



MEND & Healthy Together Research Overview:

Selection of Key Trials

Sept 2023

[Healthy Weight Partnership Inc.](#)

Overview



- MEND Programs are underpinned by the largest child weight management evidence-base globally.
- 130k+ parents and children have participated in 7 countries.
- Scaled up and evaluated across 3 continents (5 countries).
- Collaborated with 13 prestigious academic institutions, resulting in 35 peer-reviewed scientific articles (including 4 RCTs).
- Improvements in wide range of physiological and psychological wellbeing outcomes.
- Commissioned by public agencies including US (Health Depts), CA (Alberta & BC), AUS (New South Wales and Victoria), UK (Department of Health, Welsh Government and local health agencies / municipalities).
- Licensed by the YMCA of the USA for Healthy Weight and Your Child, their programming for obesity in childhood.
- Recognized by the [CDC](#), the [AAP](#) and the [National Association of Community Health Centers](#).
- High participant engagement and satisfaction - evidenced by high attendance, low attrition rates.
- Full reference list available: [MEND Full Publications List](#)

Delivers improvements in health outcomes and risk behaviors

- Child and Parental BMI
- Waist circumference
- Cardiovascular fitness
- Psychological symptoms
- Quality of life
- Body and self-esteem
- *Indicative other clinical e.g. BP, HbA1c, NAFLD*

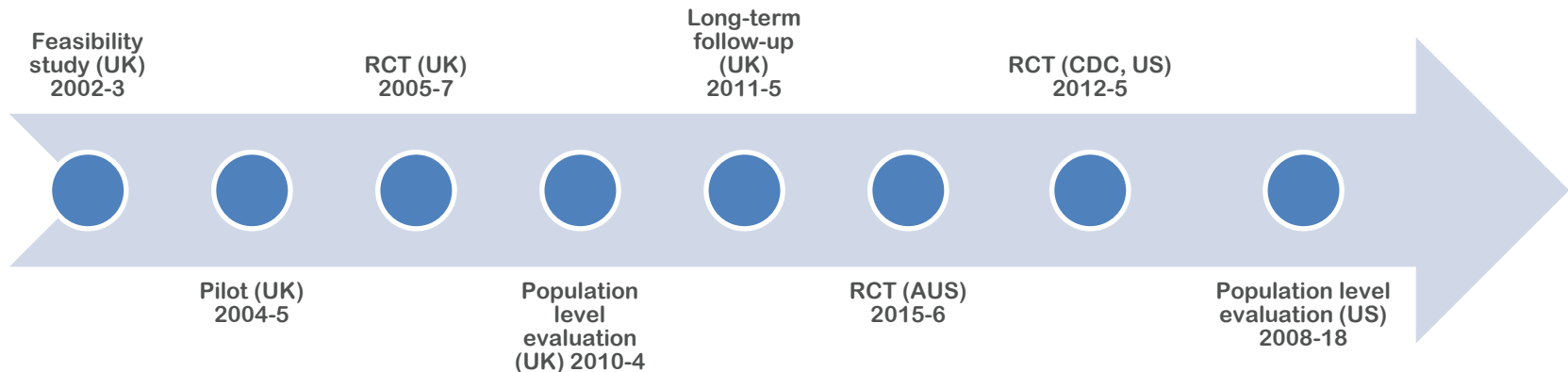


- Diet
- Eating behaviors
- Physical activity levels
- Sedentary behaviors
- Family relationships

Extensive clinical trials and evaluation in 5 countries (USA, CA, UK, AUS and NL)



Timeline: Selection of MEND 7-13 program trials



[35 published peer-reviewed articles](#)



1012 citations – most significant scientific impact across all community-based, child weight management interventions



US CDC CORD Funded RCT



Efficacy of a Community- Versus Primary Care-Centered Program for Childhood Obesity: TX CORD RCT

Nancy F. Butte¹, Deanna M. Hoelscher², Sarah E. Barlow³, Stephen Pont⁴, Casey Durand⁵, Elizabeth A. Vandewater², Yan Liu¹, Anne L. Adolph¹, Adriana Pérez², Theresa A. Wilson¹, Alejandra Gonzalez², Maurice R. Puyau¹, Shreela V. Sharma², Courtney Byrd-Williams², Abiodun Oluyomi², Terry Huang⁵, Eric A. Finkelstein⁶, Paul M. Sacher⁷, and Steven H. Kelder²

