

# Focus on Mental Health in Children and Youth living with Obesity

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# FINANCIAL DISCLOSURES

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# Outline

- Overview of socio-cultural attitudes towards body weight and shape in society
- Common Mental health conditions associated with obesity in children
- Highlight some emerging mental health-related issues
- Describe how and why these mental health factors/conditions can inform treatment planning



# Body Mass Index

- **Overweight adult\***
    - BMI 25-29.9 kg/m<sup>2</sup>
  - **Overweight child\*\***
    - BMI-for-age 85<sup>th</sup>-95th percentile
  - **Obese adult**
    - BMI > 30.0 kg/m<sup>2</sup>
  - **Obese child**
    - BMI-for-age > 95th percentile
- BMI age/ sex specific; Not ideal for failure to thrive
  - Estimate of body fat only; doesn't factor in lean muscle
  - BMI calculation = wt (kg) ÷ ht (cm) ÷ ht (cm) x 10,000

\*[www.cdc.gov/nccdphp/dnpa/bmi](http://www.cdc.gov/nccdphp/dnpa/bmi) \*\*Cole TJ. *BMJ* 2000;320:1240-1243





# Prevalence of Overweight & Obesity in Children and Youth

- Canada
  - approximately 25% of children and youth are living with overweight or obesity (Roberts, 2012).
- Similar rates in other developed countries.



# “Globesity”

- “A complex condition, one with serious social and psychological dimensions, that affects virtually all age and socioeconomic groups and threatens to overwhelm both developed and developing countries”

- World Health Organization (WHO)

- WHO facts:
  - > 1.2 billion people worldwide are living with overweight
  - 250 million are living with obesity
  - 115 million obese in developing countries



# Society and Media Pressures

- In western society the media is a powerful influence and exerts extreme pressure on our youth today
- Body image and weight messages are explicitly present and typically state:
  - Thin women are beautiful, successful, and happy
  - Lean and muscular men are handsome, happy and successful

Grabe et al. Psychological Bulletin 2003

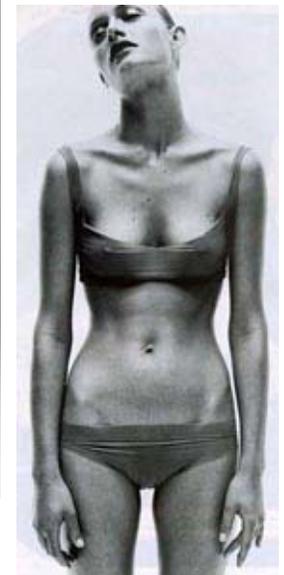
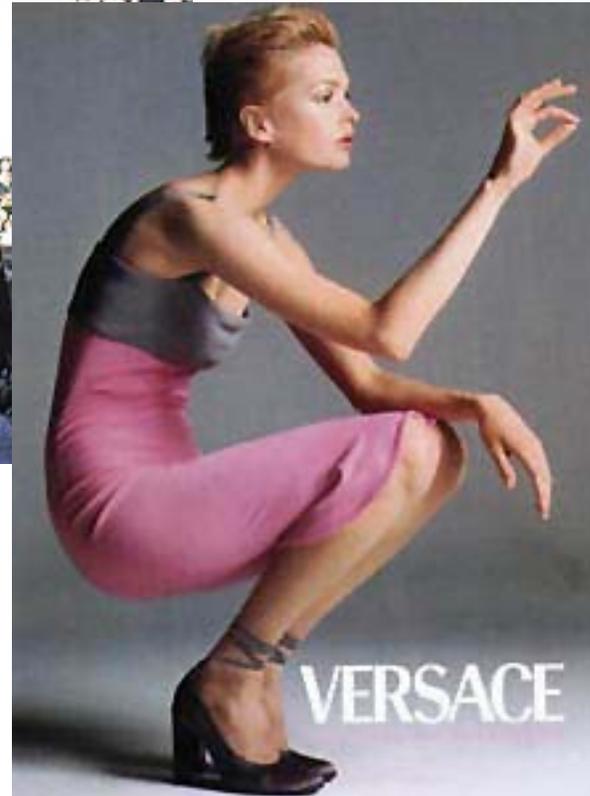
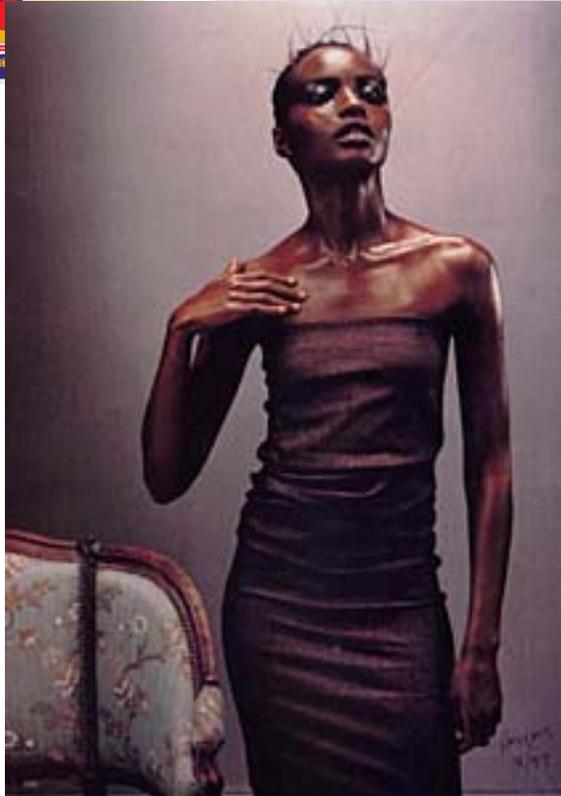


