



# Current issues in childhood overweight and obesity: What do we know?

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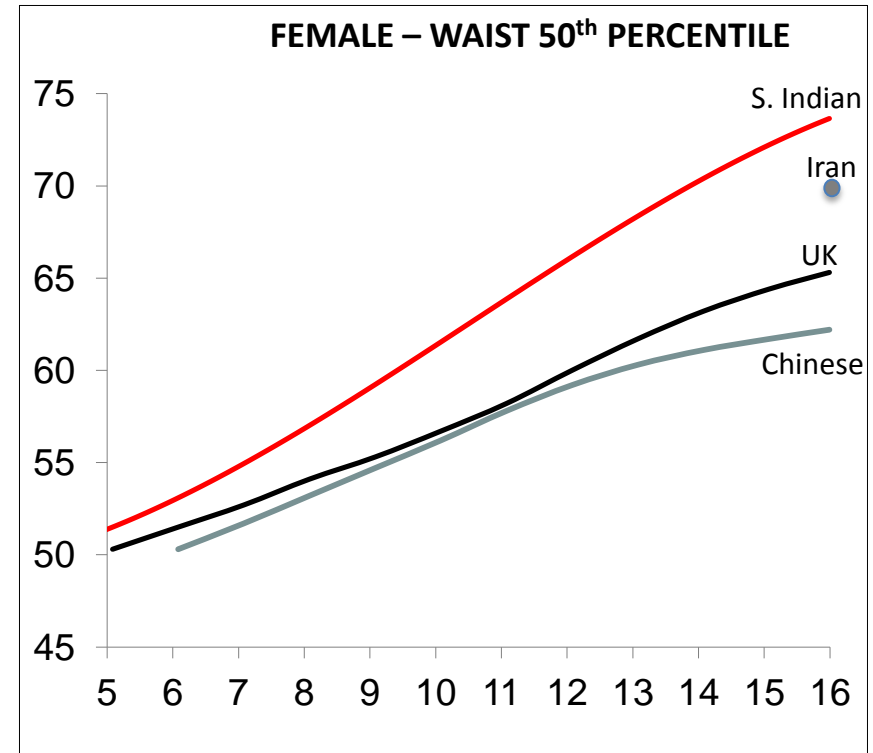
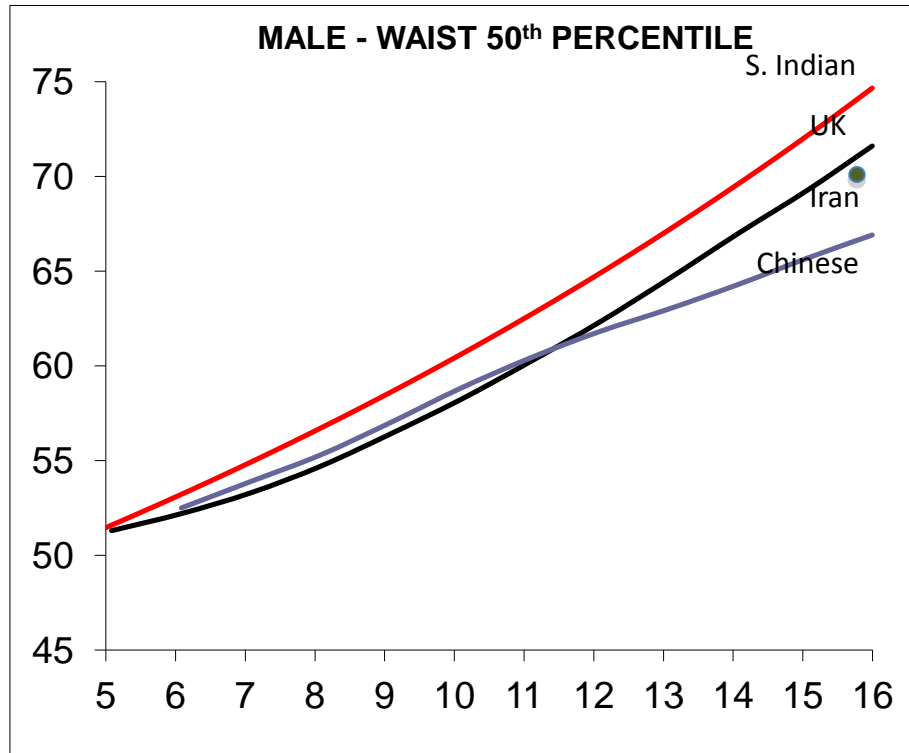
# Outline

- Identifying childhood obesity
- Diet- key points
- Physical Activity
- Behaviors
- Role of parents and siblings
- Summary

# Is BMI good for identifying Indian children?

- Good for screening
- Not totally reliable for diagnosing
- Additional easy indices are needed for confirming
- Waist circumference?

