

## Many children worldwide don't meet the dietary recommendations for essential fatty acids

### Importance of dietary fat in healthy growth and development

It is well understood that fat plays an important role in growth and development of children. Dietary fats provide essential fatty acids and fat-soluble vitamins. They are also a dense source of energy which is needed to meet the high energy demands of growing cells and tissues<sup>1</sup>. International dietary guidelines, such as those of WHO/FAO and PAHO, recommend for adults and children above the age of 2 that in a balanced diet 30% of daily calories should come from fat<sup>2,3</sup>. Children below 2 years of age need even 40% of the total energy intake from fat, compared to the recommended amount of 30% for adults.

### Essential fatty acids

The omega-6 fatty acid linoleic acid (LA) and omega-3 fatty acid alpha-linolenic acid (ALA) are called 'essential' fatty acids (EFA). They are essential because our body cannot make them. Therefore they must be obtained via our diet. These fatty acids are important building blocks for cell membranes and play an important role in processes related to healthy growth and development<sup>4</sup>. Furthermore, EFA have a positive impact on cardiovascular health<sup>2</sup>. Risk factors for cardiovascular disease are building up over decades, starting early in life.

### Recommendations on intake of essential fatty acids in children

Up to the age of two years there is a higher need for essential fatty acids because they are required for new structural lipid synthesis associated with growth of children<sup>5</sup>. After the age of 2 it is recommended to slowly reduce intake of total fat to levels which are recommended for adults as well. The recommended amount of essential fatty acids to prevent deficiencies is 1% of energy from LA and 0.2% of energy from ALA. However, an increasing number of health authorities such as the European Society for Paediatric Gastroenterology, Hepatology, and Nutrition<sup>6</sup>, and Institute of Medicine<sup>7</sup>, recommends that dietary intakes of fat and fatty acids in children should be in line with the population nutrient intake goals for the prevention of diet related chronic diseases. Saturated fatty acids (SAFA) intake should not exceed 10% of total energy and intake of trans fatty acids (TFA) should be minimised. Polyunsaturated fatty acids (PUFA) should contribute ~6–10% of energy and the remaining fat energy should come from monounsaturated fatty acids (MUFA). Table 1 shows the dietary requirements for adults and children older than 2 years<sup>2,3</sup>.

DIETARY COMPONENT	AMOUNT
Total dietary fat intake	30% of energy, depending on activity level
SAFA	≤ 10% of energy
TFA	< 1% of energy
MUFA	No restriction within limits of total fat
PUFA	6-10% of energy
(n-6) PUFA	5-8% of energy
(n-3) PUFA	1-2% of energy

Table 1. Summary of dietary requirements

### Essential fatty acids intake

LA is the most abundantly available EFA in the diet. Richest sources are vegetable oils, such as sunflower oil, soybean oil, corn oil, nuts and seeds. However, in most countries where LA intake data are available, children have, on average, intakes below WHO recommendations (figure 1). The intake data of ALA in children show that the gap between actual intake and desired intake is bigger than the intake gap of LA. In all populations where data are available, the average ALA intake is below the WHO recommendation (Figure 2). One reason could be that foods rich in ALA, such as linseed oil, rapeseed oil and walnuts, are not widely available in the diet.

Intake data for essential fatty acids are lacking for many countries. More countries have data on total PUFA intake of children and that shows that the intake is below the WHO recommendation (Figure 3, unpublished analysis of previously published data from different countries). Since EFA intake is around 90% of total PUFA intake, it can be concluded that the overall average EFA intake in children is below recommendations.

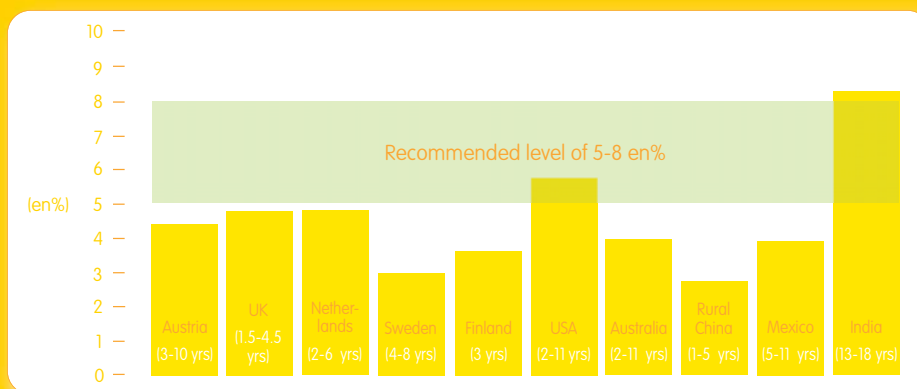


Figure 1. LA intake in children (en%)

