



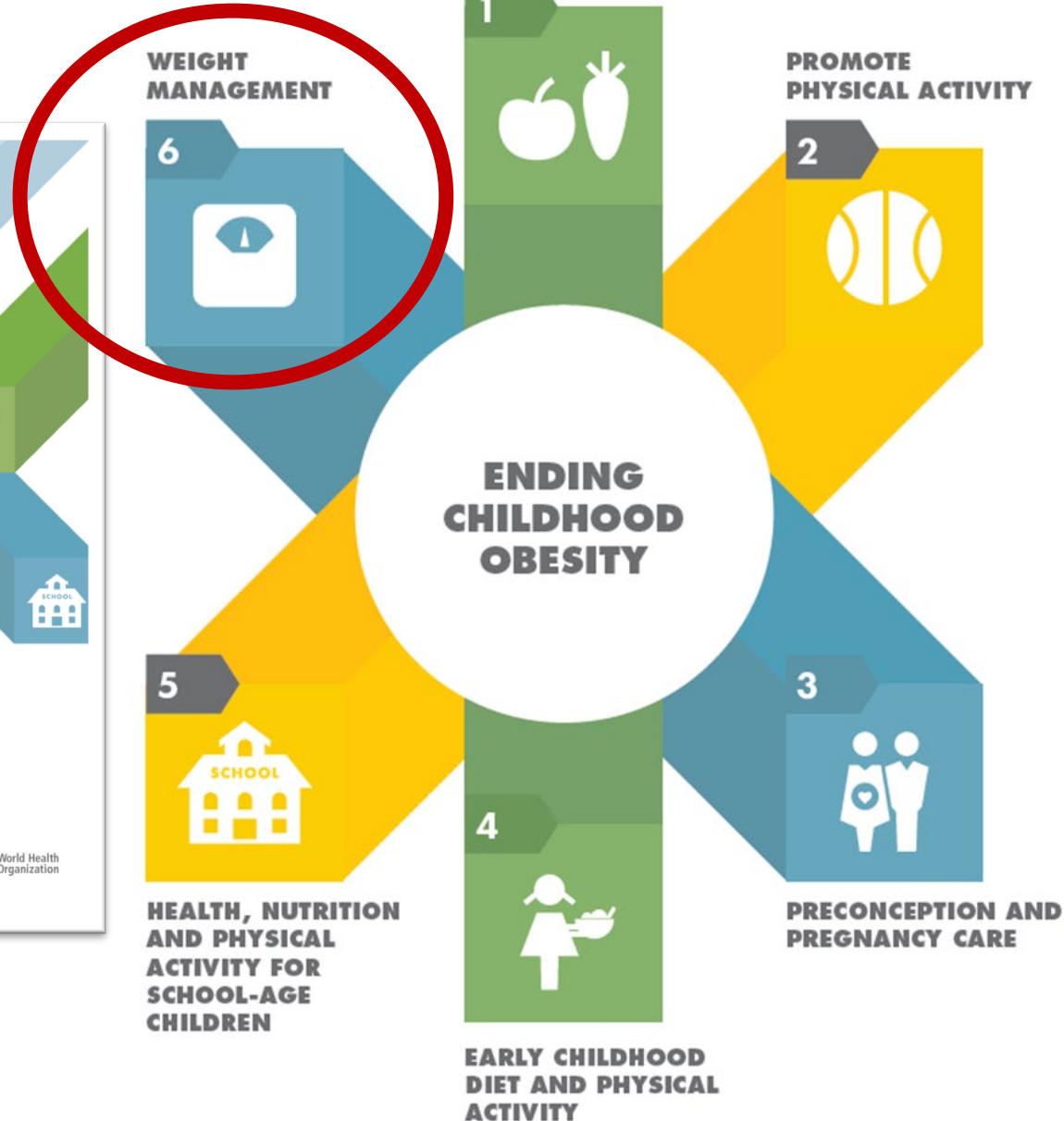
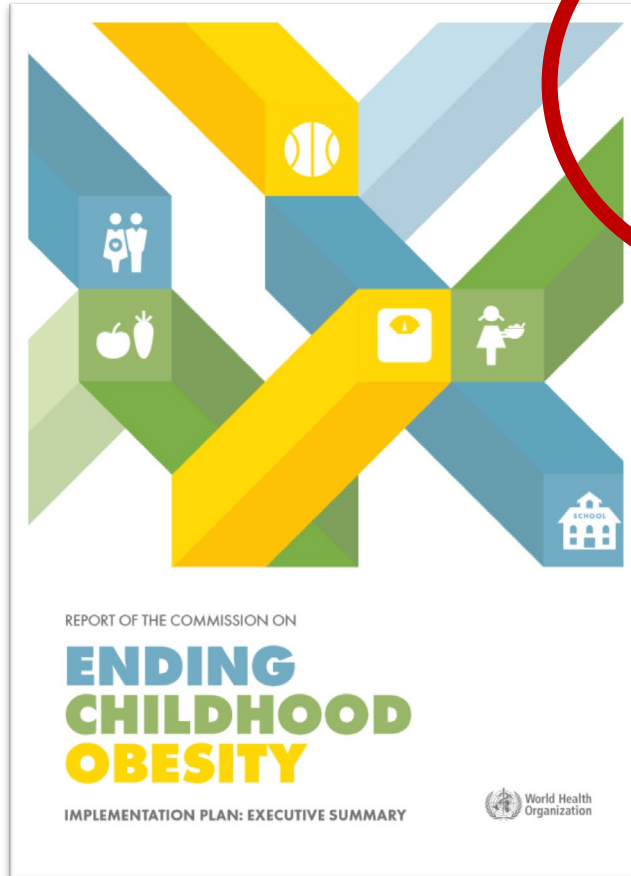
Dietary approach to treat obese children

