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Dietary fat intake – a global perspective

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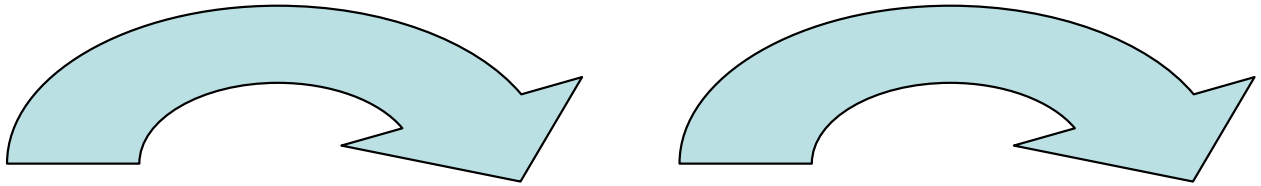
Food Intake => Nutrient Intake



Food Records: retrospective / prospective - Food Frequency Questionnaires -Food Balance Sheets	Food Composition Table/Database	Nutrient Intake (Fat, Fatty Acids)

Food Intake => Nutrient Intake
Example:

3-day dietary record

„half avocado“

Food Composition Database of the IfEW, University of Vienna
based on the German BLS 2.3

best corresponding food item:
„Avocado frisch 150 g“

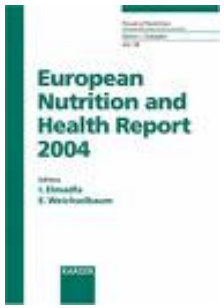
total fat	35.3 g
SFA	5.3 g
MUFA	24.9 g
PUFA	3.5 g

Fat Intake in Austria

Food **B**alance **S**heets vs. 24-h-recall

Calculated from Food Balance Sheets, 2001*

40 Energy%



Calculated from 24-h-recalls, Austrian Adults aged 25-50,1998-2001**

37 Energy%

*European Nutrition and Health Report 2004

** Österreichischer Ernährungsbericht 2003

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Following quality assessment was carried out by UNILEVER

Score	*Year of data collection*	*Survey/study type*	*Sample size*	*Dietary assessment method*
0	1980-89	Household survey	<1000	Not specified
1	1990-99	-	>1000	FFQ
2	2000-	Study		Single 24h recall
3	-	National Nutrition survey		repeated 24h recall or 48h recall, (weighed) food record min 3d
Max score per criteria	2	3	1	3

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Quality of data per survey from various countries (carried out by UNILEVER)

Quality Score	Countries
Good quality data – score 9	Austria (new data) Belgium, Denmark, Finland (2007 adults survey), France, UK (adults), USA, China,
Medium quality data- score 8-7	Austria (old data), Bulgaria, Germany (Eskimo study), Greece (children data), Hungary, Italy, Netherlands (1998 & 2003 survey), Sweden, Australia, New Zealand, Canada, Argentina, Thailand, Singapore, South Africa, Transfair data
Medium-low quality- score 6	Norway (adults, 1997), Spain (adults),
*Poor quality- score 0-5	Germany (HBS), Greece (adults data), Poland, Portugal (adults), Brazil, India
°No information available on quality or not assessed (additional data was used)	Philippines, Japan, Mexico, Cameroon, Nigeria, Tanzania, Australia (Meyer et al. 2003), Belgium (Sioen et al. 2003), Germany (Linseisen et al. 2003) Japan (Kuriki et al. 2003), Norway (Johansson et al. 1998), UK (Bakewell et al. 2006), France (Astorg et al. 2004), India (Goyal et al. 2005), US (NHANES 2001-2002), US (CSFII 1994–1996)

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Data is presented for adults 18+ with following exceptions:

Countries	Age (M+F)
Argentina	10-49y
Brazil	0+y
Thailand	15-59y
France	15>65y
Norway	16-79y
Sweden	17-65y

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Total fat intake

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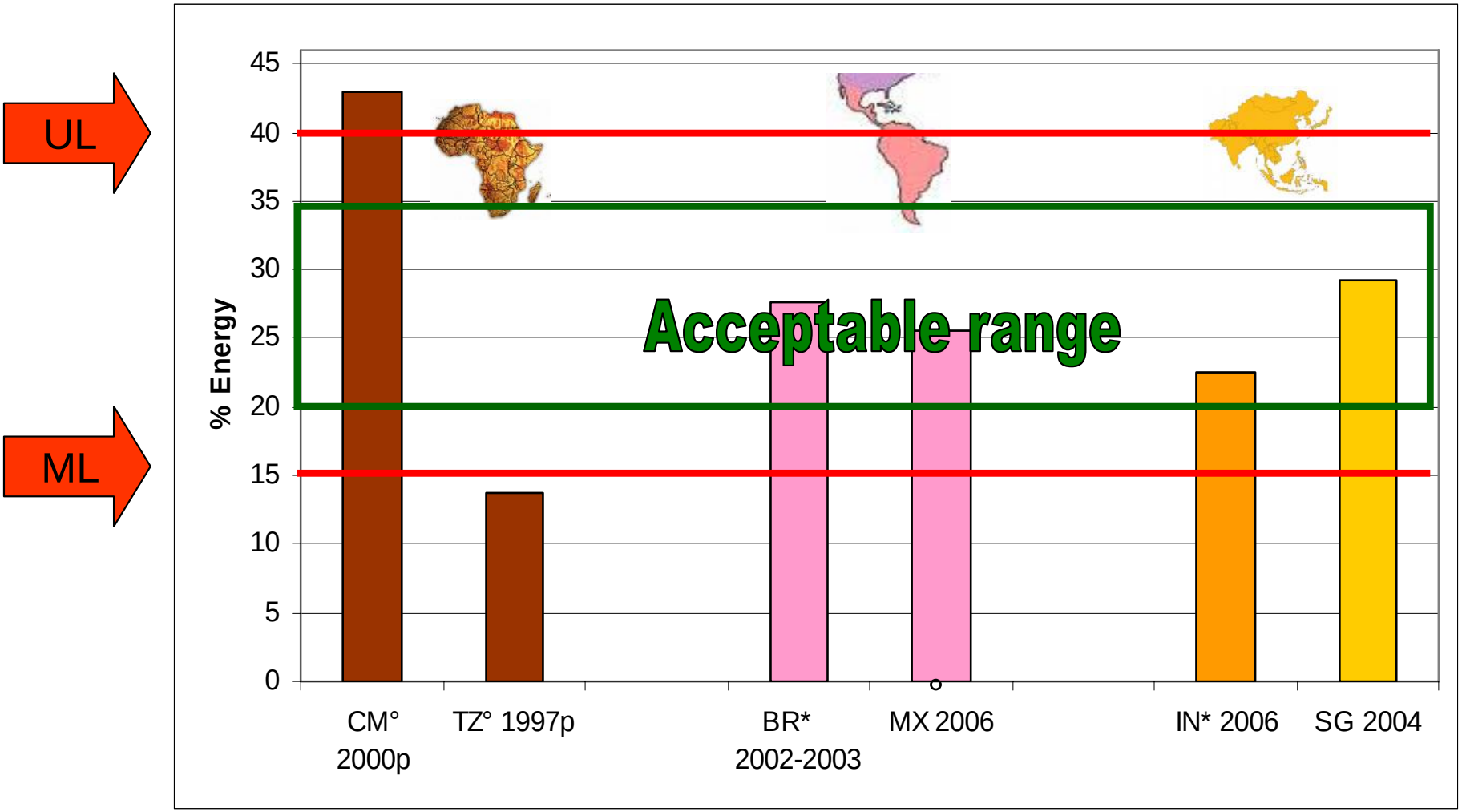
Data on total fat intake in Africa, Latin America and Asia



(*poor quality study, °no information on quality, p published year, ML minimum level, UL upper level)

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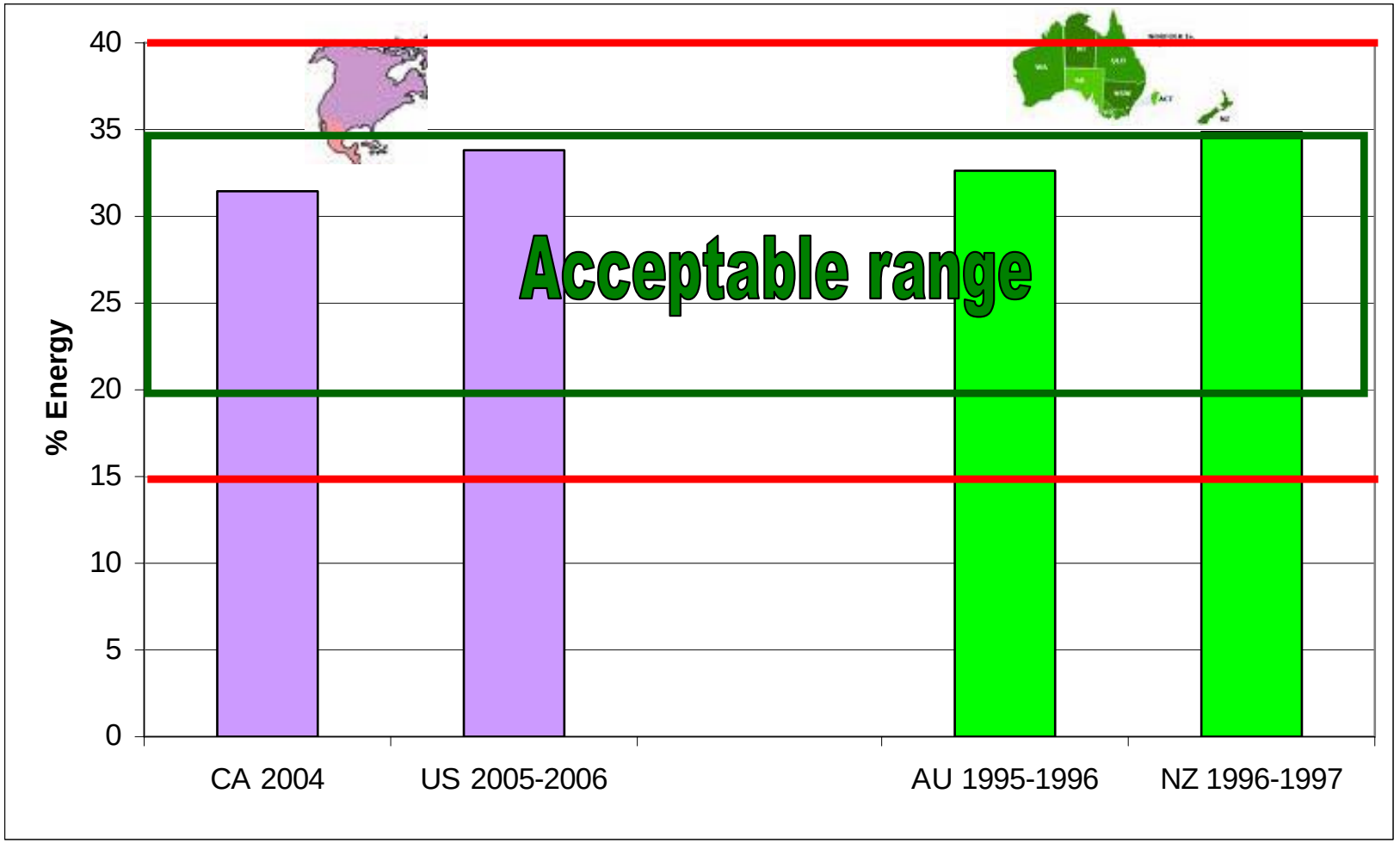
Data on total fat intake in North America, Australia and New Zealand

UL

ML



(ML minimum level, UL upper level)

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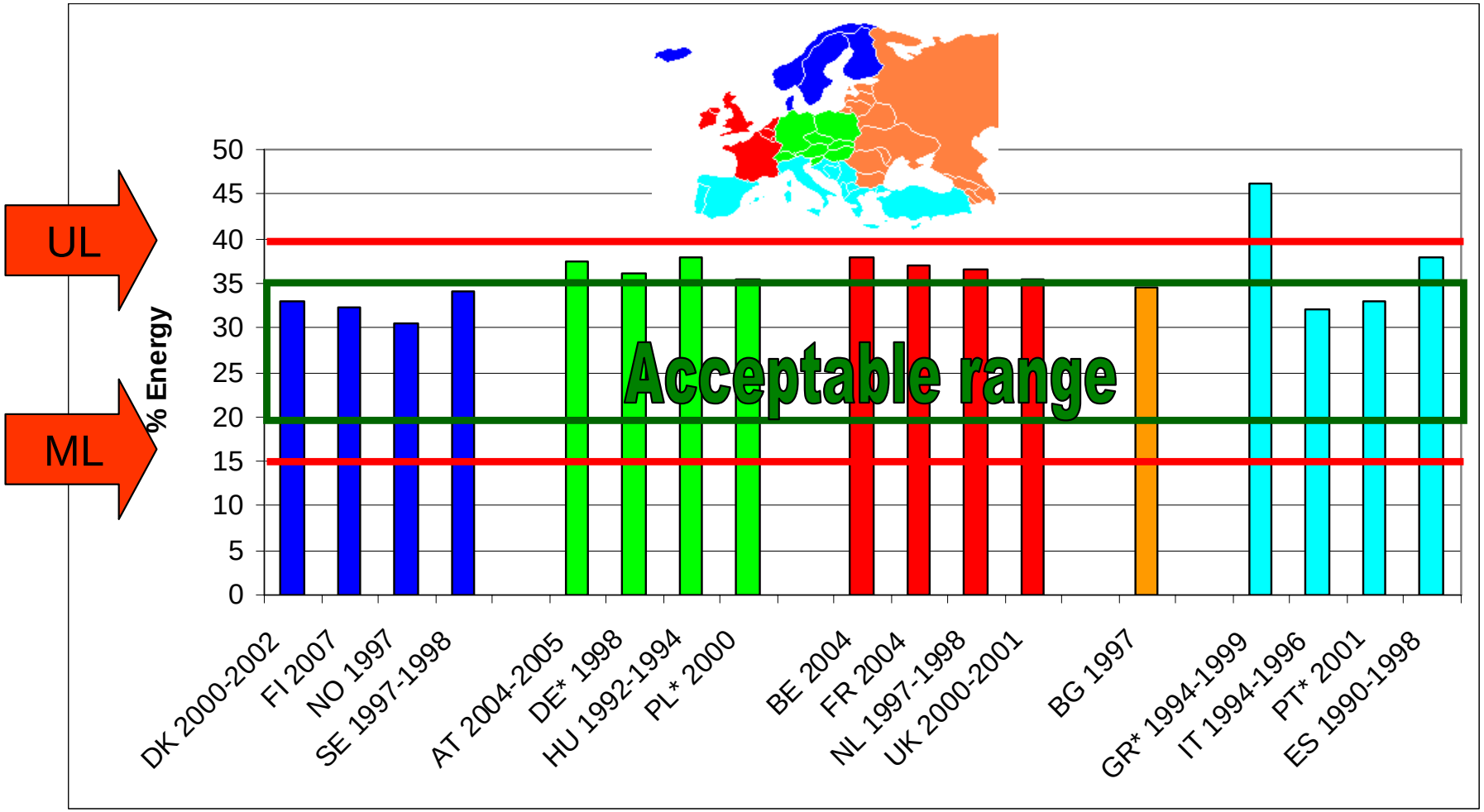
Data on total fat intake in Northern, Central, Western, Eastern and Southern Europe



(*poor quality study, ML minimum level, UL upper level)

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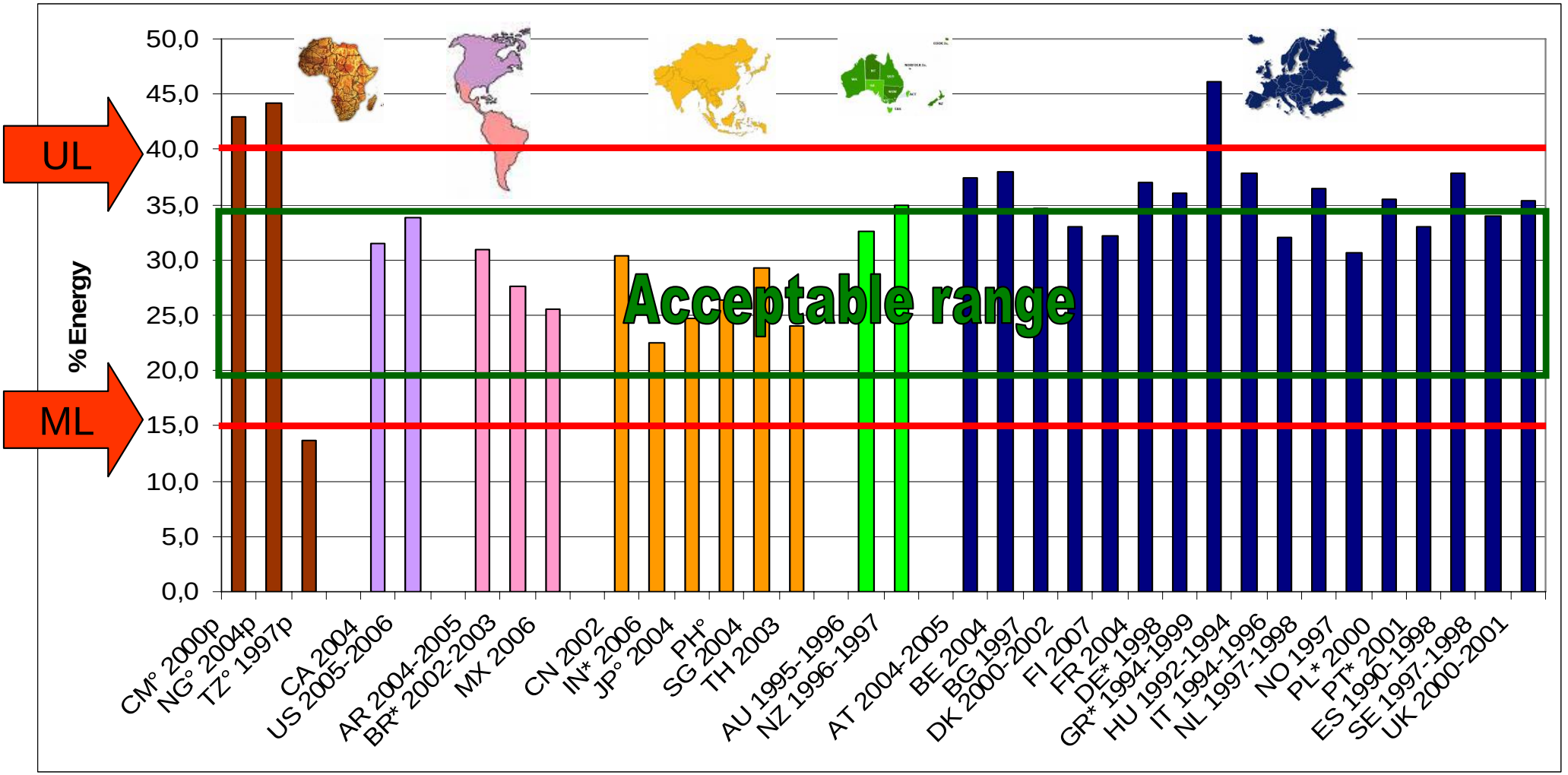
International data on total fat intake



(*poor quality study, °no information on quality; p published year, ML minimum level, UL upper level)