# Exposure to Unrealistic Beauty Ideals

- The average child and youth living in Canada and the US accrues 6-8 hours of screen time per day (Leathersdale et al. 2015).
- This translates to exposure to thousands of unrealistic standards of beauty for children and youth, which get internalized



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THIN, THIN, THIN





# The Diet Industry Culture *(Pawlak, 2009)*

## Familiar Claims:

- “Lose weight quickly”
- “Reset your genetic code”
- “Eat all you want – Lose up to 30 pounds in 3 weeks”
- “Scientifically sound”, “Based on proven studies”

Private weight loss industry in the US estimated at  
\$58.6 billion annually *(Marketdata Enterprises, 2009)*



# Biology and Genetics

- Contrary to what the media and diet industry want you to believe, body weight and shape are NOT that malleable and strongly influenced (70%) by genetics and biology. (NIH taskforce on clinical guidelines)
- 95% of people who lose weight by dieting regain it (or more) within 3-5 yrs (Mann et al. 2007)
- Clash between culture and biology (Brownell 2010)



# Weight Stigma/Discrimination Starts Young

**Has Anything Changed over the Past 40  
years?**

Latner & Stunkard, 2003

- 1961 vs. 2001: Repeated 1961 study on stigma associated child obesity in 2001.
- 5<sup>th</sup> and 6<sup>th</sup> Graders asked to rank 6 drawings of “how much they liked the child”
  - *children were depicted as either “healthy”, disabled, or obese*