Nov 8 2018, Lyon

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- Tackle the obesogenic environment
- Life course approach
- Identify and treat

Hopes and expectations of the kids



*“Could you PLEASE take that vast amount of
food out of my head?”*

(Manfred, 9 years)

Hopes and expectations of the parents

“PLEASE make my boy lose weight!”

(Inge, 39 years)

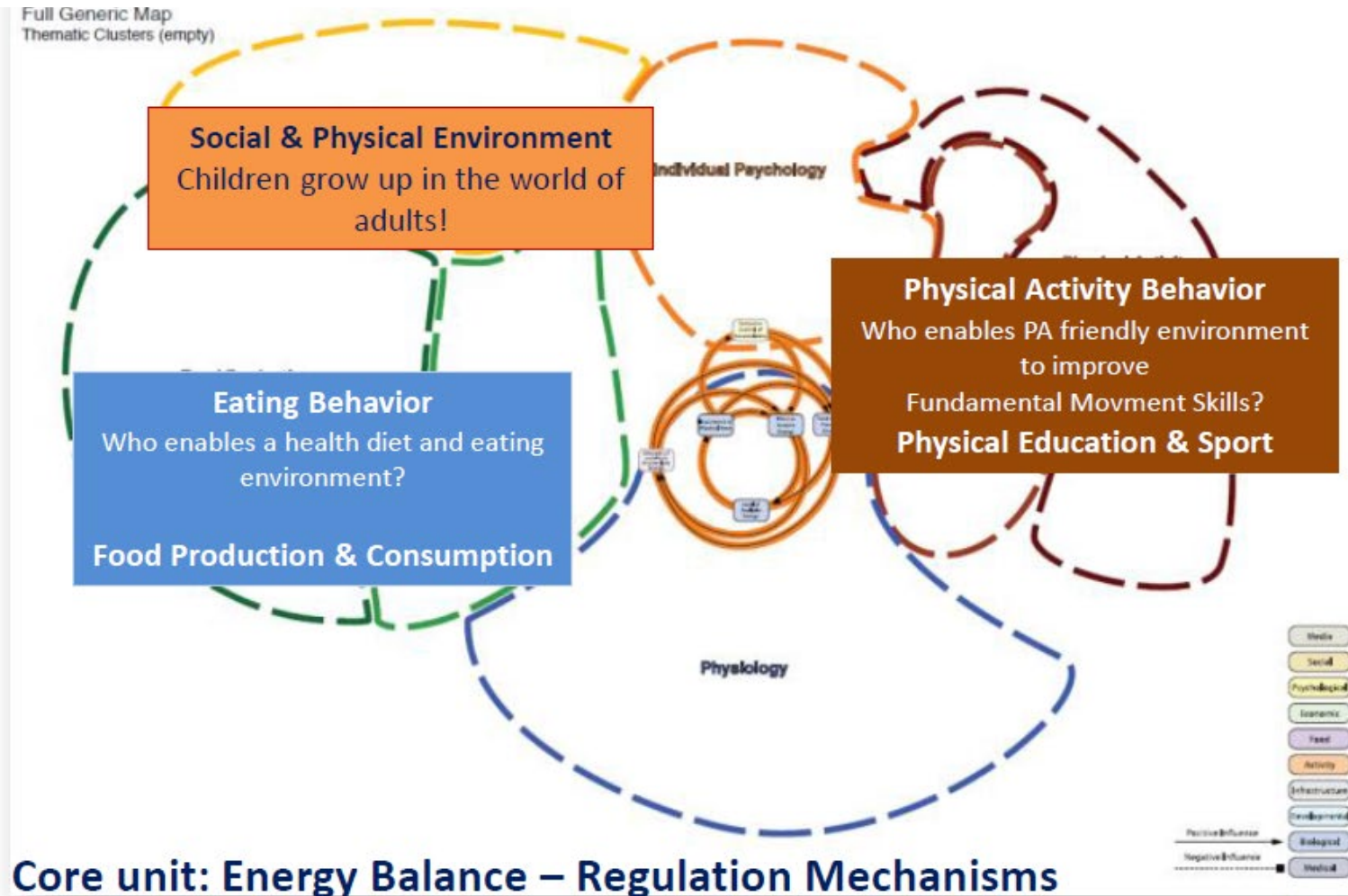
Changes of society and environment in past decades

