

Asthma and Obesity

How are they connected and can we impact both with similar strategies?

Barbara A. Chilmonczyk, M.D.

PRISM 9-17-09

with MANY thanks to Kathryn Engel for data analysis / display

Asthma and Obesity

- What is known about the association
- Local data
- Regional and national data
- What can we do to impact both



Asthma and Obesity: Link

- Asthma prevalence from 1980-1996 increased by 73.9% (MMWR 1998)
- From 1960's to 2002 obesity increased in the US from 13.4 to 27.6% in men and 15.8 to 33.2% in women (JAMA 2004)
- 15-38% of asthma in adults may be caused by obesity. (2005 review of the epidemiology of asthma and obesity, Ford, JACI)
- Children who are overweight at 6-7 years of age are at increased risk (>60%) for having symptoms of asthma at 8 years of age (JACI June 2009)

Asthma and Obesity: Causes

- Direct effect of asthma on obesity and vice versa
- Shared genetics: study of 1001 identical twins; 8% of the genetic component of obesity is shared with asthma (JACI 2005)
- Inflammatory factors: TNF- α , and IL-6 levels decrease in obesity and reduced activity is associated with asthma (Thorax 2001)
- Dietary factors (antioxidants and vitamin D): increased intake may help both (Thorax 1997; Science Daily 2007, AJRCCM 2009)
- Reduced activity: Associated with both asthma and obesity (Eur Resp J 2000)

