

# The United States Obesity Response Index



## Methodology note

Supported by



### Introducing the United States Obesity Response Index

The United States Obesity Response Index, supported by Lilly, was developed independently by Economist Enterprise to assess US state efforts to prevent and manage obesity. It highlights where policy intervention is most needed, and which interventions can be effective.

This report details the research methods used for each stage of the research programme, and the rationale behind them.

The United States Obesity Response Index programme involved four stages:

- 1. Deep learning phase:** we conducted a literature review to understand the factors that impact obesity, its long-term health and economic impacts, current policy responses, and the existing indicators and datasets used to measure those responses. This review drew on reliable international sources (e.g. World Obesity Federation, World Health Organisation), government bodies (e.g. US Centers for Disease Control and Prevention) and academic publications (e.g. The Lancet).
- 2. Expert engagement:** we consulted with US-based obesity experts to refine the index framework and validate data sources.
- 3. Data collection:** we gathered data from a range of credible primary and secondary sources to assess how states perform against the qualitative and quantitative indicators of the index.

- 4. Index development and analysis:** we compiled the data we had collected into an index workbook and summarised the research findings in an executive summary, full report and accompanying data story.

### Index structure

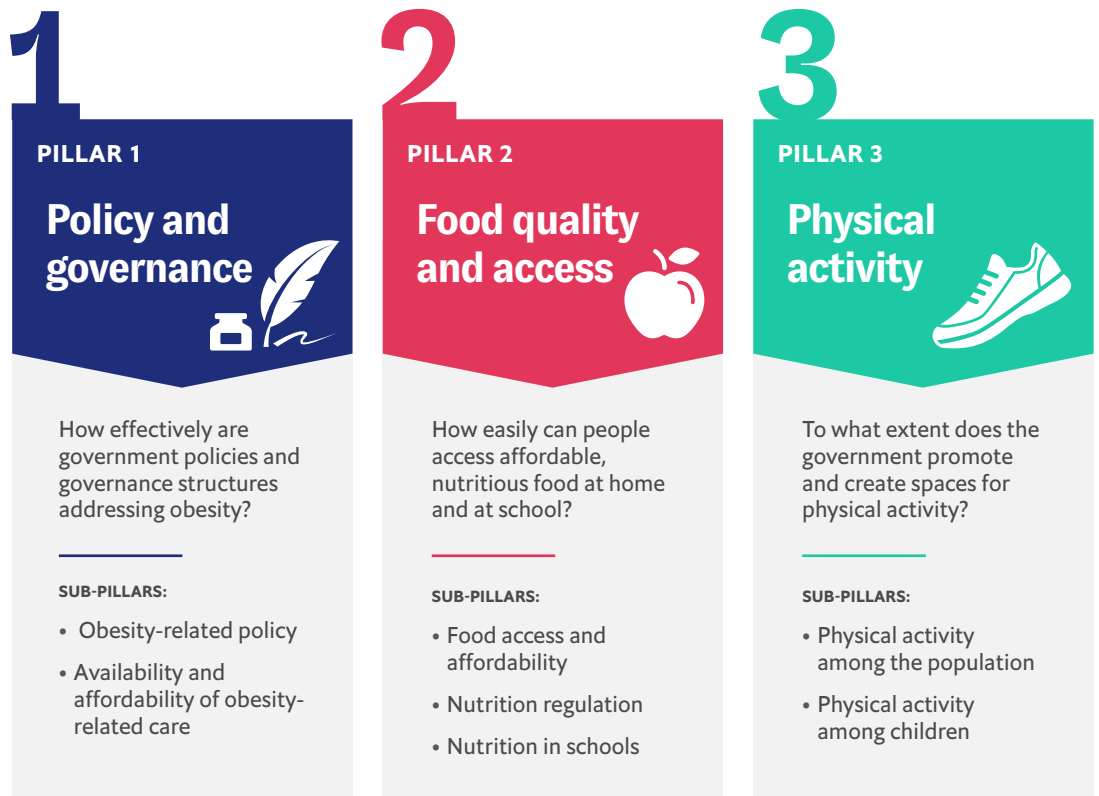
The index framework has three key pillars:

- **Policy and governance:** How effectively are government policies and governance structures addressing obesity and facilitating access to care?
- **Food quality and access:** How easily can people access affordable, nutritious food?
- **Physical activity:** To what extent does the government promote and create spaces for physical activity?