Accelerated development and urbanization,

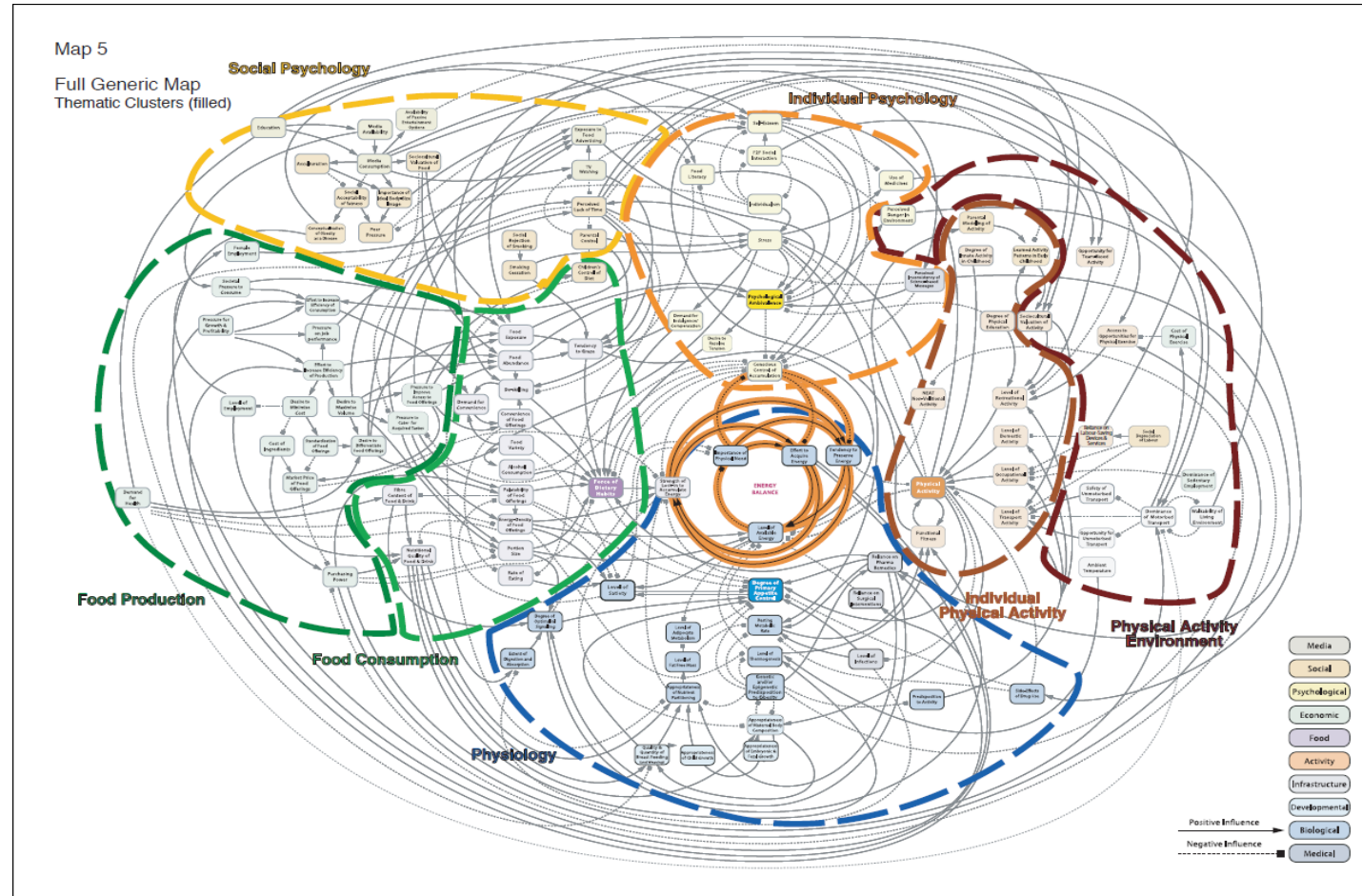
- steady increase of motorization,
- decline in physical work,
- increased availability of fast food
- ...