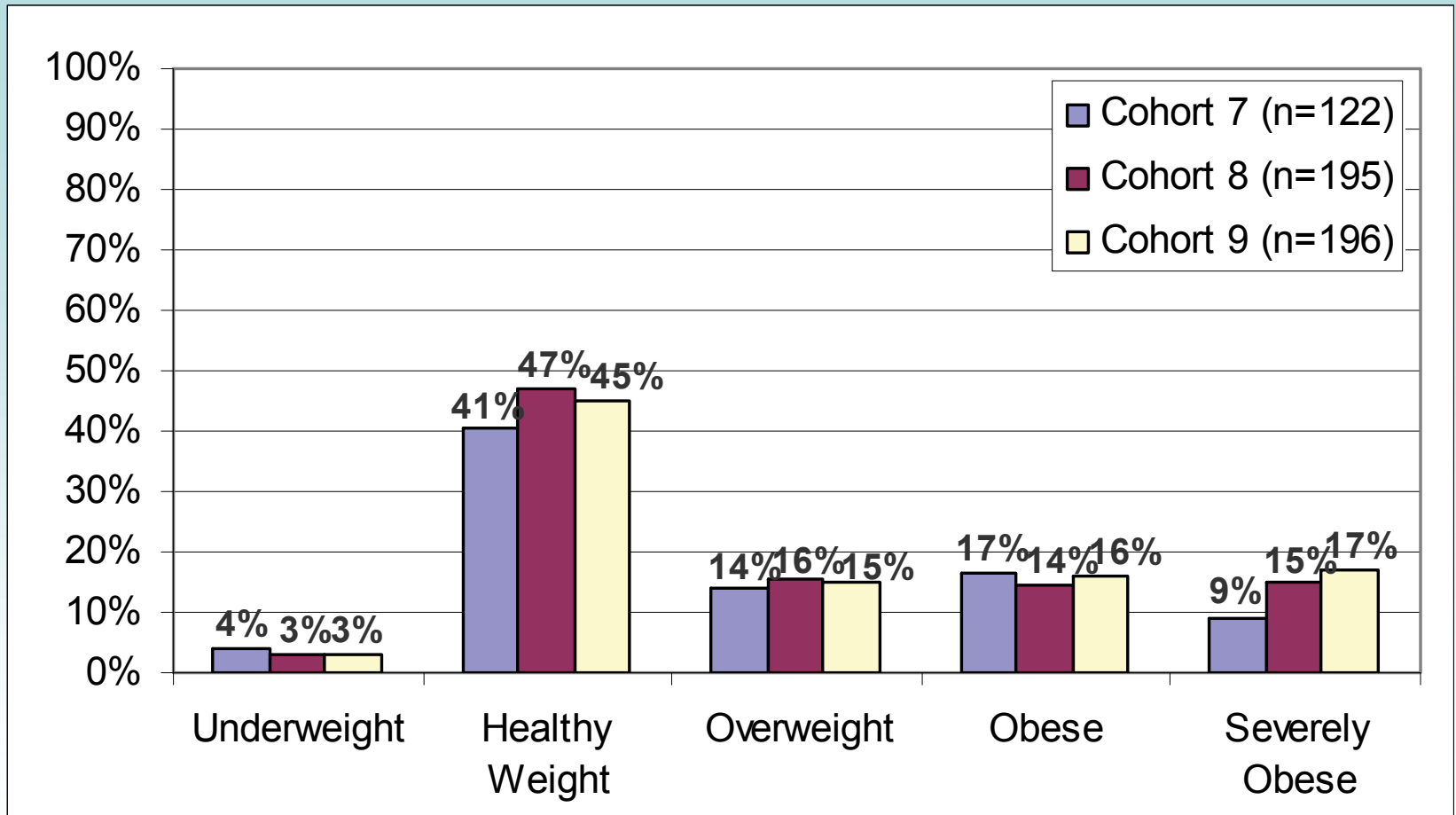


AH! Asthma Health Program

What is it?

- A comprehensive program established in 1998 to improve quality care....it started with a stamp
- **Serve:** 975,000 adults and children including 90,675 asthma
- **Focus:** 1:1 patient/family education and self-management training; provider education; system advocacy
- We measure outcomes:
 - hospital admissions, ED visits, missed work and school, QOL indicators (e.g. Asthma Control Test)
 - Recently we've started to look at obesity in our population of patients seen for education