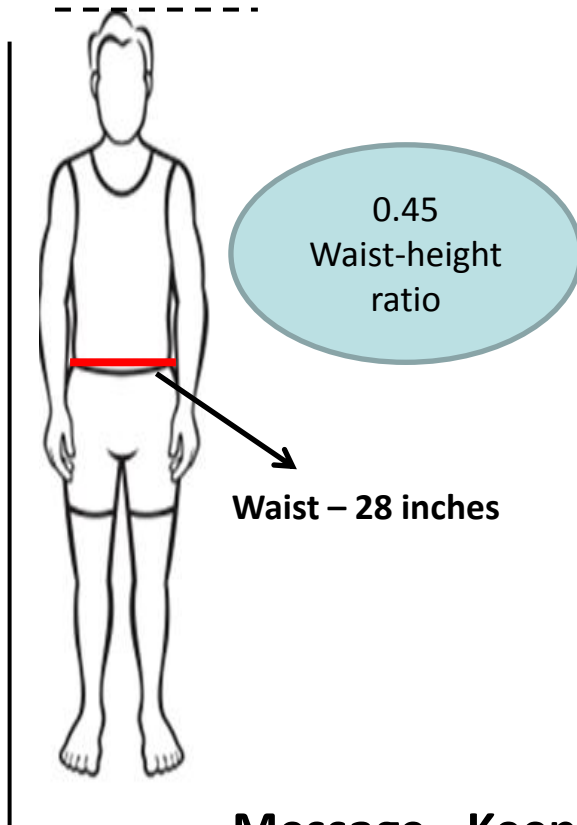
# WAIST CIRCUMFERENCE



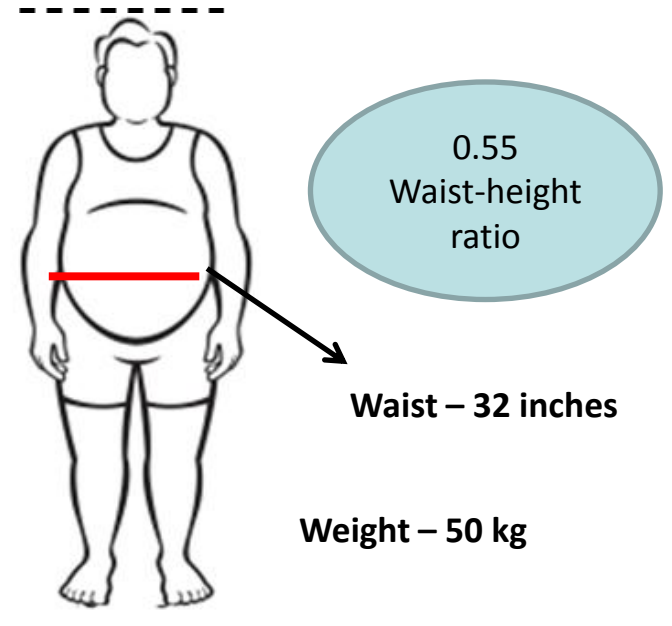
However, waist needs to be corrected for height

# Waist- Height Ratio

Height - 5 feet 1 inch  
61.2 inches



Height - 4 feet 10 inch  
58.0 inches



Weight - 50 kg

**Message - Keep your waist half your height**

# Diet of children

# NUTRIENT INTAKE OF SCHOOL CHILDREN (7-15 yr)

SJRI unpublished study on 307 urban school children

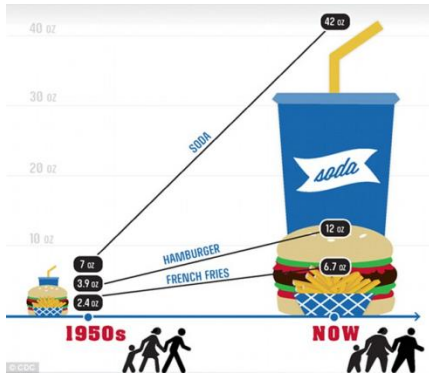
<b>NUTRIENT</b>	<b>LOW SES (n = 110)</b>	<b>MIDDLE SES (n = 105)</b>	<b>HIGH SES (n = 92)</b>
<b>Energy (kcal)</b>	<b>1685</b>	<b>1643</b>	<b>1703</b>
<b>Carbohydrate (% energy)</b>	<b>59.0</b>	<b>57.6</b>	<b>56.6</b>
<b>Protein (% energy)</b>	<b>13.2</b>	<b>13.5</b>	<b>13.6</b>
<b>Total fat (% energy)</b>	<b>27.8</b>	<b>28.9</b>	<b>29.9</b> ←
<b>Saturated fat (% energy)</b>	<b>10.2</b>	<b>10.7</b>	<b>11.4</b> ←

