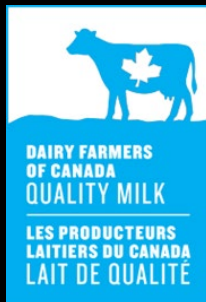


# A longitudinal study of fat mass accrual from adolescence through emerging adulthood

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Erin Barbour-Tuck



# A longitudinal study of fat mass accrual from adolescence through emerging adulthood

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# Research Questions

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1. Do people gain weight and fat during emerging adulthood (EA) and when is the age of onset of overweight by sex and different metrics? body mass index (BMI), fat mass (%FM) and waist circumference (WC), waist-to-height ratio (WHtR).
2. What factors contribute to/predict fat mass gains in EA including factors during childhood and adolescence?

# Pediatric Bone Mineral Accrual Study (PBMAS)

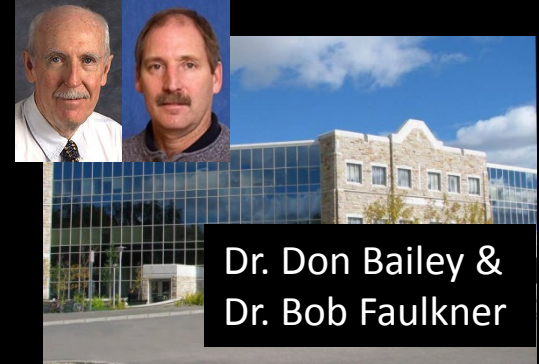
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## Participants:

- 228 (113 male)
- Measured serially 1991-2016

## Measures:

- Height, weight, BMI
- Body fat , bone mass, muscle mass
- Physical Activity (PAQ self-report),
- Diet (kcal/day)



# Participants

Variable	Males (n=56)	Females (n=57)
APHV (years)	13.6 (0.9)	12.0(0.9)*
Height (cm)	163.7 (7.4)	153.4(7.91)*
Weight (kg)	52.2 (8.5)	43.8(9.3)*
BMI (kg/m <sup>2</sup> )	19.5 (2.4)	18.4(2.8)
%Total Body Fat	19.1 (7.5)	26.8(8.2)*
Prevalence of NW BMI Category (%)	91.1%	86.0%

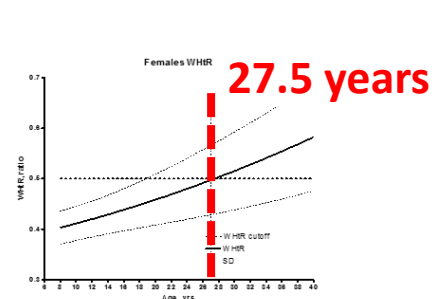
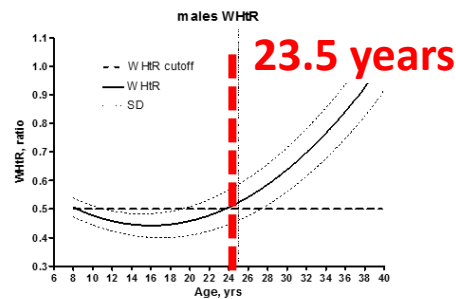
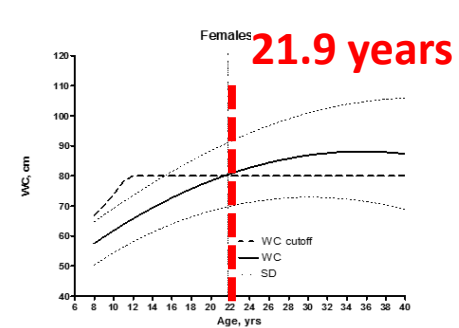
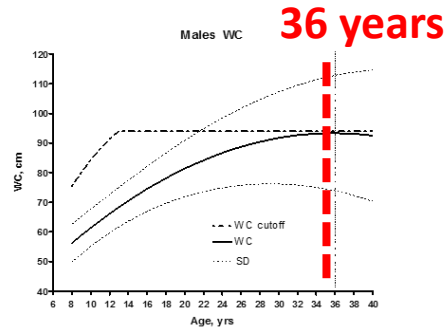
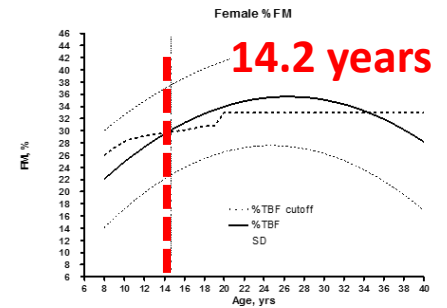
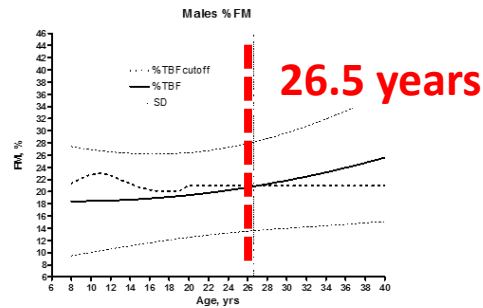
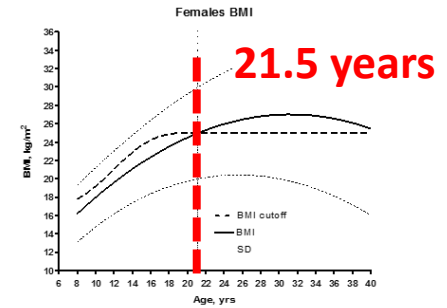
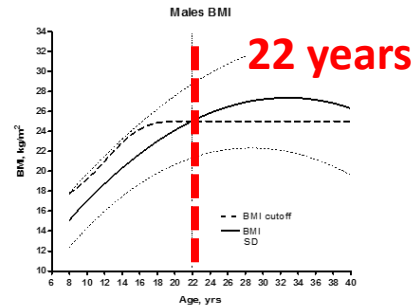
# Question 1