# Latner & Stunkard, 2003 cont.

## Rankings: Which Child Do You Like Best?

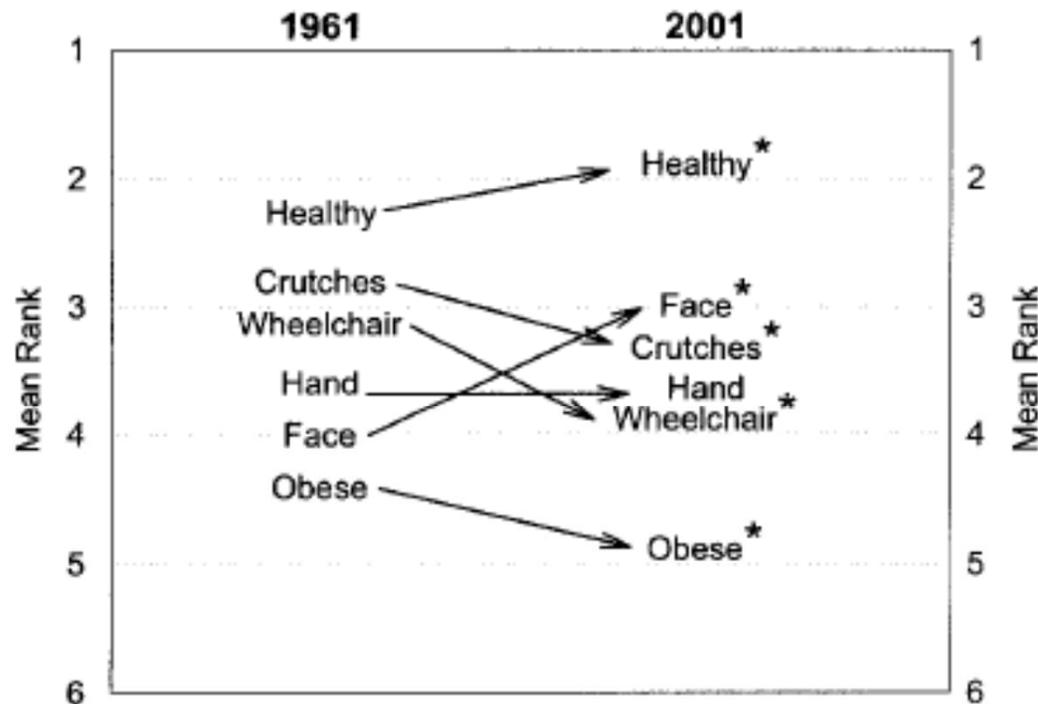
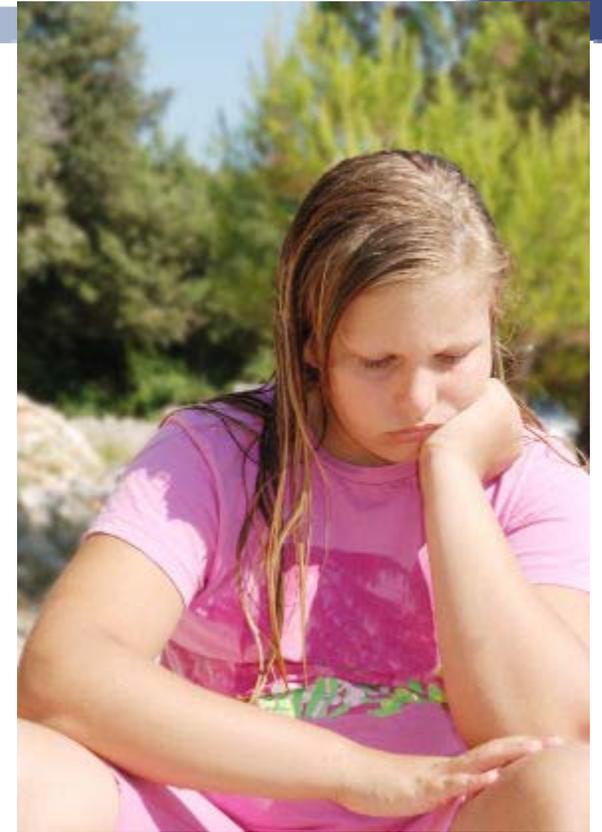


Figure 1: Rank order of drawings reported in 1961 by Richardson et al. and rank order of drawings found in the present study. Asterisks indicate significant differences at  $p < 0.001$ .



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# Prevalence of Weight Teasing in youth with overweight/obesity

- In our REAL study (N=3,000 children & Youth) weight-teasing:

## **Youth with Overweight/Obese:**

- **Weight teasing by peers: 65%**
- Weight teasing by **parents: 43%**
- Other adults -11%
- **Combined** (parents, peers, others):
  - Overweight = 69% experienced some weight teasing
  - Obese =84% experienced some form of weight teasing



# Child obesity and Weight-Teasing

- Weight teasing more prevalent in girls than boys with OW/obesity (65% vs. 47%)  
(Goldfield et al., 2010)
- These rates are comparable to other large community based studies, but clinical samples who present for treatment have higher rates of weight teasing.

Goldfield et al 2010 Paedtr Child health



# Mental Health Problems in Children with Obesity

- Common Mental Health Issues:
  - Body dissatisfaction- disordered eating.
  - Depression
  - Self-esteem
  - Quality of life
  - Neurocognitive
    - Executive functioning – links to LD/ADHD



## Psychosocial issues

- **Body Dissatisfaction in Youth....**
- 40 – 50% of Canadian youth age 11-15 say they need to lose weight
- 61% of Grade 7/8 students were trying to lose weight

Canadian study: Jones et al.