10 tsp of oil

4 tsp of oil

Where is this oil coming from ?

# Portion Size Distortion



- “Super-sizing” India’s children
- More food at small increase in cost
- Result- PORTION SIZE DISTORTION
- Chubby child is perceived “healthy”
- Better to waste a bit rather than it going to the “WAIST”



Serve correct portions to child





# Eating out

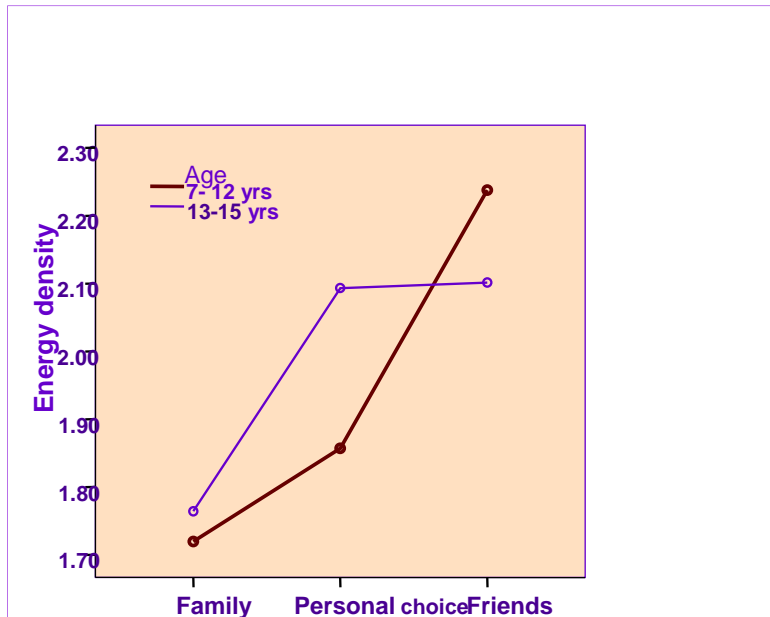
## Relationship between energy intake, BMI and monthly frequency of eating out

	0-2 times	3-4 times	>4 times
BMI (kg/m <sup>2</sup> )	16.5 ± 2.9	16.8 ± 2.8	17.0 ± 3.1
Energy Intake (kcal/day)	1575 ± 390.8	1728 ± 497.7	1862 ± 426.2