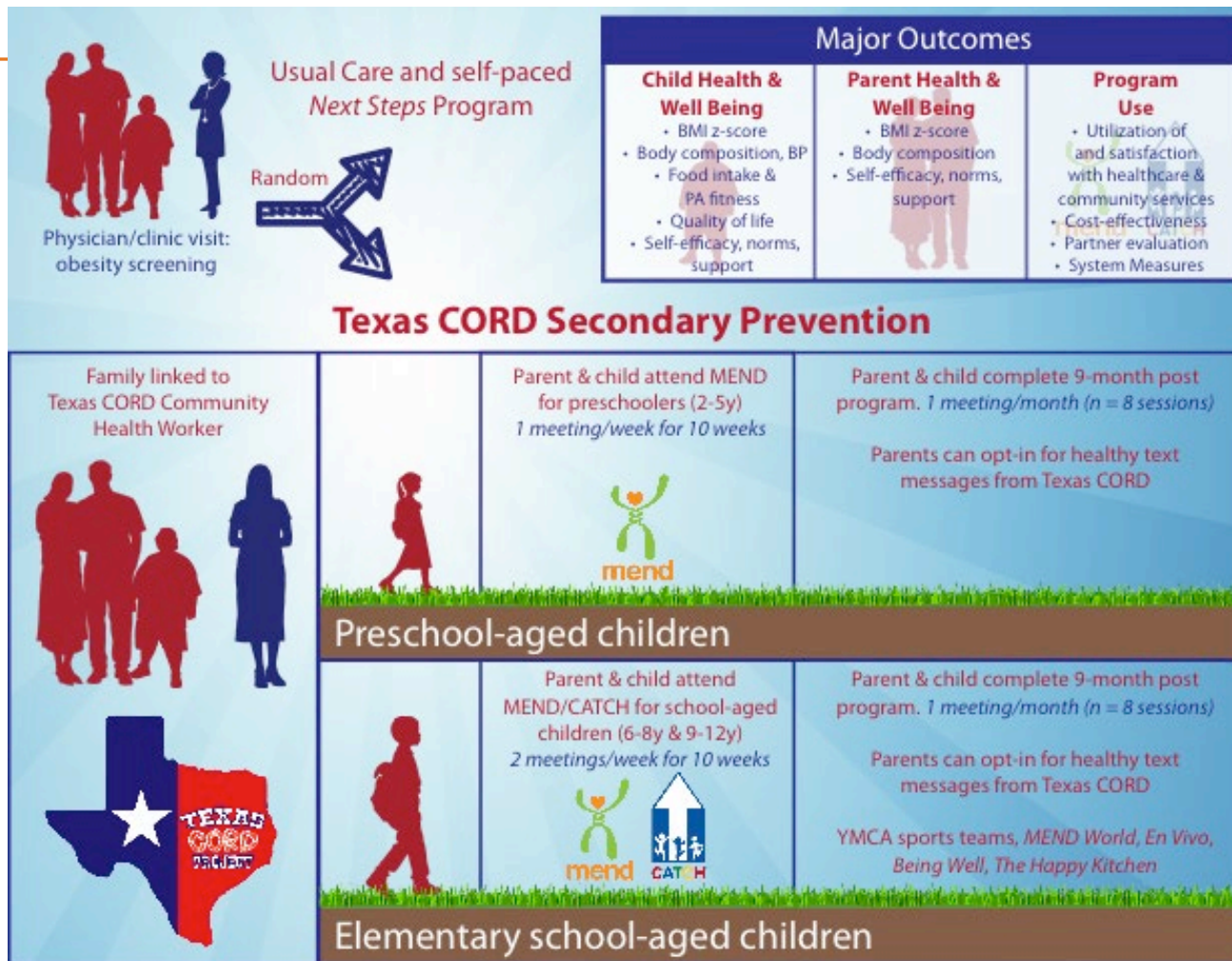


[Link](#)



Butte et al., *Obesity* 2017;25:1584

CDC Funded – US RCT

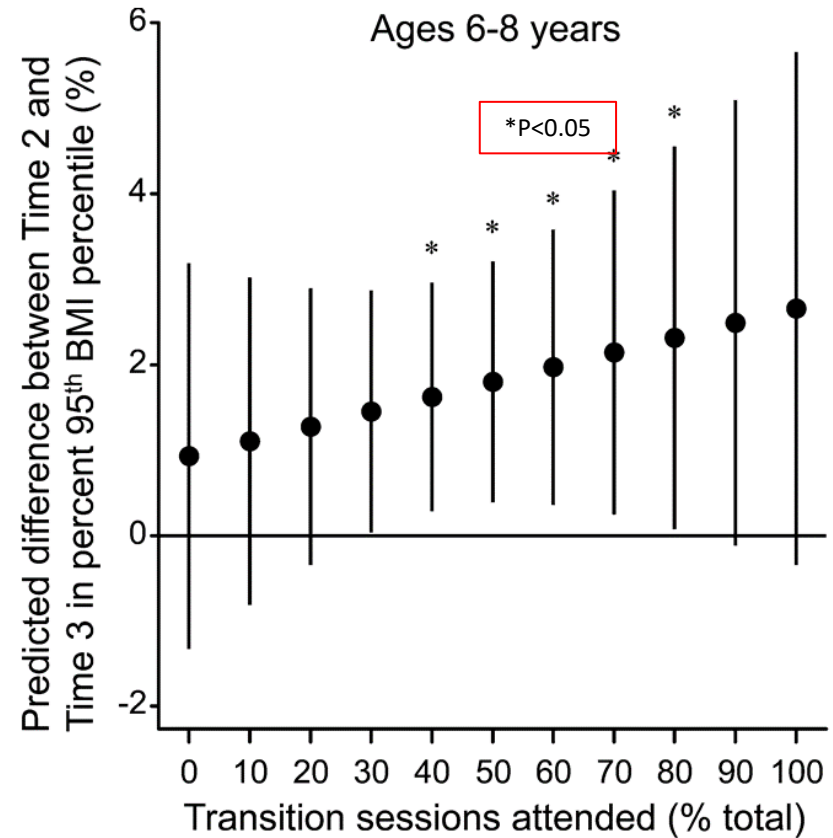
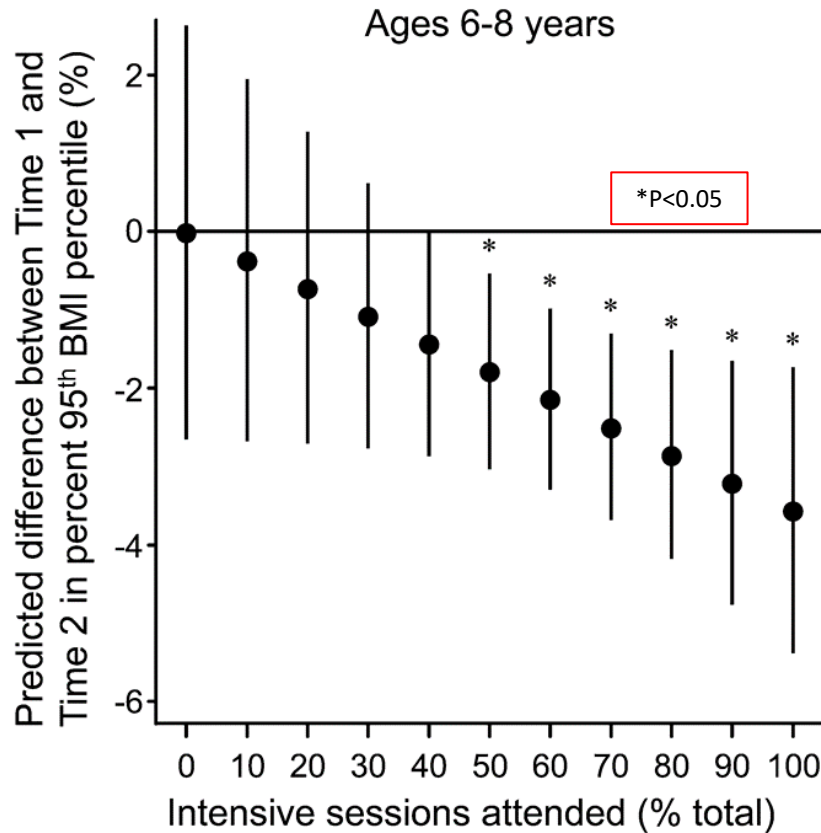


RCT begins at Provider (MEND or Next Steps)