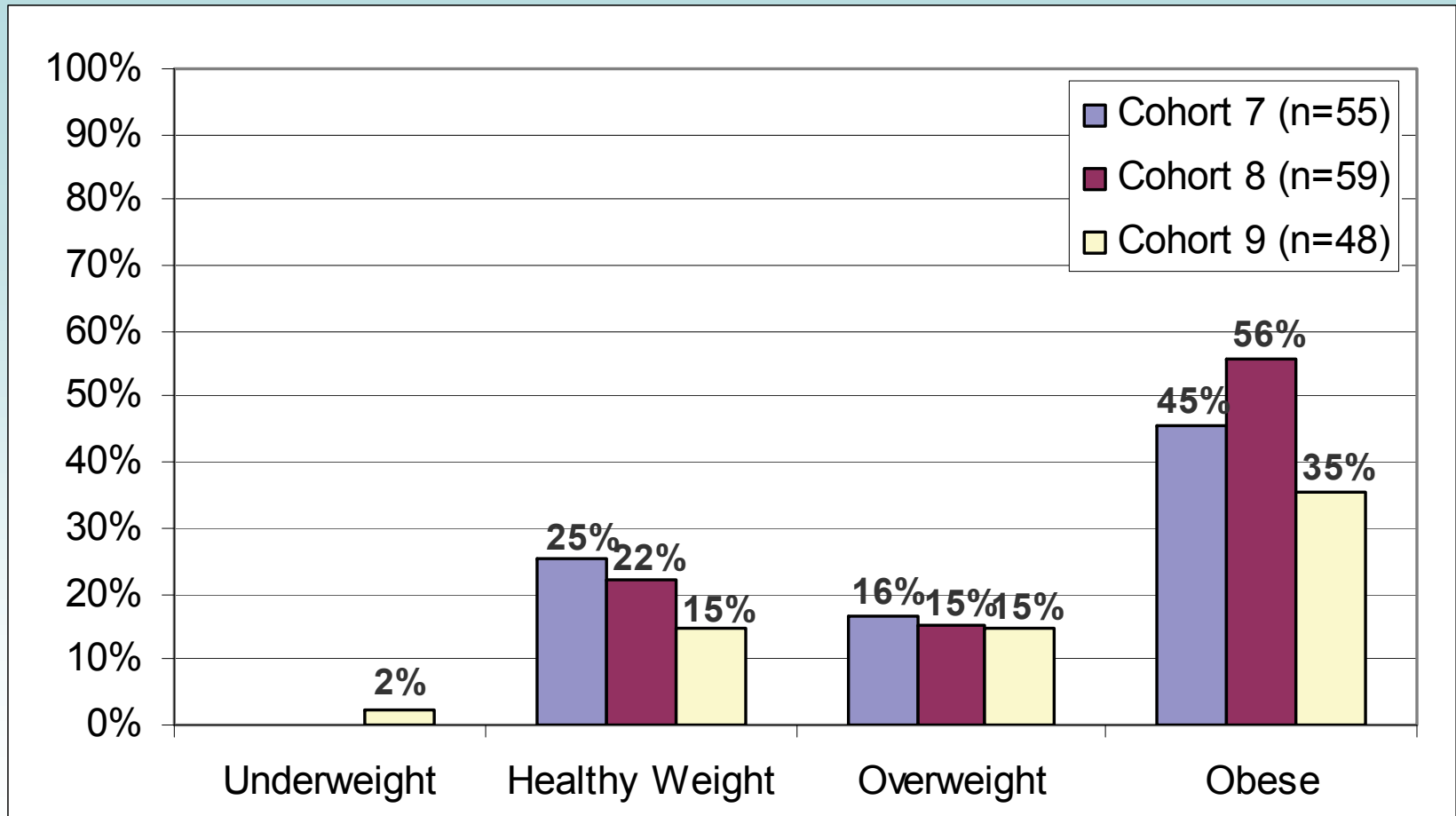
AH! Program Child BMI



On average, not able to calculate BMI for 8.5% (n=13)

Cohort 9 is incomplete (10 months of data)