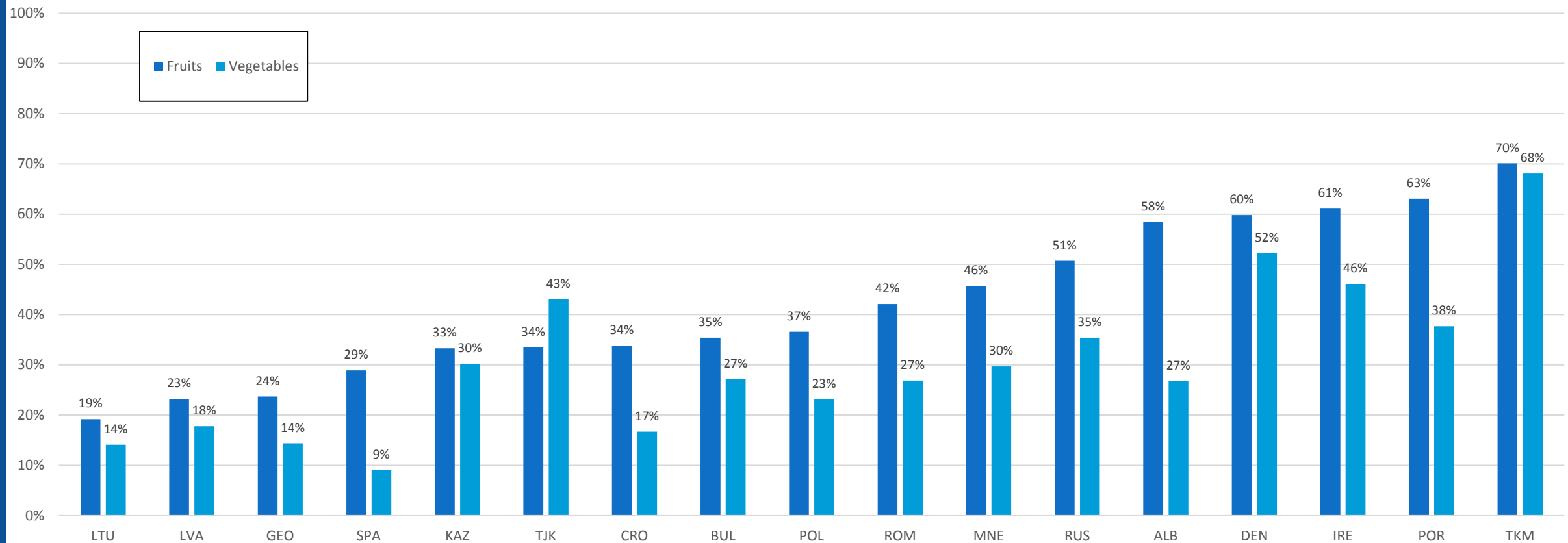
Complexity of Childhood Obesity Etiology



Nutrition is (a central) part of a bigger picture



Daily consumption of fruits and vegetables, latest COSI data



Boys and girls differ...in taste preferences



Fat and sweet taste preferences are related to weight status in European children across regions with varying food cultures.