# Psychosocial Issues-Body Image

- Body Dissatisfaction
  - Wide body of research consistently shows that children and youth with obesity are more dissatisfied with their body image than peers who are not-obese.
  - REAL study (n=3,000) dose-response effect of weight status whereby body dissatisfaction in youth with **obesity > overweight > Average range**.
  - Effects were independent of age and gender (Goldfield et al 2010 J School Health)



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# Body Dissatisfaction: The Negative Spiral

Consider:

- Genetics
- Set point theory
- Environment

**Culture of Over Valuing Thinness**

**Internalization of unrealistic standards**

- **High body self-consciousness**
- **Low body esteem**
- **High weight preoccupation**

- **Strict dieting practices**
- **Weight loss strategies**

- **Increased overeating**
- **Emotional eating**
- **Binge eating**

**Feelings of shame, guilt, anger, depression**  
**Increased weight over time**





# Depression and childhood obesity

- Depression -widely studied mental health conditions in people living with obesity
- 25-50% of youth with obesity report elevated depressive symptoms,↑clinical samples (McElroy, 2004).
- In a sample of >15,000 adults presenting for depression treatment, 40% were obese (Boudreau, 2013), rates way higher than expected

Luppino et al. 2010 JAMA



# Depression and childhood obesity

- Meta-analytic reviews of longitudinal studies show the relationship is likely bidirectional
- Those with obesity at baseline had a 55% increased risk of depression years later (Luppino et al. 2010).
- Depression at baseline increased odds of developing obesity from 1.9 to 3.5 - 15 years later (Liem et al., 2008)
- Although somewhat mixed, girls seem to be at higher risk than boys (Korczak et al. 2013).

Luppino et al. 2010 JAMA



# Depression and childhood obesity

- Depression can interfere with weight management treatment through reduced attendance, adherence to the intervention, increased attrition (Zeller et al. 2004)
- Depression is often an exclusion criterion in many weight management programs

Luppino et al. 2010 JAMA



# Mechanisms Linking Child Obesity & Depression

- Obesity → Depression
  - Stigma, shame and guilt (Stevens et al. 2016)
  - Weight teasing/bullying
  - Social marginalization
  - Reduced sleep quality
  - Dieting or disordered eating
  - Biological factors (impaired neurotransmitter function, neuroendocrine markers of inflammation, gut bacteria –microbiome)



# Mechanisms Linking Depression to obesity

- Depression → Obesity
  - Emotional eating/Binge eating
  - Reduced sleep
  - Reduced physical activity
  - Increased sedentary behaviour/screen time
  - Dysregulated neurotransmitters in dopamine, serotonin that moderate food reward, hunger
  - HPA- axis impacts neurotransmitters, appetite-related hormones (Cortisol, GLP1, Ghrelin, Leptin etc)



# Child Obesity and Self-Esteem

- French (2005) reviewed 35 studies and about 50% showed lower self-esteem in children & youth with obesity, but most x-sectional
- In prospective studies, obesity tended to predict lower self-esteem at 1-3 year follow-up.
- For each unit increase in BMI, self-esteem dropped by 5% (Veugelers et al. 2009).
- Some studies in children show that weight loss is associated with improved self-esteem, but uncertain if improvement is from mastery of healthy active lifestyle behaviours or weight loss per se.
- We found increases in fitness were more related to increases self-esteem than changes in weight or body composition (Goldfield et al. 2012).



# Child Obesity and Quality of Life (QOL)

- Youth with overweight and obesity often report lower QOL across several domains, such as emotional, social, school and physical functioning, as well as weight related QOL (Tsiros et al. 2009).
- Landmark study found that adolescents with obesity rated their QOL very similarly to a group of youth undergoing chemotherapy for cancer treatment (Schwimmer et al., 2002)
- Systematic review including longitudinal studies showed that obesity is a more often a precursor of diminished QOL, not a consequence (Tsiros et al., 2009).



