Changes in growth trajectories in Brazilian children born between 2001 and 2014

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Introduction

Height increased in recent decades due to the improvement in child nutrition and health. However, these trends have varied around the world and differ among countries with varying economic status.

(NCD-RISC, 2016; NCD-RISC, 2020)

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Introduction

Childhood obesity continue to increase among all age groups, but trends are becoming stable in some populations, especially in High Income Countries, whereas in many Low-middle Income Countries mean BMI and prevalence of overweight/obesity continue to increase.

(NCD-RISC, 2017; GBD, 2013; RIVERA et al., 2014)

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Objective

Our objective was to investigate the extent to which growth trajectories for height and BMI have changed in two different periods after 2000.

Methods

- Brazilian population-based cohort
- Housed at the Centre of Data and knowledge Integration for Health (CIDACS) in Bahia, Brazil
- Derived from linked data from three Brazilian national databases

CADUNICO

100 Million Brazilian Cohort (CADU)

2001 – 2015

114.008.317 individuals

Socioeconomic and demografic variables

SINASC

(Information System of Live Birth)

2001 – 2015

44.485.274 childrens

Characteristic of the newborn, characteristics of the mother, characteristic of pregnancy and delivery

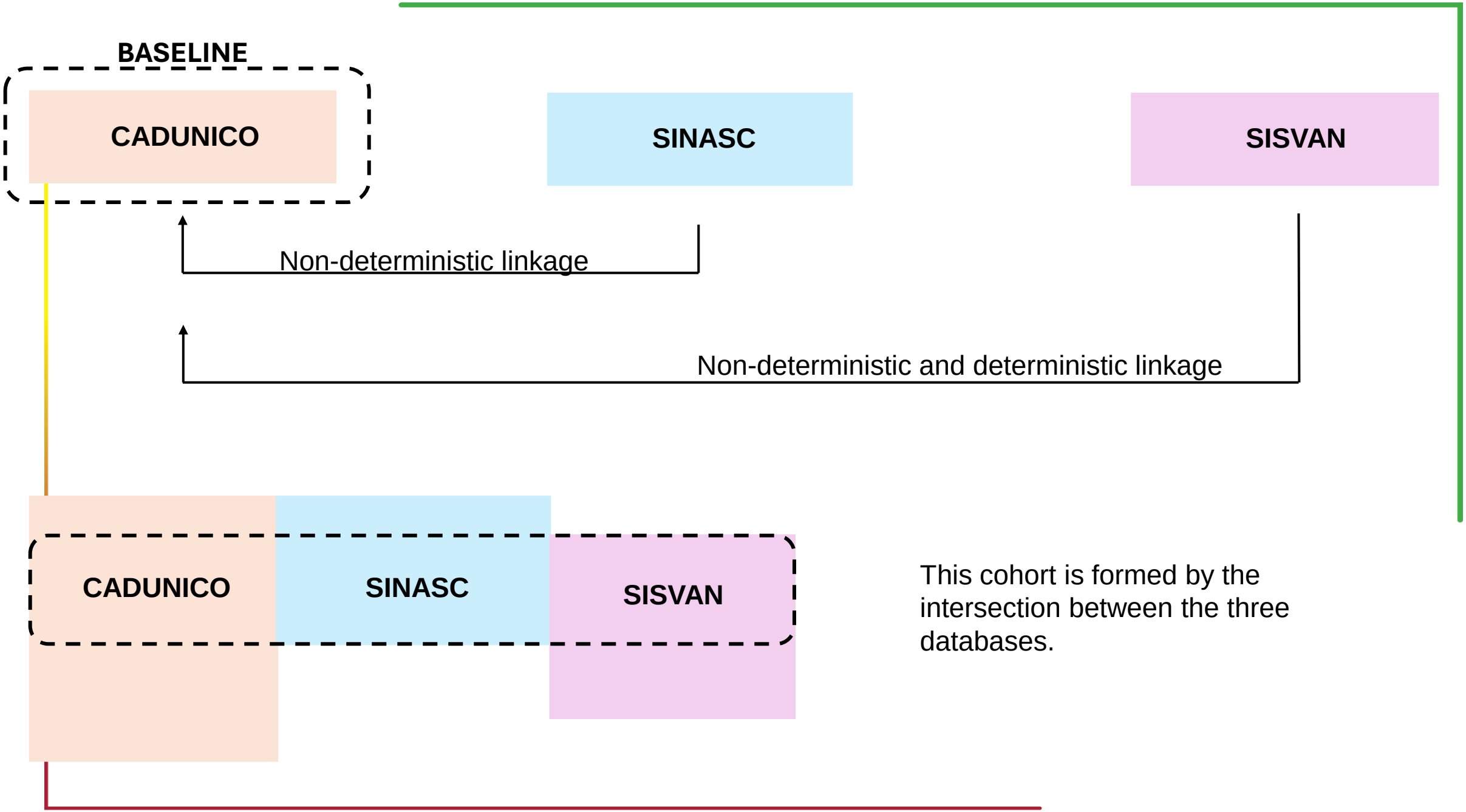
SISVAN

(Food and Nutrition Survillance System)

2008 – 2017

307.245.508 records

Information on growth, height and weight


BASELINE
CADUNICO
SINASC
SISVAN
Non-deterministic linkage
Non-deterministic and deterministic linkage
CADUNICO
SINASC
SISVAN
This cohort is formed by the intersection between the three databases.