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SFA intake

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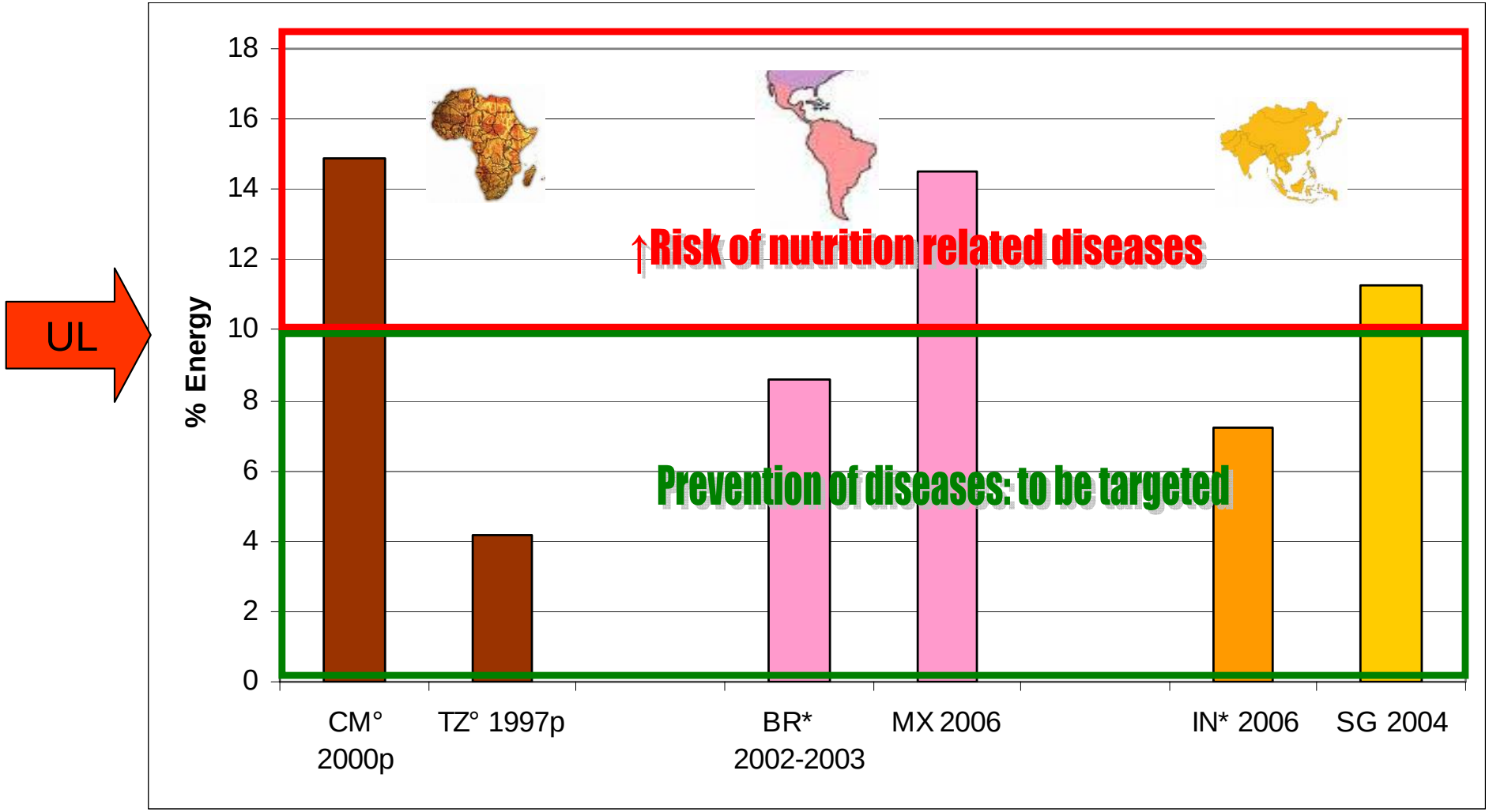
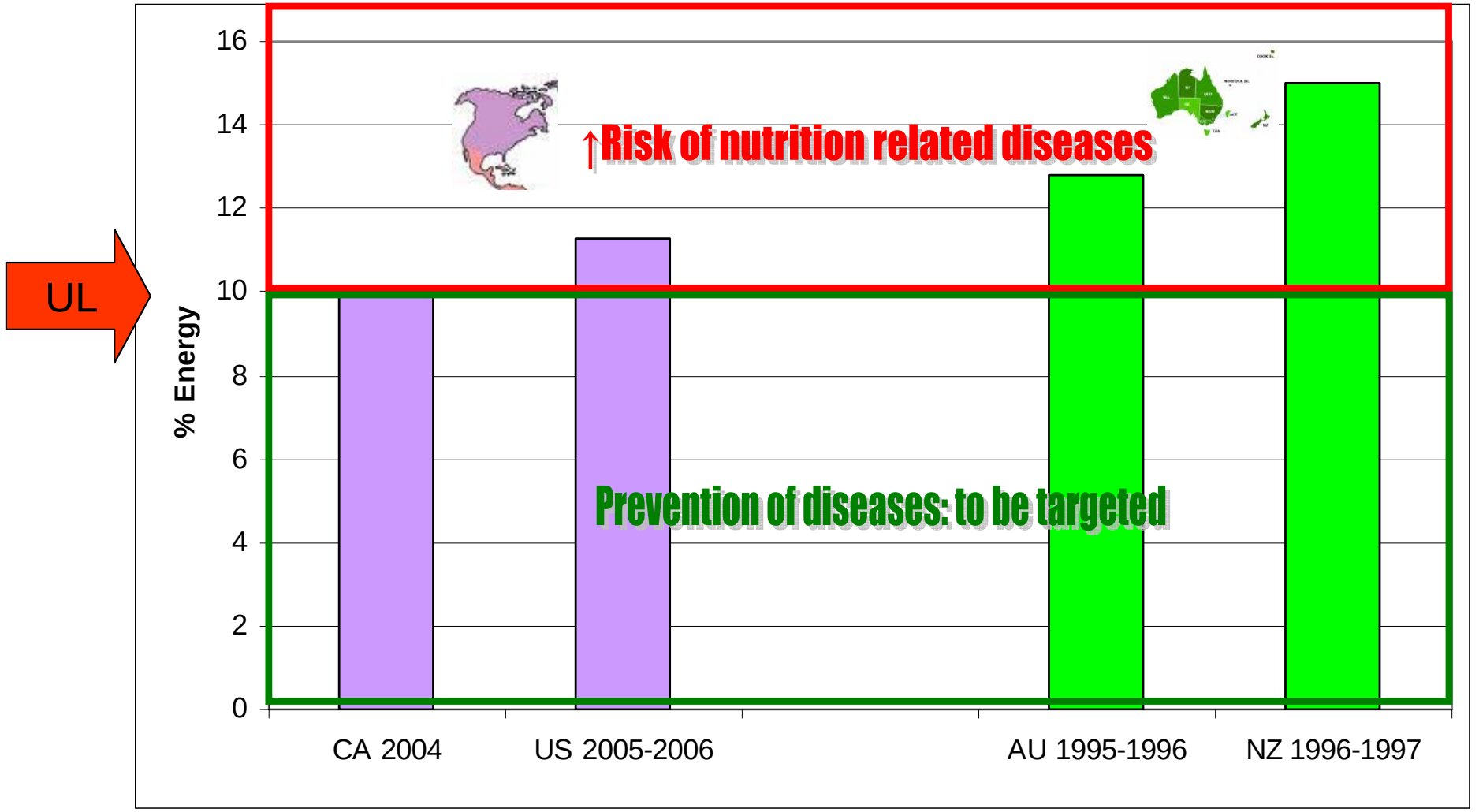
Data on saturated fatty acid (SFA) intake in Africa, Latin America and Asia



(*poor quality study, °no information on quality; p published year, UL upper level)

Data on saturated fatty acid (SFA) intake in North America, Australia and New Zealand



UL upper level

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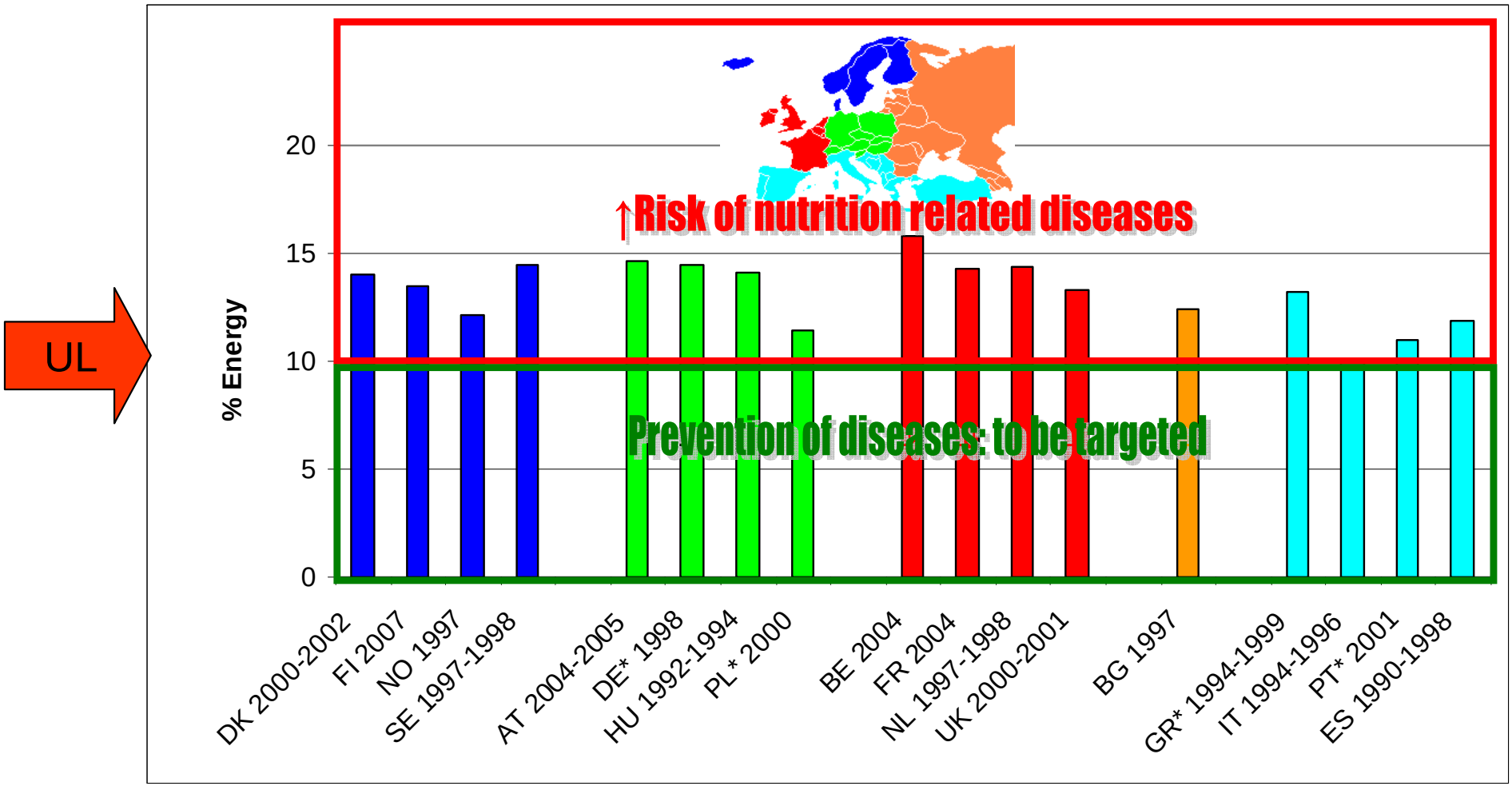
Data on saturated fatty acid (SFA) intake in Northern, Central, Western, Eastern and Southern Europe



(*poor quality study, UL upper level)

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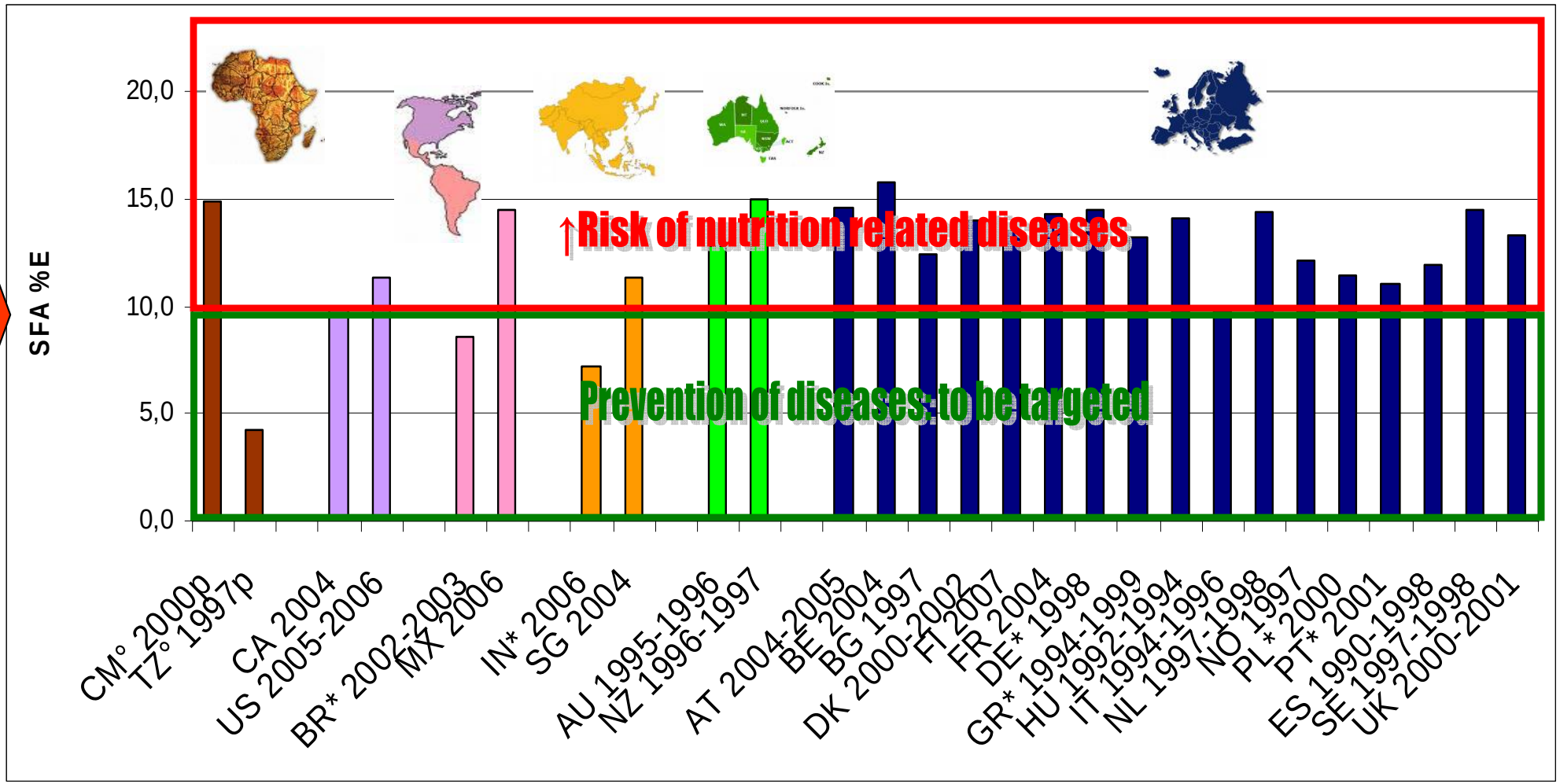
International data on intake of saturated fatty acids (SFA)



(*poor quality study, °no information on quality, p published year, E energy, UL upper level)

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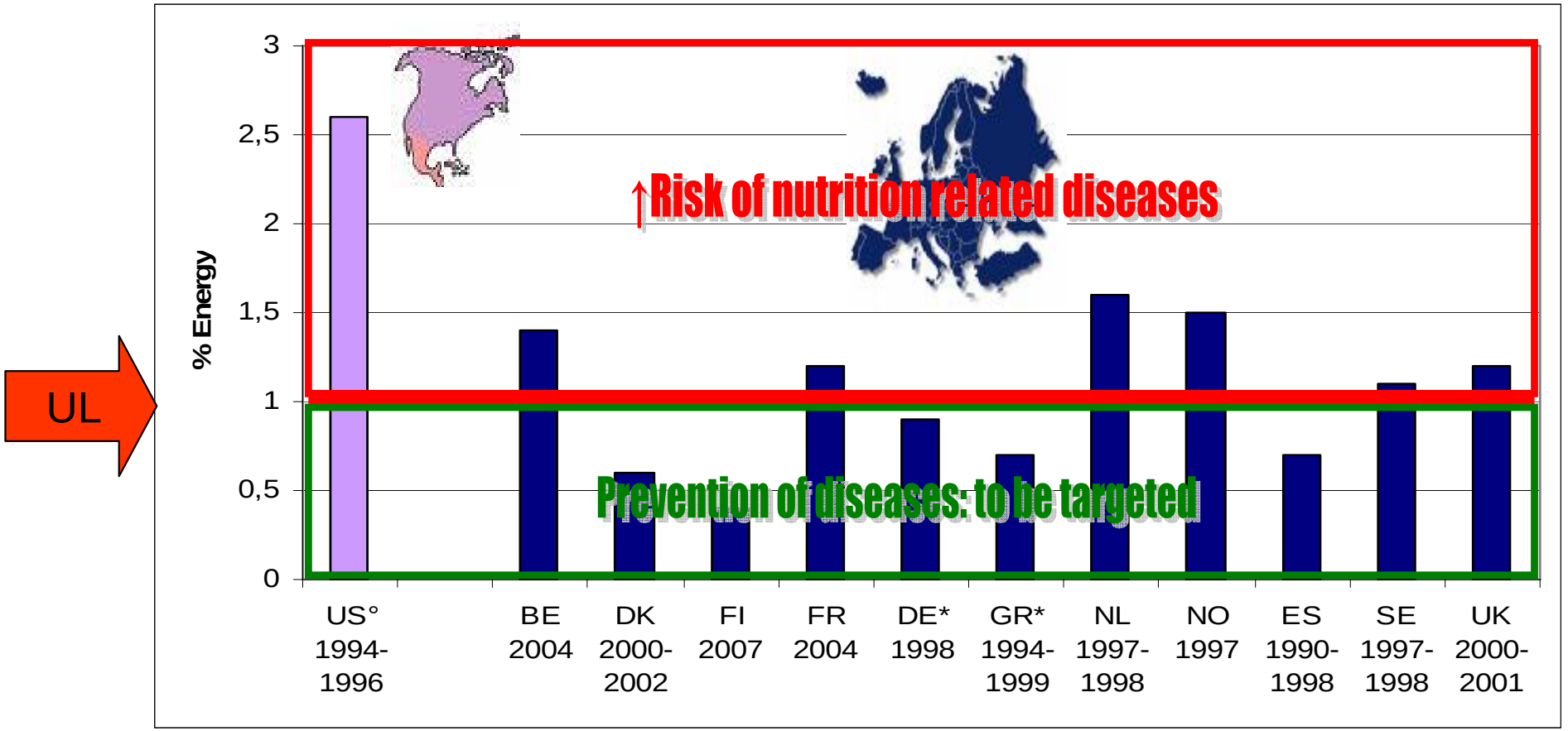
TFA intake

International data on trans fatty acid (TFA) intake

(Ruminant and industrial TFA should be < 1%E)



(*poor quality study, °no information on quality, UL upper level)

