

# FAMILY INTERVENTIONS FOR OBESITY IN CHILDREN 0-5 YEARS: EFFECTIVE PROGRAMS AND NEW AVENUES TO EXPLORE

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# Family-focused interventions

Recent proliferation of family-focused interventions for reducing childhood obesity focused on age 0-5 years

- Since 2012, at least **16** RCTs completed
- At least **9** additional studies are still in progress or have results pending

**Family-focused** = repeated interactions with parents, intervention designed to modify parenting approaches

# Types of family interventions

1. Promotion of healthy lifestyles
2. Healthy lifestyles + parenting skills
3. Interventions targeting broader family life



# 1. Promoting healthy lifestyles

## Intervention content:

- Timing of introduction of solids
- Limiting sugar-sweetened beverages
- Turning TV off during meals
- Meal time routines
- Parent diet and physical activity modeling
- Need for repeated exposure to vegetables
- Promoting child motor development



# 1. Promoting healthy lifestyles

## Completed

- Barkin (2012): Salud Con La Familia, USA
- Campbell (2013): INFANT, Australia
- Daniels (2013): NOURISH, Australia
- Fitzgibbon (2013): Family-based Hip Hop to Health, USA
- Schroeder (2015): Growing Leaps and Bounds, USA
- Skouteris (2010): MEND 2-4 years, Australia

## Results pending

- Horodyski (2011): Healthy Babies; Healthy Toddlers, USA
- Sobko (2011): Early STOPP, Sweden
- deVries (2015): GECKO, Netherlands
- Delisle (2015): MINSTOP, Sweden
- Eneli (2015), Feeding dynamics, USA

## 2. Healthy lifestyles + parenting skills

### Intervention content:

- Diet, physical activity, screen time, and sleep targets previously outlined
- Responsive parenting
- Child sleep routines (soothe to sleep)
- Authoritative parenting style
- Child emotion regulation
- Co-parenting



## 2. Healthy lifestyles + parenting skills

### Completed

- Haines (2013): Healthy Habits, Happy Homes, USA
- Paul (2010): SLIMTIME, USA
- Wen (2012): Healthy Beginnings Trial, Australia
- Ostbye (2012): KAN-DO, USA

### Results pending

- Ward (2011): My Parenting SOS, USA
- Paul and Birch (2014): INSIGHT, USA

# 3. Non-obesity targets

## Completed

- Brotman (2012): Incredible Years, USA

Parenting intervention for children at risk of conduct disorder

- Reducing harsh discipline
- Promoting child social competence and emotional regulation
- Child school readiness



# **SUMMARY OF RESULTS**

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# Overview of results to date

## Effects on child BMI and proposed mediators:

- 6/14 studies → significant effects on child BMI  
Consistent with meta-analysis by Yavus et al. (2015)
- 11/14 studies → significant effects for mediator

Yavus et al. (2015). Interventions aimed at reducing obesity in early childhood: a meta-analysis of programs that involve parents. *Journal of Child Psychology and Psychiatry*.

# Does implementation setting matter?

Sig. BMI effects

Author	Home	Community	Child care	Mail/phone	Clinic
Brotman (2012)	X	X	X		
Haines (2013)	X				
Paul & Birch (2010)	X				
Wen (2012) *	X				
Barkin (2012)		X			
Slusser (2012)		X			
Campbell (2013)		X			
Daniels (2013)		X			
Skouteris (2015)		X			
Sobko (2015a)		X			
Ostbye (2012)				X	
Fitzgibbon (2013)			X		
DeVries (2015)*					X
Schroeder (2015)					X

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Wen (2012) *	X				
Barkin (2012)		X			
Slusser (2012)		X			
Campbell (2013)		X			
Daniels (2013)		X			
Skouteris (2015)		X			
Sobko (2015a)		X			
Ostbye (2012)				X	
Fitzgibbon (2013)			X		
DeVries (2015)*					X
Schroeder (2015)					X

All studies implementing in the home context reported significant BMI effects

# Does implementation setting matter?

Sig. BMI effects

Author	Home	Community	Child care	Mail/phone	Clinic
Brotman (2012)	X	X	X		
Haines (2013)	X				
Paul & Birch (2010)	X				
Wen (2012) *	X				
Barkin (2012)		X			
Slusser (2012)		X			
Campbell (2013)		X			
Daniels (2013)		X			
Skouteris (2015)		X			
Sobko (2015a)		X			
Ostbye (2012)				X	
Fitzgibbon (2013)			X		
DeVries (2015)*					X
Schroeder (2015)					X

Results for programs implemented in community setting are mixed;