Methods

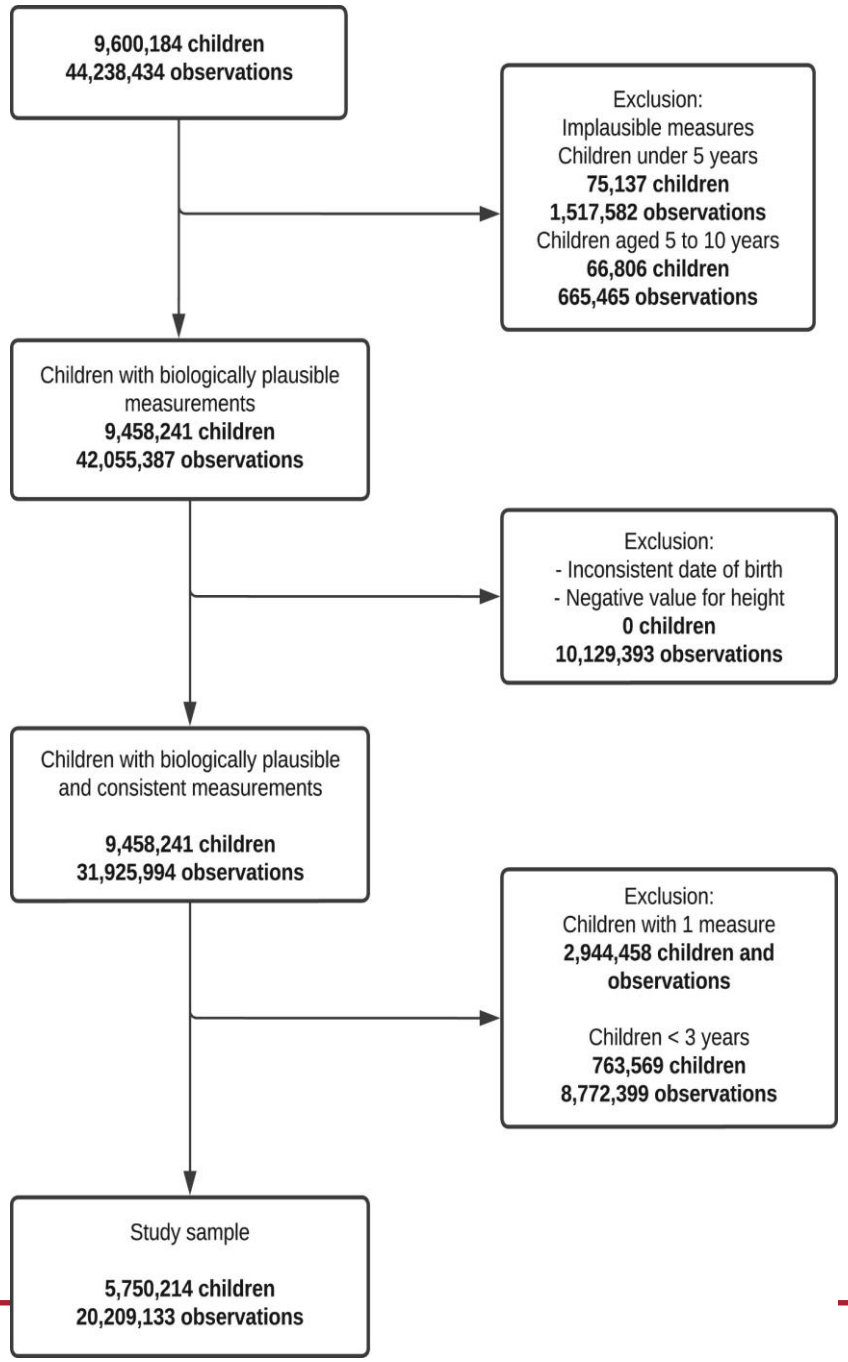


Figure 1: Population flowchart

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Methods

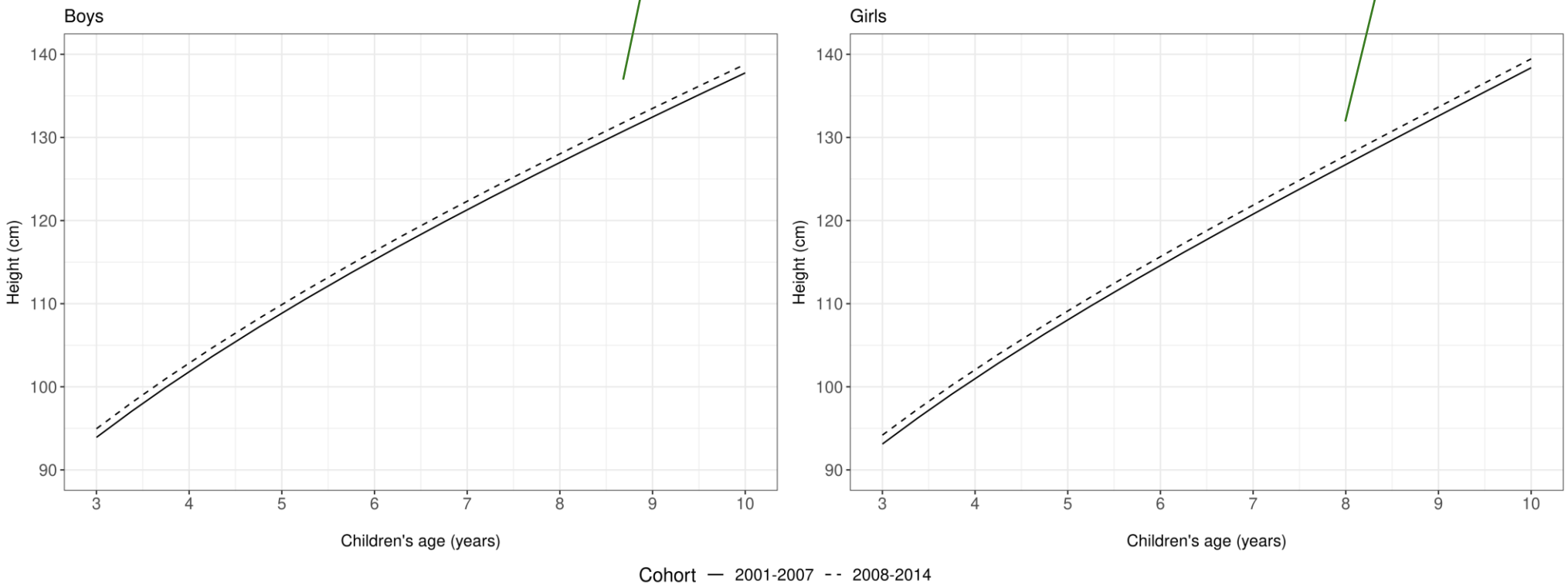
- We derived two birth cohorts (2001 - 2007 and 2008 - 2014)
- We utilized random-effects fractional polynomial models

Results

1 cm

1 cm

Fig. 1 Mean trajectories of height (cm) from 3 to 10 years for boys and girls in two cohorts born in 2001–2007 and 2008–2014 (N = 5,750,214)



Legend: Solid line is for the cohort born in 2001–2007 and dotted line is for the cohort born in 2008–2014.