# Neurocognitive Correlates and Obesity: Role of executive functioning

- Definition:
  - Executive function (EF) refers to the self-regulatory cognitive processes that are associated with monitoring and controlling both thought and goal directed behaviours.
  - Domains of EF include:
    - Inhibitory/impulse control
    - Attention and mental flexibility (cognitive control)
    - Motivation – ability to initiate and complete tasks to obtain goals
    - Emotion regulation
    - Planning/organization



# Neurocognitive Correlates of Obesity in Youth

- 2 Systematic Reviews:
  - Liang et al. (2014) reviewed 67 studies, Reiner et al (2013) reviewed 23 studies.
  - MAIN findings – no consistent relationships between obesity and overall cognitive functioning (intelligence), language, learning, memory or academic achievement.
  - Both reviews found that obesity was associated with difficulties in indicators of executive functioning- namely – **inhibitory control and attention** and obesity.



# Neurocognitive associations with childhood obesity

- Most studies were cross-sectional, so caution is needed when interpreting directionality
- However, the handful of longitudinal studies show that **poor inhibitory control** was the primary aspect of executive functioning that predicted weight gain and obesity status in later life. (Liang et al. 2014)
- **Mechanisms** -poor inhibitory control /impulsivity was associated with increased food intake, binge eating, and reduced physical activity (Liang et al. 2014).



# Child Obesity and ADHD

- Historically- Children with ADHD were leaner, but recently this trend has reversed
- Children with (untreated) ADHD were 50% more likely to present with overweight/obesity than children without ADHD (Waring & Lapane, 2008).
- Data from the National Survey of Children's Health (NSCH; N=46,707) indicate 18.9% of children with ADHD had obesity (Chen et al. 2010)



# Child Obesity and ADHD

- Systematic review showed number of people seeking obesity treatment with ADHD is much greater than expected given rates in the general population (5%) (Cortese et a. 2010)
- CHEO's Center for Healthy Active Living, which has assessed over 200 families, found that about 25% of the patients had a learning or attention disorder.



# Summary

- children with obesity are growing up in a culture of weight-bias, discrimination and stigma
- These socio-cultural attitudes combined with some biological vulnerabilities predispose these children to developing mental health issues:
  - These issues have implications for treatment planning



# Informing Treatment Planning

## 1. Hippocratic Oath (Do no harm)

- Use appropriate language that is person centred and reduces stigma, shame or guilt.
- Employ emotional sensitivity – it is not easy to live with obesity in our current weight-biased culture



# Informing Treatment Planning

## 2. Thorough Mental Health/Psychosocial Assessment

- Assess for depression, anxiety, body image disturbance, binge eating disorder, quality of life, peer relations, social support, family dynamics, attachment etc.
- Assess for executive functioning indicators, ADHD or learning issues that complicate treatment



# Informing Treatment Planning

**3. Clinical Decision**-have the resources & expertise to address the comorbidities or refer out?

- Etiology of obesity is complex and heterogeneous so try to avoid simplistic strategies that focus on eating less and exercising more - One size does NOT fit all
- Multidisciplinary approach- dieticians, exercise specialists, psychologists, social workers, that offer group and individualized intervention tailored to meet the client's needs.



# Treatment Planning-Key Targets

**Body Dissatisfaction-** we know its prevalent, is predictive of disordered eating, weight gain, and poor mental health.

- **Health at Every Size (HAES)**-based on size acceptance and focuses on improving lifestyle behaviours rather than focusing on weight.
- **HAES** -has been shown to enhance body image and mental health in youth with obesity.
- Improved body image has been shown to attenuate weight gain and promote healthier eating behaviours in youth (Loth et al. 2015)



# Treatment Planning-Key Targets

- If resources permit, it would be helpful to provide children and families with strategies to better manage/cope with:
  - Mood, anxiety, self-esteem issues
  - **conflict with peers/parents**
  - **Executive functioning** (i.e. **impulse control**, planning, organization) to make following a multi-dimensional treatment program less challenging.
  - Targeting these mental health indicators would likely improve adherence, reduce attrition, and improve efficacy



# Treatment Planning-Future Directions

## **Resilience and strength-based approaches**

- Not all children and youth with obesity have psychosocial issues despite the prevalence of weight-bias and stigma in society.
- Future research is needed to better identify protective factors to promote emotional resilience and positive mental health.
- Future research should evaluate if incorporating elements of positive psychology, self-compassion theory and other strength-based approaches in treatment enhances physical and mental health in this population of children and youth.



# Back to You

- Thank You for your attention
- Any Questions?