# Do sample demographics matter?

Author	Low income	Racial/ethnic minority
Brotman (2012)	X	
Haines (2013)	X	X
Paul & Birch (2010)		
Wen (2012) *	X	
Barkin (2012)	X	X
Slusser (2012)	X	X
Campbell (2013)		
Daniels (2013)		
Skouteris (2015)	X	
Sobko (2015a)		
Ostbye (2012)		
Fitzgibbon (2013)	X	X
DeVries (2015)*		
Schroeder (2015)		

# Do sample demographics matter?

Author	Low income	Racial/ethnic minority
Brotman (2012)	X	
Haines (2013)	X	X
Paul & Birch (2010)		
Wen (2012) *	X	
Barkin (2012)	X	X
Slusser (2012)	X	X
Campbell (2013)		
Daniels (2013)		
Skouteris (2015)		
Sobko (2015a)		
Ostbye (2012)		
Fitzgibbon (2013)	X	X
DeVries (2015)*		
Schroeder (2015)		

Most studies that engaged predominantly low income or racial/ethnic minority families reported significant BMI effects

# Does intervention length matter?

Sig. BMI effects

Author	< 3 mons	3-6 months	<1 year	1 year +
Brotman (2012)		X		
Haines (2013)		X		
Paul & Birch (2010)		X		
Wen (2012) *				X
Barkin (2012)	X			
Slusser (2012)	X			
Campbell (2013)	X			
Daniels (2013)		X		
Skouteris (2015)	X			
Sobko (2015a)				X
Ostbye (2012)			X	
Fitzgibbon (2013)		X		
DeVries (2015)*			X	
Schroeder (2015)				X



# Does intervention length matter?

Sig. BMI effects

Author	< 3 mons	3-6 months	<1 year	1 year +
Brotman (2012)		X		
Haines (2013)		X		
Paul & Birch (2010)		X		
Wen (2012) *				X
Barkin (2012)	X			
Slusser (2012)	X			
Campbell (2013)	X			
Daniels (2013)		X		
Skouteris (2015)	X			
Sobko (2015a)				X
Ostbye (2012)			X	
Fitzgibbon (2013)		X		
DeVries (2015)*			X	
Schroeder (2015)				X

No clear effect of intervention length

# What about length of follow-up?

Sig. BMI effects

Author	Immediate post int	<3 mons follow-up	1 year follow-up	>1 years follow-up
Brotman (2012)				X
Haines (2013)	X			
Paul & Birch (2010)			X	
Wen (2012)	X			
Barkin (2012)	X			
Slusser (2012)			X	
Campbell (2013)				X
Daniels (2013)				X
Skouteris (2015)				X
Sobko (2015a)	X			
Ostbye (2012)				X
Fitzgibbon (2013)				X
DeVries (2015)				
Schroeder (2015)				X
Wen (2015)				X

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Brotman (2012)				X
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Paul & Birch (2010)			X	
Wen (2012)	X			
Barkin (2012)	X			
Slusser (2012)			X	
Campbell (2013)				X
Daniels (2013)				X
Skouteris (2015)				X
Sobko (2015a)	X			
Ostbye (2012)				X
Fitzgibbon (2013)				X
DeVries (2015)				
Schroeder (2015)				X
Wen (2015)				X

Intervention effects typically limited to short term follow-up



# **SUCCESSSES, GAPS AND OPPORTUNITIES**

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# Successes

1. Positive **short term** effects of family interventions on child BMI are observed, but few are maintained
2. Family interventions implemented in the **home setting** show significant positive effects on child BMI
3. Successful interventions generally implemented with **low income** and/or **racial/ethnic minority families**

# Gaps

1. Intervention effects are not maintained; sustainable family interventions are crucial.
2. Most programs focus on a specific group of behaviors.
3. Currently working with highly select samples.
4. Most interventions are limited to a single setting.
5. Family retention is still a challenge. Drop out rates range from 27-73% (Skelton et al, 2011).
6. What about dads?

Skelton JA, Beech BM. Attrition in paediatric weight management: a review of the literature and new directions. *Obesity Reviews*. May 2011;12(5):e273-281

# Opportunities

1. Increased emphasis on **translational research** and the value of pragmatic trials → sustainable interventions.
2. **Multi-setting** family-focused interventions are in progress.
3. Increasing interest in **engaging fathers**.
4. Potential to integrate interventions into **systems of care** (e.g., Head Start, School Based Health Centers) to reduce selection bias and sustain intervention effects.
5. Integration of **social media/web applications** into family interventions may increase family engagement and reduce attrition.

# Conclusions

- Rapidly expanding interest in this area.
- Results are mixed; overall there appears to be a short term significant effect of family-focused programs on child BMI.
- Effects most often observed when implemented in a home setting with low income or ethnic minority families
- Future research: plan for sustainability upfront, systems of care approach, focus on fathers, integrate media