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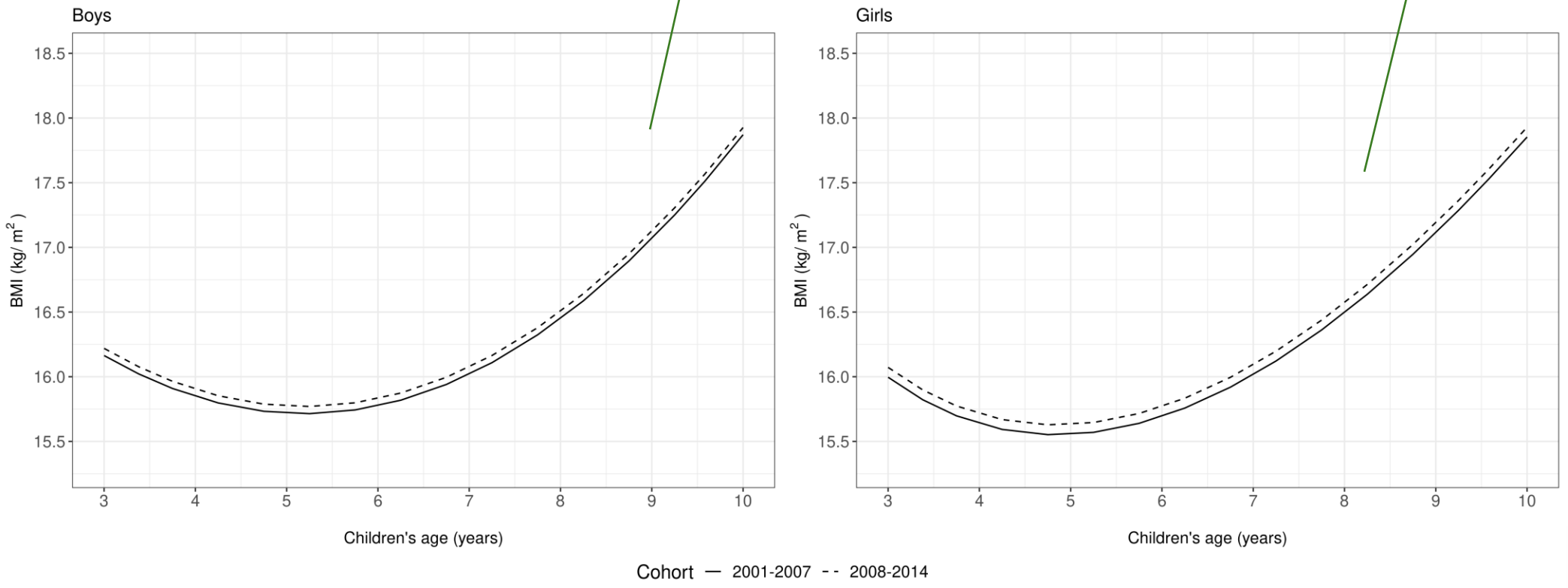
Results

0.06 kg/m²

0.08 kg/m²

Fig. 2 Mean trajectories of BMI (kg/m2) from aged 3 to 10 years for boys and girls in two cohorts born in 2001–2007 and 2008–2014 (N = 5,750,214).



Legend: Solid line is for the cohort born in 2001–2007 and dotted line is for the cohort born in 2008–2014.

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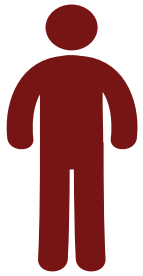
Results

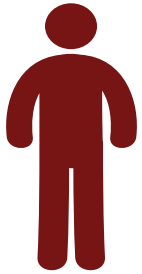
Prevalence of obesity



2001-07	2008-14	
4,0%	4,5%	3-4 years
11,9%	13,8%	5-9 years

2001-07	2008-14	
3,6%	3,9%	3-4 years
9,1%	11,2%	5-9 years

Prevalence of overweight



2001-07	2008-14	
10,9%	11,8%	3-4 years
26,8%	30,0%	5-9 years

2001-07	2008-14	
9,6%	10,5%	3-4 years
23,9%	26,6%	5-9 years

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Conclusion

Our results reveal an increase in height and overweight/obesity in Brazilian children. These findings reinforce the urgent need to develop strategies for interventions early in life to prevent the development of obesity especially children from low-income families.

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29. Erratum in: *Lancet.* 2014;Aug 30;384(9945):746

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Thank you!

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