General Linear model, adjusted for age and sex; p<0.001

Swaminathan et al 2007, Indian Pediatrics

# ENERGY DENSITY OF FOODS WHILE EATING OUT

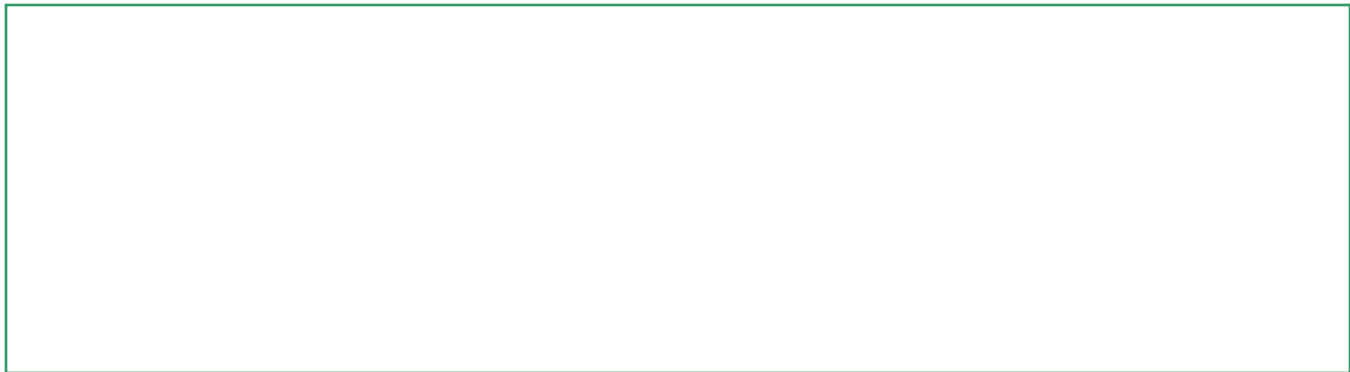
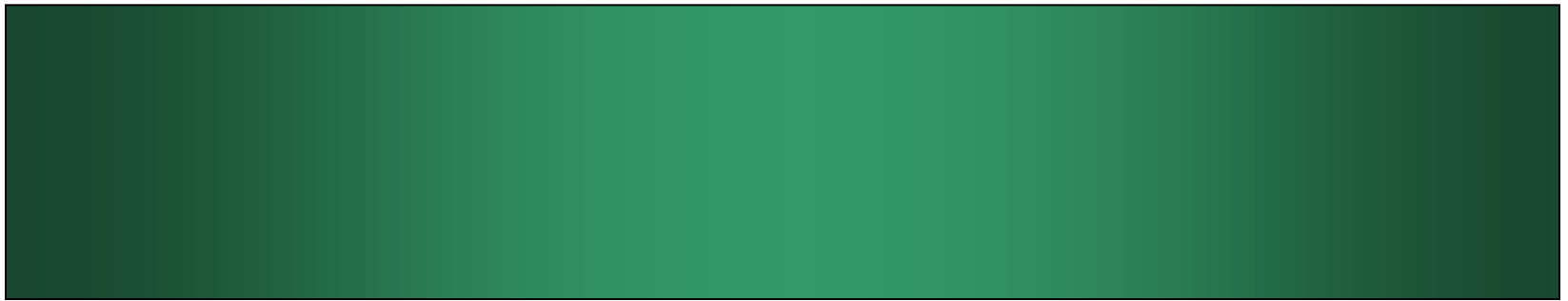