- ❖ **Fat preference** associations were stronger in **girls**
- ❖ **Girls**, but not boys, with a combined **preference for fat and sweet** had an especially high probability of being overweight or obese.

Boys and girls differ...
in certain dietary patterns



Boys and older adolescents consumed the most amount of per capita total energy from **beverages**.

Acceleration of BMI in Early Childhood and Risk
of Sustained Obesity

Mandy Geserick, M.Sc., Mandy Vogel, Ph.D., Ruth Gausche, M.B.A., Tobias Lipek, M.D., Ulrike Spielau, M.Sc.,
Eberhard Keller, M.D., Roland Pfäffle, M.D., Wieland Kiess, M.D., and Antje Körner, M.D.

D Obesity at the Age of 0–14 Yr

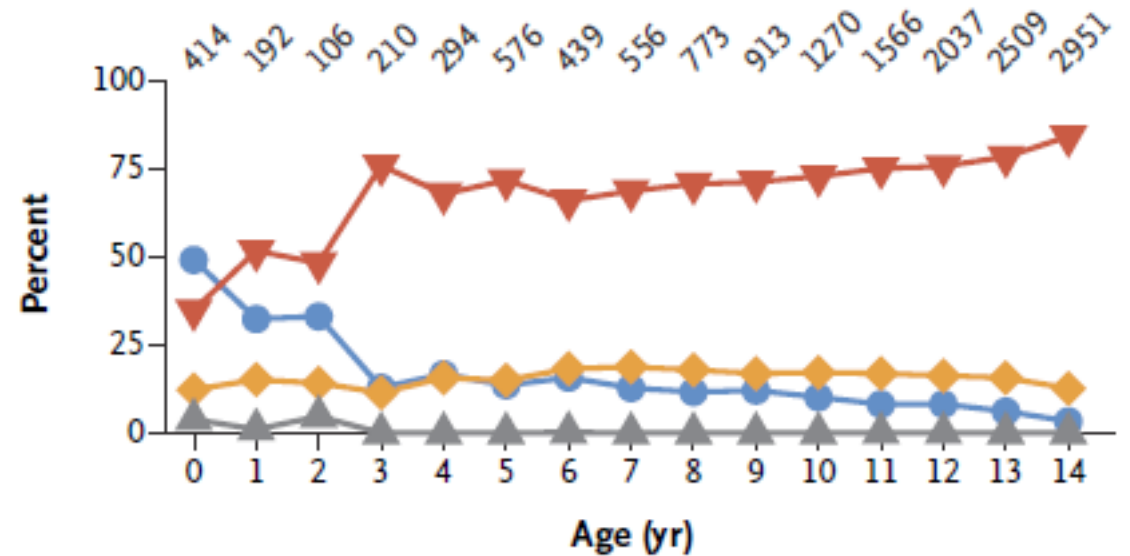


Figure 2. Prospective Tracking of BMI Status of Children into Adolescence.

CONCLUSIONS

Among obese adolescents, the most rapid weight gain had occurred between 2 and 6 years of age; most children who were obese at that age were obese in adolescence.

Effective treatment of children and adolescents can be defined in various ways...

Goals must be



There is no standard definition of effectiveness

Reduction in **anthropometric measures**
(**BMI/BMI-SDS, waist circumference, fat mass**)

Change in **weight gain trajectory**

Improvement in **obesity–associated complications**

Reduction in **markers of risk of future complications**

Diet, physical activity and behavioural interventions for the treatment of overweight or obese children from the age of 6 to 11 years (Review)

Diet, physical activity and behavioural interventions for the treatment of overweight or obesity in children aged 6 to 11 years

Population: children (aged 6 to 11 years) being overweight or obese

Settings: various

Intervention: behaviour-changing interventions (behavioural, diet and/or physical activity components)