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- **Do people gain weight and fat during emerging adulthood (EA) and when is the age of onset of overweight by sex and different metrics?**
  - **Body mass index (BMI), fat mass (%FM) and waist circumference (WC), waist-to-height (WHtR).**

# Question 1

- All measures of fat mass increase across the time span
- The average age of transition to overweight varied by metric and sex but MOST occur in emerging adulthood



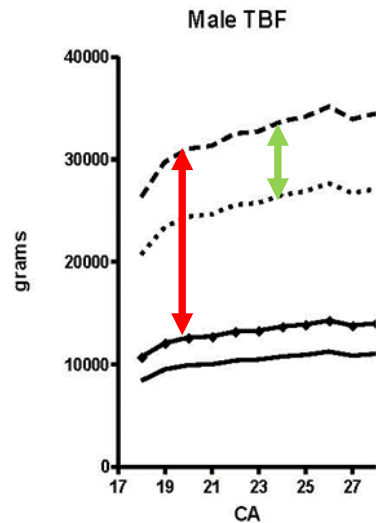
## Question 2

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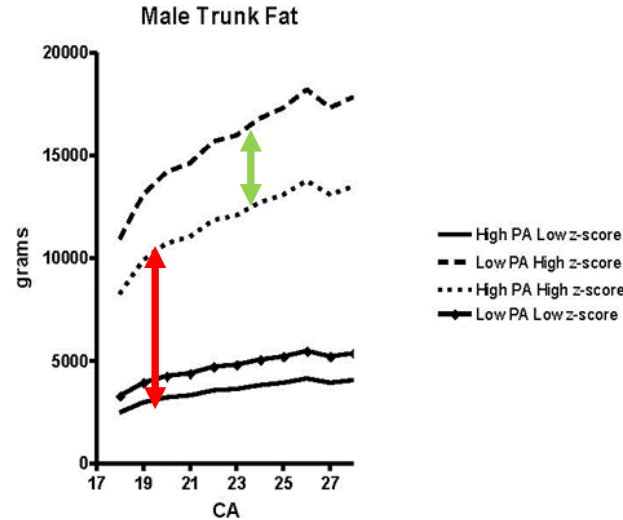
- **What factors contribute to/predict fat mass gains in EA including factors during childhood and adolescence?**



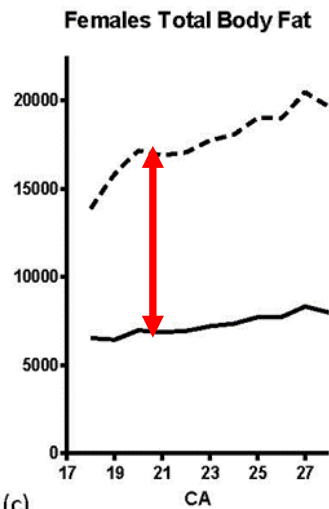
# Question 2



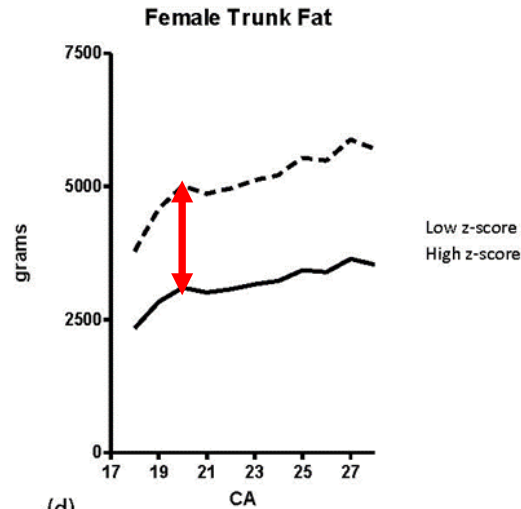
(a)



(b)



(c)



(d)

- Children and adolescents with more fat mass will gain more fat mass in emerging adulthood.
- Higher physical activity during emerging adulthood will lower the fat mass gained during emerging adulthood.

# So What?

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## Question 1

- **The freshman 5 is real but just the tip of the iceberg** (Article published in Conversation Canada; National Post; Gormley 650 CKOM September 2018)
- **Normal weight youth became predominantly overweight during emerging adulthood with onset between adolescents and mid 20's**
- Programming, interventions, education with a focus on emerging adulthood



# So What?

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## Question 2

- **Childhood and adolescent fat mass has significant and long standing implications on fat mass in later life**
  - Continue research focusing on child health and weight
- **Physical activity can mitigate fat mass accrual**
  - Continue research focusing on physical activity education and intervention for all age groups.





THANK  
YOU