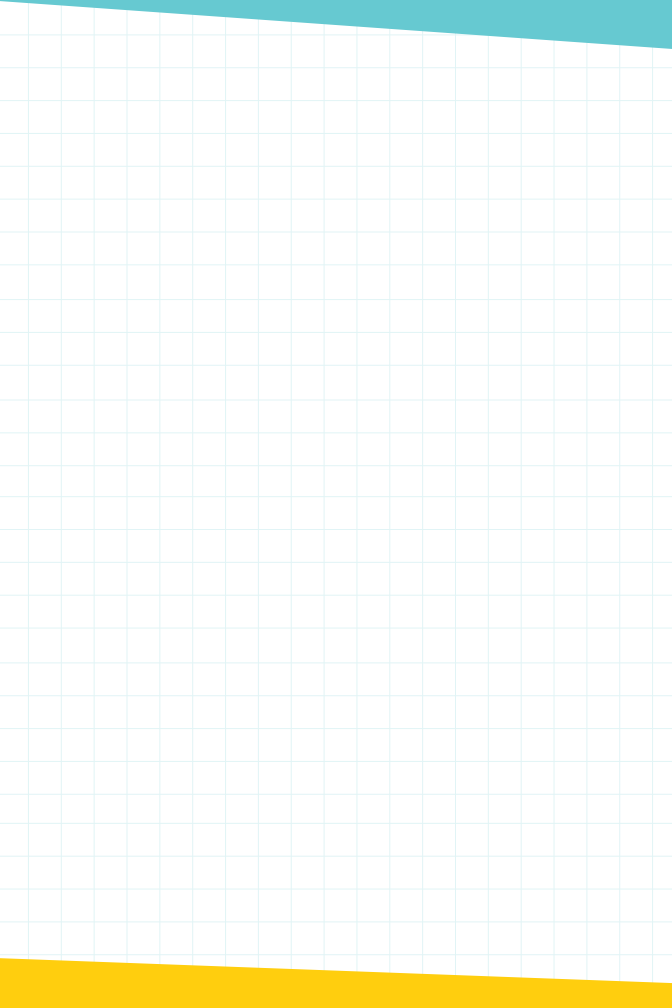




INTERPRETING REPORTS ON OBESITY PREVALENCE AND TRENDS

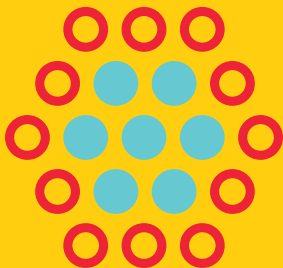
Key Considerations
for Navigating the Evidence

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Accurate and meaningful estimates of prevalence and trends are fundamental to describing and understanding the scope of obesity. Yet different approaches are used to collect and analyze data on obesity prevalence and trends. This has made understanding and using reports challenging. How do those reports differ? And what do those differences mean for interpretation and application?

Drawing from a report by the National Academies of Sciences, Engineering, and Medicine, *Assessing Prevalence and Trends in Obesity* (2016), this guide summarizes some of the key considerations that work together to inform interpretation of reports on obesity prevalence and trends. Detailed information can be found at [nationalacademies.org/APTFramework](https://www.nationalacademies.org/APTFramework).



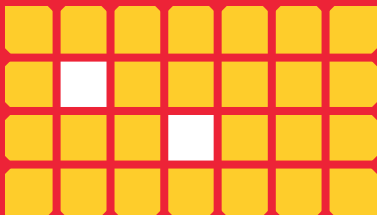
DETERMINE WHO WAS INCLUDED IN THE DATA

- ◆ How individuals are identified, and who decides to participate, affects the generalizability of the resulting estimates.
- ◆ Not all samples are designed to be representative of a broader population or geographic area.

It's usually not feasible to measure every person in a population. Obesity prevalence and trends estimates, therefore, are typically based on data from select individuals who agreed to take part in the assessment.

There are different ways investigators can select participants. Some approaches are designed to arrive at a sample that is representative of a specific target population. Other approaches and techniques can help ensure adequate representation of select subpopulation groups.

Some data sources, like electronic health records and registries, collect data on almost every person who makes use of the system. Although sampling isn't used in these instances, it's still important to consider who is included—and who is not included—in the data.