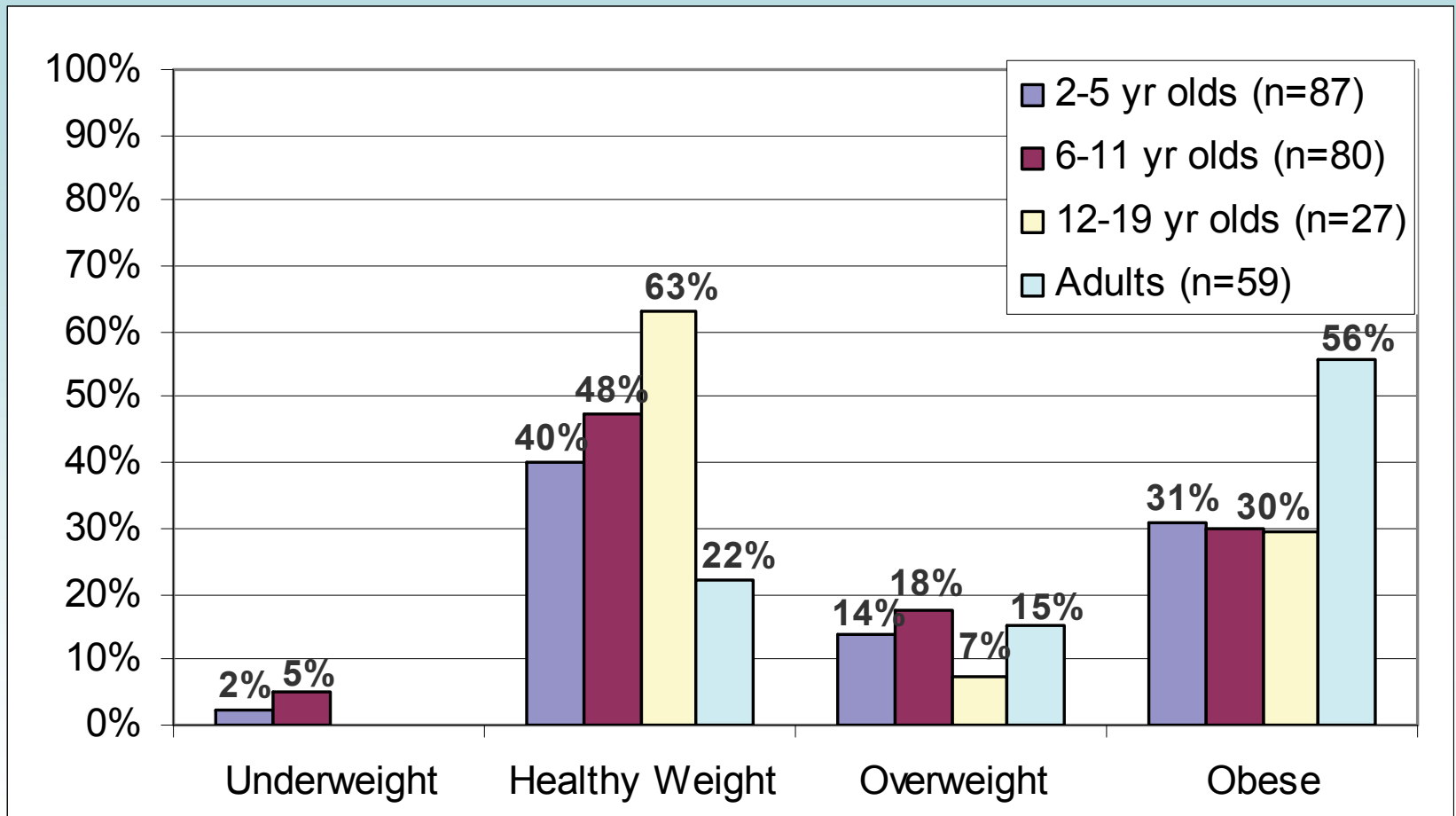
AH! Program Adult BMI



On average, not able to calculate BMI for 17.6% (n=9)

AH! Program

Cohort 8 (Oct 07-Sept 08)



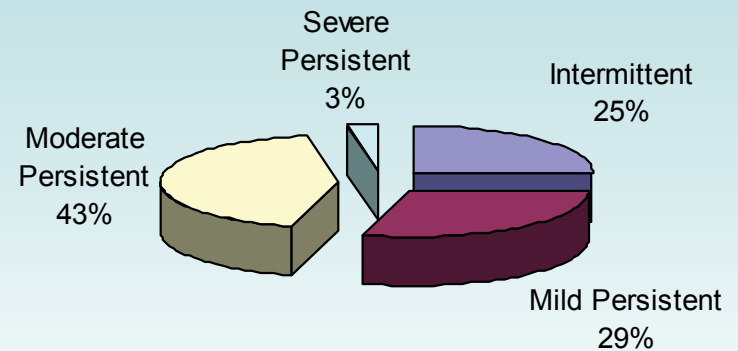
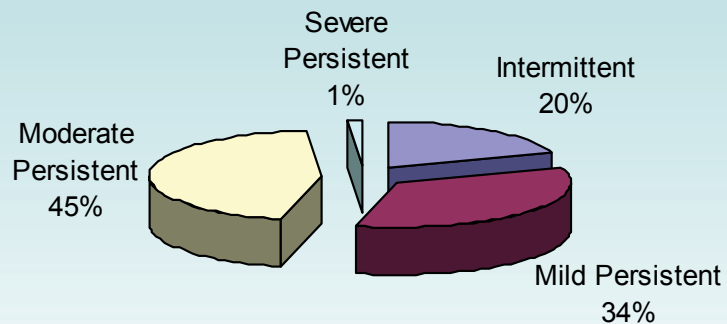
On average, unable to calculate BMI for 4.9% (n=4)

45% of children 2-19 years are overweight/obese

Is Obesity connected to Asthma Severity?

BMI Percentile >85% (n=228)

Healthy Weight (n=227)