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PUFA intake

general recommendations

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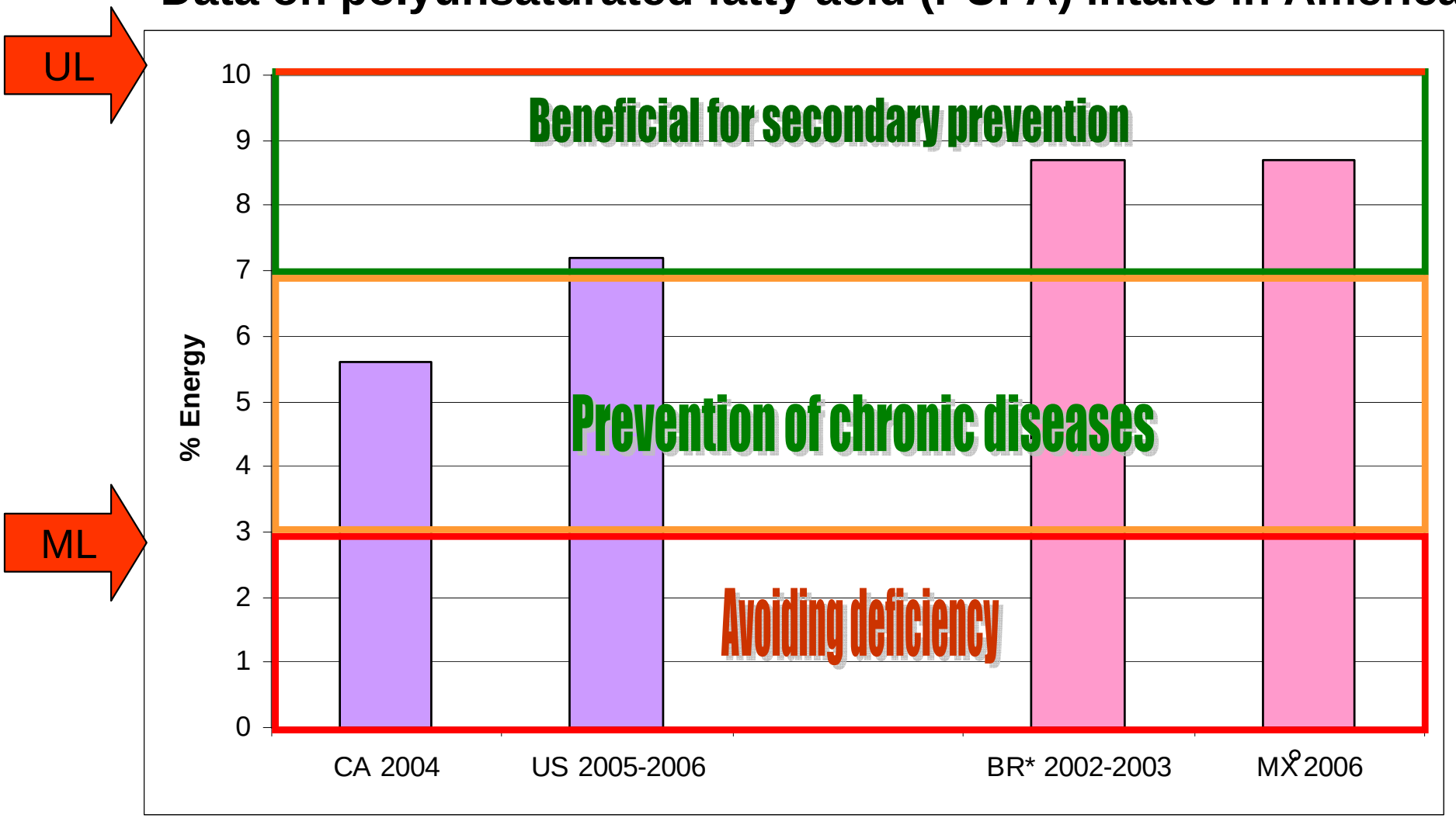
Data on polyunsaturated fatty acid (PUFA) intake in America



(*poor quality study, °no information on quality, ML minimum level, UL upper level)

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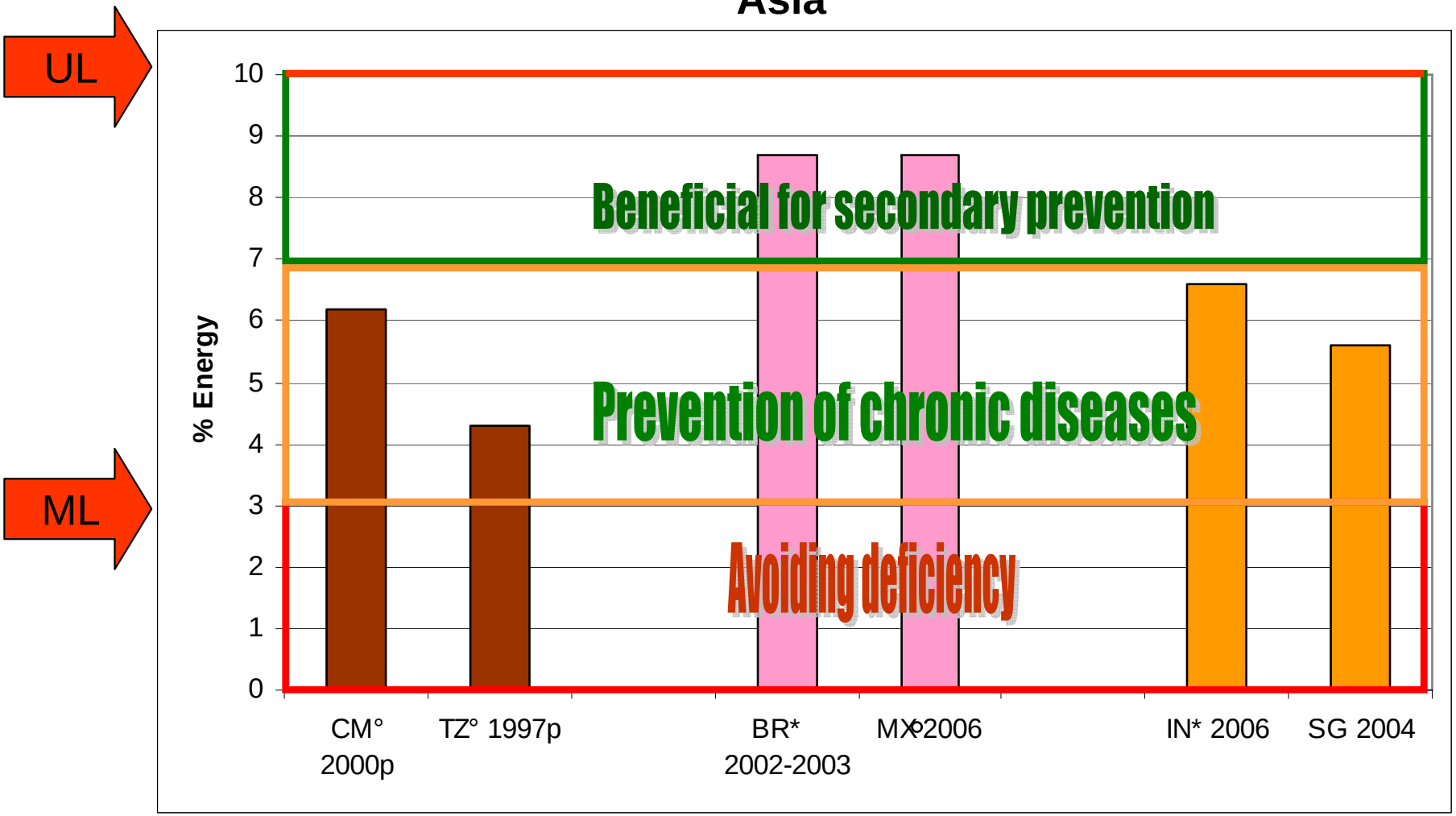
Data on polyunsaturated fatty acid (PUFA) intake in Africa, Latin America and Asia



(*poor quality study, °no information on quality, ML minimum level, UL upper level)

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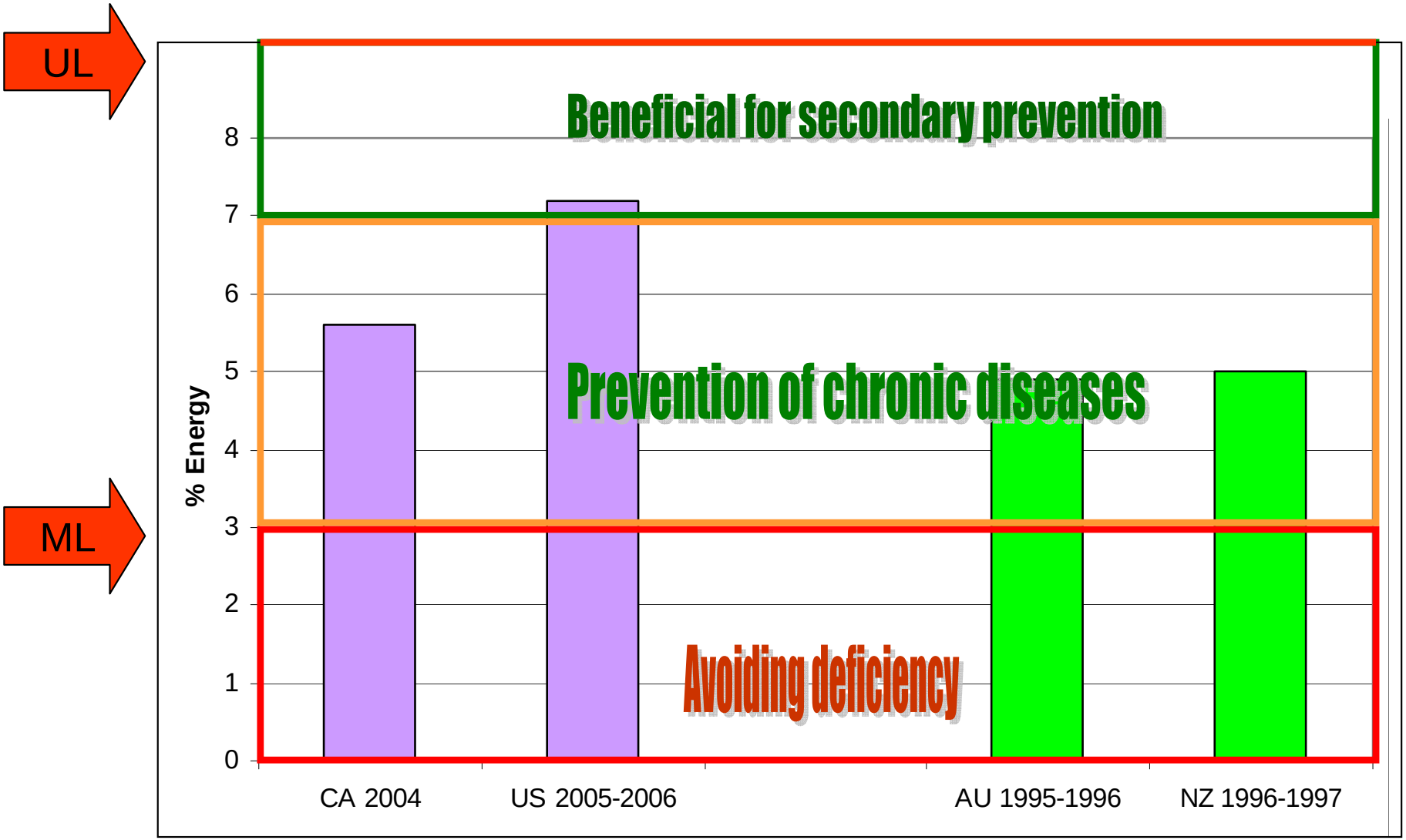
Data on polyunsaturated fatty acid (PUFA) intake in North America, Australia and New Zealand



ML minimum level, UL upper level

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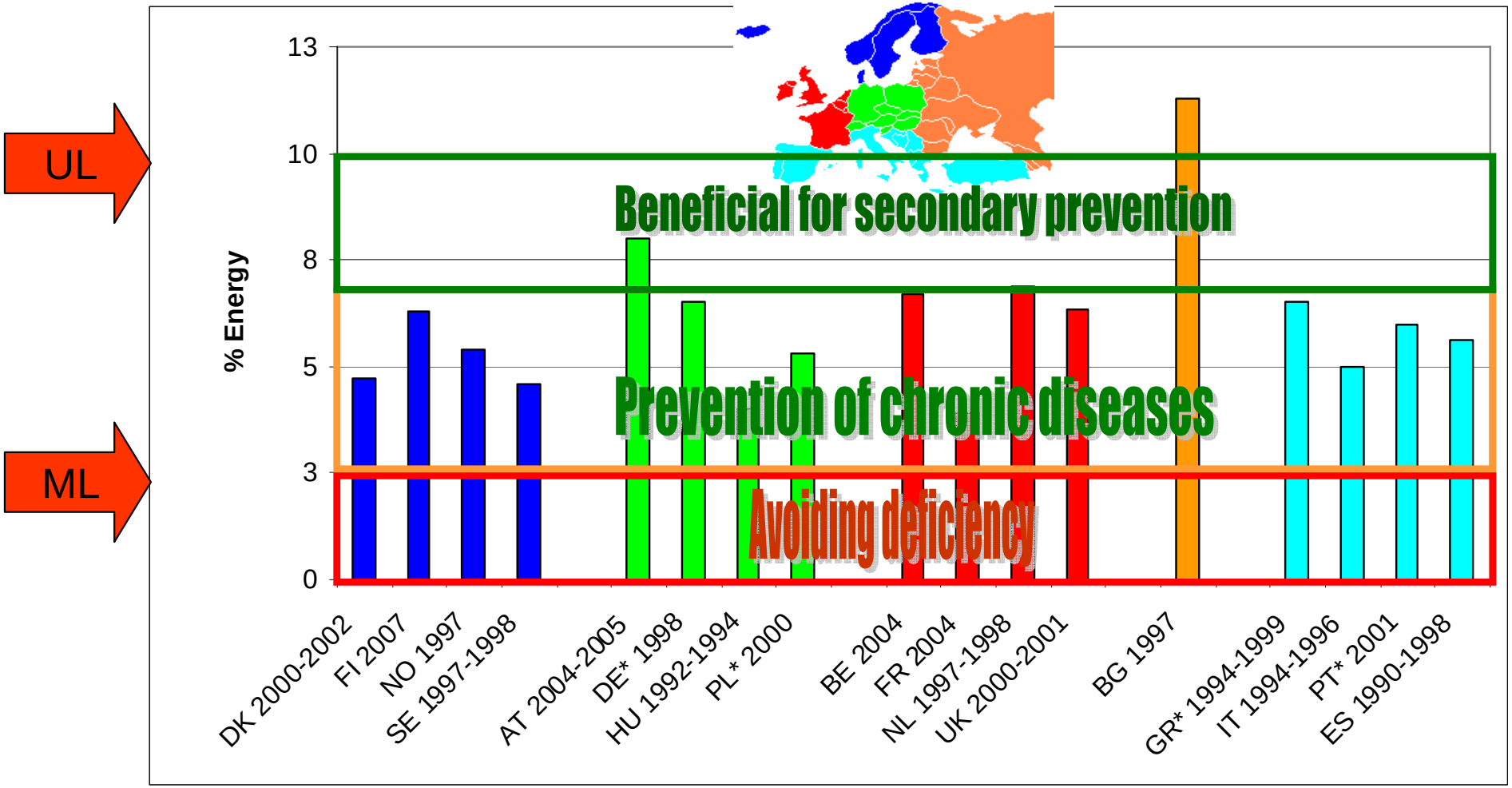
Data on polyunsaturated fatty acid (PUFA) intake in Northern, Central, Western, Eastern and Southern Europe



(*poor quality study, ML minimum level, UL upper level)

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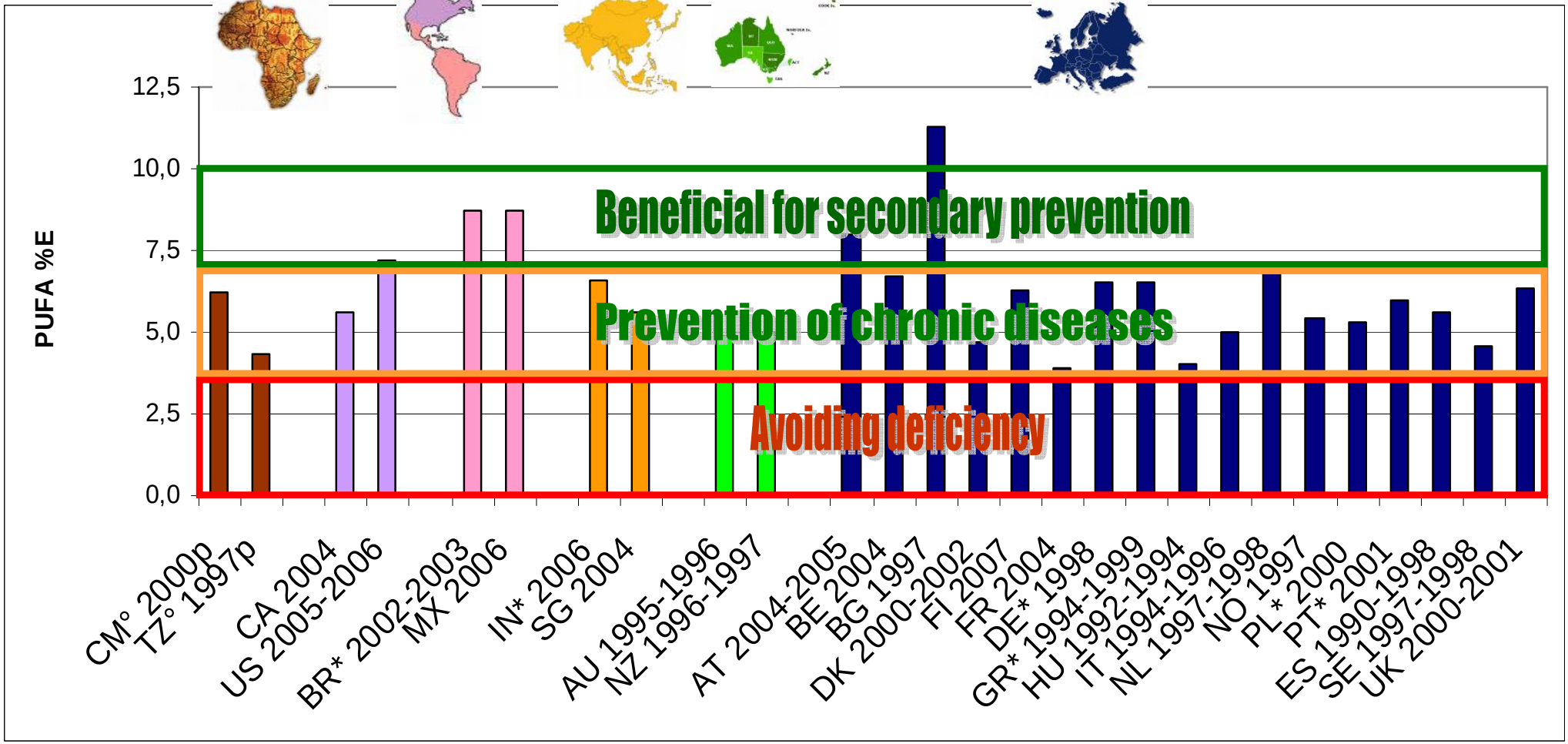
International data on polyunsaturated fatty acid (PUFA) intake



(*poor quality study, °no information on quality, p published year, E energy)

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Intake of essential fatty acids

