

# NUTRITION THERAPY IN CHILDREN WITH FOOD ALLERGY

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# OUTLINE

- ▶ What is the problem?
- ▶ Case presentation
- ▶ How do we manage it?
  - ▶ Correct diagnosis
  - ▶ Close monitoring
  - ▶ Paying attention to food groups and substitutions
- ▶ How to manage the case presented
- ▶ Summary and conclusion

# What is the problem?

- ▶ From a study conducted in the US 2009-2010, approximately 8% of children aged 0-18 years have food allergies<sup>1</sup>.
- ▶ 2.2-2.5% of infants in the UK suffer from a proven food allergy<sup>2</sup>.

# What is the problem?

- ▶ The mainstay of dietary management of food allergies remains the elimination diet.
- ▶ The removal of major food groups from the diet can predispose to inadequate nutrient intake and malnutrition.



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## CLINICAL NUTRITION

### **Malnutrition in children with food allergies in the UK**

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- ▶ Aim: to establish growth status in food allergic children receiving dietetic input in the UK
- ▶ Dietitians submitted anthropometrical data for children with food allergies. Malnutrition was defined according to WHO standards.
  - ▶ Wasting. Low weight for height. ( $<-2$  Z score).
  - ▶ Stunting. Low Height for age. ( $<-2$  Z score).
  - ▶ Underweight. Low weight for age ( $<-2$  Z score.)

Data from 13 different centres yielded 97 patients (51 male and 46 female) of which 66 excluded  $\leq 2$  foods and 31 excluded  $\geq 3$  foods.

8.5% had a weight for age  $\leq -2$  Z-score.

For height for age, 11.1% were  $\leq -2$  Z-score

for weight for height, 3.7% were  $\leq -2$  Z-score

Elimination of  $\geq 3$  foods significantly impacted on weight for age ( $P = 0.044$ ).

- ▶ Conclusion: Children with food allergies are more underweight than the general UK population, which appears to be linked to the number of food excluded.
- ▶ Limitations of the study: Population was picked from patients on follow up by dietitians. The advice given may have avoided more cases of malnutrition.



# CASE PRESENTATION

▶ PERSONAL DATA

▶ NAME: T.O

▶ SEX: Male

▶ AGE: 5 ½ months

- ▶ Fever, vomiting, cough x 3/7
- ▶ Poor weight gain since 6 weeks of life
- ▶ **History of presenting illness**
- ▶ Tyron has had history of regurgitation of feeds and poor weight gain since 6 weeks of life- birth weight was 3.2 kg and is now 3.9 kgs.
- ▶ He also has an on and off cough, with a previous admission for bronchopneumonia 2 months ago.
- ▶ 3 days before admission, he developed fevers, vomiting and progressive worsening of the cough. Clarithromycin had been started orally with no improvement.

- ▶ Was exclusively breastfed initially for the first 6 weeks. When he started to regurgitate mum avoided cow's milk in her diet. The problem persisted. She then stopped breastfeeding and tried formula feeding. The problem persisted. She then tried cow's milk.
- ▶ First admission at 3 months of age at KNH for bronchopneumonia
- ▶ Second admission at AKUH-N at 5 months with 'severe cow milk protein allergy' - he was started on Neocate and Motilium during this admission.

- ▶ **On examination:**
- ▶ **Wasted, febrile, Pulse rate 176/min, Temperature 38.9, Resp rate 58/min. SpO2 87% on room air**
- ▶ No pallor, no jaundice, no cyanosis, no edema, some dehydration (dry mucous membranes).
- ▶ CVS: Good volume pulses, regular. CRT 3 secs. S1, S2 heard
- ▶ Respiratory system: tachypnoeic, bilateral crepitations, occasional wheezes.
- ▶ Abdominal exam: not distended, normal bowel sounds, soft, non-tender
- ▶ CNS: unremarkable
- ▶ ENT: unremarkable

## Investigations

**On admission:**

**FHG:** WBC 23.72, ANC 11.82, Hb 11 Platelet 422

**Urine MCS:** unremarkable

**CXR:** Right upper lobe lobar pneumonia as well as features of broncho-pneumonia

**Cardiac Echo:** Normal heart study

**Barium swallow:** 2 episodes of gastro esophageal reflux up to upper third of esophagus visualized during the period of study.

## Management

Started on IV Ciprofloxacin, Supplemental oxygen, Chest physiotherapy, Lanzoprazole, Domperidone and Neocate.

Remained tachypnoeic and on oxygen for about two weeks. Vomiting stopped.

Discharged home after two weeks on Lansoprazole, Domperidone and Neocate.



► Follow up

- At 6 months weight 4.5kg. Could sit with support.
- At 9 months 5.9kg. Still has some episodes of aspiration pneumonia requiring outpatient management.

- ▶ This case points out the close relationship between cow milk protein allergy and Gastroesophageal reflux disease.
- ▶ The symptoms are similar. Its difficult to know which came first.
- ▶ They exacerbate one another.