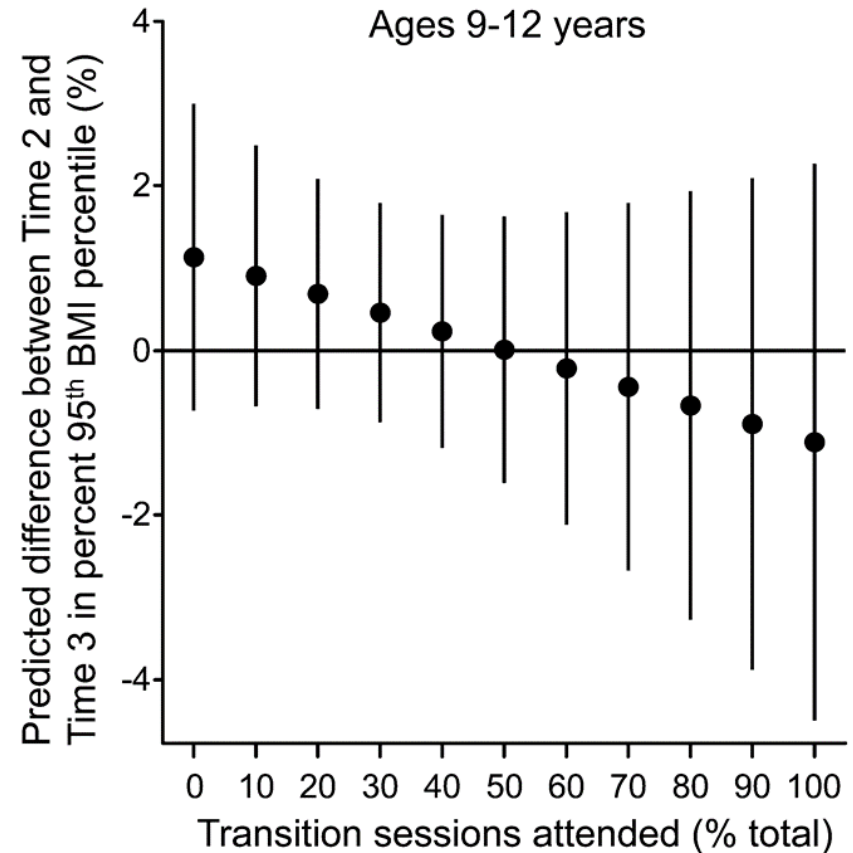
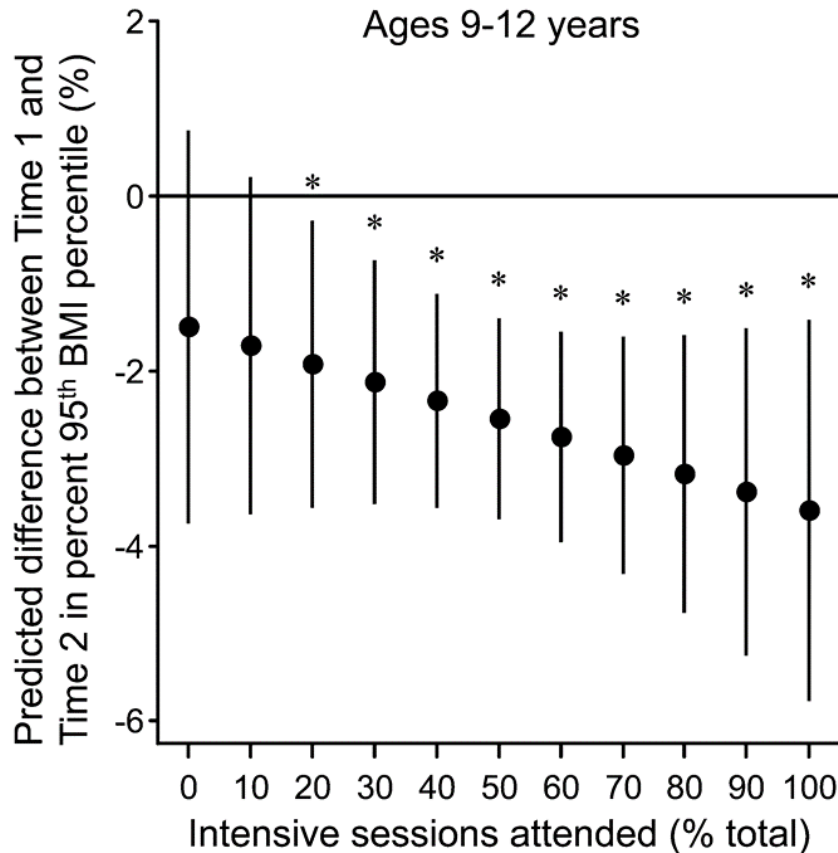
n = 576
(288 Intervention, 288 Comparison)

Source: Sacher et al., 2010; Kelder et al., 2005; Evans et al., 2012; Ranjit et al.

MEND decreased BMI in children ages 6-8 years (effects are greater with dose)



MEND decreased BMI in children ages 9-12 years (effects are greater with dose)



Butte et al., *Obesity* 2017;25:1584



Largest USA Child Weight Management Evaluation



Addressing childhood obesity in low-income, ethnically diverse families: outcomes and peer effects of MEND 7–13 when delivered at scale in US communities

Paul M. Sacher^{1,2} • Maria Kolotourou² • Stavros Poupakis³ • Paul Chadwick⁴ • Duncan Radley⁵ • Jamie Fagg⁶

Methods MEND 7–13 is a community-based, multi-component, childhood obesity intervention designed to improve dietary, physical activity and sedentary behaviors. It comprises twice weekly sessions for 10 consecutive weeks (35 contact hours) and is delivered to groups of children and accompanying parents/caregivers. The evaluation used an uncontrolled, repeated measures design. Overall, 3782 children with overweight or obesity attended 415 MEND 7–13 programs in eight US states, of whom 2482 children (65.6%) had complete data for change in zBMI. The intervention targeted low-income, ethnically diverse families. Changes in anthropometric, cardiovascular fitness and psychological outcomes were evaluated. A longitudinal multivariate imputation model was used to impute missing data. Peer effects analysis was conducted using the instrumental variables approach and group fixed effects.

Results Mean changes in BMI and zBMI at 10 weeks were -0.49 kg/m^2 (95% CI: $-0.67, -0.31$) and -0.06 (95% CI: $-0.08, -0.05$), respectively. Benefits were observed for cardiovascular fitness and psychological outcomes. Mean peer reduction in zBMI was associated with a reduction in participant zBMI in the instrumental variables model ($B = 0.78$, $P = 0.04$, 95% CI: 0.03, 1.53). Mean program attendance and retention were 73.9% and 88.5%, respectively.