Comparison: no treatment or usual care

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No. of participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk	Corresponding risk				
	No treatment or usual care	Behaviour-changing intervention				
▲ BMI (6-36 month follow-up)	mean change in BMI z score ranged across control groups from -0.24 to 2.8 kg/m ² . The mean change in BMI z score ranged across control groups from -1.1 to 0.26 units. The mean change in BMI z score ranged across control groups from 1. The mean change in	0.53 kg/m ² lower (0.82 lower to 0.24 lower)		2785 (24) 4019 (37)	⊕⊕○○ low ^a ⊕⊕○○ low ^a	Lower units indicate weight loss
▲ BMI z-score (6-36 month follow-up)		0.06 kg/m ² lower (0.10 lower to 0.02 lower)		1774 (17)	⊕⊕○○ low ^a	Lower units indicate weight loss

„...beneficial in achieving small, short-term reductions in BMI, BMI z-score...”

Mead E, Brown T, Rees K, Azevedo LB, Whittaker V, Jones D, Olajide J, Mainardi GM, Corpeleijn E, O'Malley C, Beardsmore E, Al-Khudairy L,

Baur L, Metzendorf MI, Demaio A, Ellis LJ.

Diet, physical activity and behavioural interventions for the treatment of overweight or obese children from the age of 6 to 11 years.

Cochrane Database of Systematic Reviews 2017, Issue 6. Art. No.: CD012651.

DOI: 10.1002/14651858.CD012651.

**Preschool intervention ~7 times more effective
than in children aged 6-11 years**

Broad principles of obesity treatment

- Assess and manage **obesity-associated disorders**
- Ensure a **developmentally appropriate** approach
- Support **long-term** behaviour change
- **Dietary change**
- Increased **physical activity**
- Decreased **sedentary behaviour**, including screen time
- Improved **sleep**
- **Consider more intensive dietary interventions**
- Consider **pharmacotherapy**
- Consider **bariatric surgery**

TEAM approach



„individualized“



The main objective is a **permanent change** in the child's eating habits and lifestyle...

...rather than attaining rapid weight loss through low-calorie diets

Dietary approach

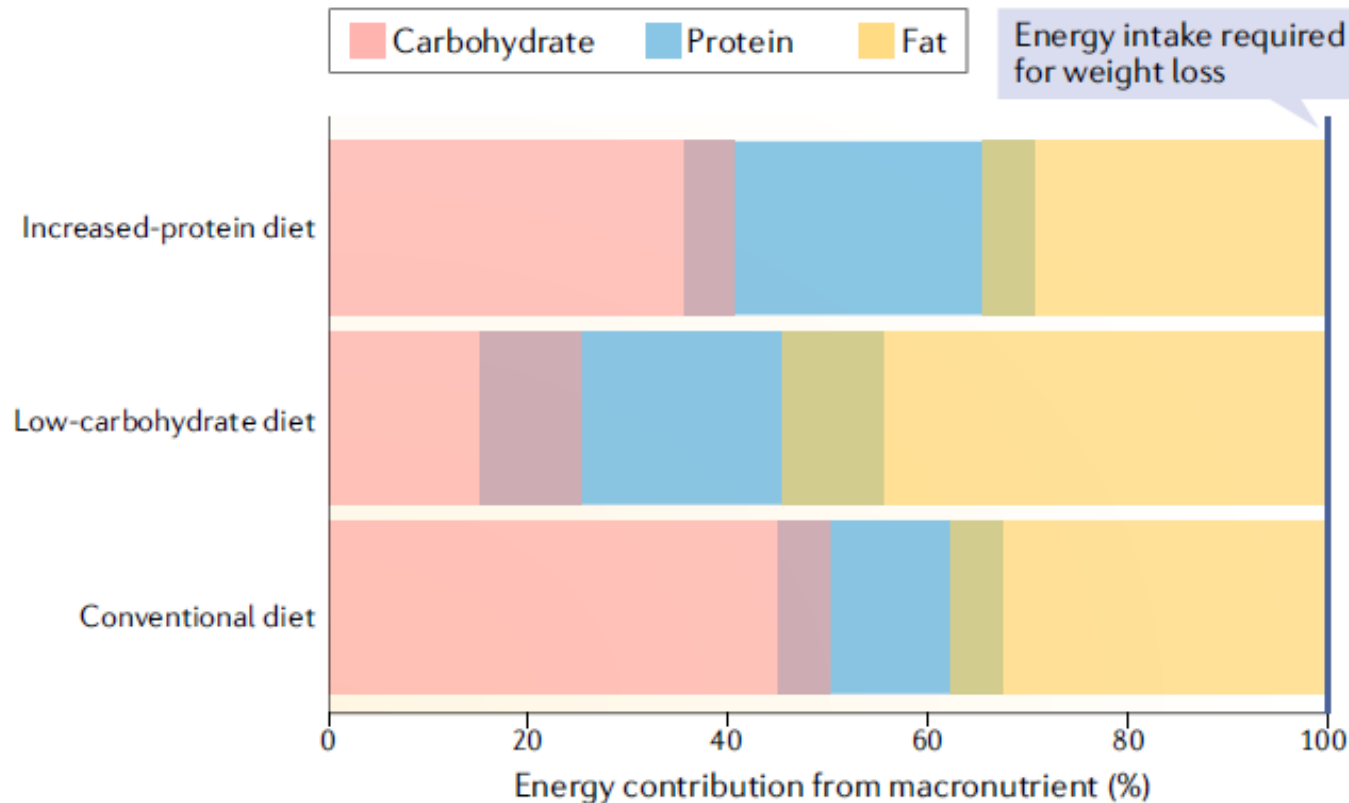
A balanced and varied diet is recommended (LOE I-A)