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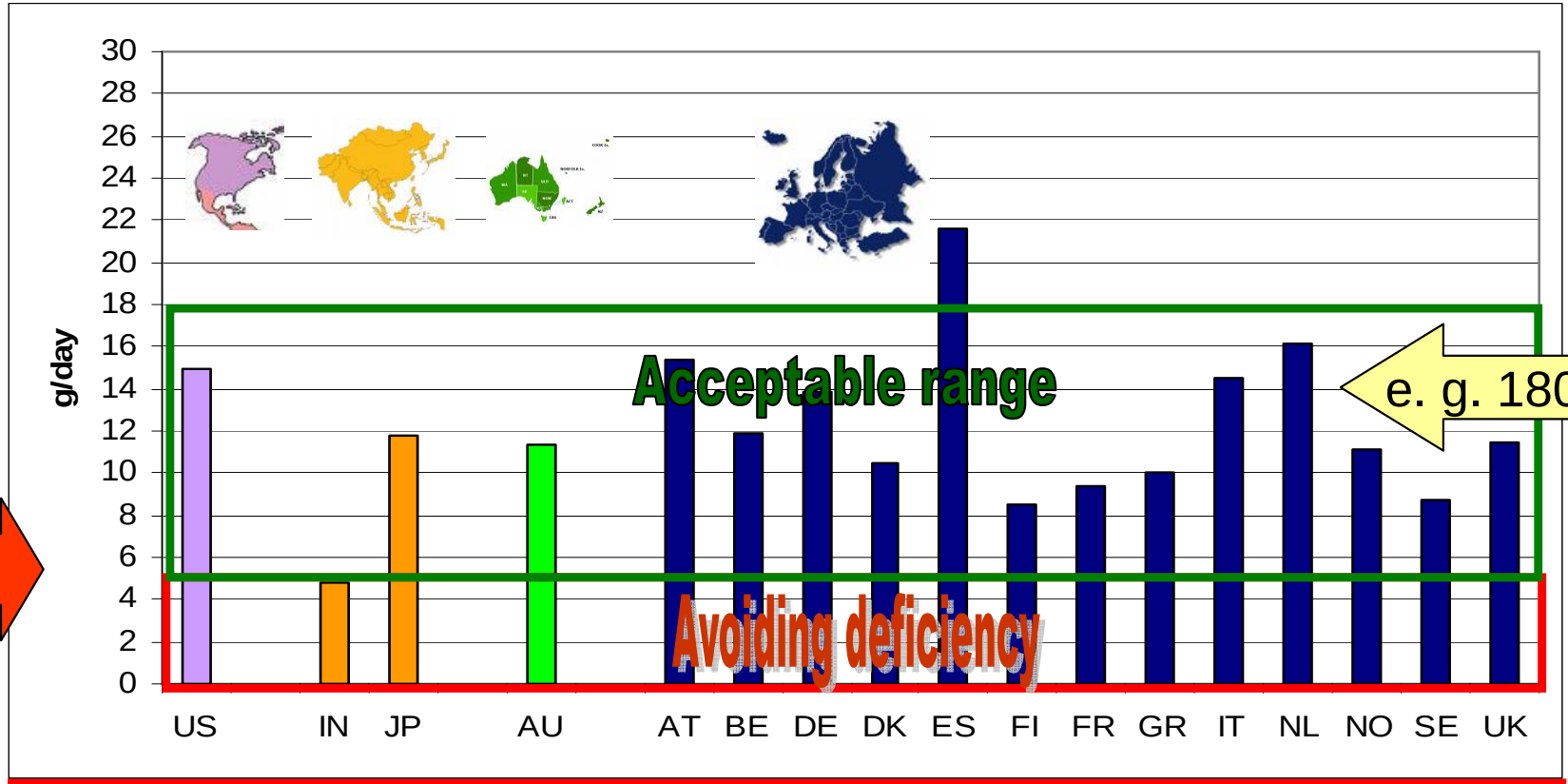
International data on linoleic acid (LA) intake



Acceptable Macronutrient Distribution Range: 2.5 – 9%E
2.5%E = 5 - 8 g/d (1800 – 3000 kcal)
9.0%E = 18 – 30 g/d (1800 – 3000 kcal)

Additional data without quality assessment, ML minimum level

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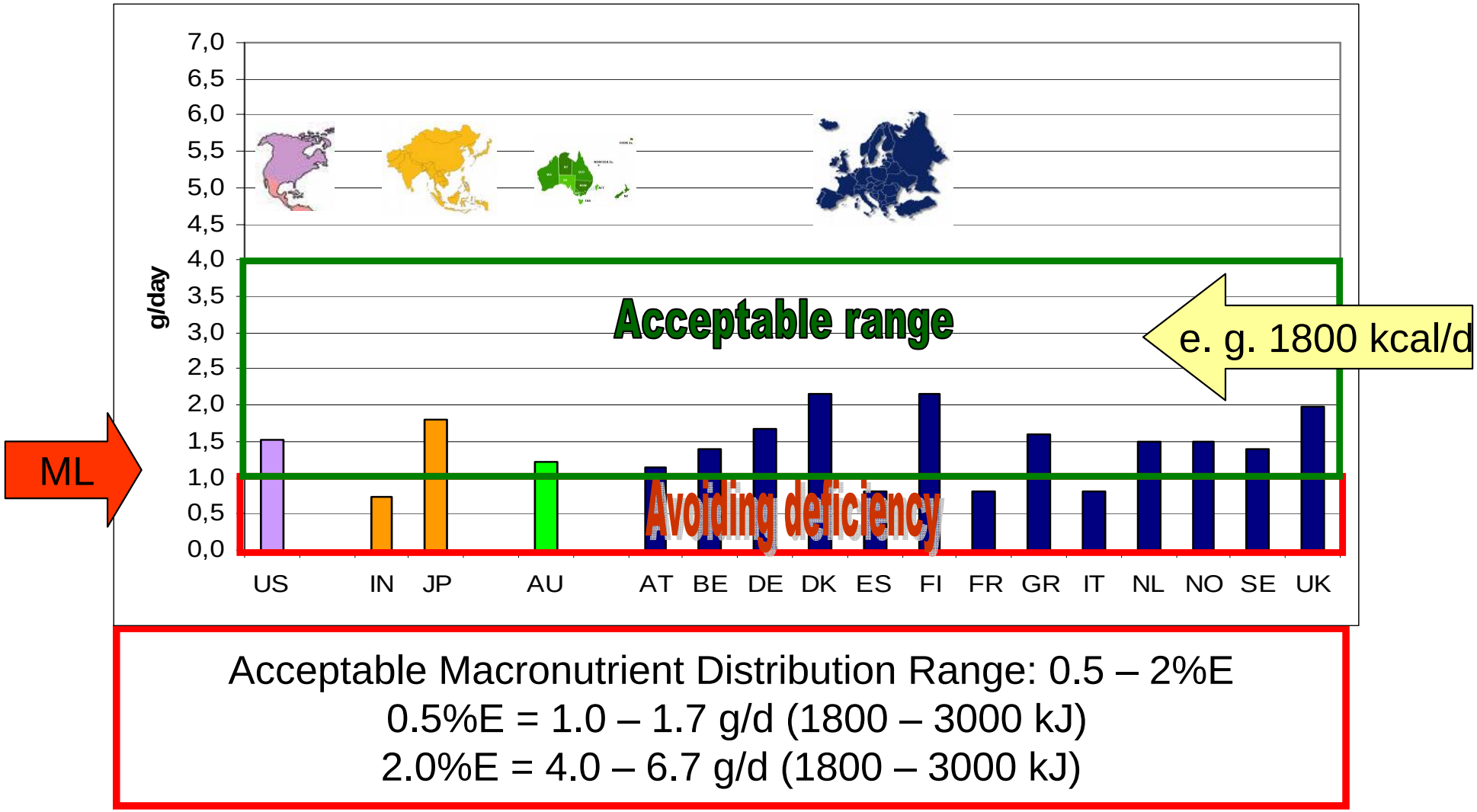
International data on α-linolenic acid (ALA) intake



Acceptable Macronutrient Distribution Range: 0.5 – 2%E
0.5%E = 1.0 – 1.7 g/d (1800 – 3000 kJ)
2.0%E = 4.0 – 6.7 g/d (1800 – 3000 kJ)

Additional data without quality assessment, ML minimum level

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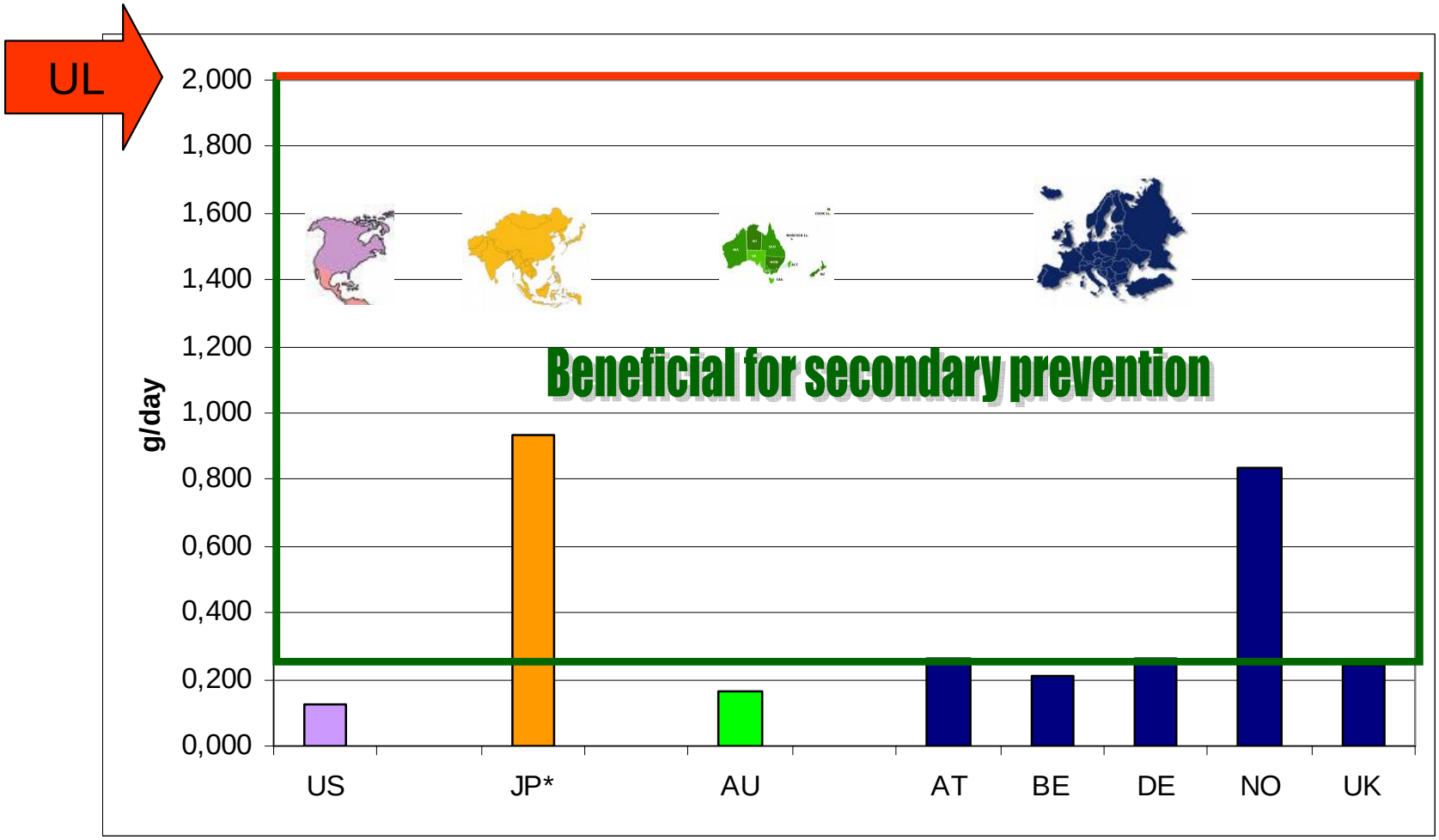
International data on eicosapentaenoic and docosahexaenoic acid (EPA + DHA) intake



*Dietitians, additional data without quality assessment, UL (upper level) for supplements

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MUFA intake

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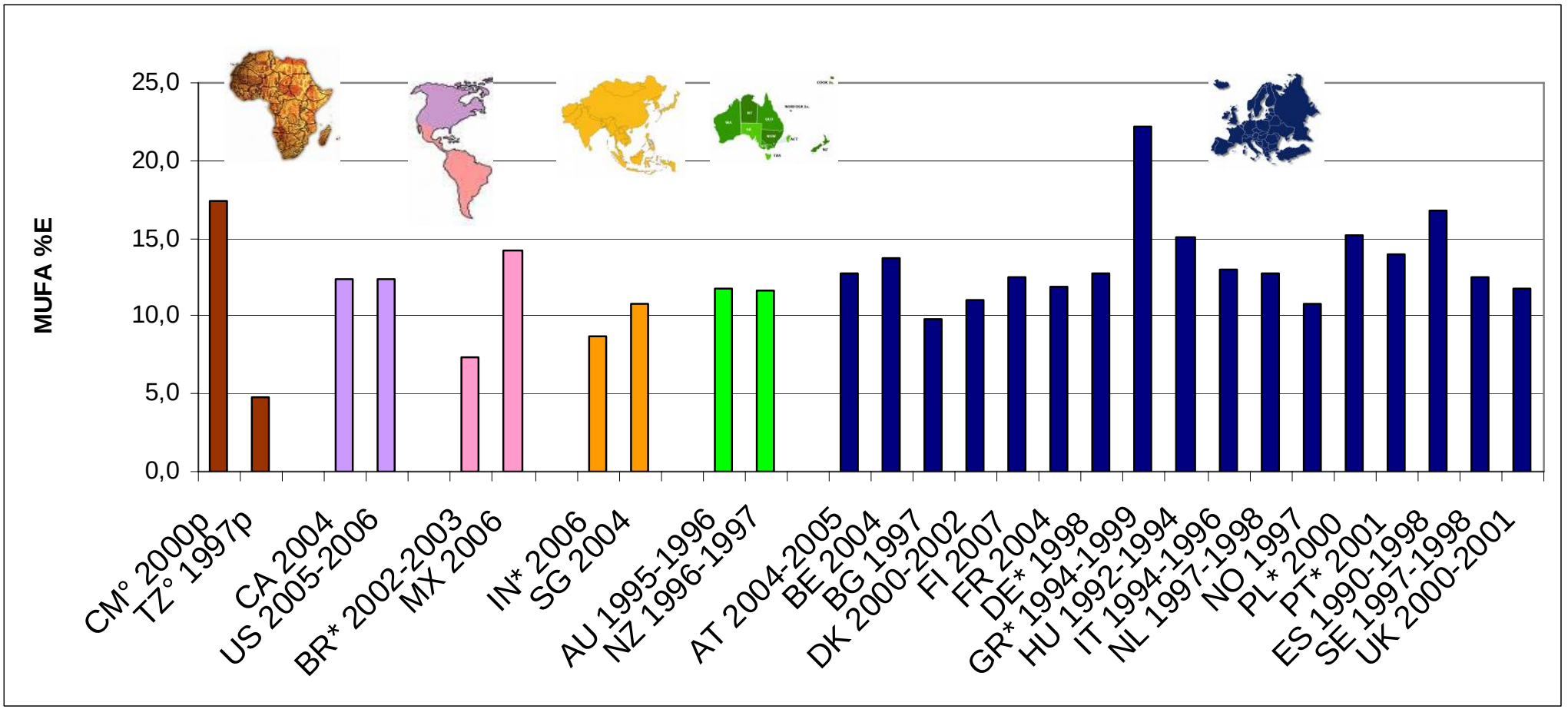
International data on monounsaturated fatty acid (MUFA) intake



(*poor quality study, °no information on quality, p published year, E energy)

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UFA intake

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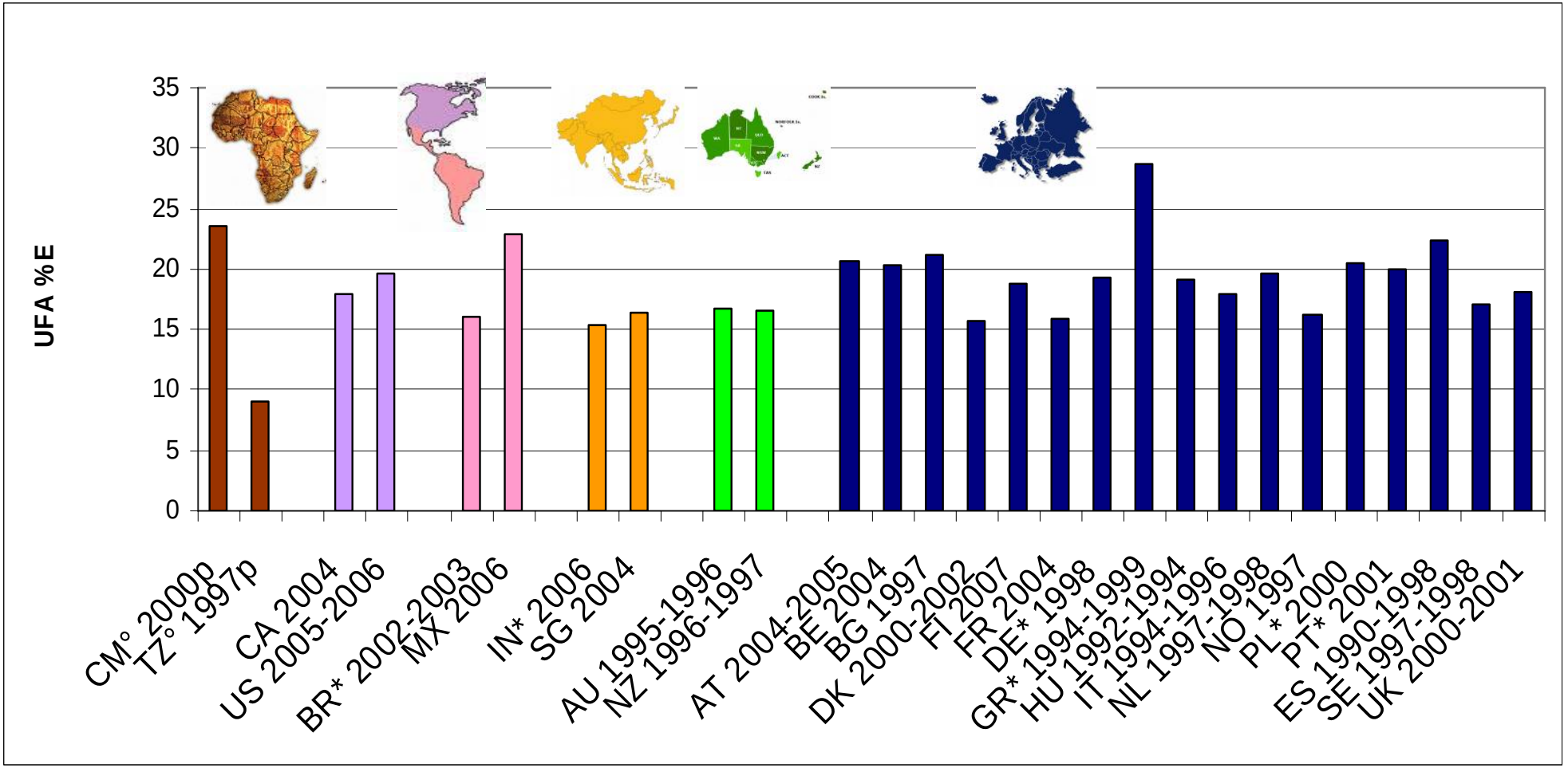
International data on unsaturated fatty acids (UFA) intake



(*poor quality study, °no information on quality; p published year; E energy)