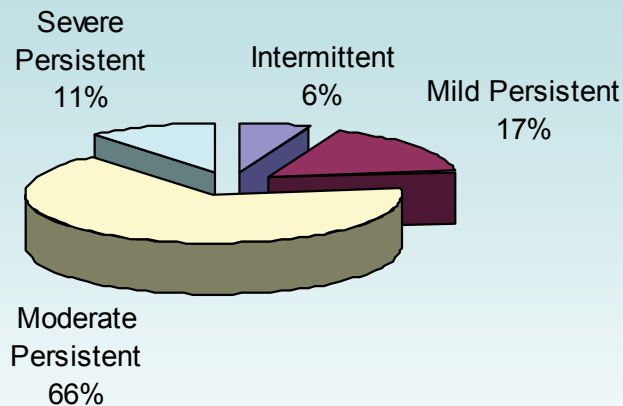


AH! Pediatric Population

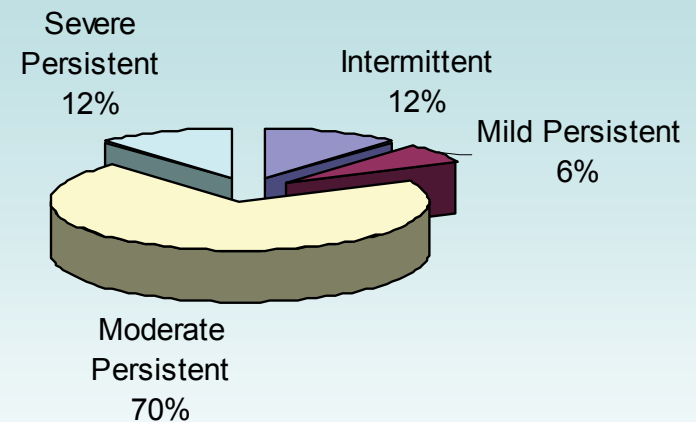
Patients seen for education and self management training from 10-06 to 7-09

Is Obesity connected to Asthma Severity?

Overweight or Obese (n=100)



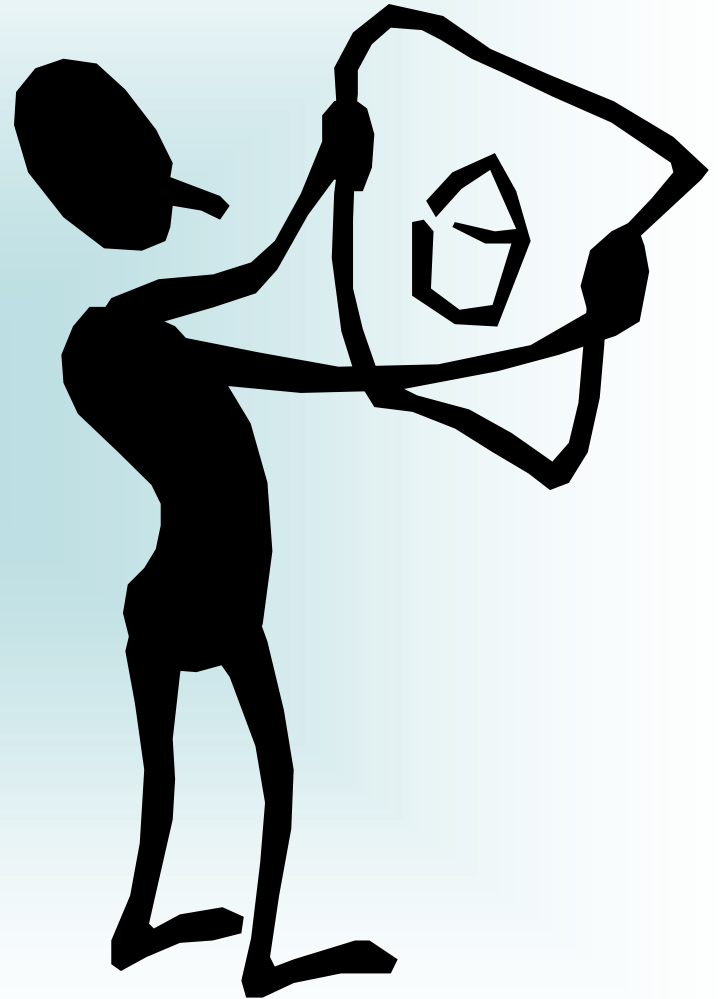
Healthy Weight (n=34)