The framework is further broken down into seven sub-pillars, which contain a total of 23 indicators (19 qualitative and four quantitative indicators). Figure 1 shows how the pillars and sub-pillars are organised.

Additionally, we collected data for a set of 14 background indicators to allow for correlation analysis and to provide context. These background indicators do not contribute to states' scores. They include measures of obesity prevalence by demographic group, healthcare spending and access (such as healthcare spending per capita, access to a personal doctor, health insured population), and health outcomes (such as life expectancy).

Figure 1: The United States Obesity Response Index framework



**Data collection**

We designed a total of 19 qualitative indicators to analyse factors that lack readily available cross-state data. These indicators are scored using detailed scoring criteria, which are applied consistently across states. For more details about the indicators, the scoring schema and the score ranges, see Table 1 below. The data collection for these indicators comprises research using credible sources such as state websites and official state documents.

The information on which the scores are based, including relevant references, is presented in the Index data workbook.

The four quantitative indicators draw on raw data from pre-existing datasets from the US Department of Agriculture and the County Health Rankings produced by the University of Wisconsin Population Health Institute.

We collected the data between January and April 2025.

Table 1. Indicator framework

| No.   | Indicator  | Question  | Scoring schema   | Unit |
|---|--|---|--|------|
| <b>Pillar 1: Policy and governance</b>            |  |   |  |      |
| <b>1.1 Obesity-related policy</b>                 |  |   |  |      |
| 1.1.1   | Health policy/strategy/plan that includes obesity    | Does the state-level health policy/strategy/plan specify obesity as a priority area?  | 0 = No, or there is either no state-level health policy/strategy/plan in place OR one that is currently valid<br>1 = Yes   | 0-1  |
| 1.1.2   | Definition of obesity                                | Does the state define obesity as a chronic disease and connect obesity to its related chronic diseases (e.g. cardiovascular disease, diabetes)? | 0 = No<br>1 = Yes, it defines obesity as a chronic disease OR makes reference to other chronic diseases related to obesity (e.g. diabetes, cardiovascular disease, obstructive sleep apnea)<br>2 = Yes, it defines obesity as a chronic disease AND makes reference to other chronic diseases related to obesity (e.g. diabetes, cardiovascular disease, obstructive sleep apnea)  | 0-2  |
| <b>1.1.3 Obesity-related policy/strategy/plan</b> |  |   |  |      |
| 1.1.3a  | Existence of an obesity-related policy/strategy/plan | Does the state have an obesity-related policy/strategy/plan?  | 0 = No<br>1 = Yes, but the document is not periodically updated or currently valid<br>2 = Yes, the document is periodically updated or currently valid   | 0-2  |
| 1.1.3b  | Engagement with stakeholders during development      | Were stakeholders from various sectors involved in the development of the state-level obesity-related policy/strategy/plan?                     | 0 = No, only health-focused stakeholders were involved in developing the policy OR there is either no state-level obesity-related policy/strategy/plan in place or one that is periodically updated or currently valid<br>1 = Yes, stakeholders from at least two sectors (e.g. health, agriculture, education, finance, urban planning) were involved in developing the policy<br>2 = Yes, stakeholders from three or more sectors (e.g. health, agriculture, education, finance, urban planning) OR people living with obesity were involved in developing the policy<br>3 = Yes, stakeholders from three or more sectors (e.g. health, agriculture, education, finance, urban planning) AND people living with obesity were involved in developing the policy | 0-3  |

