The Guelph Family Health Study:

Understanding factors that contribute to healthy behaviours and habits in families with young children

The problem is immense.
“... between 48,000 and 66,000 Canadians – roughly a full house for a Blue Jays home game – die every year from conditions linked to obesity.”
“Since 1980, ...the number of obese adults has doubled, while the number of obese children has tripled....one in four Canadian adults, and one-third of children, are overweight, if not obese.

This pushes Canada into fifth place among industrialized countries.”

Are kids healthy?

• **DIET:** 70% of 4-8 year old children do not consume recommended servings of fruits and vegetables.

• **PHYSICAL ACTIVITY:** 80% of 3-4 year olds meet Canadian physical activity guidelines (180 min), but only 19% meet moderate to vigorous activity (60 minutes)

• **SEDENTARY BEHAVIOUR/SCREEN TIME:** Nearly 80% of 3-4 year olds exceed recommended screen time.
Long-term Health and Economic Impact

• Obesity in childhood tracks into adulthood

• Obesity increases risk of type 2 diabetes, heart disease and cancer

• Economic cost ranges from $4-7 billion annually

Obesity in Canada: Canadian Institute for Health Information, 2011.

Family-based study that aims to:

• Identify early life risk factors for obesity and chronic disease

• Test family-based strategies to promote healthy behaviours early in life (18mo – 5yrs)
We Talked to Families in Advance

- Group interviews with 31 parents
- Non-judgmental, convenient and family-friendly
We Engaged Community Partners

Population and Public Health

Intervention Builds on Previous Research

Haines et al., JAMA Pediatrics, 2013
Guelph Family Health Study’s Home-Based Obesity Prevention Intervention Increases Fibre and Fruit Intake of Preschool Children

Julia Mirotta, Alison Duncan, David Ma, Jess Haines and on behalf of the Guelph Family Health Study

- 4-home visit group had ↑ fibre intake
- 4-home visit groups had ↑ fruit intake

Parental feeding practices and their associations with child nutrition risk status: Comparing mothers and fathers.

Jessica Watterworth et al.

- Both mothers’ and fathers’ food parenting practices are associated with their children’s nutrition status.

Mother
- Encouraging
- Involvement

Father
- Modelling
Biological markers of stress and chaos in the home.
Laura MacRae et al.

↑ Home environment chaos
↑ Serum cortisol

Associated with

↑ dietary fat intake among parents with preschool-age children

Better snacks needed in kids’ school lunches
New research shows that girls eat more sugary snacks than boys, but there are easy ways to improve the nutrition in all school lunch boxes
Frequency, quality and quantity of preschooler snack consumption

Joy MacKay et al.

- 96% of children snacked daily - Average of 2.3 snacks/day
- Snacks accounted for 1/3 of daily energy.
- Boys ate fewer sugary snacks and more boys ate snacks containing a food group, compared to girls.

Taste Receptors

- Sweet: T1R2, T1R3
- Umami: T1R1, T1R3
- Bitter: T2Rs
- Salt: ENaC
- Sour: KVR2-1
- Fat: CD36, GPR120
Summary

- Genetic differences in taste may alter the risk of chronic disease by impacting dietary intake.

- Tailor dietary advice for families
  - Picky eaters
  - Sweet tooth

- New data on taste perception, taste preferences, and dietary intake may create a link between the genetics of taste and health outcomes
GFHS Cookbooks

• In response to requests from GFHS Families

Take Home Messages

• Every family is different and have different needs – no one size fits all
• Healthy habits is more than just diet and physical activity
• Healthy habits start early
Interdisciplinary Team

• 9 investigators across 3 colleges:
  • Social science
  • Basic science
  • Health economics

• Over 50 Trainees

Thank you! Questions?

www.guelphfamilyhealthstudy.com