Conclusion Implementing MEND 7–13 under service level conditions was associated with short-term improvements in anthropometric, fitness and psychological indices in a large sample of low-income, ethnically diverse children with overweight and obesity. A peer effect was quantified showing that benefits for an individual child were enhanced, if peers in the same group also performed well. To our knowledge, this is the first US study to evaluate outcomes of an up-scaled community-based, child weight management program and to show positive peer effects associated with participation in the intervention.

**8 US states. All outcomes significantly improved.
1st study of its kind.**



MEND USA: Changes in health-related behaviors (real-world data)

| | Before MEND | After MEND |
|--|-----------------|------------|
| 60 minutes physical activity/day | 52% | 81% |
| Change in physical activity after MEND 7-13 | +4.5 hrs / week | |
| Sedentary for more than 2 hours/day | 20% | 8% |
| Change in sedentary behavior after MEND 7-13 | -2.8 hrs / week | |
| Sugar-sweetened beverages a few times/day | 10% | 2% |
| Rarely consumed sugar-sweetened beverages | 25% | 43% |
| > 5 servings fruit and vegetables/day | 21% | 40% |
| < 2 servings fruit and vegetables/day | 16% | 5% |

All results are highly statistically significant (all $p < 0.0001$)

MEND USA: Attendance, retention and health outcomes

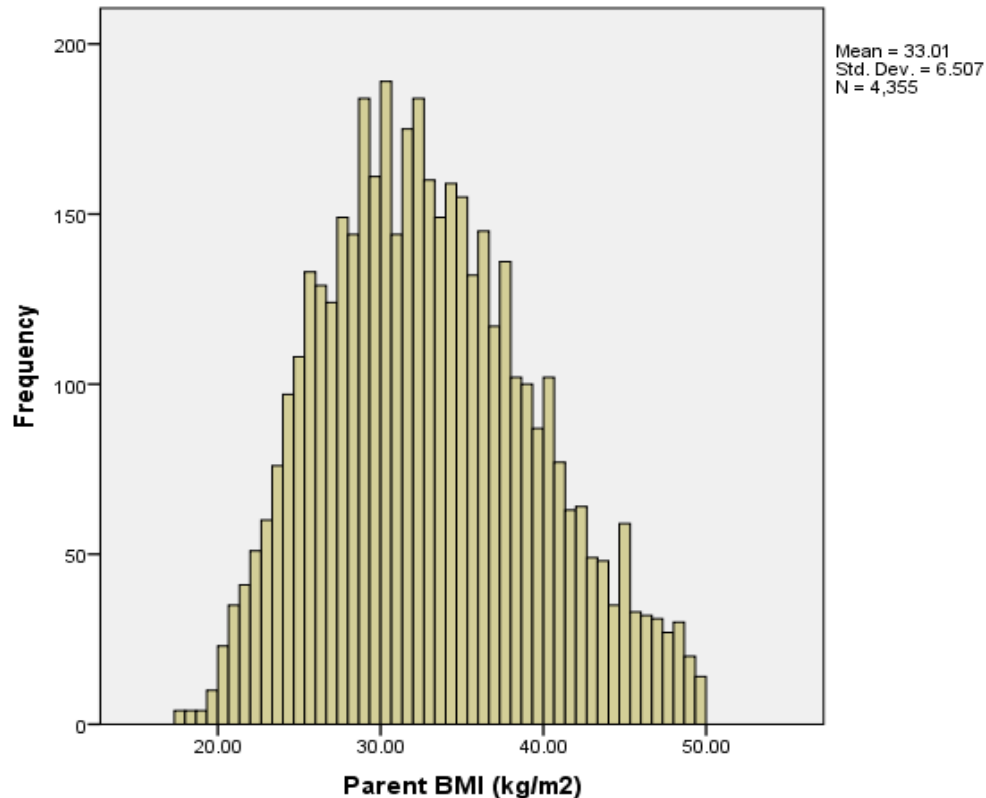


| | |
|------------|-----|
| Attendance | 81% |
| Retention | 87% |

| | |
|--|-------------|
| Body image | Improvement |
| Self esteem (Rosenberg scale) | Improvement |
| Dietary behaviors and nutritional intake | Improvement |

| | |
|--|----------|
| Cardiovascular fitness (recovery heart rate after step test) | -4.5 bpm |
| Participants decrease or reduce BMI z-score after MEND 7-13 | 83% |

Living with obesity is a family issue: Parental baseline BMI change after MEND



| Parental weight status | % |
|------------------------|-----|
| Underweight | 0% |
| Healthy weight | 10% |
| Overweight | 25% |
| Obese | 65% |



90% of parents living with overweight or obesity
67% of parents maintained or reduced their BMI



US Clinical Trial Demonstrating Effectiveness & Improvements in Blood Pressure



Body Mass Index and Blood Pressure Improvements With a Pediatric Weight Management Intervention at Federally Qualified Health Centers



Omoye E. Imoisili, MD, MPH; Elizabeth A. Lundeen, PhD, MPH*; David S. Freedman, PhD; Lindsay S. Womack, PhD, MPH; Jessica Wallace, PA-C, MPH; Simon J. Hambidge, MD, PhD; Steven Federico, MD; Rachel Everhart, PhD, MS; Delia Harr, MSN; Jillian Vance, MPH; Lyudmyla Kompaniyets, PhD; Carrie Dooyema, MPH, MSN, RN; Sohyun Park, PhD; Heidi M. Blanck, PhD; Alyson B. Goodman, MD, MPH*

From the Obesity Prevention and Control Branch, Division of Nutrition, Physical Activity, and Obesity (OE Imoisili, EA Lundeen, DS Freedman, L Kompaniyets, C Dooyema, S Park, HM Blanck, and AB Goodman), National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Ga; Epidemic Intelligence Service (OE Imoisili and LS Womack), Center for Surveillance, Epidemiology, and Laboratory Services, Centers for Disease Control and Prevention, Atlanta, Ga; United States Public Health Service (OE Imoisili, LS Womack, HM Blanck, and AB Goodman), Rockville, Md; and Denver Health Ambulatory Care Services (J Wallace, SJ Hambidge, S Federico, R Everhart, D Harr, and J Vance), Denver, Co

WHAT'S NEW

This is the first study that demonstrates not only BMI improvement, but also a statistically significant decrease of blood pressure in an implementation of the MEND 7–13 program model in real world, federally qualified health center settings.