- **Low calorie diet is not effective** in the medium/long term
- **The educational process** starts with the **assessment of the child's and family's dietary habits,**
- **Food diary**
 - **<age 10-12: compiled by the parents**
 - **>age 10-12: compiled by the child/adolescent together with the parents and evaluated by dietary expert**

Dietary advice

- 5 meals a day (3 meals and no more than 2 snacks) (LOE V-B)
- Adequate breakfast (LOE II-B)
- Avoid eating between meals (LOE III-B)
- Avoid high-energy and low nutrient density foods (eg. sweetened or energizing drinks, fruit juices, fast food, high-energy snack) (LOE III-B)
- Increase intake of fruit, vegetables and fiber rich cereals (LOE VI-A)
- Limit portions (LOE I-A)

Efficacy of [different] dietary regimens



“no randomized controlled trials (RCTs) examining the effects of different diets on child’s weight and body composition, regardless of potential confounders such as treatment intensity, behavioral or physical activity strategies”

Fig. 3 | **Macronutrient distribution of common diet interventions**^{39,42,43}.


Very low caloric diet




- most effective regimen in terms of weight loss

e.g. protein-sparing modified fast (600–800 kcal/day, protein 1.5–2 g/kg ideal weight, carbohydrates 20–25 g/day, multivitamins + minerals, water >2000 ml/day)

- The aim is to induce rapid weight loss (duration of this restrictive diet no longer than 10 weeks) followed by a less restrictive diet regimen balanced in macronutrients
- selected patients with severe obesity, under specialized close medical surveillance
- RCTs are not available to evaluate medium to long-term efficacy

Traffic light and modified traffic light diets



Red foods Greater than 20 kcal of the average serving for foods within that food group	Eaten rarely <ul style="list-style-type: none">• Sweets• Desserts• Fast food• High-fat meat or meat substitutes	Examples 
Yellow foods Within 20 kcal of the average serving for foods within that food group (i.e. fruit = 40 kcal and milk and dairy = 80 kcal)	Eaten judiciously <ul style="list-style-type: none">• Full-fat milk• Whole-grain breads and cereals	Examples 
Green foods Less than 20 kcal of the average serving within that food group	Eaten freely <ul style="list-style-type: none">• Fruits• Vegetables• Legumes• Low-fat milk• Lean meat or meat substitutes	Examples 

Reduced caloric intake
(1000–1500 kcal/day) is achieved
through categories of foods grouped
by nutrient density

Fig. 2 | **Traffic light diet categories**^{18,36,37,113}. Foods are categorized according to high (top panel), moderate (middle panel) or low (bottom panel) caloric density. These categories are used to guide frequency of intake, with the aim to reduce overall calorie intake.

Replacement meals

(drink, bar, soup,...as substitute for solid meal)

- ...are not recommended, since efficacy and safety have not been tested in children/adolescents.