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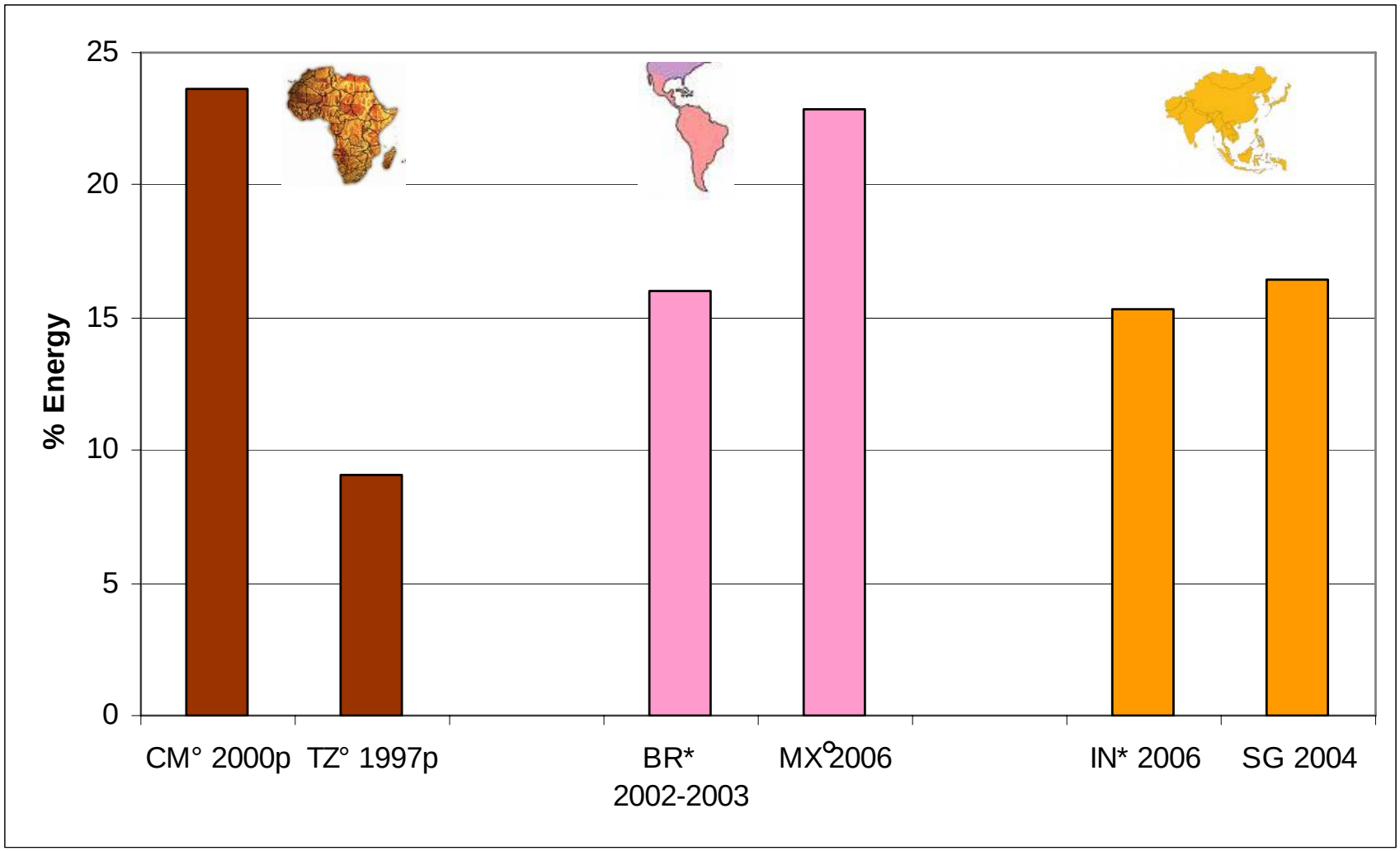
Data on unsaturated fatty acid (UFA) intake in Africa, Latin America and Asia



(*poor quality study, °no information on quality)

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Distribution of SFA, MUFA and PUFA

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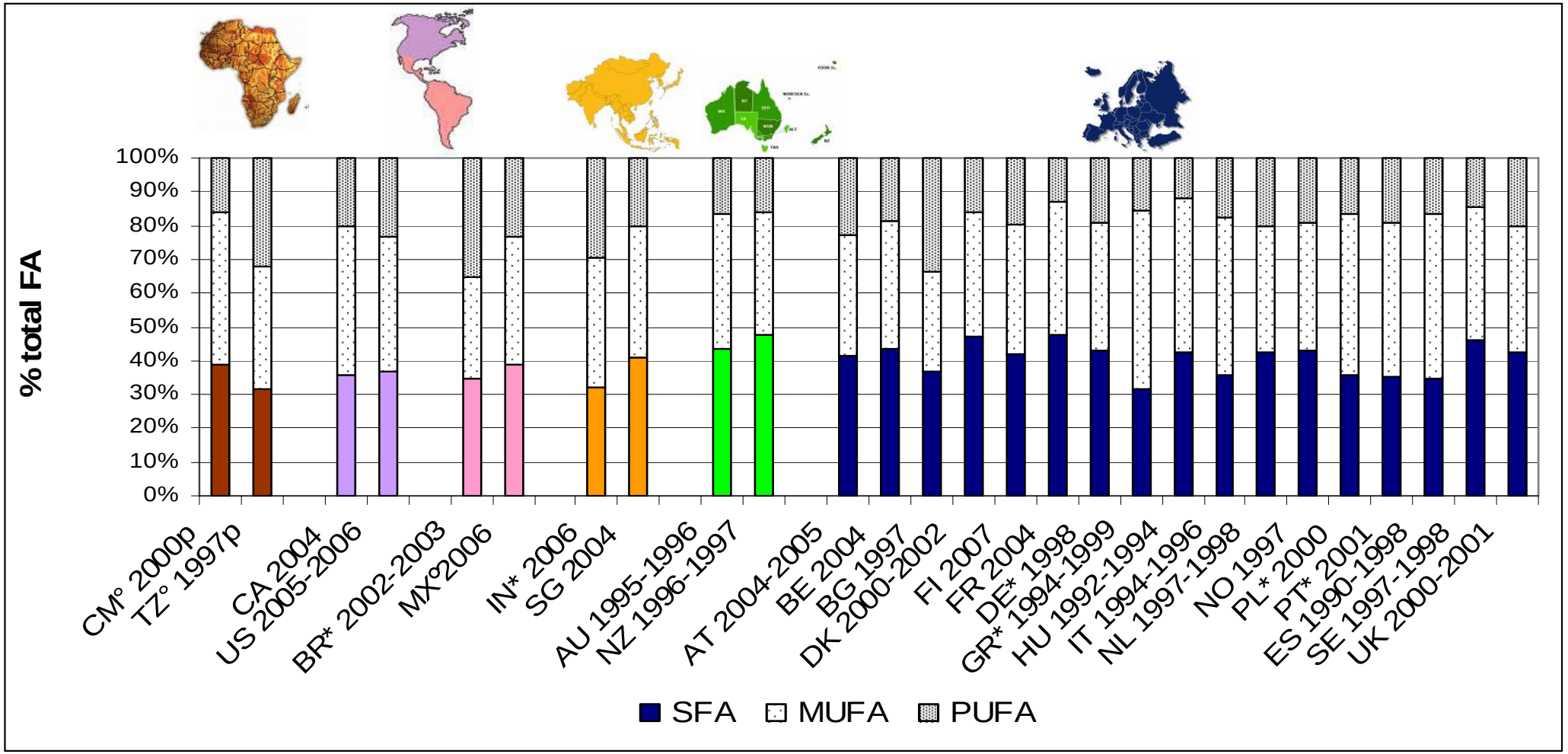
International data on the distribution of SFA, MUFA and PUFA



(*poor quality study, °no information on quality; p published year)

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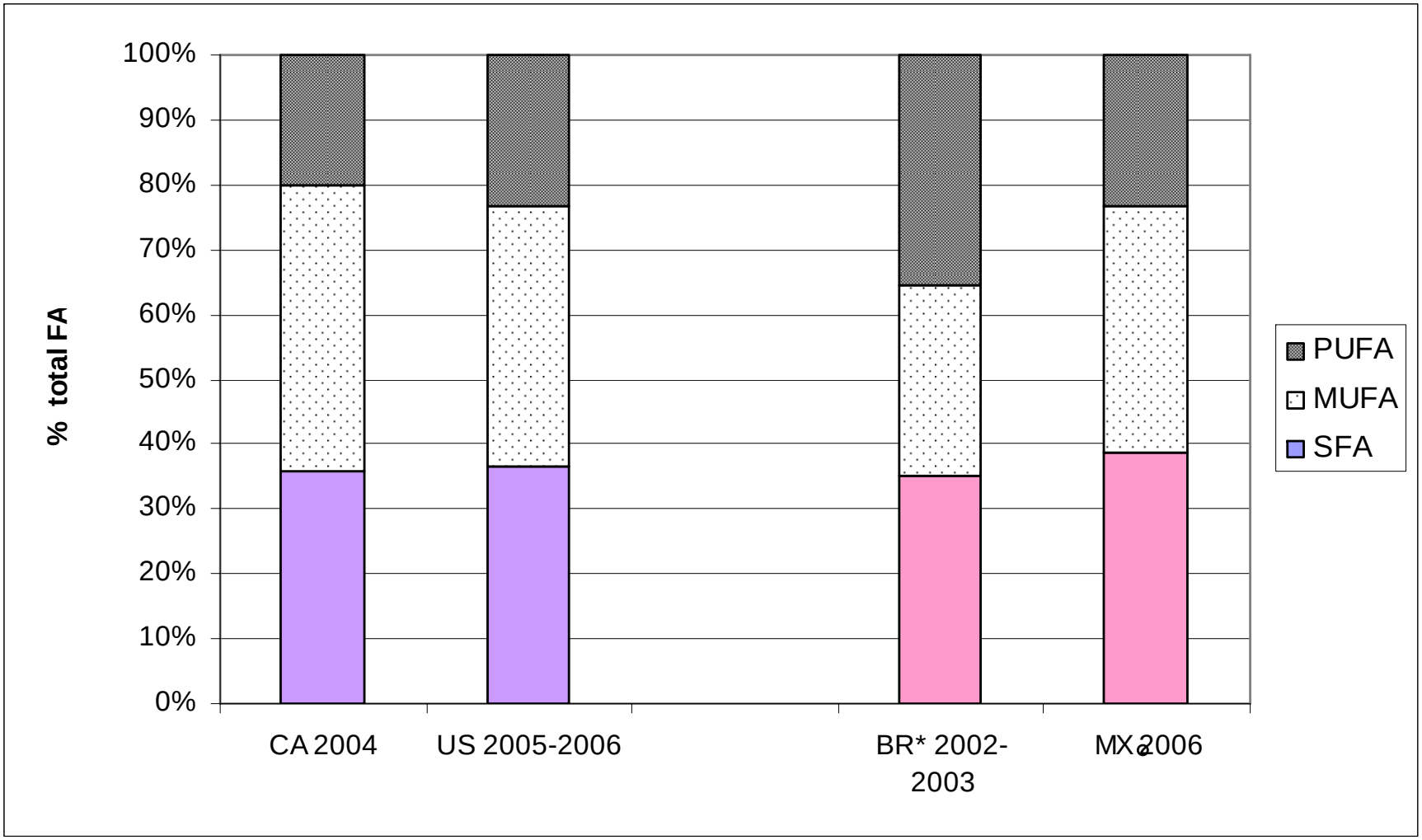
Distribution of SFA, MUFA and PUFA in America



(*poor quality study, °no information on quality)

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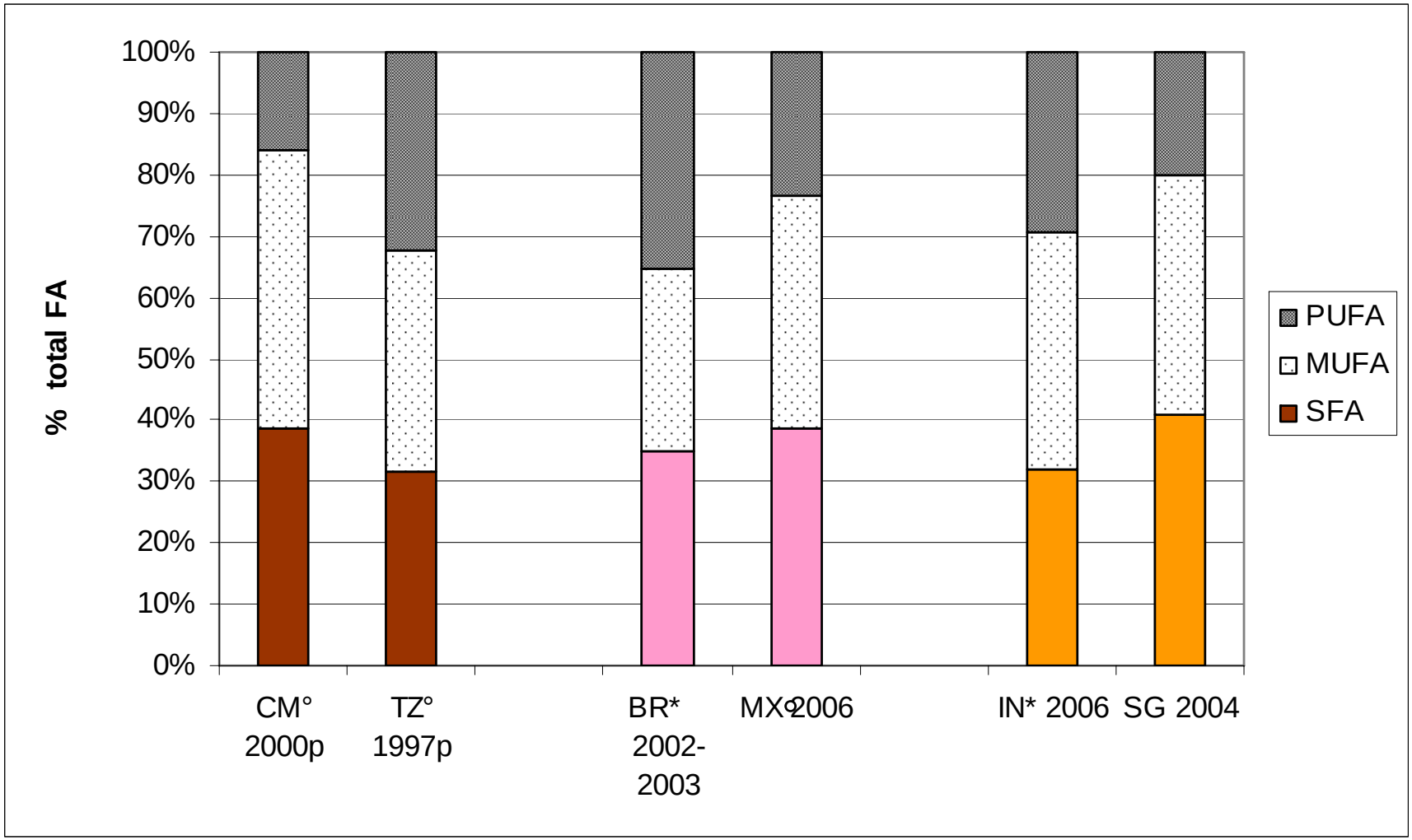
Distribution of SFA, MUFA and PUFA in Africa, Latin America and Asia



(*poor quality study, °no information on quality)

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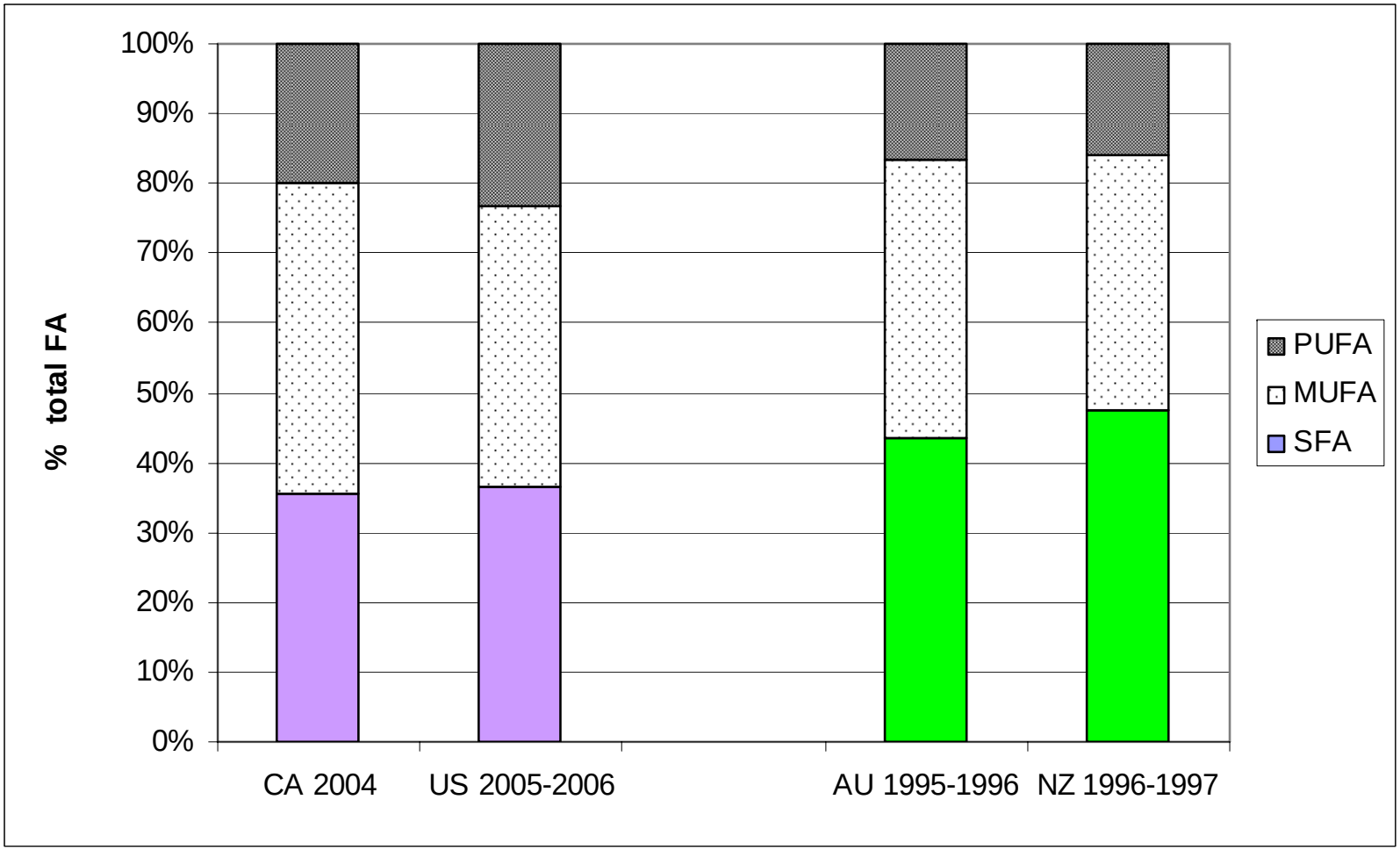
Distribution of SFA, MUFA and PUFA in adults in North America, Australia and New Zealand