[Link](#)



Landmark RCT (UK)



Randomized Controlled Trial of the MEND Program: A Family-based Community Intervention for Childhood Obesity

Paul M. Sacher¹, Maria Kolotourou¹, Paul M. Chadwick², Tim J. Cole³, Margaret S. Lawson¹, Alan Lucas¹ and Atul Singhal¹

The aim of this study was to evaluate the effectiveness of the Mind, Exercise, Nutrition, Do it (MEND) Program, a multicomponent community-based childhood obesity intervention (www.mendcentral.org). One hundred and sixteen obese children (BMI \geq 98th percentile, UK 1990 reference data) were randomly assigned to intervention or waiting list control (6-month delayed intervention). Parents and children attended eighteen 2-h group educational and physical activity sessions held twice weekly in sports centers and schools, followed by a 12-week free family swimming pass. Waist circumference, BMI, body composition, physical activity level, sedentary activities, cardiovascular fitness, and self-esteem were assessed at baseline and at 6 months. Children were followed up 12 months from baseline (0 and 6 months postintervention for the control and intervention group, respectively). Participants in the intervention group had a reduced waist circumference z-score (-0.37 ; $P < 0.0001$) and BMI z-score (-0.24 ; $P < 0.0001$) at 6 months when compared to the controls. Significant between-group differences were also observed in cardiovascular fitness, physical activity, sedentary behaviors, and self-esteem. Mean attendance for the MEND Program was 86%. At 12 months, children in the intervention group had reduced their waist and BMI z-scores by 0.47 ($P < 0.0001$) and 0.23 ($P < 0.0001$), respectively, and benefits in cardiovascular fitness, physical activity levels, and self-esteem were sustained. High-attendance rates suggest that families found this intensive community-based intervention acceptable. Further larger controlled trials are currently underway to confirm the promising findings of this initial trial.

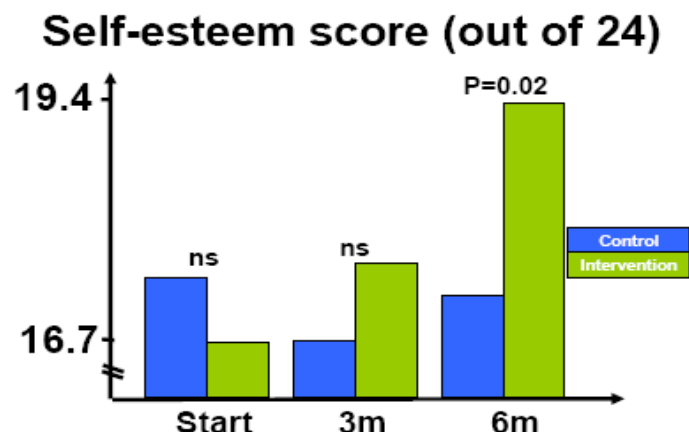
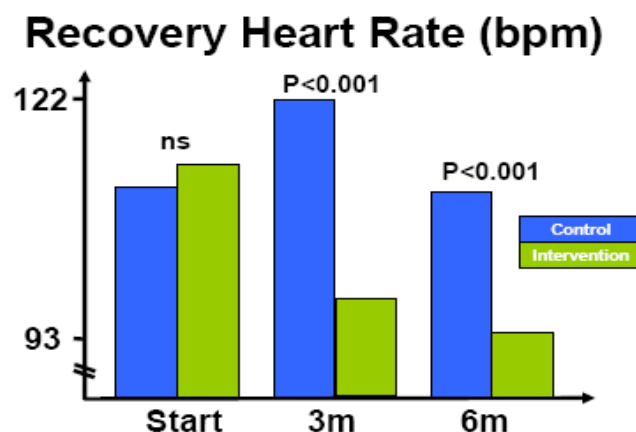
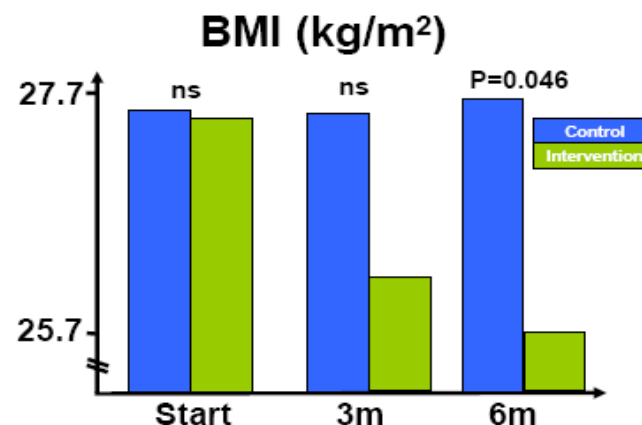
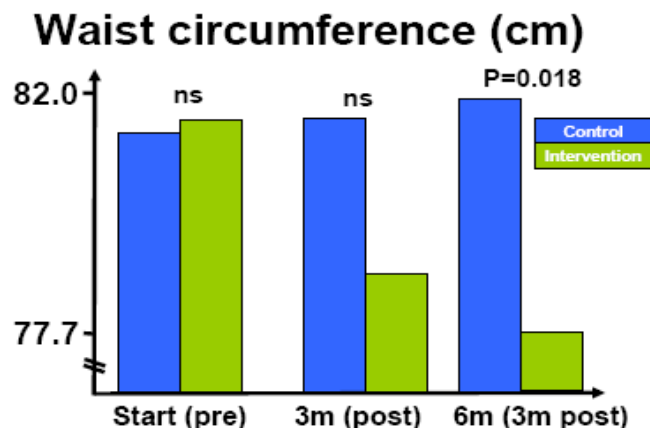
1st UK program to demonstrate efficacy. Led to adoption and rollout internationally. Citations: 445.