|               |   |  |  |     |
|---------------|---|--|--|-----|
| <b>1.1.3c</b> | Measures for obesity prevention           | <b>Does the state-level obesity-related policy/strategy/plan contain measures for obesity prevention across the population?</b>  | 0 = No, or there is either no state-level obesity-related policy/strategy/plan in place OR one that is periodically updated or currently valid<br>1 = Yes, but the measures do not include clear actions or specific targets<br>2 = Yes, there are measures with clear actions or specific targets, but they lack methods of evaluation<br>3 = Yes, there are measures with clear actions or specific targets AND methods of evaluation  | 0-3 |
| <b>1.1.3d</b> | Measures for obesity management           | <b>Does the state-level obesity-related policy/strategy/plan contain measures for obesity management across the population?</b>  | 0 = No, or there is either no state-level obesity-related policy/strategy/plan in place OR one that is periodically updated or currently valid<br>1 = Yes, but the measures do not include clear actions or specific targets<br>2 = Yes, there are measures with clear actions or specific targets, but they lack methods of evaluation<br>3 = Yes, there are measures with clear actions or specific targets AND methods of evaluation  | 0-3 |
| <b>1.1.3e</b> | Targets for obesity prevalence reduction  | <b>Does the state-level obesity-related policy/strategy/plan contain targets for obesity prevalence reduction across the population?</b>   | 0 = No, or there is either no state-level obesity-related policy/strategy/plan in place OR one that is periodically updated or currently valid<br>1 = Yes, short-term targets (0-5 years) OR long-term targets (6 years+)<br>2 = Yes, short-term targets (0-5 years) AND long-term targets (6 years+)  | 0-2 |
| <b>1.1.3f</b> | Focus on vulnerable groups                | <b>Does the state-level obesity-related policy/strategy/plan include a particular focus on the prevention and management of obesity in groups at increased risk of developing obesity?</b> | 0 = No, or there is either no state-level obesity-related policy/strategy/plan in place OR one that is periodically updated or currently valid<br>1 = Yes, but it does not outline specific actions, targeted interventions or comprehensive strategies to address the unique needs of vulnerable and minority groups (e.g. children; low-income populations; ethnic or racial minorities)<br>2 = Yes, it outlines well-defined and actionable measures specifically addressing the needs of vulnerable and minority groups (e.g. children; low-income populations; ethnic or racial minorities) | 0-2 |
| <b>1.1.3g</b> | Obesity-related stigma and discrimination | <b>Does the state-level obesity-related policy/strategy/plan make reference to obesity-related stigma/discrimination and contain measures to combat it?</b>                                | 0 = No, or there is either no state-level obesity-related policy/strategy/plan in place OR one that is periodically updated or currently valid<br>1 = Yes, it mentions obesity-related stigma/discrimination BUT does not contain any measures to combat it<br>2 = Yes, it mentions obesity-related stigma/discrimination AND contains measures to combat it   | 0-2 |

|              |                               |  |   |     |
|--------------|-------------------------------|--|---|-----|
| <b>1.1.4</b> | Obesity-related funding       | <b>Is there a budget allocated to implement the state-level obesity-related policy/strategy/plan?</b>                            | 0 = No, or there is either no state-level obesity-related policy/strategy/plan in place OR one that is periodically updated or currently valid<br>1 = Yes | 0-1 |
| <b>1.1.5</b> | Weight-related discrimination | <b>Does the state have a law that prohibits weight-based discrimination and classifies weight as a protected characteristic?</b> | 0 = No<br>1 = Yes   | 0-1 |

