

CHILDHOOD OBESITY: AN OVERVIEW FROM ADULT PHYSICIAN'S PERSPECTIVE

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PREVALENCE OF CHILDHOOD OBESITY

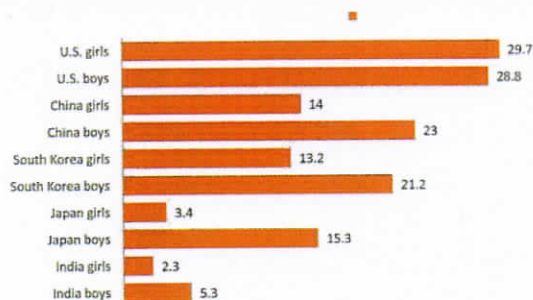
The true prevalence of obesity in childhood is difficult to determine as there is no internationally accepted definition of pathological adiposity in the paediatric age group. Body weight is reasonably well correlated with body fat but is also highly correlated with height, and children of the same weight but different heights can have differing amounts of adiposity. In children the relationship between body mass index (BMI) and body fat varies considerably with age and pubertal maturation.

Although there is no accepted definition for severe obesity in childhood, a BMI SD>2.5 (weight off the chart) is often used in specialist centers and the crossing of weight percentile lines upwards is an early indication of the risk of severe obesity.

Depending on the criteria used, prevalence figures for childhood obesity range from 4% to 11% in most developed countries.

Childhood Obesity Rates

Percentage of overweight and obese children under the age of 20 in select countries



Source: Select countries: The Lancet, University of Washington | WSJ.com

Childhood obesity is emerging as a global problem. Its immediate adverse effects include orthopaedic complications, sleep apnoea, and psychosocial disorders. As obese children are more likely to become obese adults, we may expect to see public health

consequences as a result of the emergence in later life of associated co morbidities, such as type 2 diabetes mellitus and hypertension.

WHO SHOULD BE HELD RESPONSIBLE FOR THE INCREASE IN INCIDENCE/PREVALENCE OF CHILDHOOD OBESITY?

- ▶ Genes
- ▶ Ethnicity
- ▶ LIFE STYLE : (MODIFIABLE)
 - » EATING BEHAVIOUR
 - » PHYSICALACTIVITY
- ▶ WHO SHOULD BE BLAMED FOR THE LIFE STYLE?
 - » PARENTS
 - » SCHOOL
 - » DOCTORS (HEALTH CARE PROVIDERS)

- Stewart, Liu and Rodriguez (2011), states that childhood obesity is directly proportional to the socio-economic status of the family.
- Increased risk of childhood obesity is noted in the families where mother works more hours per week which is highly seen in high socio-economic status families (Stewart et al., 2011).
- On the contrary Stewart et al. (2011) also states that maternal unemployment also shows increased in the childhood Body Mass Index leading to overweight and obesity.

FOOD IS AN ENVIRONMENTAL AGENT FOR OBESITY

- ▶ Costs of Food: The relative prices of foods high in sugar and fat have decreased since the early 1980s compared with those of fruits and vegetables. There is a rise in prices of fruits and vegetables.
- ▶ Quantity of food eaten.
- ▶ Portion size.



Food offered at various famous primary schools in Mumbai is comprised mainly of Samosa, Poori, Pav bhaaji and similar type of items. (Sad!!!)



FAT IS THE NEW TASTE

- ▶ Fat is considered as Taste now.
- ▶ Fat is addictive.

WHAT SCHOOLS ARE DOING?

- ▶ Whole focus is on academics.
- ▶ Day to day academic competition.
- ▶ No control over the canteen food supplies.
- ▶ No freshly made food available in school canteens.
- ▶ Majorly Fried and Junk foods available.
- ▶ Vanishing playgrounds in the primary schools.
- ▶ Multiple batches and hence less attention.

WHAT CAN WE DO?

- ▶ Change the kitchen concept. (Something what we don't want to give to our children, we should also stay away from them. Please remember, we are the first teacher(s) of our children. Let only healthy food cook in our kitchen.)
- ▶ Eat together as a family on dining table (no watching TV while eating).
- ▶ Modify the eating behaviour of parents.
- ▶ Make the parents understand the fact that they have already transferred their genes to the child. That can't be modified. But they can impart a healthy life style to their Children.
- ▶ Encourage playful bond between Parents and Children.
- ▶ Awareness programs in all the schools (teachers and canteen).
- ▶ Approach the government body to draft guidelines about the quality of food served in School Canteens.
- ▶ Fast Foods should be labelled as addictive and
- ▶ Injurious to health.
- ▶ Awareness about importance of Physical Activities.
- ▶ Awareness about "OSA" and its management.
- ▶ Treat the treatable causes and complications of Obesity.
- ▶ Prevent the preventable causes and complications of Obesity.
- ▶ Childhood Obesity is a Global epidemic and its prevention, control and management need to be the responsibility of all the medical & paramedical fraternity along with each and every responsible citizen.



FOOD MENU AT MY DAUGHTER'S SCHOOL: IS IT REALLY HEALTHY???