MEND RCT



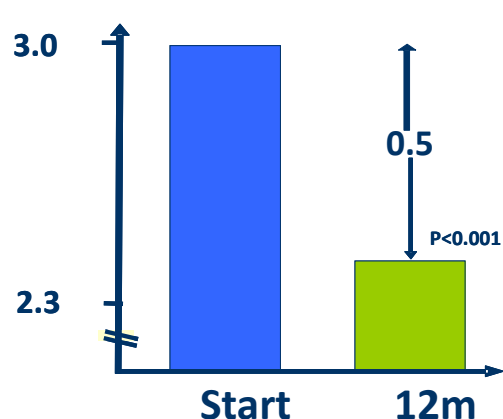
- Sites: 5
- Female: 57%
- Minorities: 48%
- Mean age: 10.1 (± 1.2) years
- Mean BMI z-score: 2.8 (± 0.6)
- Statistically significant reductions in BMI, waist circumference, sedentary activities & improvements in physical activity and self-esteem at 6 months – sustained at 12 months

MEND RCT: Three month outcomes, improved at six months

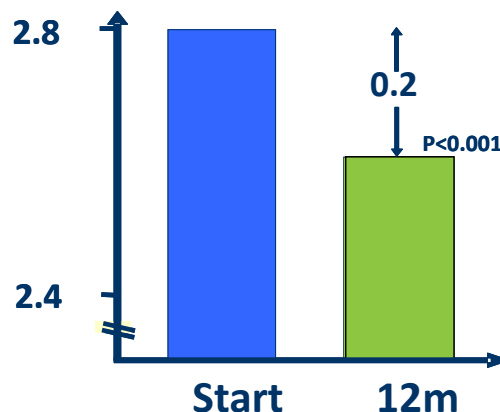


Outcomes sustained at 12 months

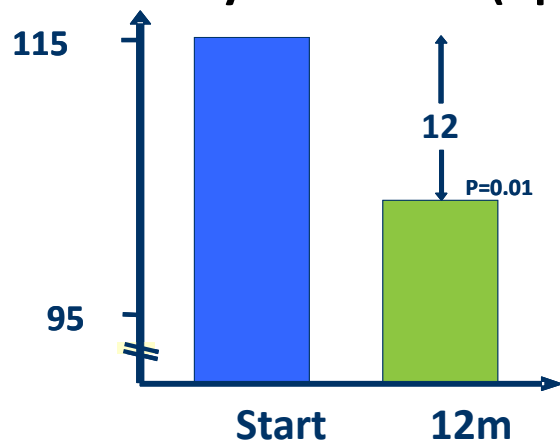
Waist circumference z-score



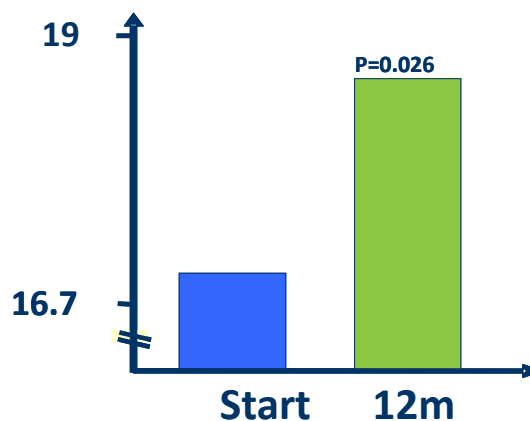
BMI z-score



Recovery heart rate (bpm)



Self-esteem score (out of 24)





Largest Real World Evaluation of a child weight management program (UK)



From trial to population: a study of a family-based community intervention for childhood overweight implemented at scale

J Fagg¹, P Chadwick², TJ Cole¹, S Cummins³, H Goldstein^{1,4}, H Lewis⁵, S Morris⁶, D Radley⁷, P Sacher⁸ and C Law¹

METHODS/SUBJECTS: Intervention evaluation using prospective service level data. Families ($N=21\,132$) with overweight children are referred, or self-refer, to MEND. Families (participating child and one parent/carer) attend two sessions/week for 10 weeks ($N=13\,998$; $N=9563$ with complete data from 1788 programmes across England). Sessions address diet and physical activity through education, skills training and motivational enhancement. MEND was shown to be effective in obese children in a randomised controlled trial (RCT). Outcomes were mean change in body mass index (BMI), age- and sex-standardised BMI (zBMI), self-esteem (Rosenberg scale) and psychological distress (Strengths and Difficulties Questionnaire) after the 10-week programme. Relationships between the outcome and covariates were tested in multilevel models adjusted for the outcome at baseline.

RESULTS: After adjustment for covariates, BMI reduced by mean 0.76 kg m^{-2} (s.e. = 0.021, $P < 0.0001$), zBMI reduced by mean 0.18 (s.e. = 0.0038, $P < 0.0001$), self-esteem score increased by 3.53 U (s.e. = 0.13, $P < 0.0001$) and psychological distress score decreased by 2.65 U (s.e. = 0.31, $P < 0.0001$). Change in outcomes varied by participant, family, neighbourhood and programme factors. Generally, outcomes improved less among children from less advantaged backgrounds and in Asian compared with white children. BMI reduction under service conditions was slightly but not statistically significantly less than in the earlier RCT.

CONCLUSIONS: The MEND intervention, when delivered at scale, is associated with improved BMI and psychosocial outcomes on average, but may work less well for some groups of children, and so has the potential to widen inequalities in these outcomes. Such public health interventions should be implemented to achieve sustained impact for all groups.

International Journal of Obesity (2014) **38**, 1343–1349; doi:10.1038/ijo.2014.103

Largest real-world evaluation of a child weight management program
Conducted by University College London. NIHR funded. Citations: 53

UK scale-up (2007–10)

2063 programs (>300 locations)



Each pin represents a location running MEND

Rare opportunity to evaluate:

- Outcomes on a national or population level
- Outcomes in the real world compared to the RCT

Outcomes



- BMI reduced in all subgroups:
 - Overall: 90% of children reduced their BMI z-score
- No significant differences between BMI reduction in the the UK scale-up compared to the RCT – **demonstrates that MEND's clinical findings are replicable when the intervention is delivered in the real-world**
- Significant improvements in waist circumference, physical activity time, sedentary behaviors, cardiovascular fitness, dietary behaviors, self-esteem and psychological symptoms
- High engagement and low attrition rates



Weight Loss Maintenance: Longer Term Outcomes (UK)



Long-Term Outcomes Following the MEND 7–13 Child Weight Management Program

Maria Kolotourou, MSc,¹ Duncan Radley, PhD,² Catherine Gammon, BSc,³ Lindsey Smith, PhD,⁴ Paul Chadwick, DClínPsy,⁵ and Paul M. Sacher, PhD^{1,6}

Background: In the current study, we report outcomes 2.4 years from baseline in a random subsample of overweight and obese children who attended MEND 7–13 programs delivered in UK community settings under service level conditions.

Methods: The study employed an uncontrolled pre-follow-up design. A total of 165 children were measured. Outcomes included anthropometry, parental perception of emotional distress, body esteem, and self-esteem.