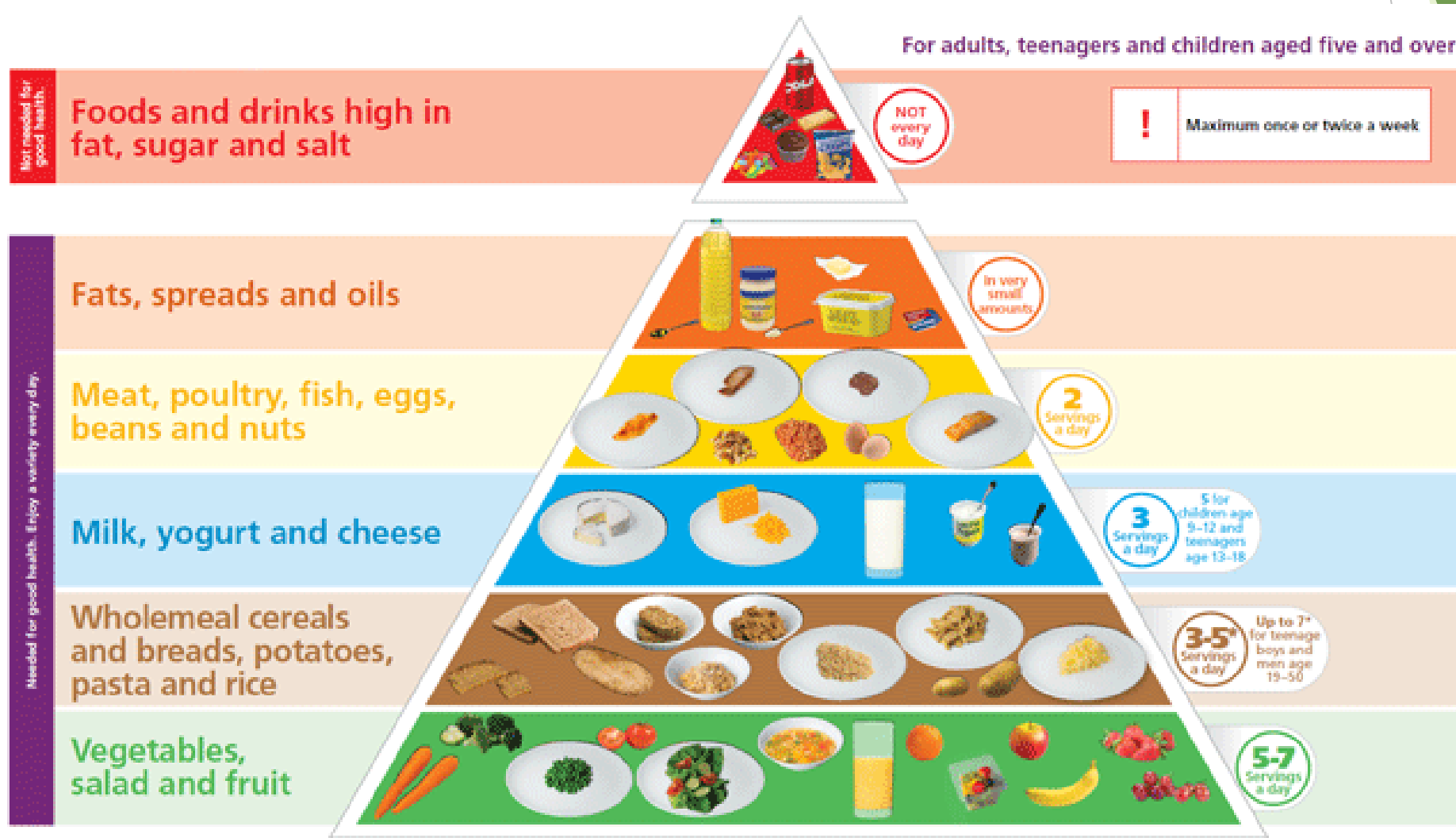


# Prevention of malnutrition in children with food allergies

- ▶ Practice confirmation of diagnosis of food allergy by either Tests or oral challenge before elimination of foods from the diet.
- ▶ Once a definite diagnosis of food allergy has been made, a strict avoidance of the offending food is of great importance.
- ▶ Patients, their families and health care workers need guidelines and suggestions for avoiding allergenic foods in meal planning and preparation and selecting nutritionally adequate replacement foods. <sup>3</sup>

- ▶ Educate on
  - ▶ What are the components of a healthy diet
  - ▶ What are the sources of various nutrients
- ▶ A complete assessment, the development and implementation of a realistic plan, ongoing follow up and evaluation are essential to improving outcome.
- ▶ The complete assessment also includes the social parameters.
- ▶ Assess how seriously the individuals lifestyle is affected by the allergy.

# The Food Guide Pyramid



# Patients at risk of compromised nutrition status.

- ▶ BMI < 20 or > 30 kg/m<sup>2</sup>
- ▶ Rapid weight loss ( 5% of body weight in 1 month)
- ▶ Major weight loss ( 10% in 6 months)
- ▶ Low serum albumin (< 3,5 g/dl)
- ▶ Low serum cholesterol (< 130 mg/dl)
- ▶ Poor appetite

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# BACK TO OUR PATIENT

- ▶ What were the underlying causes of malnutrition in this patient?
- ▶ How could they be remedied?

# SUMMARY

- ▶ Patients with food allergy are at risk of malnutrition
- ▶ The approach to this patient requires a multidisciplinary team.
- ▶ Assessment, management and follow up have to be very thorough to aid positive outcomes.
- ▶ The medical team needs to include a dietitian who will explain the role of different food groups and the alternatives to foods advised not to eat.
- ▶ Look out for the danger signs for possible undernutrition.

# QUESTIONS





# REFERENCES

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