IDENTIFY WHAT SUBGROUPS WERE ASSESSED

- ◆ One number may not tell the whole story. An estimate that describes a broad population can mask what is occurring in smaller groups.
- ◆ Sample size often limits subgroup comparisons.

An estimate describing a broad population, like a state or the nation, provides insight into the general status of obesity. Subgroup comparisons shed light on how obesity prevalence and trends differ within and between populations.

While any variable can be used to create subgroups, the most common ones used in obesity prevalence and trends reports are demographic characteristics. Some key factors to consider are age, sex, race, ethnicity, socioeconomic status, rurality, and geographic location.

Sample size is a primary determinant of the number of subgroups that can be evaluated in an analysis and the way they are defined. A sample size that is too small may not lead to a reliable estimate. This often leads to the omission or combination of subgroups.

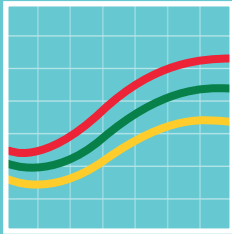


CONSIDER HOW THE CONTEXT HAS CHANGED OVER TIME

- ◆ The U.S. population is becoming increasingly diverse. With it have come population subgroups with differing obesity prevalence.
- ◆ Changes to the demographic characteristics of the population can affect the interpretation of the trend estimate.

Over the past several decades, the demographic landscape of the nation, states, and communities has changed. The median age has risen. Net immigration has increased. The population has become more racially and ethnically diverse.

Because different population groups can have different risks and rates of obesity, demographic shifts can affect an obesity trend. An influx or efflux of groups with higher or lower obesity prevalence can affect the prevalence estimate for the broader population. These changes over time can affect obesity trends. An assessment of the stability of the underlying or target population provides context for interpretation.



IDENTIFY HOW OBESITY WAS MEASURED

- ◆ Directly measured height and weight data provide the best estimates of obesity prevalence.
- ◆ Reported height and weight data are being used to fill data gaps that would otherwise exist and can provide insight into the overall obesity trend.

Body mass index, or BMI, is typically used to classify a person's obesity status.

$$\mathbf{BMI = \frac{Weight\ in\ kilograms}{(Height\ in\ meters)^2}}$$

Data can be collected by directly measuring heights and weights or by asking people to report such information about themselves (self-report) or about someone else (proxy-report).

Reported heights and weights are not always accurate. This can make the obesity prevalence estimate higher or lower than it would be if the people were actually measured.



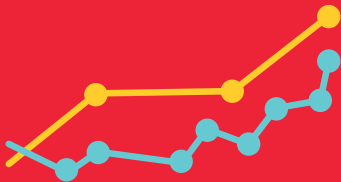
CONSIDER HOW EXTREME VALUES WERE HANDLED

- ◆ Not all extreme values are necessarily errors.
- ◆ Using different criteria to assess extreme values can lead to different prevalence estimates.

Inaccurate height or weight data can lead to misclassification of obesity status. Extreme values in height, weight, and BMI within a dataset may be due to measurement or data entry error OR due to actual extreme values. Both including these values when they're a mistake, or excluding them when they're legitimate, can affect obesity prevalence estimates.

Investigators often look for these values when they're preparing data for analysis. The criteria they use to find the extreme values and what they do with them once identified differs across reports.

Data from collection systems that automatically detect extreme values at the point of data collection with a way to distinguish true extreme values from measurement error may need different criteria than those with limited ability to check data until analysis.



DETERMINE HOW MANY DATA POINTS WERE USED AND WHAT TIME PERIOD WAS INCLUDED

- ◆ **A trend is defined by the period of time the data encompass.**
- ◆ **Consider the timespan each data point represents and the spacing of data points when interpreting an obesity trend analysis.**

In general, more time points can lead to more precise and nuanced analyses. When there are only two points in time evaluated, the difference is considered a change. A trend consists of three or more time points.

The spacing of time points in a trend analysis is not always consistent. This often reflects when data were collected and the extent to which the data produce a reliable estimate of prevalence.

To read the full report and
access related resources, please visit
**[nationalacademies.org/
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