Results: Overall, there were significant improvements in all outcomes apart from BMI z-score. In boys, BMI z-score, waist circumference z-score, and psychometrics all improved. In girls, there were no statistically significant differences at 2.4 years, except for body esteem.

Conclusions: In real-world settings, the MEND intervention, when delivered by nonspecialists, may result in modest, yet positive, long-term outcomes. Subsequent research should focus on improving the outcome effect size, providing effective behavior change maintenance strategies, and further investigating the reasons behind the observed gender differences.

Findings



- Mean length of follow-up = 2.4 years
- 55% of children reduced their BMI z-score
- Significant weight loss improvement in boys, no significant change in girls (weight loss maintained)
- Significant improvements in all other outcomes - waist circumference, psychological symptoms, body esteem and self esteem
- Encouraging results showing that child weight management programs can result in positive long-term outcomes



Australian RCT



Effectiveness of a once per week delivery of a family-based childhood obesity intervention: a cluster randomised controlled trial



S. Khanal,¹ D. Welsby,¹ B. Lloyd,¹ C. Innes-Hughes,¹ S. Lukeis² and C. Rissel¹

Background: The effectiveness of once per week (OPW) delivery of a family-based childhood obesity programme was compared with twice per week (TPW) delivery in achieving health and behavioural outcomes at a population level and in improving programme attendance. Both programmes were delivered over 10-weeks, and the contact hours in the OPW and TPW programmes were 20 and 35-h, respectively.

Methods: A cluster-randomised controlled trial with stratification by local health district was conducted. Height, weight and global self esteem of participants and parent-reported diet and physical activity were measured at programme commencement and completion and at 6-month follow-up. Attendance was defined as the proportion of total sessions attended.

Results: There were no differences between the OPW and TPW arms in changes from pre-programme baseline for body mass index (BMI) z-score and other health and behavioural measures at programme completion and at follow-up, except for the increase in physical activity outside of the programme at programme completion (OPW, 3.5 h/week; TPW, 1.9 h/week; $p=0.03$). OPW and TPW participants attended 71.2% and 69.2% of the total sessions, respectively. Attendance was the only contributing factor to a positive BMI z-score outcome ($\beta = -2.45$, $p < 0.01$) with no effects of child age and gender, language spoken at home or highest qualification of mother.

Conclusions: A family-based childhood obesity programme can be delivered OPW with no compromise to health or behavioural outcomes compared with TPW. Higher attendance, as a proportion of available sessions, leads to better outcomes for children.

- MEND was scaled up in States across Australia. This RCT in NSW found that once per week attendance did not negatively impact outcomes.
- Demonstrates that MEND is flexible and different program intensities can be effective.



AUS Trial Demonstrating Program Effectiveness



Translational research: are community-based child obesity treatment programs scalable?

Louise L. Hardy^{1*}, Seema Mahrshahi¹, Joanne Gale¹, Binh Nguyen¹, Louise A. Baur^{1,2} and Blythe J. O'Hara



Background: Community-based obesity treatment programs have become an important response to address child obesity; however the majority of these programs are small, efficacy trials, few are translated into real-world situations (i.e., dissemination trials). Here we report the short-term impact of a scaled-up, community-based obesity treatment program on children's weight and weight-related behaviours disseminated under real world conditions.

Methods: Children age 6–15 years with a body mass index (BMI) ≥ 85 th percentile with no co-morbidities, and their parents/carers participated in a twice weekly, 10-week after-school child obesity treatment program between 2009 and 2012. Outcome information included measures of weight and weight-related behaviours. Analyses were adjusted for clustering and socio-demographic variables.

Results: Overall, 2,812 children participated (54.2 % girls; M_{age} 10.1 (2.0) years; $M_{\text{attendance}}$ 12.9 (5.9) sessions). Beneficial changes among all children included BMI (-0.65 kg/m^2), BMI-z-score (-0.11), waist circumference (-1.8 cm), and WtHtr (-0.02); self-esteem ($+2.7$ units), physical activity ($+1.2 \text{ days/week}$), screen time (-4.8 h/week), and unhealthy foods index (-2.4 units) (all $p < 0.001$). Children who completed ≥ 75 % of the program were more likely to have beneficial changes in BMI, self-esteem and diet (sugar sweetened beverages, lollies/chocolate, hot chips and takeaways) compared with children completing < 75 % of the program.

Conclusions: This is one of the few studies to report outcomes of a government-funded, program at scale in a real-world setting, and shows that investment in a community-based child obesity treatment program holds potential to produce short-term changes in weight and weight-related behaviours. The findings support government investment in this health priority area, and demonstrate that community-based models of child obesity treatment are a promising adjunctive intervention to health service provision at all levels of care.

Keywords: Community health services, Behaviour change, Public health

MEND efficacy and effectiveness
demonstrated in Australia



Canadian Trial Demonstrating High Levels of Engagement and Program Effectiveness



Evaluation of the scale-up and implementation of mind, exercise, nutrition ... do it! (MEND) in British Columbia: a hybrid trial type 3 evaluation

Sam Liu¹, Joy Weismiller², Karen Strange³, Lisa Forster-Coull³, Jennifer Bradbury³, Tom Warshawski³ and Patti-Jean Naylor^{1*} 



Abstract

Background: The Mind, Exercise, Nutrition ... Do it! (MEND) childhood obesity intervention was implemented in British Columbia (B.C.), Canada from April 2013 to June 2017. The study objective was: a) to describe and explore program reach, attendance, satisfaction, acceptability, fidelity, and facilitators and challenges during scale-up and implementation of MEND in B.C. while b) monitoring program effectiveness in improving children's body mass index (BMI) z-score, waist circumference, dietary and physical activity behaviours, and psychological well-being.

Methods: This prospective, pragmatic implementation evaluation (Hybrid Type 3 design) recruited families with children and adolescents aged 7–13 with a BMI \geq 85th percentile for age and sex. The 10-week MEND B.C. program was delivered in 27 sites, throughout all five B.C. health regions (Northern, Interior, Island, Fraser, and Vancouver Coastal) over 4 years. Families attended two weekly in-person group sessions aimed to increase physical activity and promote healthy eating. BMI z-score and waist circumference were measured at baseline and follow-up. Dietary and physical activity behaviours and psychological well-being were measured using validated questionnaires. A mixed-method approach was used to collect and analyze the data.