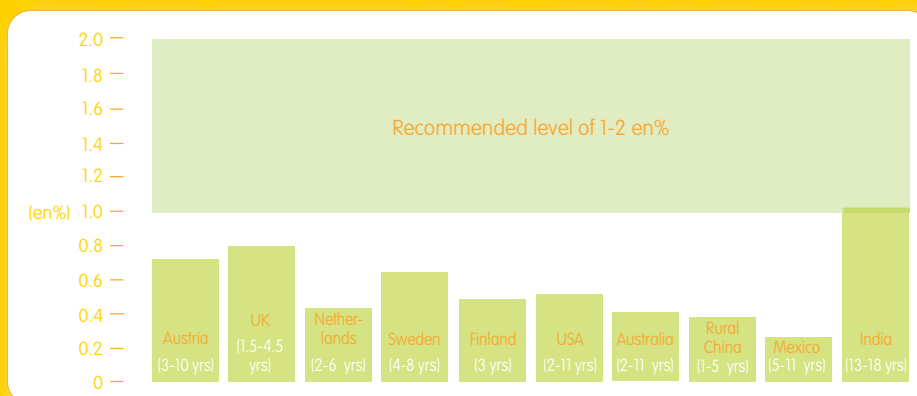


Figure 2. ALA intake in children (en%)



Figure 3. PUFA intake in children (en%)

### SAFA intake exceeds recommendations

WHO recommends a maximum intake of 10 en% of SAFA from the total diet, but in many countries worldwide, children have a SAFA intake above 10 en% (figure 4, unpublished analysis of previously published data from different countries). High SAFA intake is associated with an increased risk of cardiovascular disease. Risk factors for CVD are building up over decades, starting early in life.