DAYS	MENU
MONDAY	-Sandwiches/Paratha/Cereals
TUESDAY	-Aloo Tikki/Paneer Tikki/Pasta
WEDNESDAY	-Idli/Dhokla/Sprouts/Fruits
THURSDAY	- Pulao/Poha/Salads
FRIDAY	-Biscuits/Chips/Dry Snacks/ French Fries

USPSTF: Draft Screening Guidelines for Obesity in Kids, Teens Released

November 09, 2016

Clinicians are encouraged to screen all children from 6 to 18 years of age for obesity by making body mass index (BMI) measurement part of usual care, according to new draft recommendations on screening for obesity in children and adolescents from the United States Preventive Services Task Force (USPSTF).

WHAT SHOULD BE OUR TARGET?

- ▶ Weight (BMI)
- ▶ Adipostat (The weight threshold in the brain)
- ▶ Stomach size (Volume and capacity)
- ▶ Need (Calorie requirement to lead healthy, active and

- productive life)
- ▶ Greed (Taste, Cravings, Addiction, Dependence on particular type of food)
- ▶ Hormones (Insulin, GH, Cortisol, Leptin, Adiponectin, Ghrelin, Incretins etc.)
- ▶ Neurotransmitters (Dopamine, Adrenaline, Serotonin etc.)

INVESTIGATIONS

- ▶ BSL (Fasting and 2 hrs PP)
- ▶ Lipid Profile
- ▶ TSH, Free T3, Free T4
- ▶ Urinary free cortisol (as needed)
- ▶ Genetic testing (as needed)
- ▶ Serum Leptin (not recommended routinely)
- ▶ Serum Insulin (Appropriate references are lacking)

MANAGEMENT

- ▶ Identify the treatable/modifiable causes and manage them.
- ▶ Manage the complications simultaneously.
- ▶ Counselling & life style modification.
- ▶ Diet and Nutrition.(Without causing malnutrition)
- ▶ Physical Activity.
- ▶ Medicines (Metformin, Orlistat, Cetilistat,Hormones)
- ▶ Gastric Banding/Ballooning
- ▶ Bariatric Surgery.

Eating Pulses 'Could Help With Weight Loss' **WebMD**

Patricia Russell
April 06, 2016

▶ Eating one serving of pulses each day could contribute to modest weight loss, according to a new study.

Canadian researchers say that because beans, peas, chickpeas and lentils take longer to digest than many other foods, they can keep hunger pangs away by making you feel fuller for longer.

The analysis, published in the American Journal of Clinical Nutrition, reviewed results from 21 clinical trials involving 940 adults.

POTENTIAL ADVANCEMENTS IN OBESITY MANAGEMENT

- ▶ Leptin (Recombinant Leptin)
- ▶ Advanced Incretins
- ▶ Medicines targeting Amylin.
- ▶ Medicines targeting Ghrelin and other mediators of feeding.
- ▶ Neurobiofeedback and Transcranial Stimulation.
- ▶ Neurotransmitters control (Dopamine, NE, Serotonin, GABA etc)
- ▶ Advanced Antidepressants, Mood stabilizers , Antianxiety medicines.
- ▶ Monoclonal Antibodies.

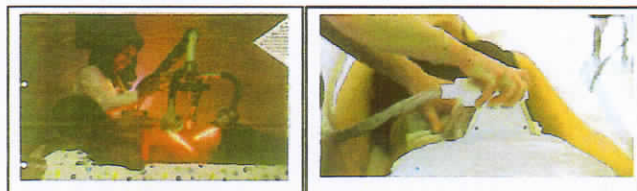
- ▶ Genetic Testing
- ▶ Drugs targeting AgRP, NYP,CART, MCH,MC4R etc.
- ▶ Peptides
- ▶ Nutrigenomics
- ▶ DNA analysis for Diet???
- ▶ Telemedicine/Online follow up programs.

ACTIONS OF BARIATRIC SURGERY

- ▶ DECREASED FOOD INTAKE :
 - » REDUCED SIZE OF STOMACH.
 - » EARLY STRETCHING OF STOMACH STIMULATING VAGUS.
- ▶ ENHANCED GASTRIC EMPTYING:
 - » SHORTENING OF THE GIT
- ▶ DECREASED GHRELIN
- ▶ IMPROVED GLP-1
- ▶ POTENTIAL ENHANCEMENT OF PPY, CCK.
- ▶ MALABSORPTION
- ▶ EARLY SATIETY

EFFECTS OF NON INVASIVE TECHNOLOGIES

- ▶ Subcutaneous Lipo-deflation (Zerona, Verju)
- ▶ Leptin Sensitivity (Zerona, Verju)
- ▶ NO release (Zerona, Verju)
- ▶ Lowering of Cholesterol (Zerona, Verju)
- ▶ Subcutaneous Lipolysis (HIFU, Cryolipolysis)
- ▶ Energy Hormesis



MANAGE THE POTENTIAL SIDE EFFECTS OF WEIGHT MANAGEMENT

- ▶ Nutritional Deficiencies
- ▶ Altered Immunity
- ▶ Sagging Skin
- ▶ Loss of Buccal fat
- ▶ Hair loss
- ▶ Menstrual Irregularities
- ▶ Constipation/Bloating
- ▶ Mood changes.
- ▶ Plateau effect leading to feeling low and giving up.
- ▶ Fatty liver, Gall stones, Electrolyte imbalances are some of the potential side effects of rapid weight loss.

HINDRANCES IN WEIGHT MANAGEMENT

- ▶ Amotivation (Patient and Parents)

