

Behavioral weight-loss treatment in children and adolescents: Potentials and limitations

**A systematic review and
qualitative analysis**

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Conflict of interest statement

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Obesity in childhood and adolescence

- **High prevalence** of obesity in childhood and adolescence remains unchanged.

→ Europe: Overweight 13 %, Obesity 7 %

Ahrens et al., Int J Obes 2014

- Elevated risks of **comorbidity, stigmatization, psychosocial impairment** and **health-care costs** warrant effective treatment.

Treatment: State of the Art

•**Evidence-based** recommendation for treatment:

- Nutrition counseling
- Physical activity
- Behavior therapy



***Interdisciplinary
lifestyle intervention***

Barlow & Dietz, Pediatrics 1998

Wabitsch & Moß, German Guidelines 2009

•Extreme obesity in adolescence: adjuvant pharmacological or surgical treatment

Efficacy in terms of weight loss?

Children < 12 years:

Measurement	RCT (N)	Patients (N)	Average treatment effect [95% CI]
BMI z score (6 months)	4	301	-0.06 [-0.12, -0.01]*
BMI z score (12 months)	3	264	-0.04 [-0.12, -0.04]

* $p < .05$

→ *"At six months follow up...the effect size was small but statistically significant and clinically relevant. ... The effect size found in meta-analysis at 12 months was no longer significant,..."*

Oude Luttikhuis et al., Cochrane Database of Syst Rev 2009

Efficacy in terms of weight loss?

Adolescents ≥ 12 years:

Measurement	RCT (N)	Patients (N)	Average treatment effect [95% CI]
BMI z score (6 months)	3	291	-0.14 [-0.17, -0.12]*
BMI z score (12 months)	2	231	-0.14 [-0.18, -0.10]*

* $p < .05$

→ *"In adolescents, a similar pattern was seen, albeit with an even greater effect size...the effect remained significant at 12 months after beginning of the intervention..."*

→ Drop Out: up to **42 %**, Loss to follow-up: up to **43 %**

Oude Luttikhuis et al., Cochrane Database of Syst Rev 2009

MEDICINE

ORIGINAL ARTICLE

Weight Loss in Children and Adolescents

A Systematic Review and Evaluation of Conservative, Non-Pharmacological Obesity Treatment Programs

Yvonne Mühlig, Martin Wabitsch, Anja Moss, Johannes Hebebrand

Mühlig et al., Dtsch Arztebl Int 2014

Aims:

- Update of the evidence
- Evaluation of the overall expectable treatment effect on weight status
- Deduction of clinical implications

Inclusion and exclusion criteria

Inclusion

- RCT
- At least 1 element of dietary, physical activity-based or behavior therapy
- At least 6 months of follow-up after the initiation of treatment
- BMI and/or BMI z score as study outcome
- Inclusion of participants with obesity (BMI z score ≥ 2 or BMI > 97th percentile)

Exclusion

- Only self-reported anthropometric data
- Inclusion of participants with normal weight
- Age 18 years or older
- Treatment goal other than weight reduction
- Exclusively maintenance therapy
- Pharmacological or surgical treatment

Results:

Literature research

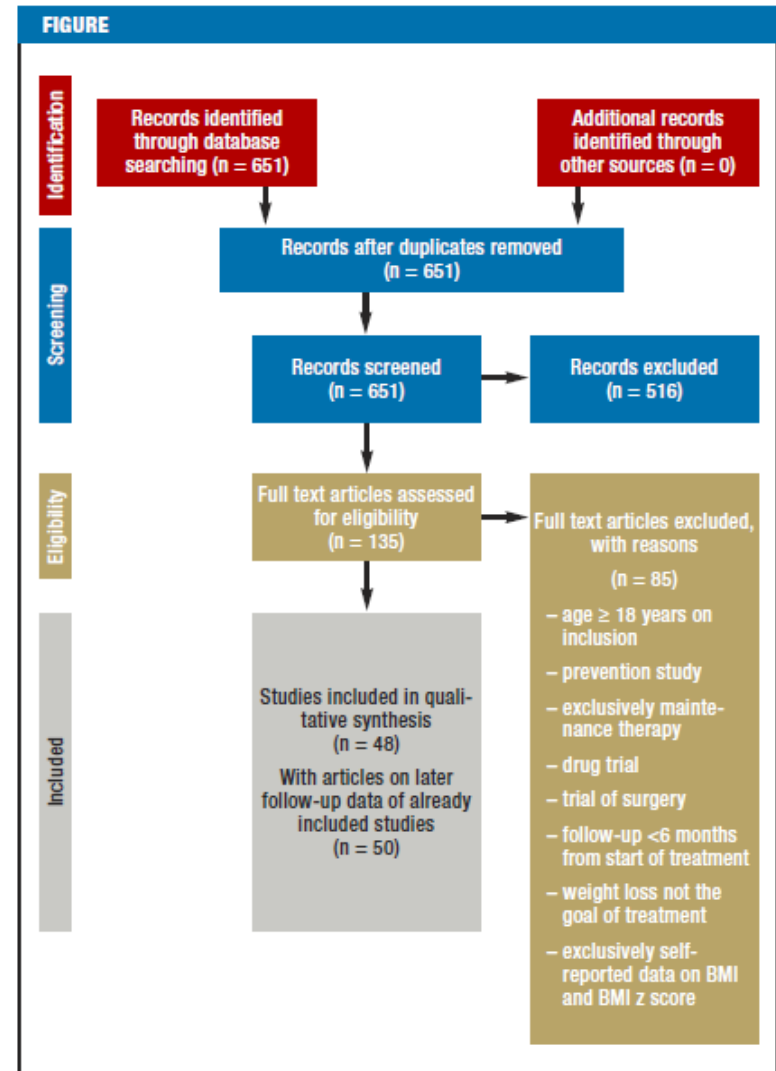
Search in MEDLINE via PubMed (05/08 – 12/13):

Search term: (weight loss OR weight reduction OR diet OR exercise) AND (therap* OR treatment OR intervention) AND obesity AND (child* OR adolesc* OR youth)