**Peers seem to have influence on choice of food**

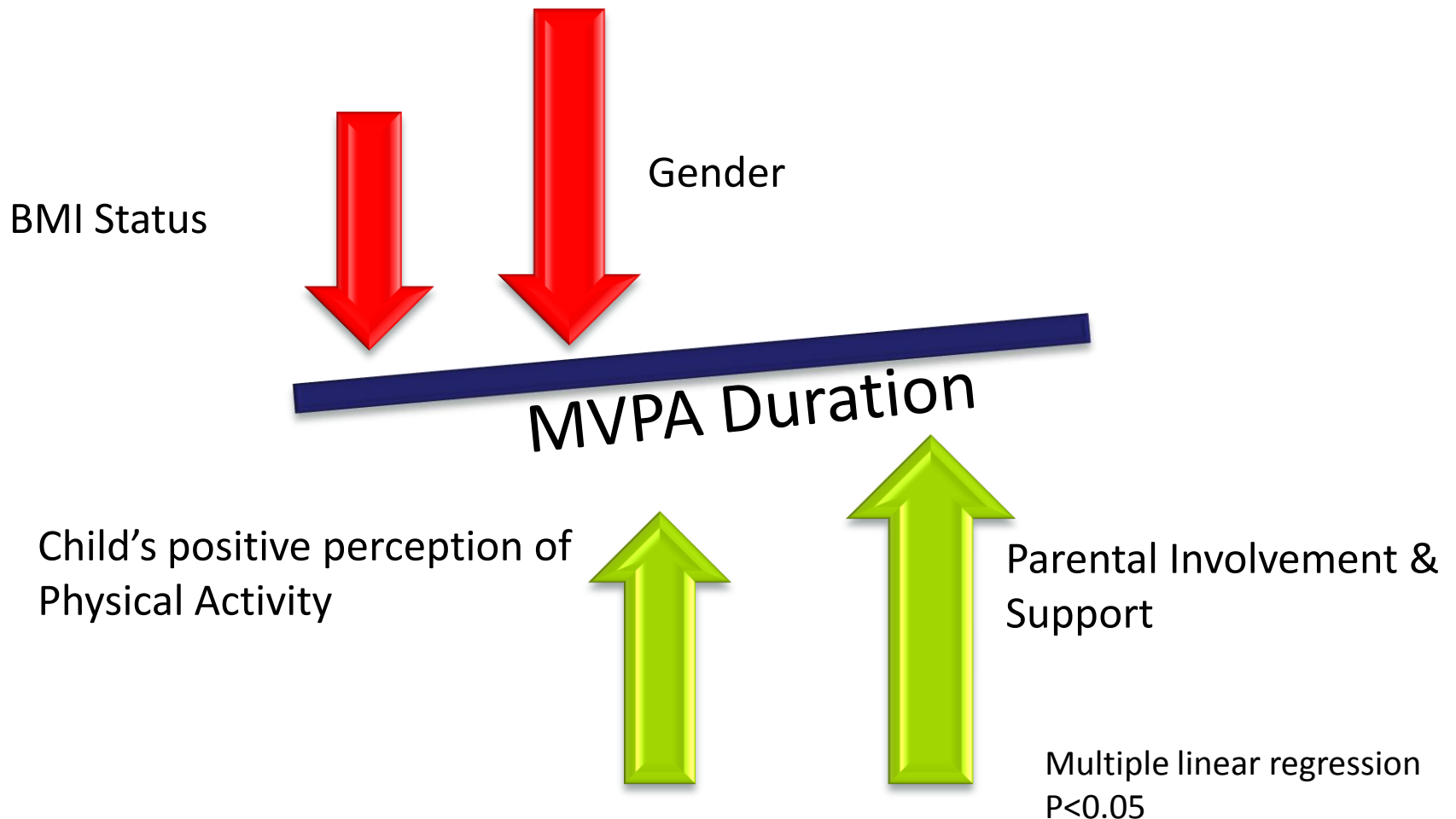
## Messages

- School education programs ?
- Include peer during counselling?
- Advice a balanced low energy diet
- Reducing frequency of eating out
- Choosing sensibly while eating out
- Keeping an eye of portion size
- Be aware that overweight children under report food intake

# Physical Activity



# Factors Associated with MVPA



# Television viewing

Minutes/day	N	OR	P
≤45	217	1	-
45-90	266	3.1	0.09
>90	115	19.6	<0.001

Kuriyan et al 2007, Nutrition Journal

Restrict TV viewing to about 1 hour/day

What about other screen time ?

# Social Media ?

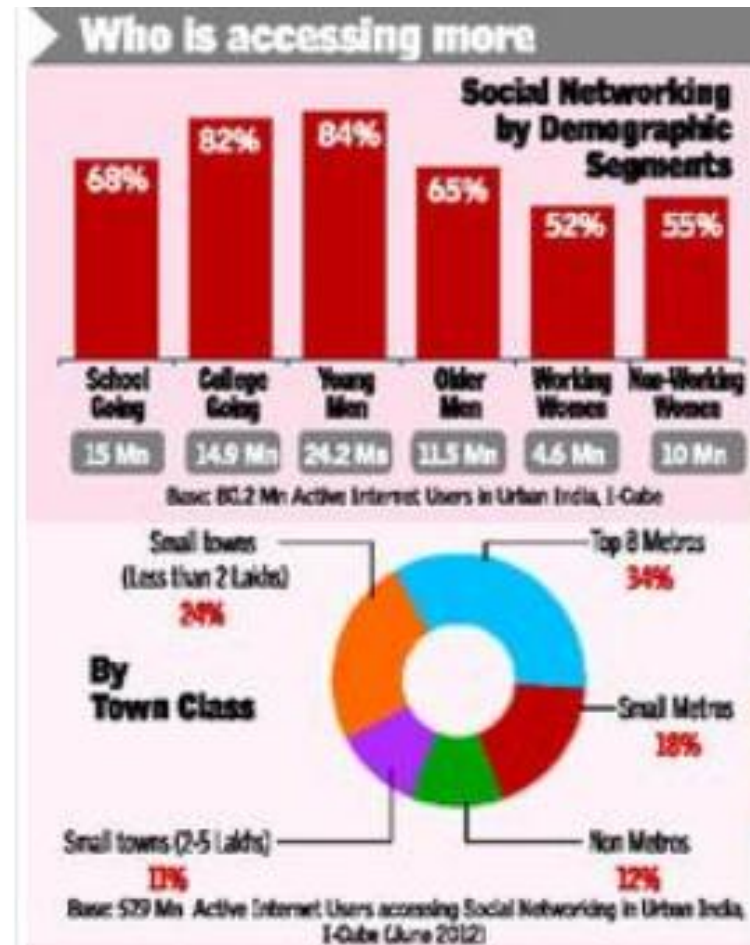
**BusinessLine**

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**Social media: GenY the top user**