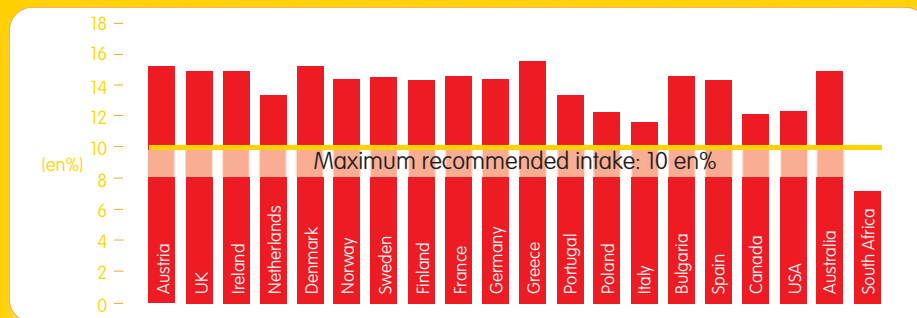


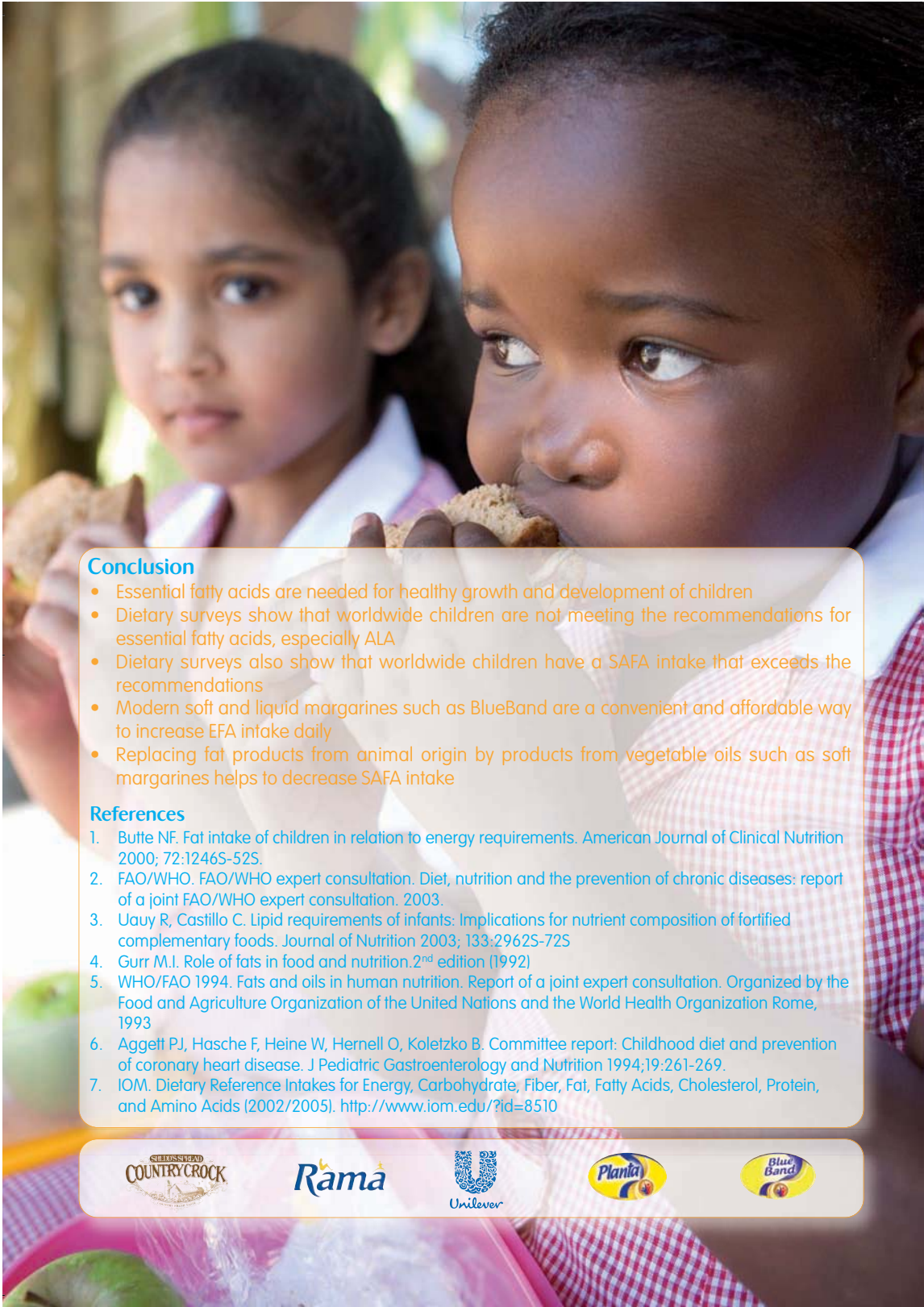
Figure 4. SAFA intake in children (en%)

### Modern soft and liquid margarines are an important source of essential fatty acids

Dietary surveys show that intake of essential fatty acids, especially ALA, is below WHO recommendations. Good sources of essential fatty acids are not always widely available. On top of this, there are only a few good dietary sources of both ALA and LA. Furthermore, SAFA intake often exceeds the recommended level.

Modern soft and liquid margarines like BlueBand\* are a good source of ALA and LA. Because they can be used daily for spreading and cooking they are a convenient, as well as an affordable, way to increase the intake of essential fatty acids in the diet. On top of this, these margarines are virtually trans fat free (VTF) and lower in SAFA than fats from animal origin.

\* BlueBand is an example of a brand name that is synonymous to other brands names, like Pamis, Country Crock, Doriانا, Dorina, Milda, Mirasol, Planta, Planta Pin, Asta, Primavera, Sana, Tulipin, Mulbella, Vitam.



### Conclusion

- Essential fatty acids are needed for healthy growth and development of children
- Dietary surveys show that worldwide children are not meeting the recommendations for essential fatty acids, especially ALA
- Dietary surveys also show that worldwide children have a SAFA intake that exceeds the recommendations
- Modern soft and liquid margarines such as BlueBand are a convenient and affordable way to increase EFA intake daily
- Replacing fat products from animal origin by products from vegetable oils such as soft margarines helps to decrease SAFA intake

### References

1. Butte NF. Fat intake of children in relation to energy requirements. *American Journal of Clinical Nutrition* 2000; 72:1246S-52S.
2. FAO/WHO. FAO/WHO expert consultation. Diet, nutrition and the prevention of chronic diseases: report of a joint FAO/WHO expert consultation. 2003.
3. Uauy R, Castillo C. Lipid requirements of infants: Implications for nutrient composition of fortified complementary foods. *Journal of Nutrition* 2003; 133:2962S-72S
4. Gurr M.I. Role of fats in food and nutrition. 2<sup>nd</sup> edition (1992)
5. WHO/FAO 1994. Fats and oils in human nutrition. Report of a joint expert consultation. Organized by the Food and Agriculture Organization of the United Nations and the World Health Organization Rome, 1993
6. Aggett PJ, Hasche F, Heine W, Hernell O, Koletzko B. Committee report: Childhood diet and prevention of coronary heart disease. *J Pediatric Gastroenterology and Nutrition* 1994;19:261-269.
7. IOM. Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids (2002/2005). <http://www.iom.edu/?id=8510>