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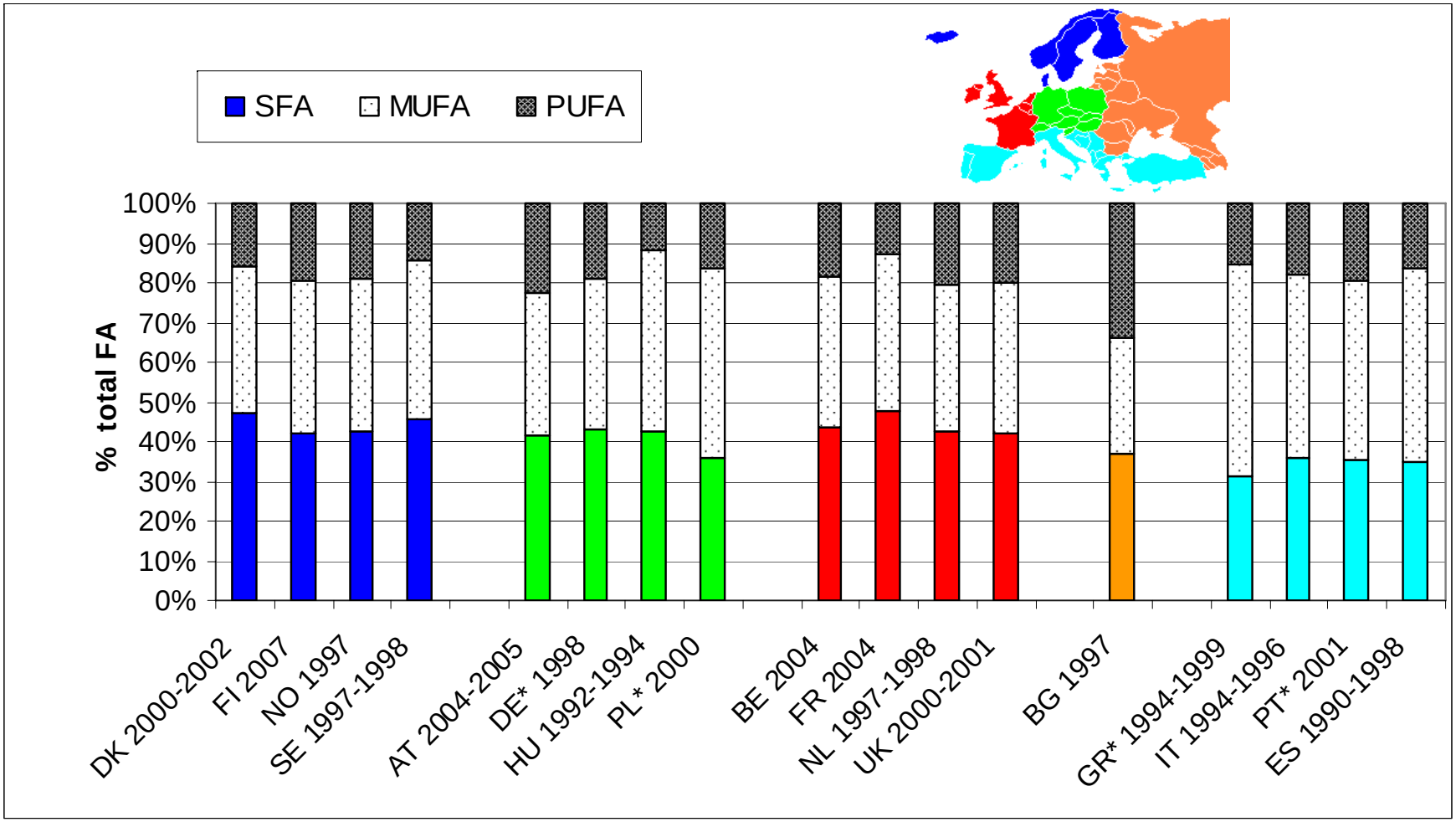
Distribution of SFA, MUFA and PUFA in adults in Northern, Central, Western, Eastern and Southern Europe



(*poor quality study)

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Countries

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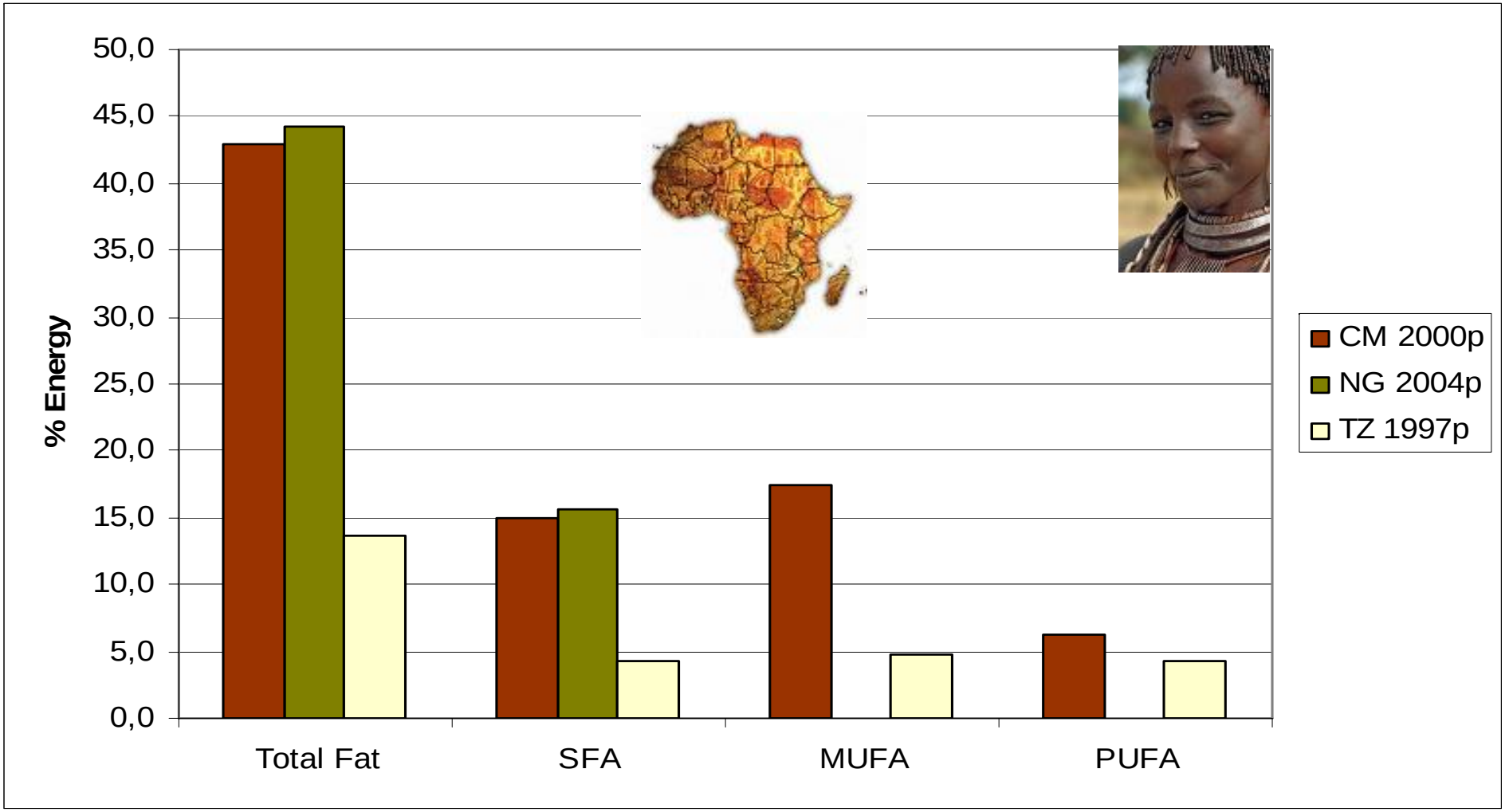
African data on fat intake in adults



(Data quality not evaluated; p published year)

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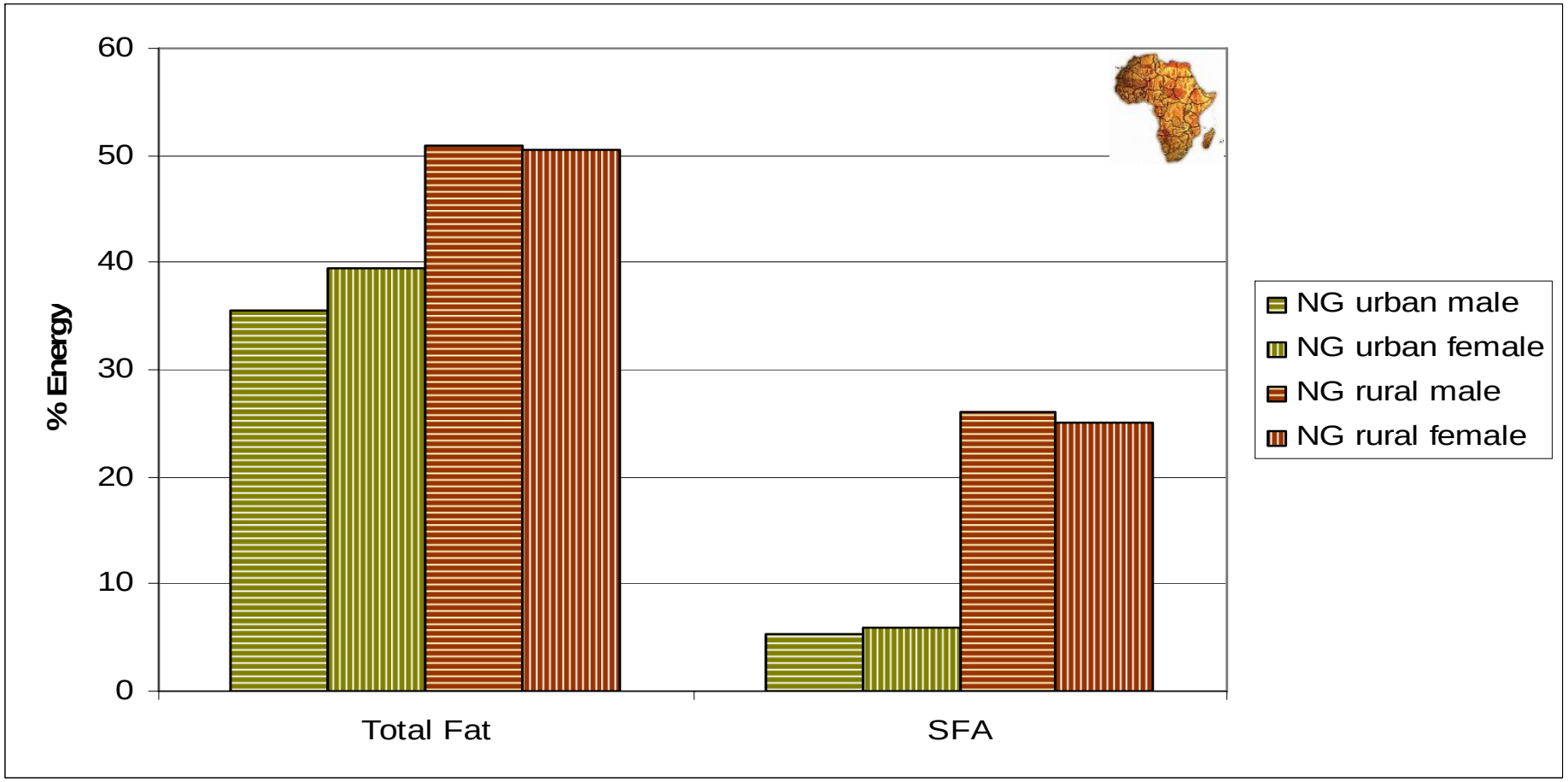
Data on fat intake of urban and rural dwellwers in Ningeria



(Data quality not evaluated; p published year)

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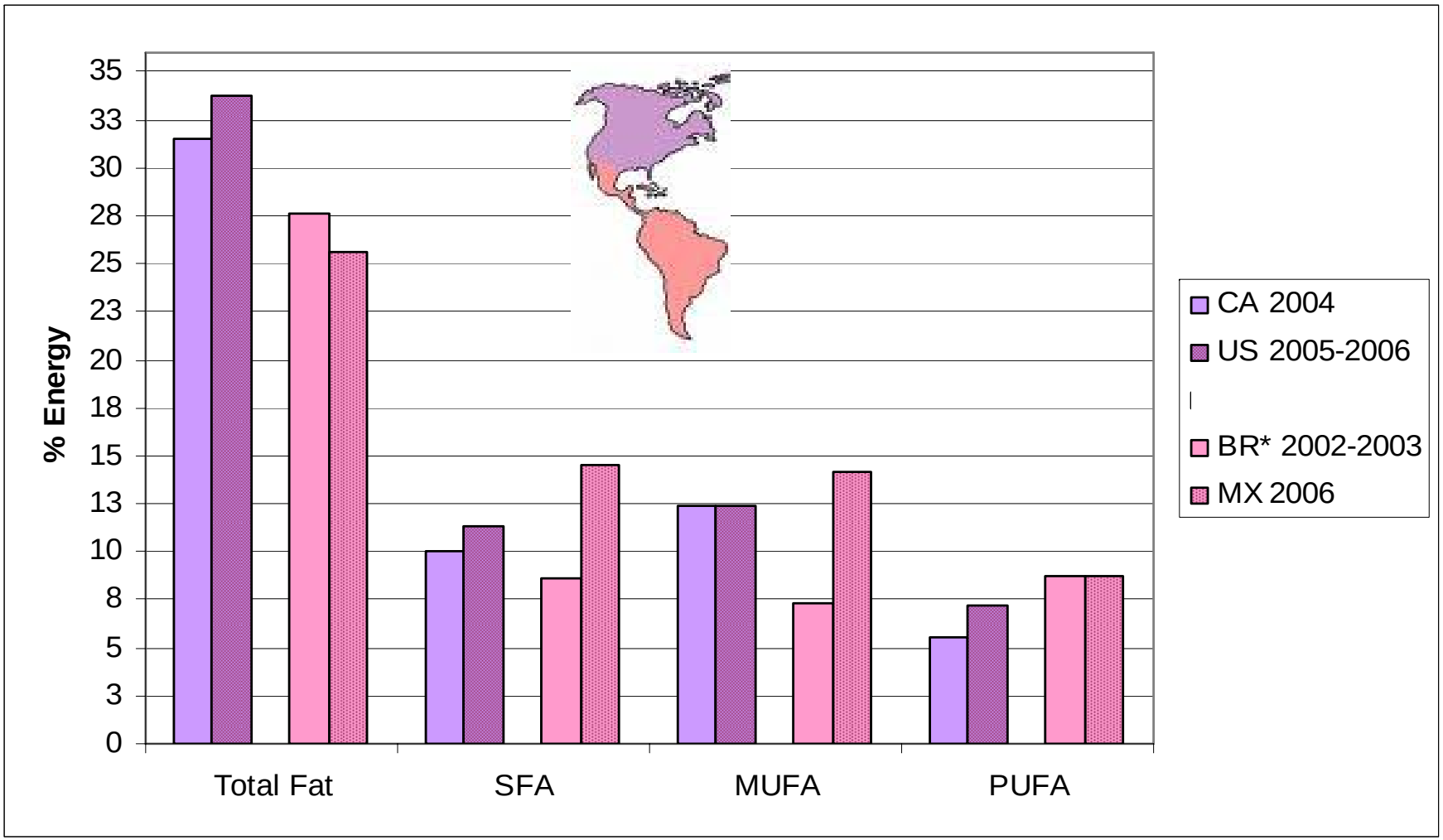
Data on fat intake in adults in America



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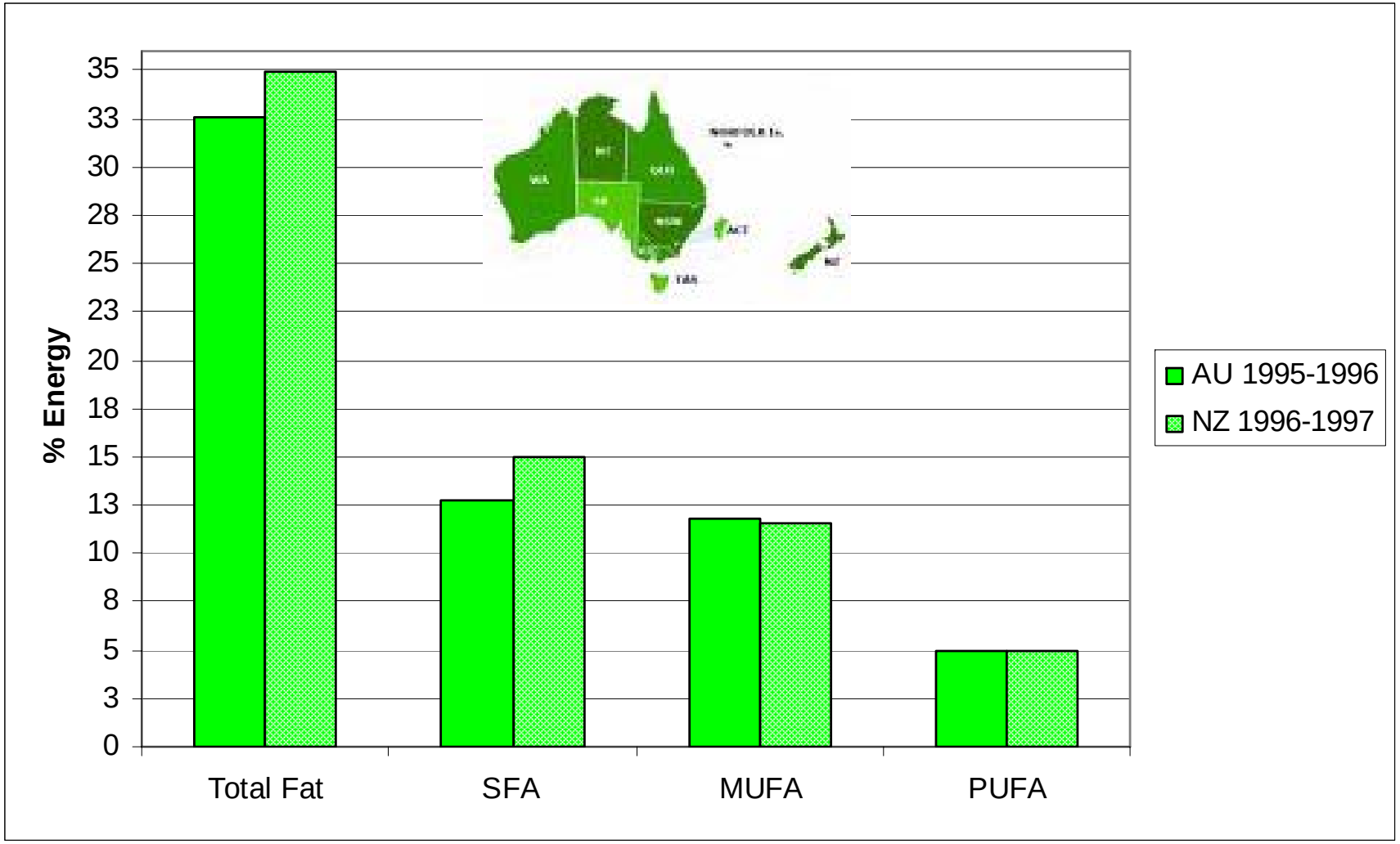
Data on fat intake in adults in Australia and New Zealand