- Young men, college and school children dominate the social media in urban India.
- 68% of school children (1.5 crores)
- Survey by Internet and Mobile Association of India

**REDUCE SCREEN TIME TO 2 HOURS/DAY**



# What needs to be done?

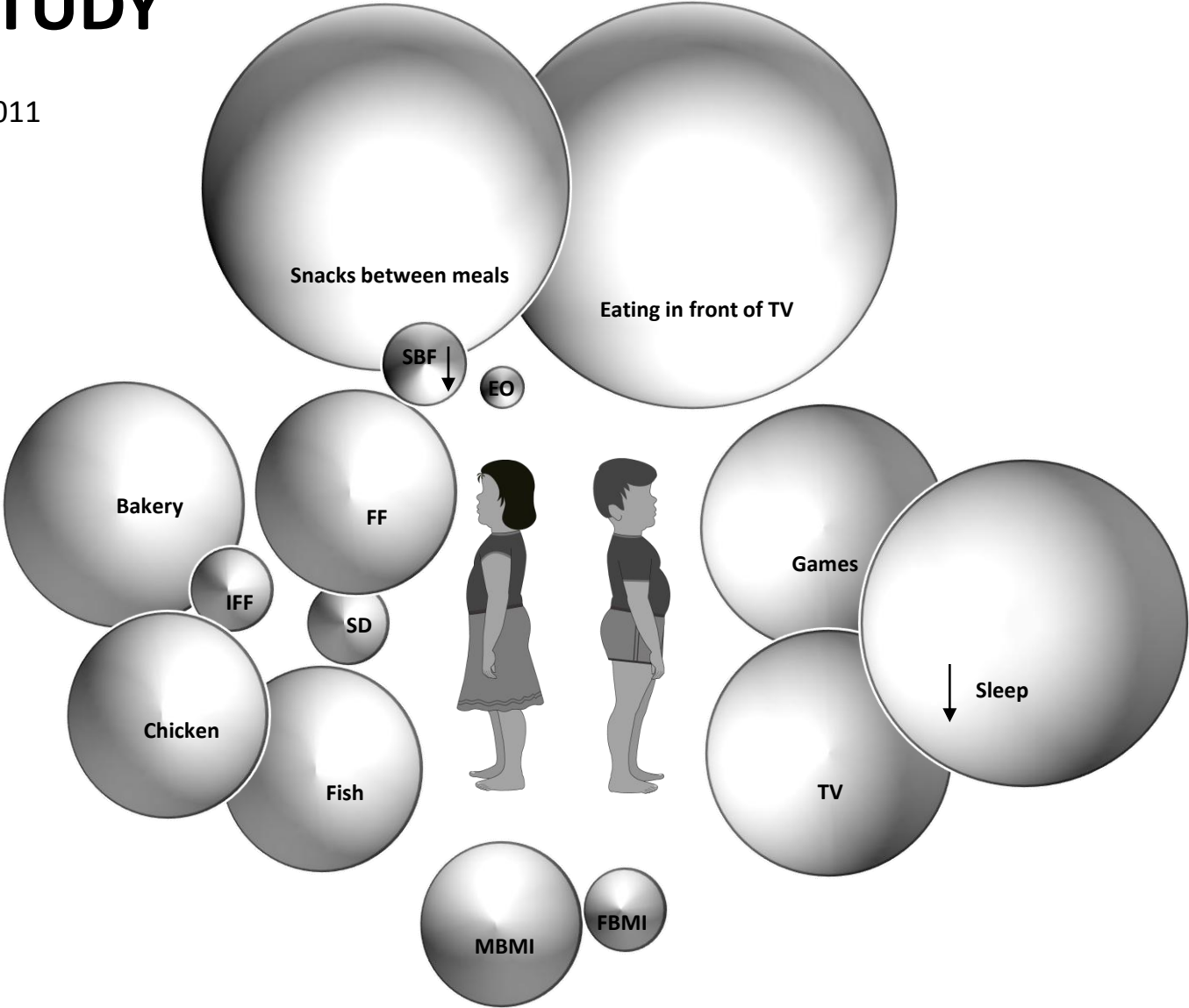
- Need to assess the barriers for physical activity and provide advice
- Help children understand how to assess their physical activity
- Provide Pedometers for children in order to keep track of their steps/counts for the day?
- Parents should be encourage to support and involve themselves in physical activity with children.
- Decrease sedentary and screen time.



