

# Junk Food & Obesity in Children: Opting to go under the knife

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## Case Report 1

### Can Junk Food come in the way of your dreams?

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- 17 yr old boy, 198 kgs heavy.
- Professional dancer & football player – given up
- Family had a habit of eating out at least 3 times / week; gained weight
- Sleeve 8 months back – lost 60 kgs
- Started dancing again



## Case Report 2

### Lifestyle-habit based obesity

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- 13 yr old 202 kgs boy
- Fond of fast food
- Diabetic, hypertensive & had bent tibia
- Treatment financed by MOH, Oman
- Sleeve 7 months back – lost 62 kgs
- Stopped all medicines



# Childhood Obesity — The Shape of Things to Come — Phase 1

David S. Ludwig, N Engl J Med 2007; 357:2325-2327, [2007](#)

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- ↑ numbers of overweight(>85 percentile) & obese(>95 percentile)
- 1 in 3 children across USA & 1 in 2 in minorities



# Childhood Obesity — The Shape of Things to Come

## Phase 2

David S. Ludwig, N Engl J Med 2007; 357:2325-2327, [2007z](#)

### Increase in co-morbidities

- 10 folds increase in T2DM in adolescents in 2 decades (> T1DM in minorities)
- Increasing incidences of fatty liver (unheard in past in children) – 1 in 3 adolescents
- Psycho-social – Isolation, low education, low employability, poverty
- Others – Orthopedic, Sleep Apnea, Reflux



# Childhood Obesity — The Shape of Things to Come: phase 3

David S. Ludwig, M.D., Ph.D.

N Engl J Med 2007; 357:2325-2327, [2007](#)

- 100,000 extra CHD cases from today's obese adolescents (5%-16% ↑)
- T2DM – Amputations, Kidney Failures & premature Deaths,
- Fatty Liver – hepatitis & un-recognised cirrhosis
- Poverty & isolation – delayed access & treatment
- Risk of mid age death in adolescent obese girls is 3 times more than normal weight girls
- Shortened life expectancy by 2-5 years in obese children – more than effect of all cancers combined.



# Childhood Obesity — The Shape of Things to Come: phase 4

David S. Ludwig, M.D., Ph.D.

N Engl J Med 2007; 357:2325-2327, [2007](#)

## Trans-generational manifestation

- Persistence of obesity promoting habits handed down to generations.
- Irreversible changes in hormone pathways, fat cells & brain affecting body metabolism
- Maternal hyper-glycemia – predicts BMI at 5-7 years age of children



## Obesity in Youth

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- **BMI  $\geq$  85<sup>th</sup> - Overweight ~ 32%**
- **BMI  $\geq$  95<sup>th</sup> - Obese ~17%**
- **BMI  $\geq$  99th %ile - Extremely Obese ~ 4%**

Use of the BMI 99%ile - recognition that prevalence of cardio-metabolic risk factors and increased adiposity rises dramatically near 99%ile





# Teens **do not** outgrow Obesity

Freedman, DS. J Pediatr 2007;150:12-7

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**Adult BMI**

**≥ 30**

**≥ 35**

**≥ 40**

**Teens ≥ 99%ile**

**100%**

**88%**

**65%**

Almost 90% of extremely obese teenagers become extremely obese adults!



## Obesity in Indian Children

N Gupta, A Mishra et al, Indian J Pediatr DOI 10.1007/s12098-012-0923-5

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- 22% obesity prevalence rate in children & adolescents between 5-19 yrs.
- Indian adolescents and young adults (13-25 yrs) consume four times of daily recommendation of fats and nearly at par with the intake in adolescents in north America



# A Brewing Storm

9% Of 0-14 yrs children are morbidly obese

while only

2% of overall population is morbidly obese

# Steep rise in fast food consumption in India

ASSOCHAM study – National Bureau of Economic Research

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- 3000 households survey
- Dual income, bachelors - convenience, time pressed
- 85% of parents with < 5 year old children are serving fast food > 7-10 times/month
- 86% households in metros prefer ‘food on the go’
- 40% - 60% annual growth of processed food industry
- We are fuelling a population of obese teens.



# ‘Adult’ Diseases in > 99 percentile Teens

- Obstructive Sleep Apnea
- Fatty liver – 83% - Remain unsuspected
- Cardiovascular disease - > 33% have > 3 cardiac risk factors
- Diabetes – 13.3% - abN glucose value- higher  $\beta$  cell failure
- Dyslipidemia
- PCOS, Infertility
- Cancers -breast, uterus, cervix, colon, esophagus, pancreas  
kidney, prostate

# Priority?

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**For teen & family, psychosocial disease have immediate & important consequences.**



## Treatment Options for teenage obesity

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- Lifestyle Changes: For patients with BMI above 40, only 2% wt loss is recorded.
- Surgical: effective & only option in some
- Regulatory: To be implemented at the Govt level.



# Lifestyle Program

| <b>BMI</b>                      | <b>&lt; 40</b> | <b>&gt;40</b> |
|---------------------------------|----------------|---------------|
| <b>Completion Rate</b>          | <b>84%</b>     | <b>6%</b>     |
| <b>Decrease in % overweight</b> | <b>10%</b>     | <b>2%</b>     |



# Why Bariatric Surgery in Teens?

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- **Conservative treatment options not effective for extreme Teen obesity**
- 33% non-completion rate
- Completers lost average only 2.5 kg
- NOT maintained 7 months later



# Stringent Selection Criterion for Surgery

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- 99<sup>th</sup> percentile
- BMI > 50 / 40 with co-morbidity
- Physiological maturity
  - Completion of pubertal spurt –  
in girls by 13-14 yrs & in boys by 15-16 yrs
  - Early puberty in morbidly obese.
- Psychological maturity - adherence



# Surgical Treatment

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- Weight Loss - 25% - 50%
- Safety of Surgery - 0.05% - 0.1% mortality
- Side effects – Completely preventable
- Diabetes Remission – 90% off medication within 1 year



# Accepted Surgeries for Teens

- Gastric Band
- Sleeve
- Bypass

# What's the choice?

- Lifestyle Changes have limited success  
Will a BMI change of 2 kg/m<sup>2</sup> make a difference in health outcomes at BMI ≥ 40?
- Surgery, though successful in selected kids cannot be a treatment option for millions
- Emphasis really needs to be on societal changes - prevention before a child gets to 99th%ile

# Parent's Agony

Michelle Obama at Grocery Manufacturer's Association, 2010

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- As a mom, I know it is my responsibility—and no one else's—to raise my kids.
- But ...our best efforts are undermined by an avalanche of advertisements aimed at ..kids? And what are these ads teaching...? That it's good to have salty, sugary food and snacks every day—breakfast, lunch, and dinner?



## Opinion: Michelle Obama at Grocery Manufacturer's Association, March 2010

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- Our kids didn't do this to themselves. They don't decide the sugar content in soda or the advertising content of a television show.
- Kids don't choose what's served to them for lunch at school, and shouldn't be deciding what's served to them for dinner at home.
- ..It's not that people don't know or don't want to do the right thing



# Should we be at Mercy?

Hoping that CSR of Fast food industry will help

them understand the dangers involved in their

products



# Imperative: Regulation of Food Industry

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- On the line of tobacco control
- Children targeted advertisement restriction
- Calorie restriction/portion
- Food outlet restriction - 335 bars/lounges in 3 kms stretch of a Mumbai suburb



# 'Food' For thought

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Americans currently spend more money on fast food than on movies, books, magazines, newspapers, videos, and music combined.

We are raising a generation – Its our responsibility what we hand down  
a healthy tomorrow

