poor growth and weight gain, stunting.
  - Babies and adolescents are at highest risk of poor nutritional status because they grow fastest
  - **BETTER NUTRITION LEADS TO BETTER LUNG FUNCTION**

# Monitoring Nutrition

- Weight and height at each clinic appointment
- Plot on growth charts
- The aim is to promote normal growth and development through childhood



# Nutritional Requirements In Cystic Fibrosis

- People with CF may need an 120-150% **more** than their expected nutritional requirements

Therefore a boy of 7-10 years needs around 1970kcal/day but with an extra 20-50% this could rise to

2360- 2950kcal/day (9900- 13900KJ/day)

(advanced pulmonary disease may need even more)

# 1. A diet high in fat and energy

- Regular meals and snacks encouraged
- Varied diet – foods from all the different food groups
  - Protein: egg, fish, meat, beans and dairy
  - Carbohydrate: Potatoes, bread, rice, pasta, cereals
  - Fruits and vegetables
- Add extra mayonnaise, milk powder, butter, cream, cheese and oil to increase calories
- Fried foods



# Encouraging children to eat well...

- Wean infants onto solids 17-24 weeks  
(can be easier to get calories in)
- Progress onto lumpy and finger foods at 6-9 months
- By one year give 3 meals and 3 snacks per day and around 400-600ml milk
- All children have good days and bad days with food
- Give lots of positive encouragement
- Enjoy family meals together – with family foods but make a few changes to boost the calories
- Don't force feed
- Make food enjoyable and fun



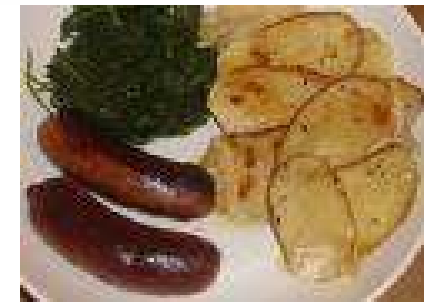
# High fat diet – Ukrainian Food

**Soups** – Borsch, Kapusnaiak, Rosolnyk (pork fat, oil added during cooking and sour cream will increase calories)

**Zrazy**, sausages, meat rolls, Kotlety, Perohy will be higher in calories if fried

**Dairy products** –

Milk, yoghurt, sour cream





## 2. Pancreatic enzymes (Creon) with all fat containing meals and snacks

- Replaces digestive enzymes lipase, amylase and protease that is not produced by most people with CF
- Each person needs a different amount of enzymes with food, which makes blanket prescribing difficult.
- Aim is to reduce symptoms of malabsorption (Fatty stools/steatorrhoea) therefore ensuring that more nutrition is used from the food eaten
- Generally we use Creon® 10,000

# Enzyme dosage suggestions – for use with Creon 10,000

- **Infants-** ½ enzyme/feed (Creon 10,000) or 1 scoop Microcreon/feed – from fruit puree before every feed
- **Toddlers-** 2 enzymes with meal, 1 with snack
- **Pre-schoolers-** 2-3 enzymes with meal, 1-2 with snack
- **School age-** 4-6 enzymes with a meal, 2-3 with a snack
- **Adolescents-** 5-8 enzymes with a meal, 2-3 with a snack
- Or we sometimes suggest 1 creon per 3-5g fat if children are struggling with gut related issues.

The dose may also change depending on the food eaten.

Children should learn to swallow enzymes from the age of 3 years.

**Enzymes should never be chewed  
and should not be mixed into food**



# Some foods do not need enzymes

- Only with simple sugars when eaten alone, such as:
  - Fruit (except avocado)
  - Drinks like fruit juice/squash/ Fizzy pop (but milk does)
  - Boiled sweets
  - Jelly, jam, honey
  - Vegetables (except peas/beans/potato)



# 3. Salt



- Higher sodium requirement secondary to increased excretion
- Add extra salt to food
- Give salty snacks – even to young children
- Especially in hot weather or if children are very sweaty
- Check urine sodium in children who are not growing well
- Infant milk (breast and formula) are low in salt so extra can be added to baby food



# 4. Fat Soluble Vitamins

- People with CF are at risk of fat soluble vitamin deficiency
- Vitamins A, D, E and K
- Even with a good diet children CF are unlikely to be able to get enough without supplementation.
- Should be given at the same time as enzymes



# Nutritional Supplements



VS



- » Can be useful (but also expensive)
- » Used to *supplement* the diet
- » Could be useful during periods of being unwell
- » Most still need be **taken with enzymes**
- » Food can have just as many calories in
- » **?? A glass of milk and a slice of cake instead...**

# Things to look out for in faltering growth

- Salt depletion
- Too few enzymes, timing of enzymes
- Cystic Fibrosis Related Diabetes
- Liver disease
- Infection
- Reflux
- Poor appetite or feeding problems