Results: One hundred thirty-six MEND B.C. programs were delivered over 4 years. The program reached 987 eligible participants. 755 (76.5%) children and adolescents completed the program. The average program attendance was 81.5%. Parents reported the program content was easy to understand, culturally suitable, respectful of family's financial situation, and provided adequate information to build a healthy lifestyle. Children achieved significant positive changes across all four evaluation years in BMI z-score ($d = -0.13$), nutrition behaviours ($d = 0.64$), physical activity levels ($d = 0.30$), hours of screen time per week ($d = -0.38$) and emotional distress ($d = -0.21$). Challenges to continued program implementation included: recruitment, resource requirement for implementation, and the need to tailor the program locally to be more flexible and culturally relevant.

(Continued on next page)

Liu et al. BMC Pediatrics. 2020

[Link](#)



Real World Dutch Trial Demonstrating Improved Health- Related Quality of Life



Changes in the Health-Related Quality of Life and Weight Status of Children with Overweight or Obesity Aged 7 to 13 Years after Participating in a 10-Week Lifestyle Intervention



Emma van den Eynde, MSc,^{1,2} Roxanna Camfferman, PhD,¹ Linda R. Putten, BSc,¹
Carry M. Renders, PhD,¹ Jacob C. Seidell, PhD,¹ and Jutka Halberstadt, PhD¹

Abstract

Background: The aim of the study was to assess changes in the health-related quality of life (HRQOL) and weight status of children with overweight and obesity after participating in a 10-week family-based combined lifestyle group intervention in their community.

Methods: In total, 340 children with overweight or obesity aged between 7 and 13 years, as well as one of their primary caregivers, took part in this intervention, in a real-world setting. The intervention comprised 20 group sessions for a 10-week period, and focused on improving knowledge, attitudes, social support, and self-efficacy in regard to healthy lifestyles. The Pediatric Quality of Life Inventory 4.0 (PedsQL) and Impact of Weight on Quality of Life-Kids (IWQOL-KIDS) questionnaires were used to determine generic and weight-specific HRQOL. Changes in HRQOL and BMI (standard deviation [SDS] of BMI, objectively measured) were tested using a Wilcoxon signed-rank test, Mann–Whitney U test, and paired *t*-test.

Results: Generic quality of life ($Z = -3.58$, $r = -0.25$), weight-specific quality of life ($Z = -4.83$, $r = -0.34$), and SDS-BMI ($d = 0.21$) were all significantly improved after participating in the 10-week intervention. The mean attendance rate was 73.74%.

Conclusion: This study demonstrated that participation in the intervention LEFF for children with overweight and obesity was associated with improved generic and weight-specific HRQOL and SDS-BMI.

MEND is not only effective in producing improved weight and related outcomes, but also shown to improve Quality of Life in a large group of Dutch children attending MEND



Efficacy and Effectiveness Trials for Different Ages



A parent-based intervention to promote healthy eating and active behaviours in pre-school children: evaluation of the MEND 2–4 randomized controlled trial



H. Skouteris¹, B. Hill¹, M. McCabe¹, B. Swinburn³, and L. Busija²

Background: There is a paucity of studies evaluating targeted obesity prevention interventions in pre-school children.

Objectives: We conducted a randomized controlled trial to evaluate the efficacy of a parent-based obesity prevention intervention for pre-schoolers – MEND (Mind, Exercise, Nutrition . . . Do It!) 2–4 on child diet, eating habits, physical activity/sedentary behaviours, and body mass index (BMI).

Methods: Parent–child dyads attended 10 weekly 90-min workshops relating to nutrition, physical activity and behaviours, including guided active play and healthy snack time. Assessments were conducted at baseline, immediately post-intervention, and 6 and 12 months post-intervention; child intake of vegetables, fruit, beverages, processed snack foods, fussiness, satiety responsiveness, physical activity, sedentary behaviour and neophobia were assessed via parent proxy report. Parent and child height and weight were measured.

Results: Two hundred one parent–child dyads were randomized to intervention ($n = 104$) and control ($n = 97$). Baseline mean child age was 2.7 (standard deviation [SD] 0.6) years, and child BMI-for-age z-score (World Health Organization) was 0.66 (SD 0.88). We found significant positive group effects for vegetable ($P = 0.01$) and snack food ($P = 0.03$) intake, and satiety responsiveness ($P = 0.047$) immediately post-intervention. At 12 months follow-up, intervention children exhibited less neophobia ($P = 0.03$) than controls.

MEND for 2-4 years

AUS RCT

Assessing the short-term outcomes of a community-based intervention for overweight and obese children: The MEND 5-7 programme



L R Smith,^{1,2} P Chadwick,^{2,3} D Radley,^{1,2} M Kolotourou,² C S Gammon,²
J Rosborough,² P M Sacher^{1,2}

Objective: The aim of this study was to report outcomes of the UK service level delivery of MEND (Mind, Exercise, Nutrition...Do it!) 5-7, a multicomponent, community-based, healthy lifestyle intervention designed for overweight and obese children aged 5-7 years and their families.

Design: Repeated measures.

Setting: Community venues at 37 locations across the UK.

Participants: 440 overweight or obese children (42% boys; mean age 6.1 years; body mass index (BMI) z-score 2.86) and their parents/carers

Intervention: MEND 5-7 is a 10-week, family-based, child weight-management intervention consisting of weekly group sessions. It includes positive parenting, active play, nutrition education and behaviour change strategies. The intervention is designed to be scalable and delivered by a range of health and social care professionals.

Results: 274 (62%) children were measured preintervention and post-intervention (baseline; 10-weeks). Post-intervention, mean BMI and waist circumference decreased by 0.5 kg/m² and 0.9 cm, while z-scores decreased by 0.20 and 0.20, respectively ($p < 0.0001$). Improvements were found in children's psychological symptoms (-1.6 units, $p < 0.0001$), parent self-efficacy ($p < 0.0001$), physical activity ($+2.9$ h/week, $p < 0.01$), sedentary activities (-4.1 h/week, $p < 0.0001$) and the proportion of parents and children eating five or more portions of fruit and vegetables per day (both $p < 0.0001$). Attendance at the 10 sessions was 73% with a 70% retention rate.

Conclusions: Participation in the MEND 5-7 programme was associated with beneficial changes in physical, behavioural and psychological outcomes

Conclusion

- Internationally MEND has been shown to be effective, scalable and engaging for families with children aged 2-18.
- MEND has been extensively adapted and localized for children and parents living in 5 countries.
- MEND represents the largest repository of evidence-based and proven child weight management know-how, content, tools, resources and data.
- We look forward to exploring how MEND can support families living with overweight and obesity in your state.



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