# Behaviors

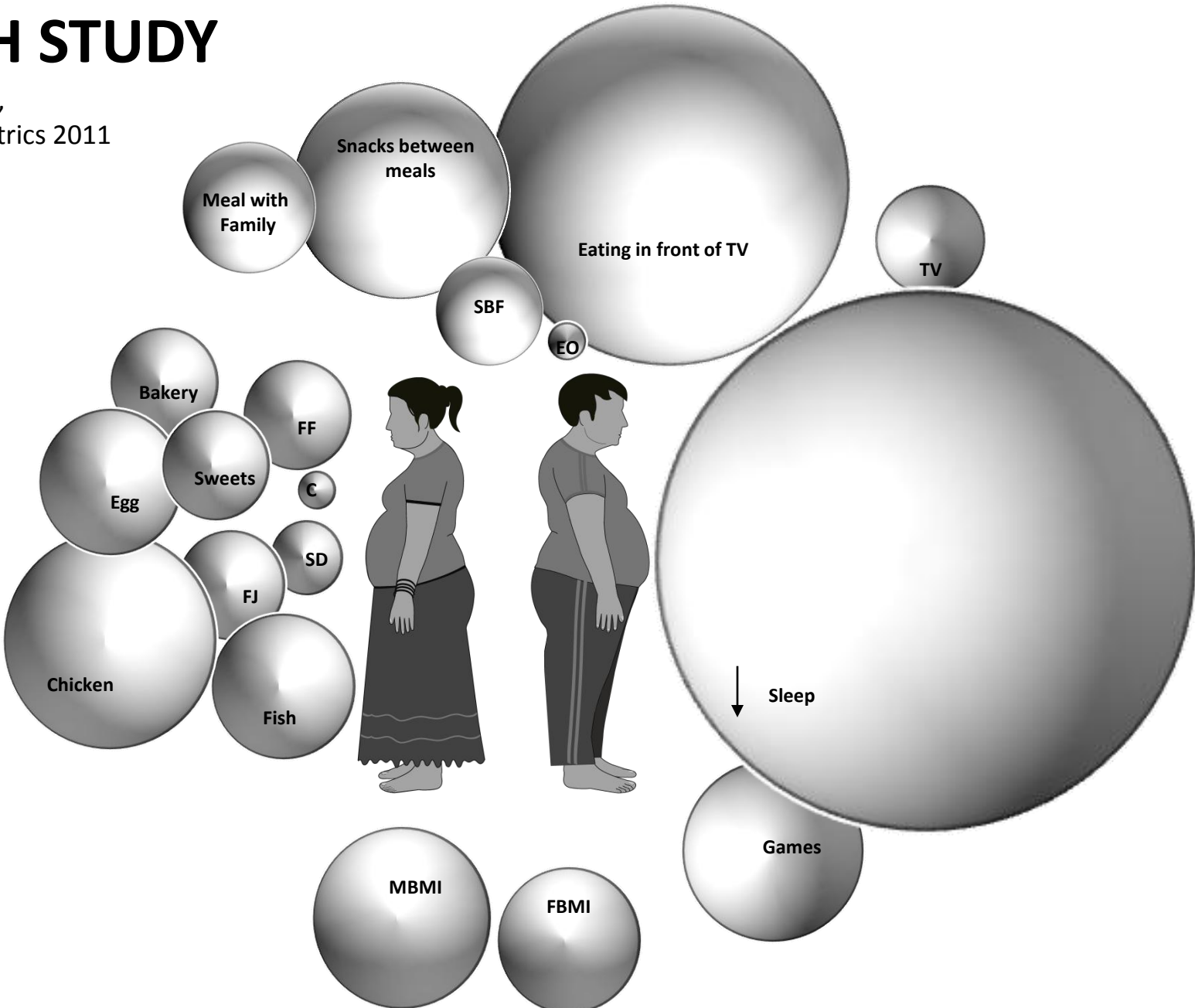
# PEACH STUDY

Kuriyan et al,  
Indian Pediatrics 2011



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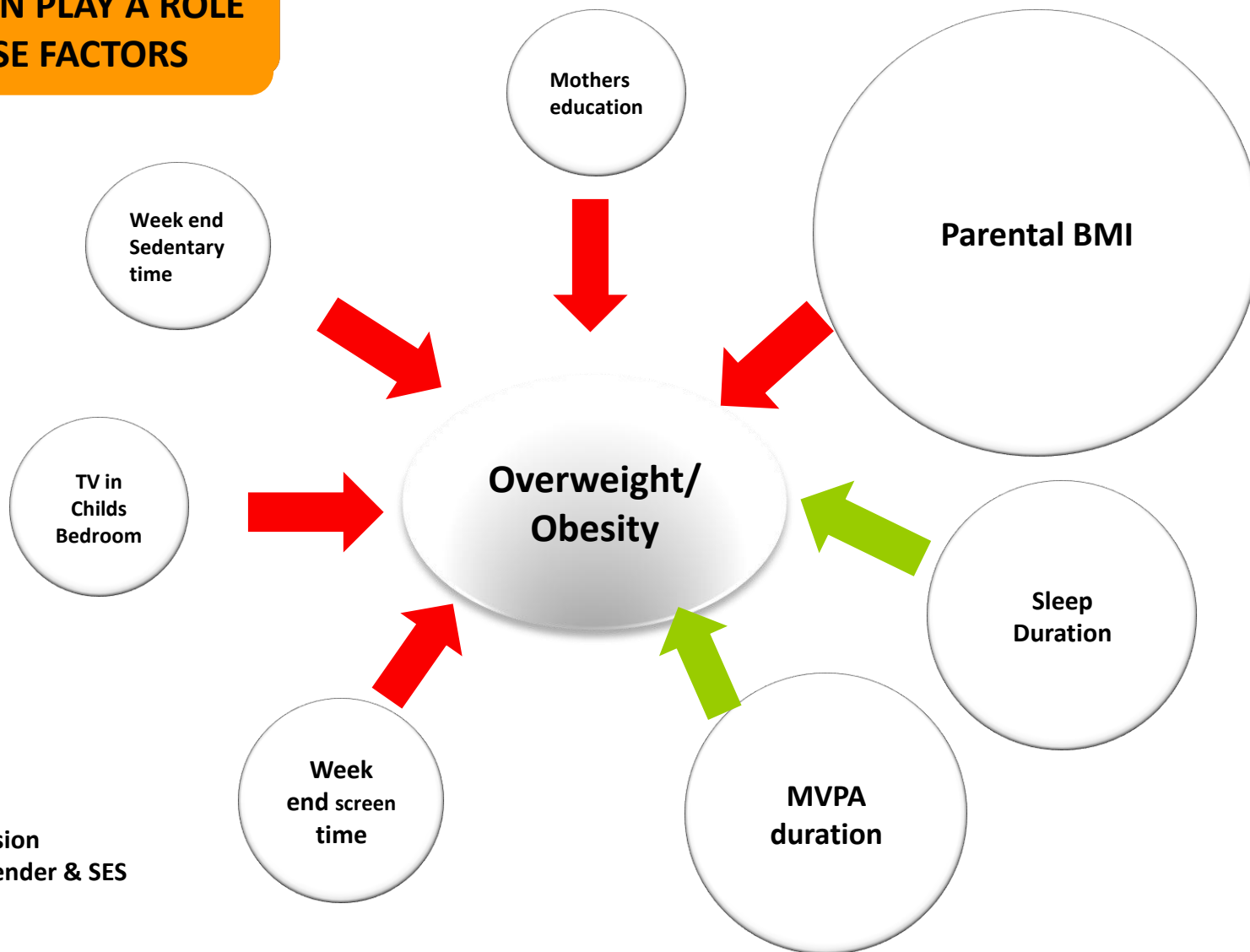
Kuriyan et al,  
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# Role of Parents and Siblings

# Factors associated with Overweight/Obesity

**FAMILY CAN PLAY A ROLE  
IN THESE FACTORS**



Logistic regression  
Adjusted for gender & SES  
P<0.01

Genes load the gun and  
environment pulls the trigger ?

# Family

- Besides genetics, obesogenic environment
- Parental BMI has an important role in child's BMI
- A younger sibling is three times likely to have high waist circumference, if the older sibling has high waist circumference.
- Thus nutritional counselling should consider parents and siblings in the treatment plan.

# Summary

- Balance energy intake and output through diet and lifestyle measures.
- Portion size and eating out needs to be regulated.
- Family to have meals together.
- Regular physical activity and reduction in screen time.
- Identify and overcome barriers to change and educate children and family.
- Parents and siblings need to be encouraged to be role models.



We need to unravel the complexities, get the science right, and then translate the science into advice and recommendations that policy-makers and parents can understand.

**Dr Margaret Chan**

**Director General of WHO**

*Opening remarks at a High level Commission to end childhood obesity*

*17<sup>th</sup> July, 2014, Geneva*