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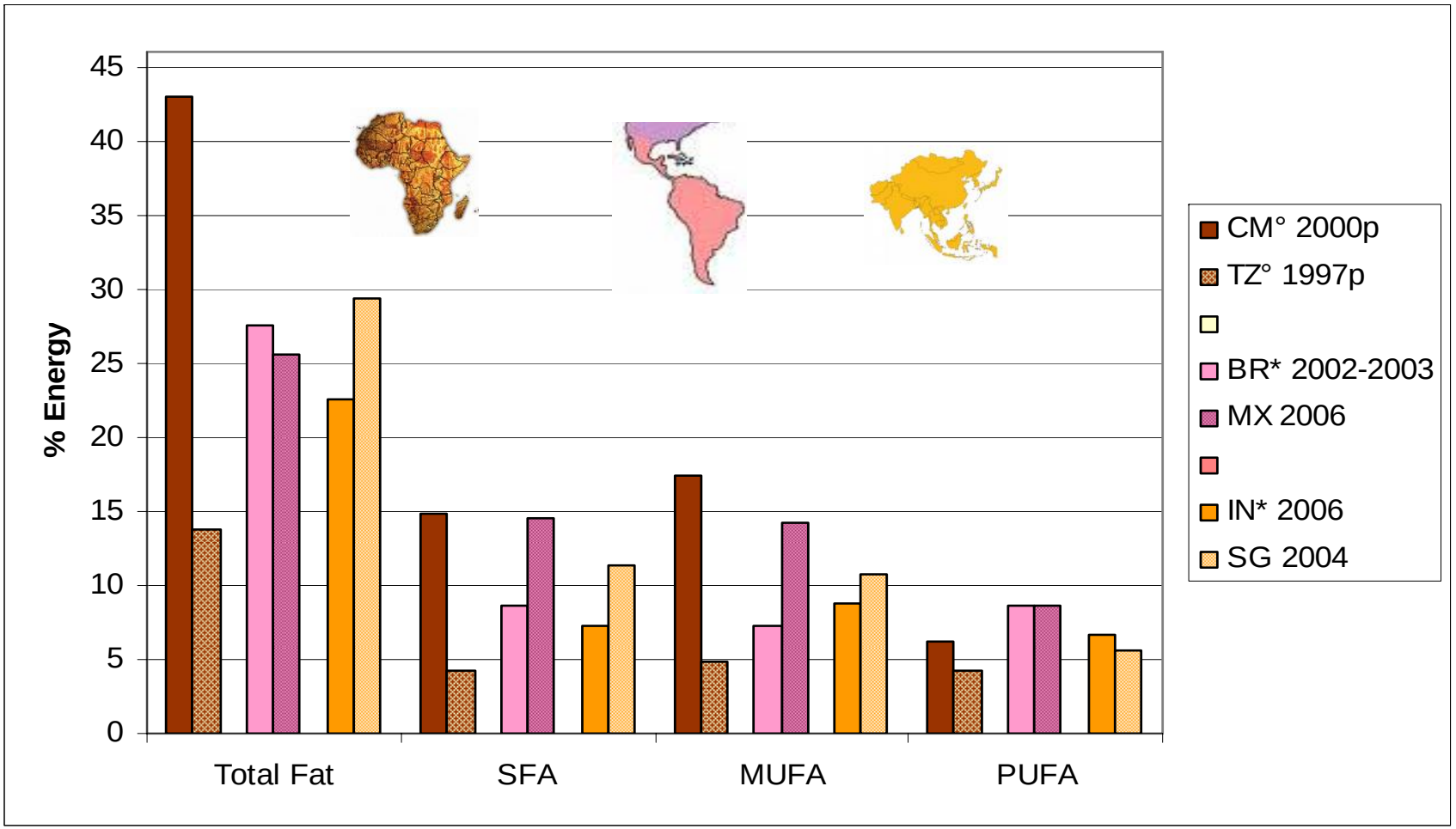
Data on fat intake in adults in Africa, Latin America and Asia



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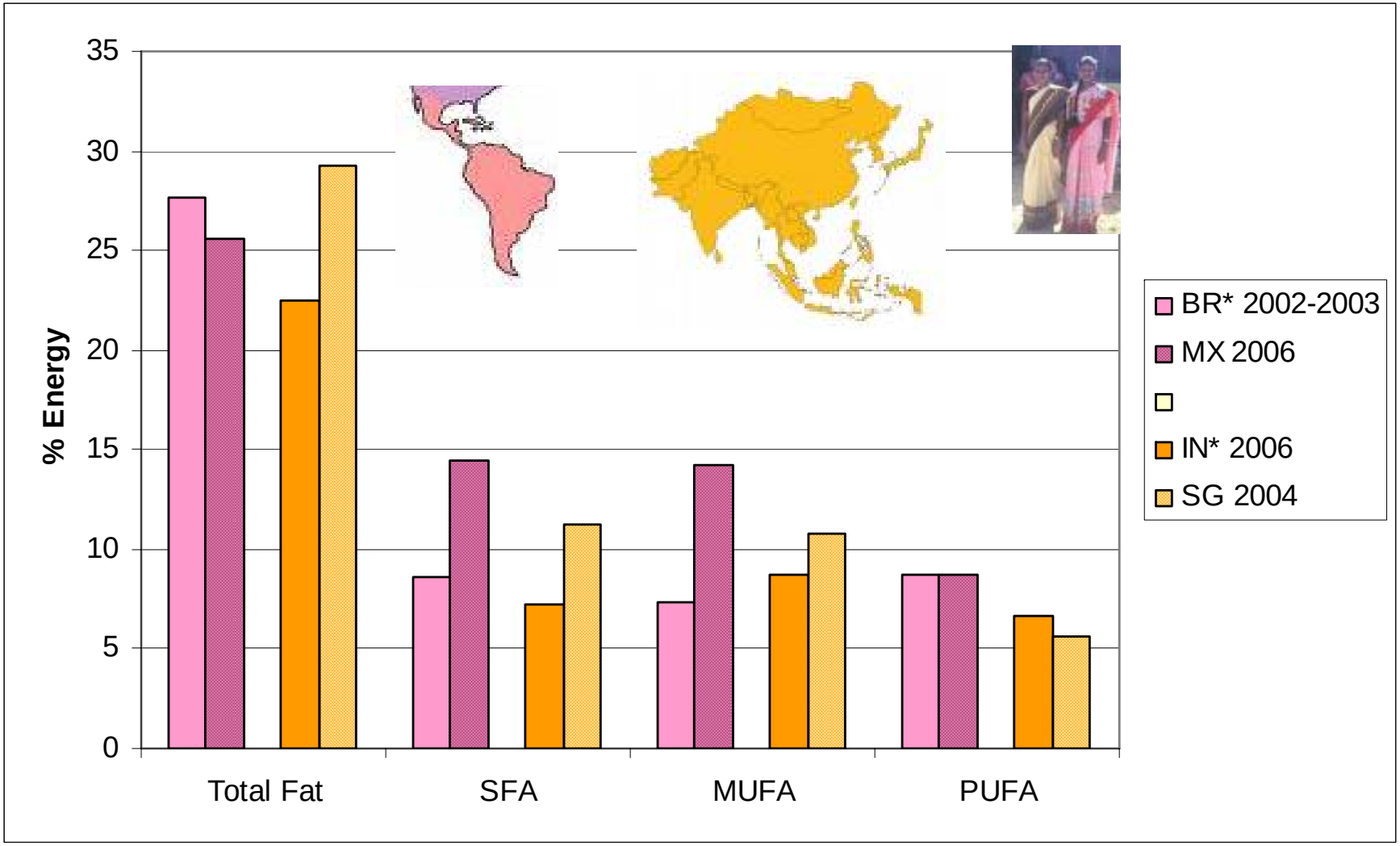
Data on fat intake in adults in Latin America and Asia



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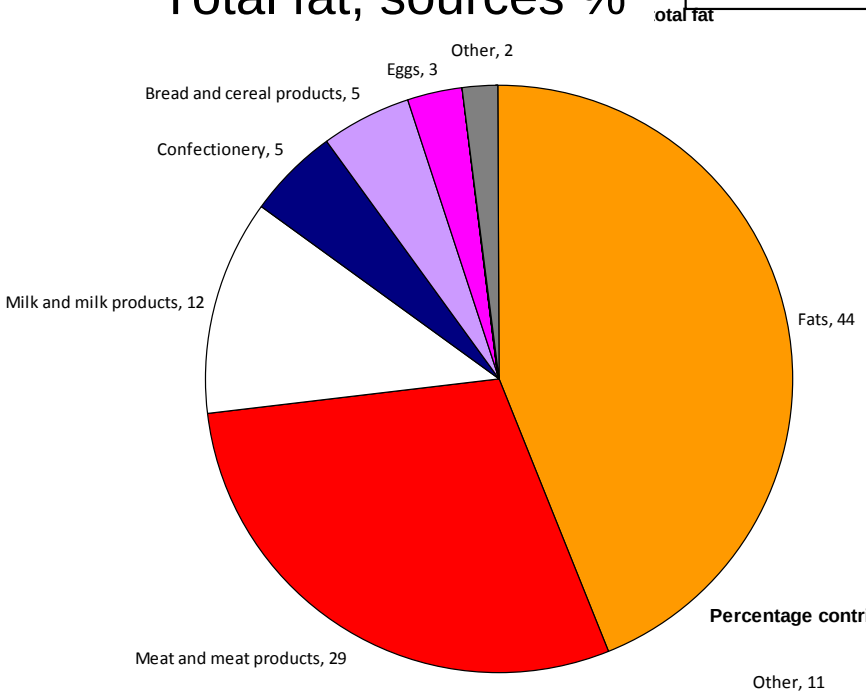
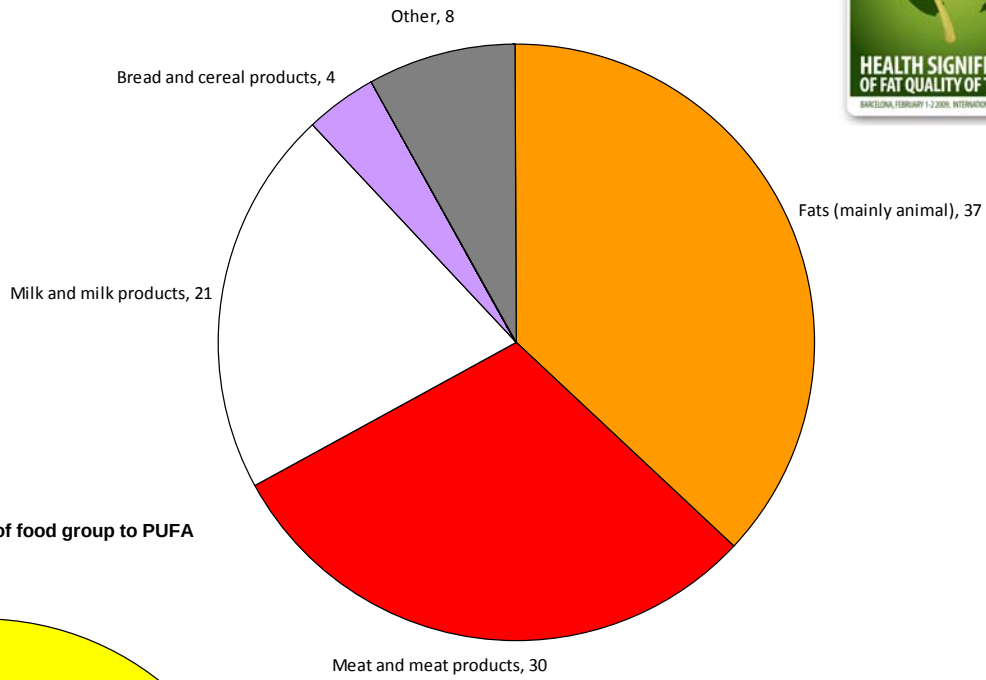
Sources of dietary fats

Fat sources in the diet
Input for break-out session IEM

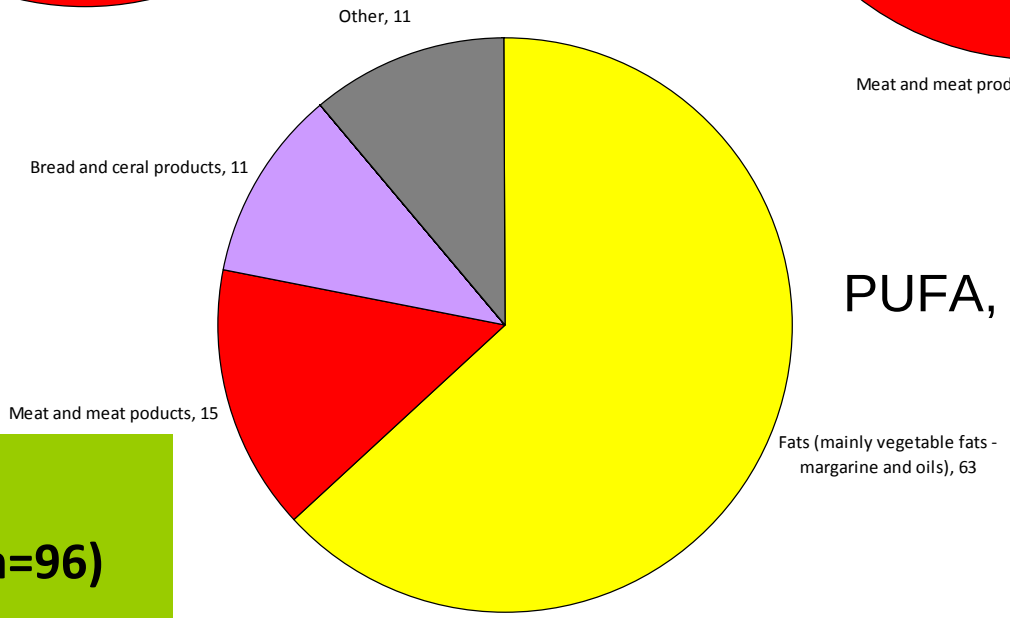
Total fat, sources %



SFA, sources %



PUFA, sources %



Poland

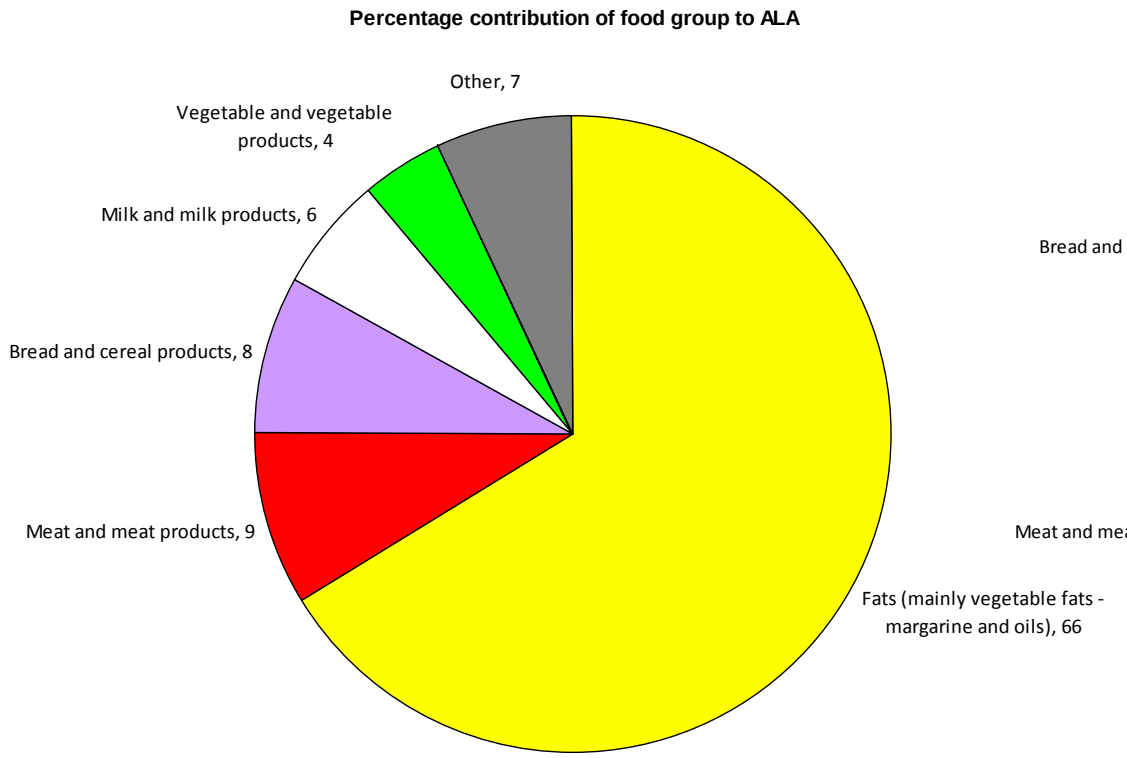
Household budgets (n=96)

Data of 1998

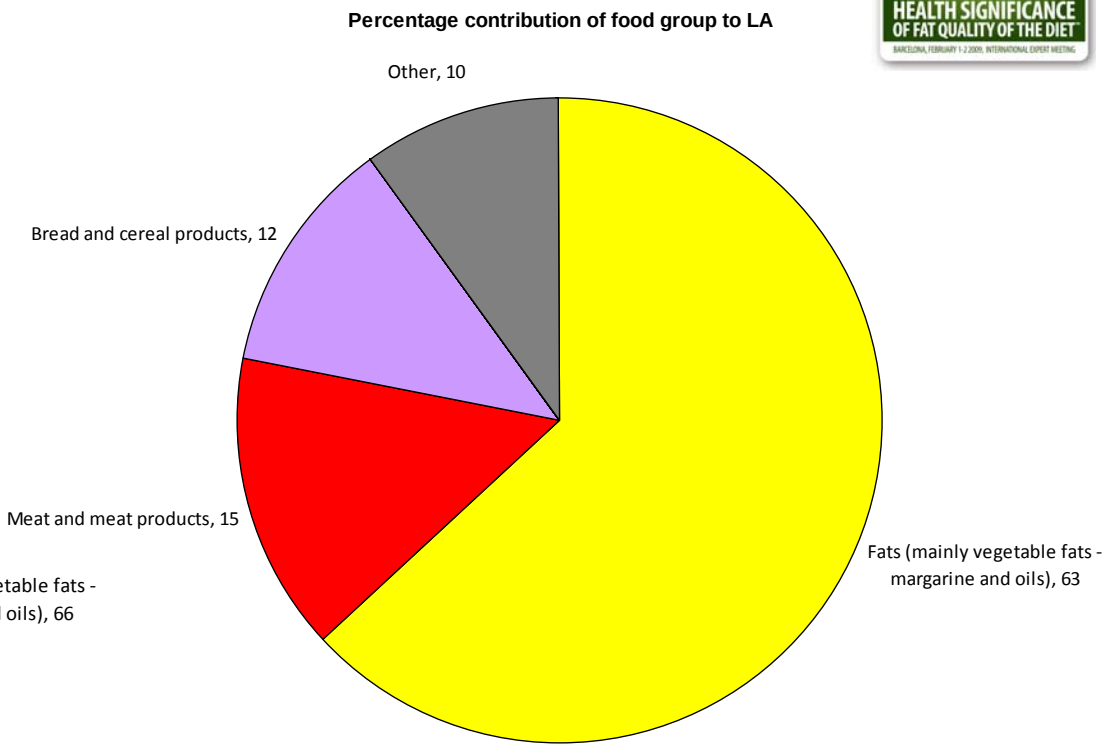
Source: Dybkowska E et al. Pol J Food Nutr Sci. 2004