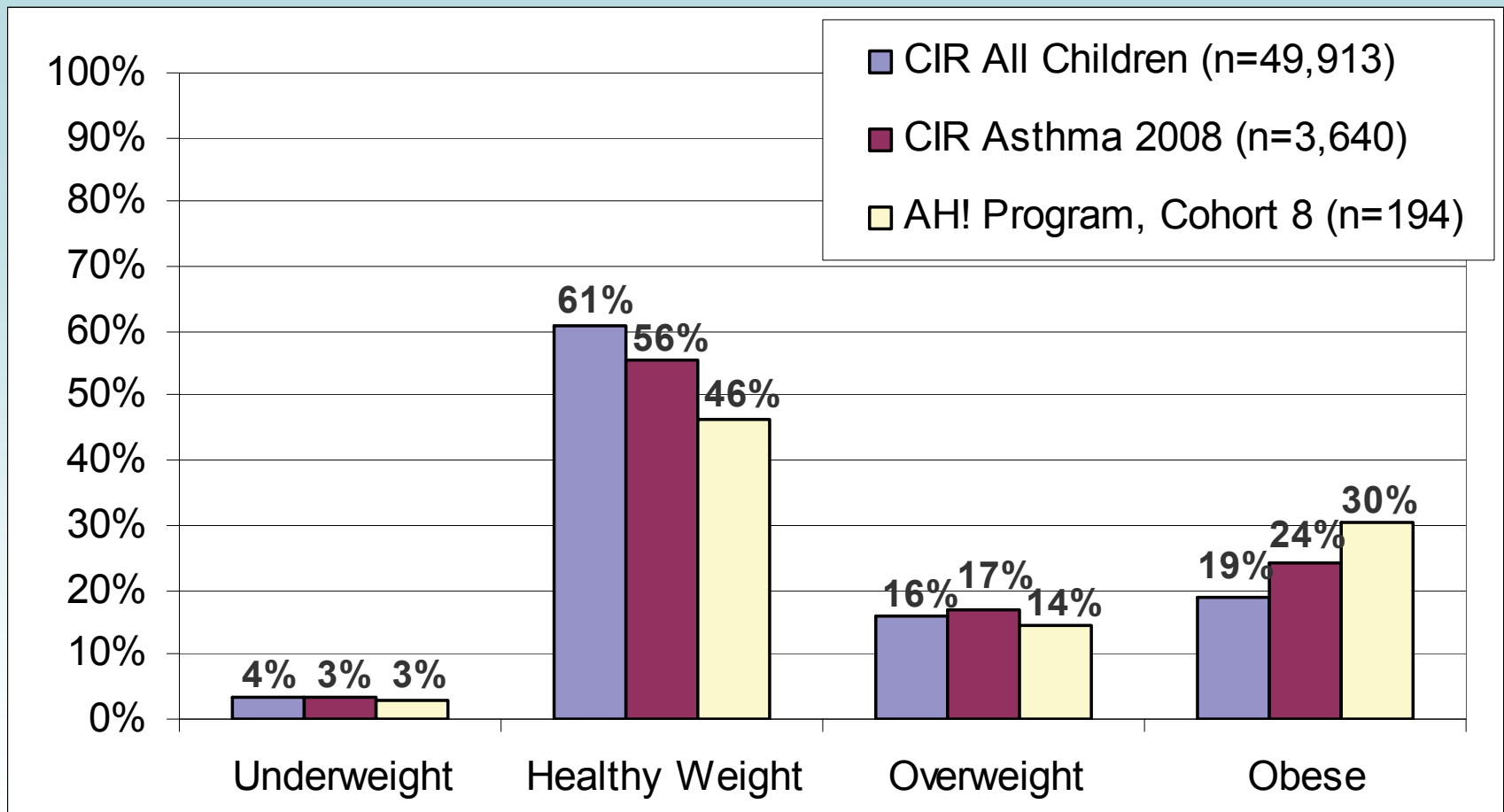
AH! Adult Population

Patients seen for education and self management training from 10-06 to 7-09

**How do the AH!
Program
participants
compare to
regional and
national data?**

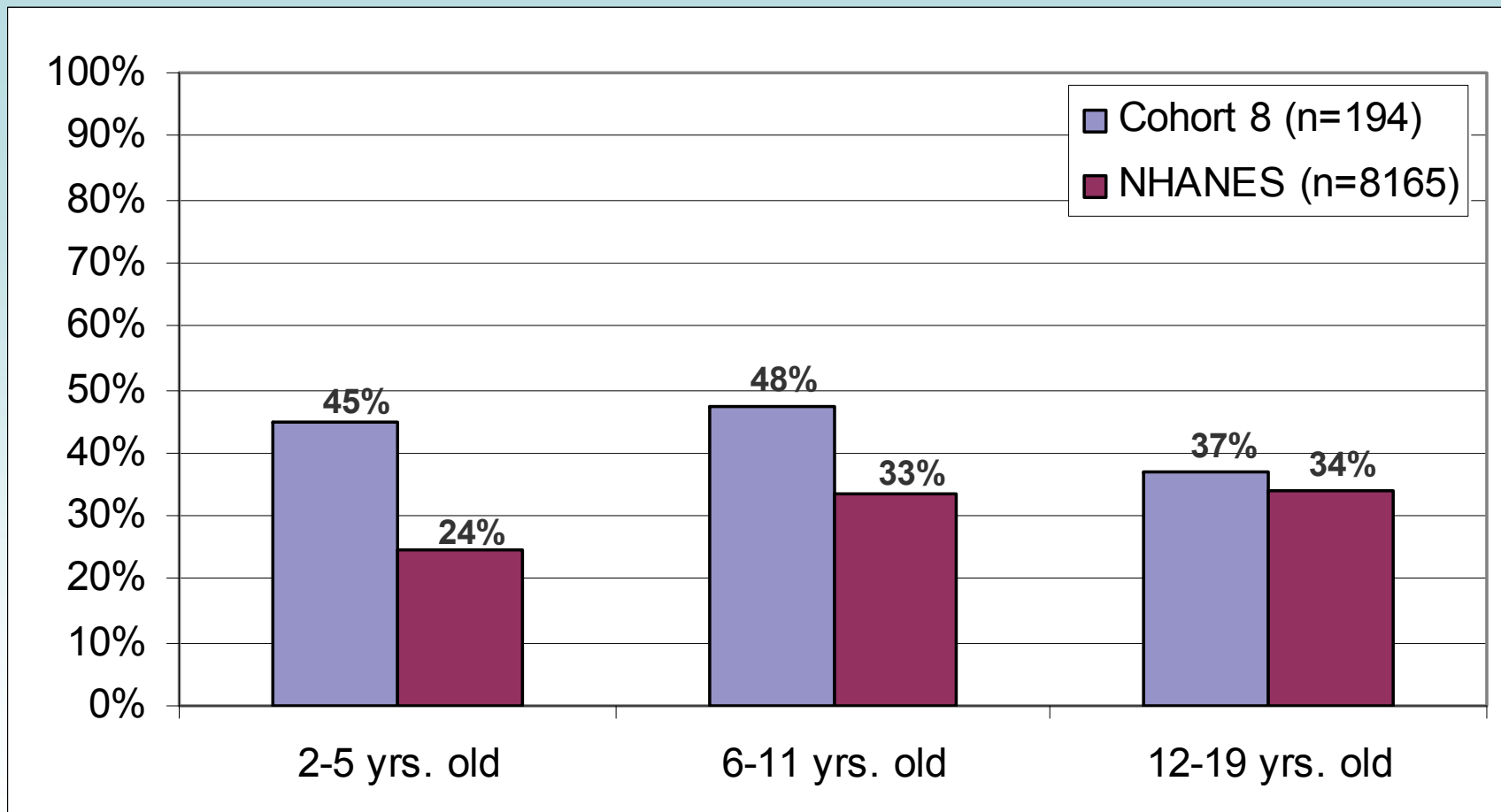


Comparison of AH! Asthma Health Program and CIR pediatric data



Children 2-18 yrs.

Comparison of AH! Program and NHANES data*



*Percent overweight/ obese

•NHANES data is all children, not just asthma

How can we use our available strategies to impact these conditions

- Healthy weight messages: 5-2-1-0
 - 5 servings of fruits and vegetables increase helpful nutrients
 - Reducing screen time will increase available time for exercise
- Exercise will increase aerobic capacity and decrease EIB, thus allowing fuller participation
- Weight loss improves asthma control
- Tobacco avoidance: decrease breathless and exacerbations over time.