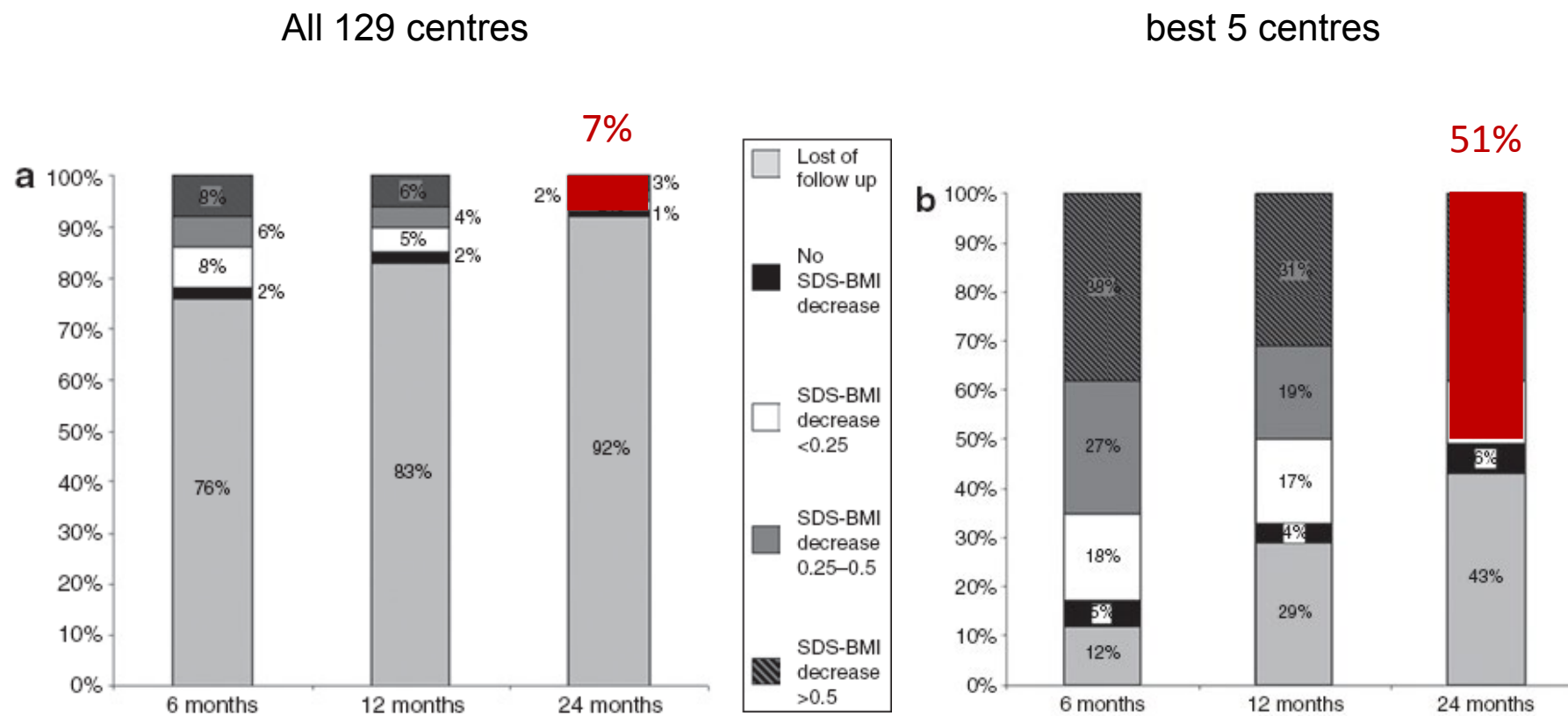
No significant effect has been demonstrated for diets with specific macronutrient composition and medium caloric content in children.

- In particular:

Hypocaloric diets with low glycemic index and low glycemic load

Although an effect on satiety is suggested, their superiority compared with other dietary approaches has not been proved over the medium term (LOE I-C).

Obesity treatment outcome (BMI-SDS decrease) – real life situation (APV Registry Germany)



Discussion – future perspectives

- Focus on preschool age
- Establish pan-European Guidelines on screening, diagnostics and management
- Implement multilayered treatment services from primary to tertiary care
- Implement WHO action plan



Discussion – future perspectives

- Involve parents and adolescents in research and development of tools
- Address children/adolescents adequately (eHealth applications)

LET US JOIN FORCES ...

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