Filter: RCT

→ **48 trials**

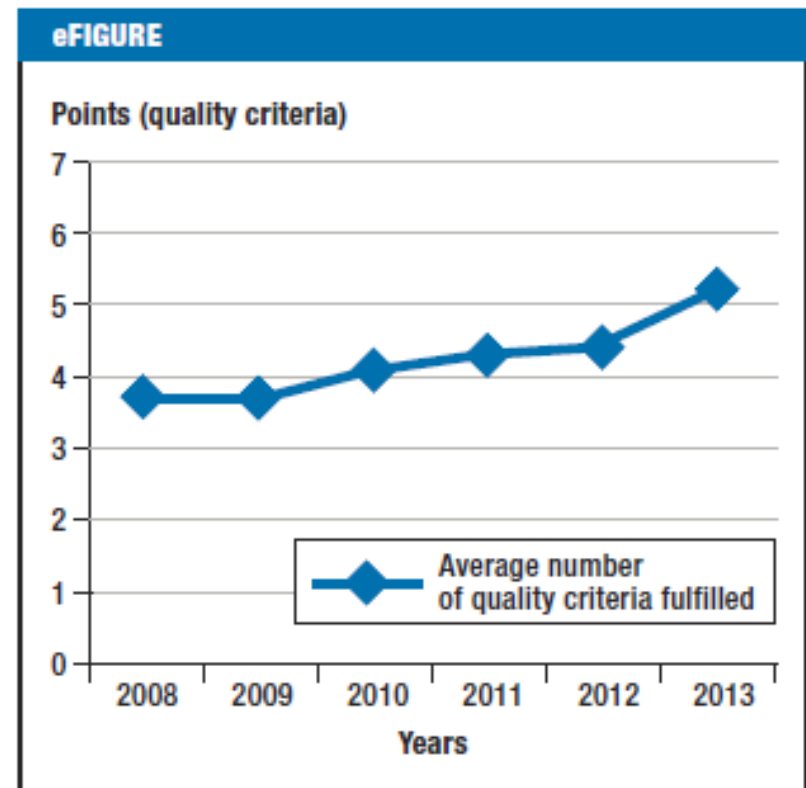
→ **5025 participants**



Moher et al., PLoS Med 2009

Qualitative analysis of included trials

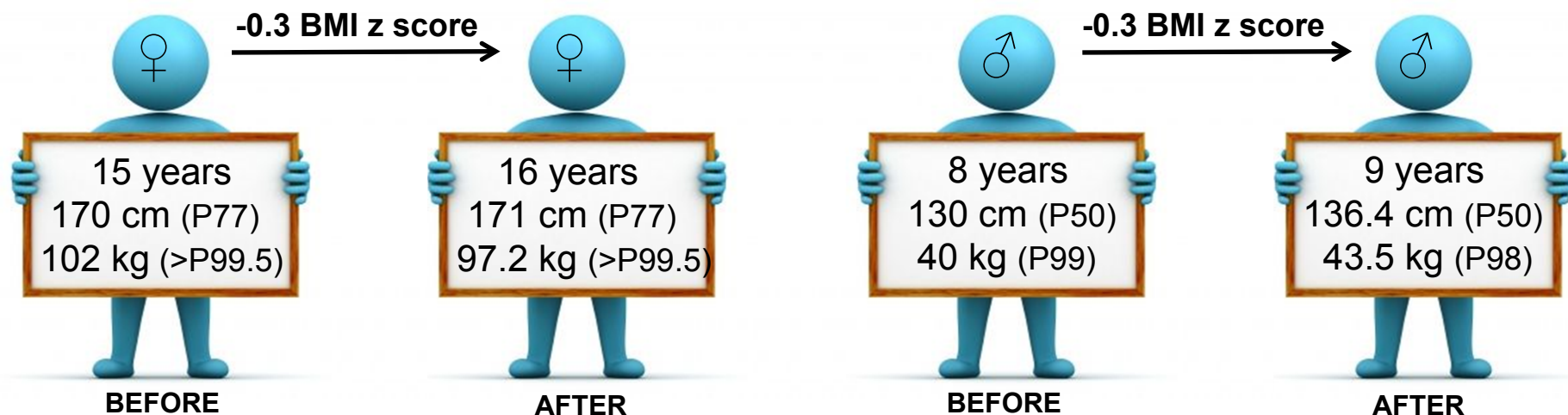
1. Statistical **power analysis**
for BMI or BMI z score
2. **Intention-to-treat analysis**
3. Description of the
randomization procedure
4. Reporting of **adverse events**
5. Information about **adherence**
6. Information about **drop out rate**
7. Information about **loss to follow-up**



Schulz et al. (CONSORT), BMJ 2010; Oude Luttikhuis et al., Cochrane Database of Syst Rev 2009

Results: Weight status

- BMI z score reduction in the range of **0.05 to 0.42** over the period of 12-24 months after the initiation of treatment
(based on 8 trials with the highest methodological quality)
- Drop out rate: up to **50 %**
- Loss to follow-up: up to **71 %**



Clinical implications

- Conservative weight-loss treatment has on average **only modest effect** on weight status in the intermediate term!
- Children and adolescents with (extreme) obesity **cannot be expected** to achieve a normal weight!
- Treatment-seeking families should be **informed** about the limited efficiency of weight-loss treatment!
- Potential **adverse side effects** must be considered!

Reformulation of treatment goals

1. Acceptance of obesity (***cop*ing** approach)
2. Promotion of a **healthy lifestyle** independent from the amount of weight loss
3. Improvement of **psychosocial functioning** and **quality of life**
4. Motivation to **utilise available health-care resources** over the long term

Thank you for your attention!

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