Fat sources in the diet
Input for break-out session IEM

ALA, sources %



LA, sources %



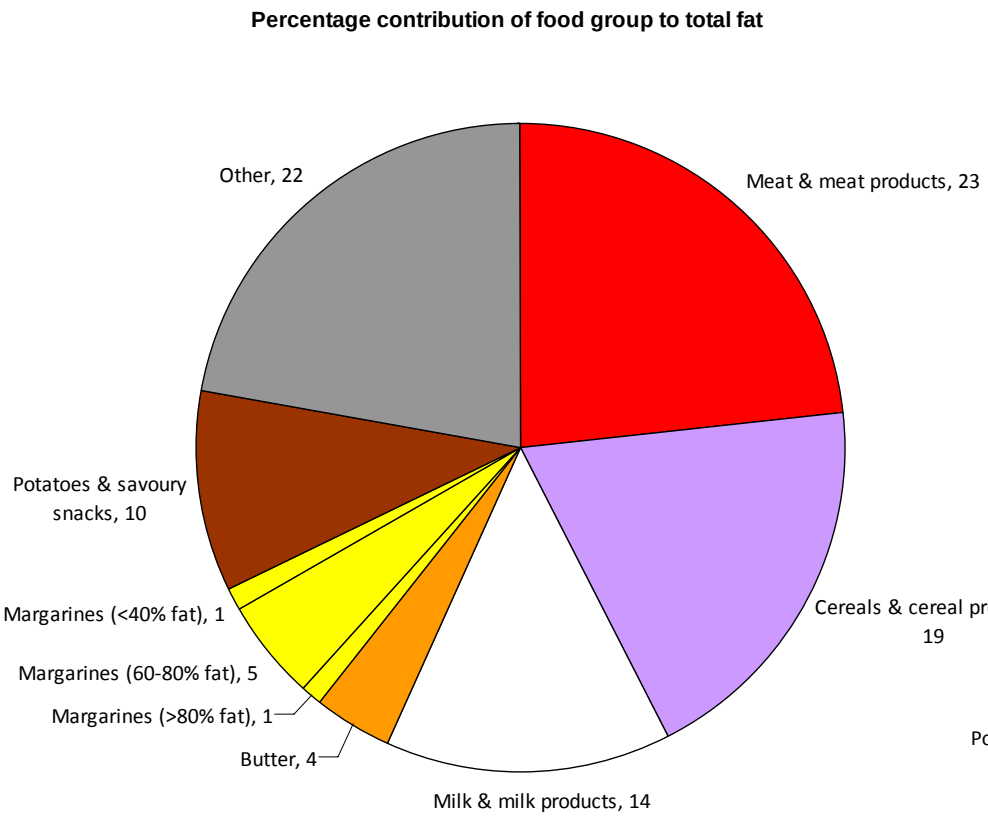
Poland

Household budgets (n=96),
Data of 1998

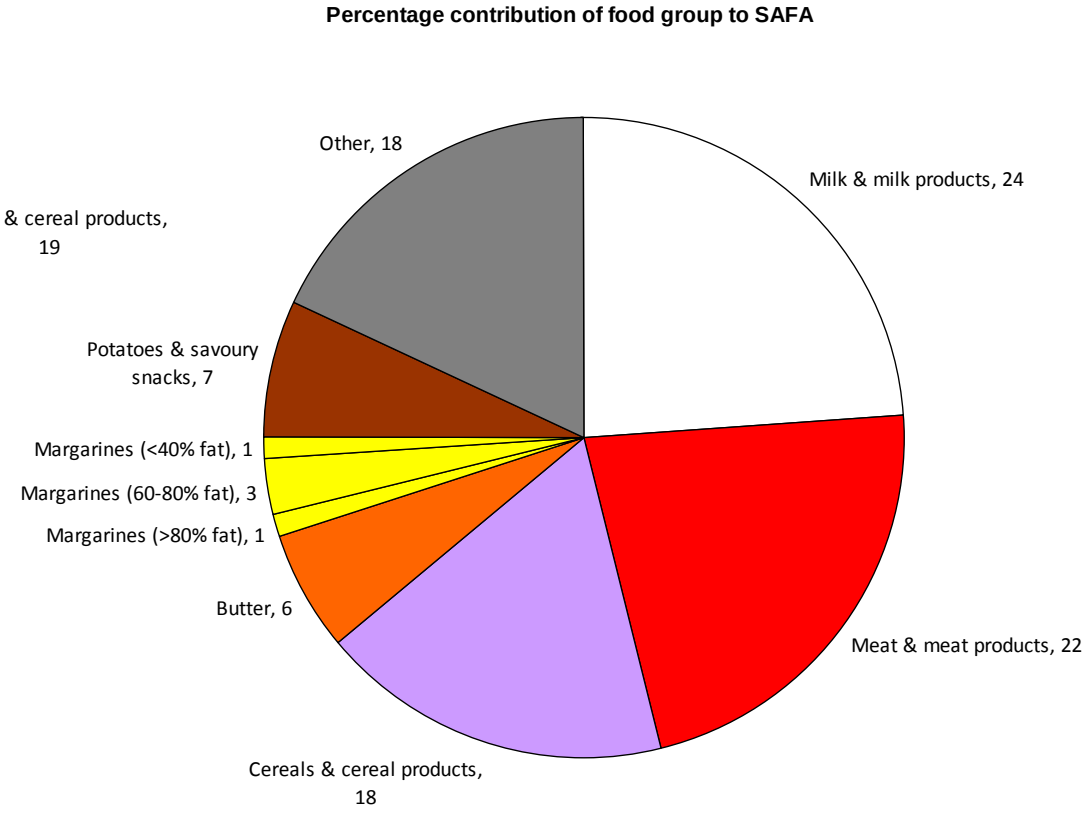
Source: Dybkowska E et al. Pol J Food Nutr Sci. 2004

Fat sources in the diet
Input for break-out session IEM

Total fat, sources %



SFA, sources %

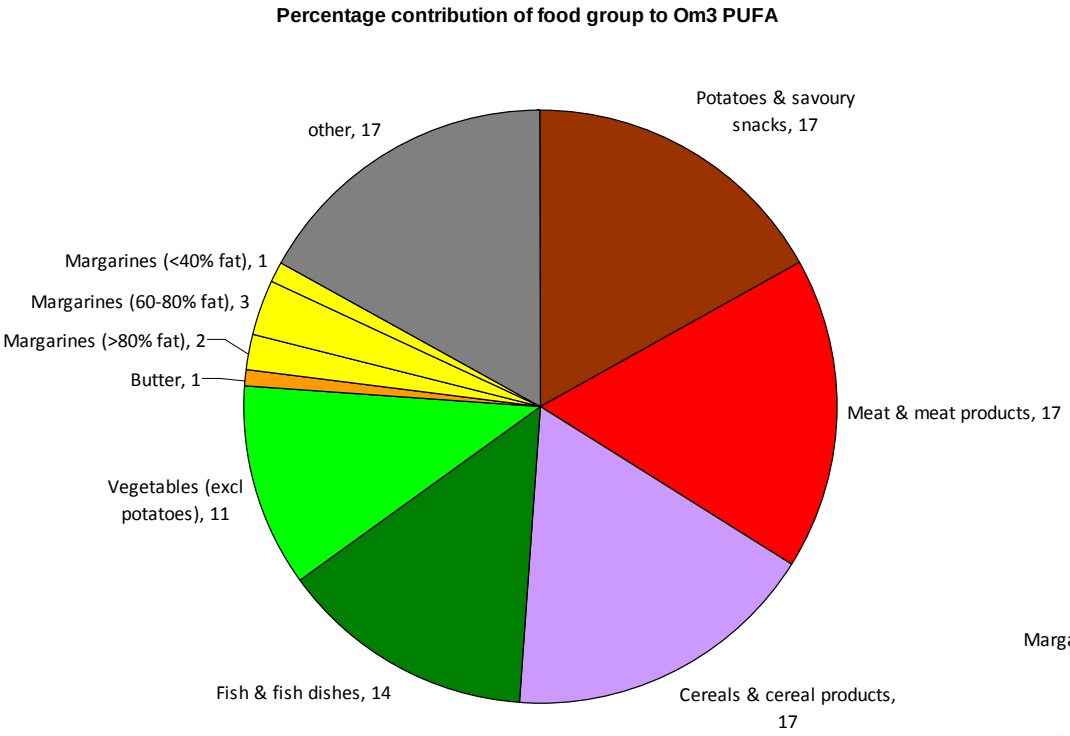


UK
N= 1724, 19-64yrs
Survey done 2000-2001

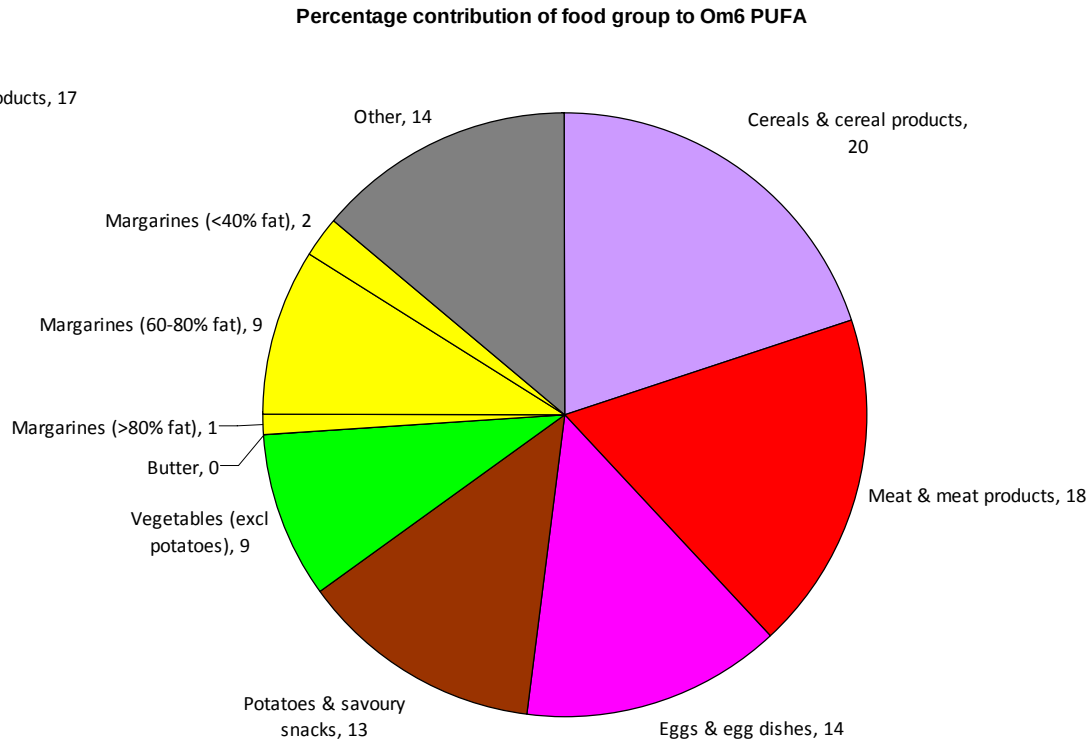
Source: UK National Diet & Nutrition Survey: adults 19-64 years (2003)

Fat sources in the diet
Input for break-out session IEM

n-3 PUFA, sources %



n-6 PUFA, sources %

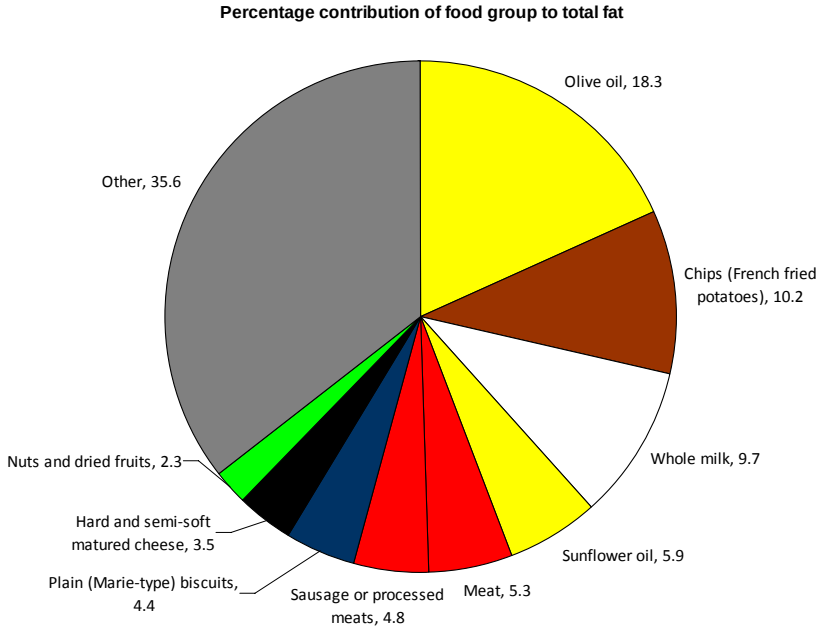


UK
N= 1724, 19-64yrs
Survey done 2000-2001

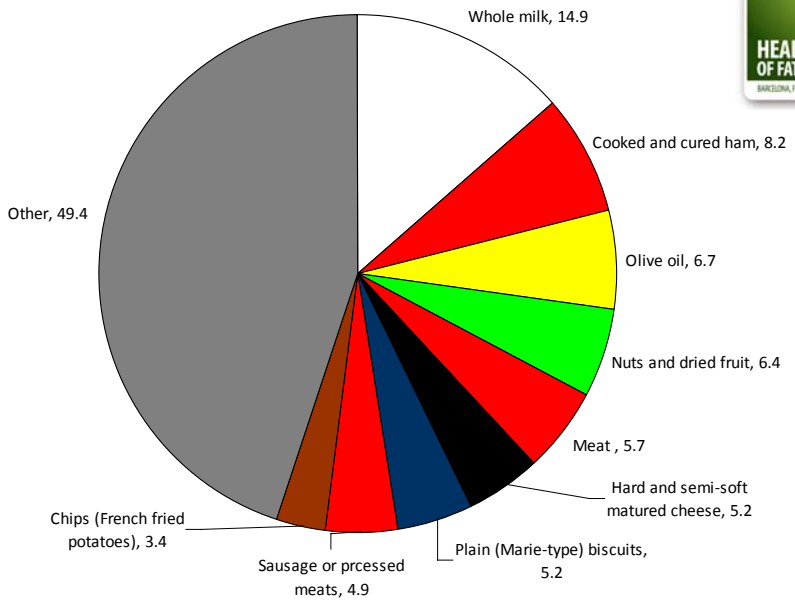
Source: UK National Diet & Nutrition Survey: adults 19-64 years (2003)

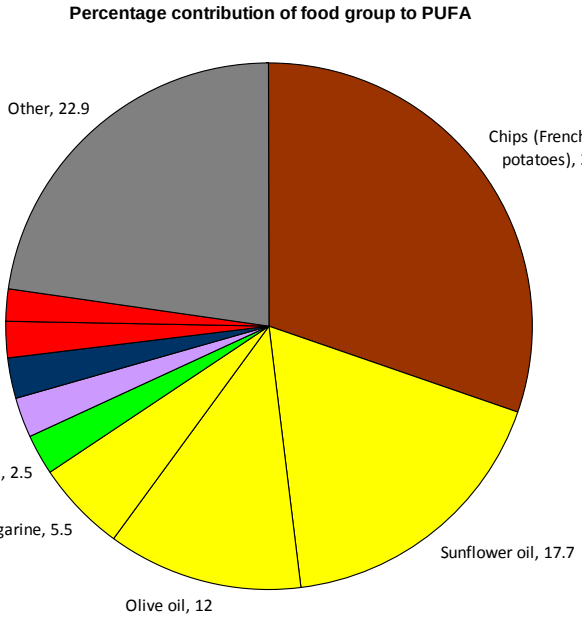
Fat sources in the diet
Input for break-out session IEM

Total fat, sources %



SFA, sources %





Total PUFA, sources %

Spain

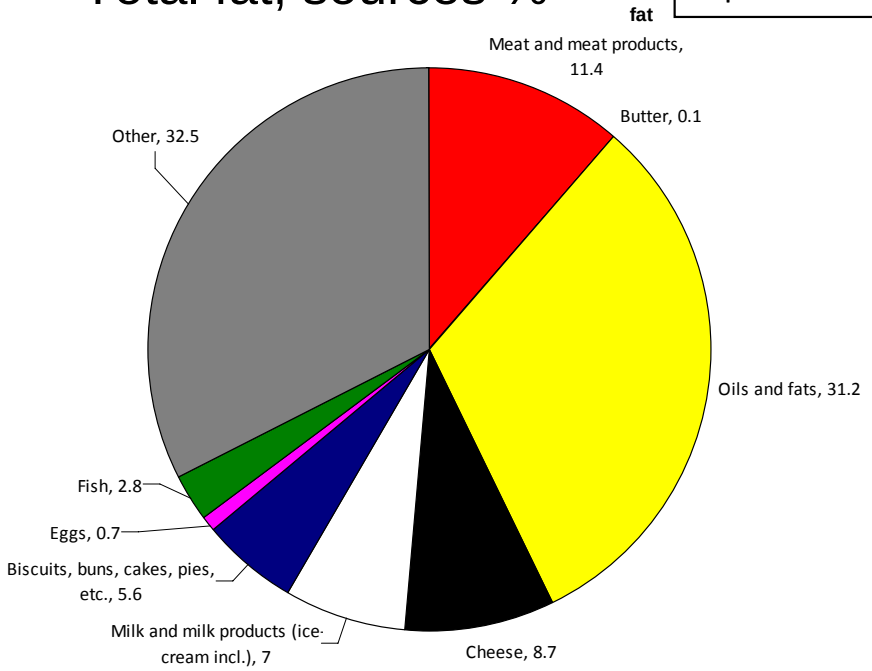
N= 1112 children 6-7 yrs

Survey done in 1998-1999

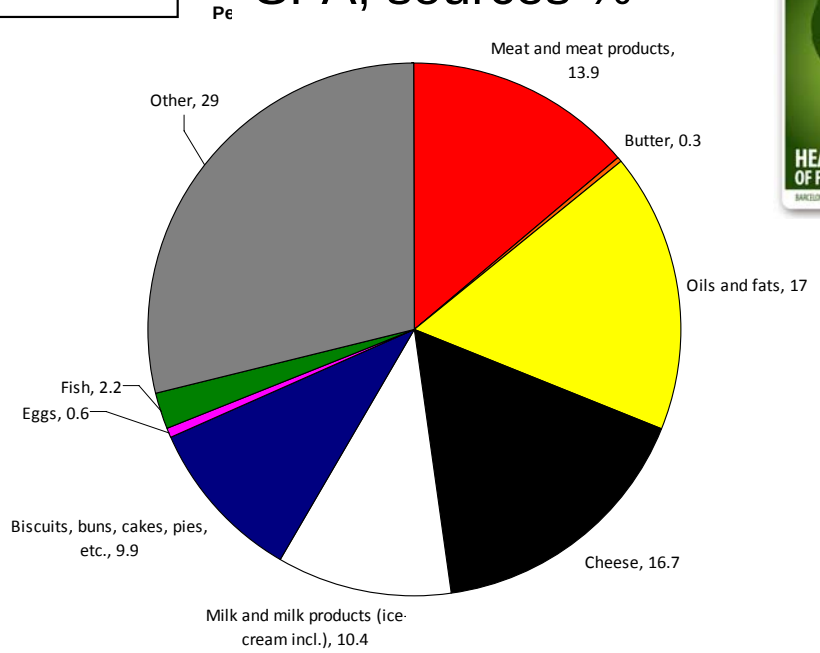
Source: Food sources of nutrients in the diet of Spanish children: the Four Provinces Study. M.A. Royo-Bordonada et al. Br J Nutr 2003

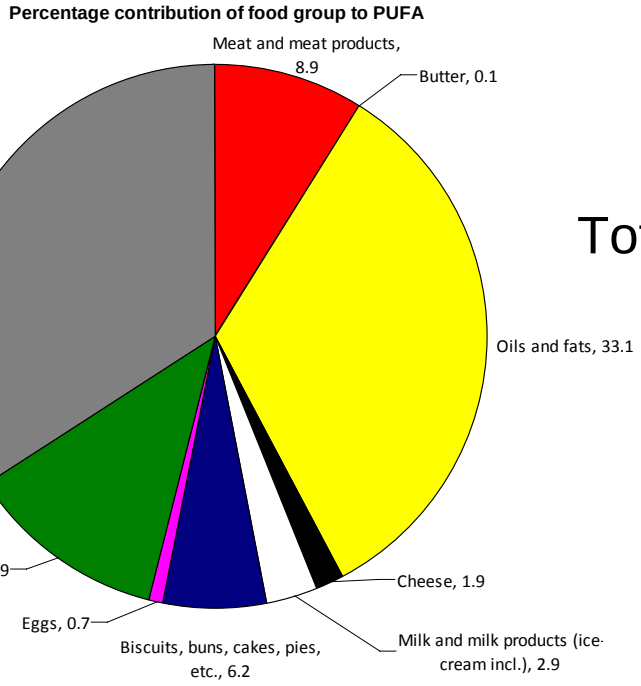
Fat sources in the diet
Input for break-out session IEM

Total fat, sources %



SFA, sources %





Total PUFA, sources %

Greece
N= 248 (23-64)
Survey done 1995

Source: Kafatos AG et al (1998): Anxiety and adipose essential fatty acid precursors for prostagladin E1 and E2, based on the Lawyer study. J. Am. Coll. Nutr. 55, 591 ± 598.