## 1.2 Availability and affordability of obesity-related care

|              |                                    |  |   |     |
|--------------|------------------------------------|--|---|-----|
| <b>1.2.1</b> | Obesity treatment coverage         | <b>Are the four elements of comprehensive obesity care (nutrition counselling, intensive behavioural therapy, obesity medications, and metabolic and bariatric surgery) covered by state Medicaid?</b> | 0 = No<br>1 = Yes, one element is covered<br>2 = Yes, two elements are covered<br>3 = Yes, three elements are covered<br>4 = Yes, all four elements are covered | 0-4 |
| <b>1.2.2</b> | State-level weight loss programmes | <b>Does the state implement Healthy Behaviour Incentive Programmes (HBIPs) in Medicaid to encourage weight loss (e.g. through HBIPs that promote physical activity and healthy eating)?</b>            | 0 = No, the state has not implemented Healthy Behaviour Incentive Programmes (HBIPs) in Medicaid OR the HBIP does not target weight loss<br>1 = Yes             | 0-1 |

## Pillar 2: Food quality and access

### 2.1 Food access and affordability

|  |  |  |  |      |
|--|--|--|--|------|
| <b>2.1.1</b>   | Level of food security   | <b>What is the level of food security in the state?</b>  | % of households experiencing food security   | %    |
| <b>2.1.2 Nutrition programmes for lower-income individuals</b> |  |  |  |      |
| <b>2.1.2a</b>  | Supplemental Nutrition Assistance Program (SNAP): monthly benefit per person, adjusted for regional price parities | <b>How much does the Supplemental Nutrition Assistance Program (SNAP) cover monthly per person in the state?</b> | Average monthly SNAP benefit per person (US\$), adjusted for regional price parities | US\$ |
| <b>2.1.2b</b>  | Supplemental Nutrition Assistance Program (SNAP): participation rate   | <b>What is the Supplemental Nutrition Assistance Program (SNAP) participation rate in the state?</b>             | SNAP participation rate (%)  | %    |

### 2.2 Nutrition regulation

|              |                                       |  |  |     |
|--------------|---------------------------------------|--|--|-----|
| <b>2.2.1</b> | Taxes on unhealthy food and beverages | <b>Does the state levy higher taxes on unhealthy food or beverages than other food or beverage products?</b> | 0 = No<br>1 = The state levies higher taxes on unhealthy food OR unhealthy beverages<br>2 = The state levies higher taxes on both unhealthy food AND unhealthy beverages | 0-2 |
|--------------|---------------------------------------|--|--|-----|

## 2.3 Nutrition in schools

|              |                             |  |  |     |
|--------------|-----------------------------|--|--|-----|
| <b>2.3.1</b> | School nutrition standards  | <b>Does the state have its own nutrition standards for school food and/or adhere to federal nutrition standards for school food?</b> | 0 = No<br>1 = Yes, the state has its own nutrition standards for school food AND/OR adheres to federal nutrition standards for school food | 0-1 |
| <b>2.3.2</b> | Nutrition education         | <b>Does the state mandate nutrition education in schools?</b>  | 0 = No<br>1 = Yes, the state's curriculum includes nutrition education   | 0-1 |
| <b>2.3.3</b> | Universal free school meals | <b>Does the state mandate the provision of free or reduced-price meals in schools?</b>   | 0 = No<br>1 = Yes, but only certain students are eligible<br>2 = Yes, for all students   | 0-2 |

## Pillar 3: Physical activity

### 3.1 Physical activity among the population

|              |                                |   |  |     |
|--------------|--------------------------------|---|--|-----|
| <b>3.1.1</b> | Promotion of physical activity | <b>Does the state have policies in place to promote physical activity amongst the general population?</b> | 0 = No<br>1 = Yes, but they do not focus on promoting active travel (e.g. walking, cycling) or reducing car usage<br>2 = Yes, they focus on either promoting active travel (e.g. walking, cycling) OR reducing car usage<br>3 = Yes, they focus on both promoting active travel (e.g. walking, cycling) AND reducing car usage | 0-3 |
| <b>3.1.2</b> | Access to exercise facilities  | <b>What is the level of access to exercise opportunities in the state?</b>                                | % of population with adequate access to locations for physical activity  | %   |

### 3.2 Physical activity among children

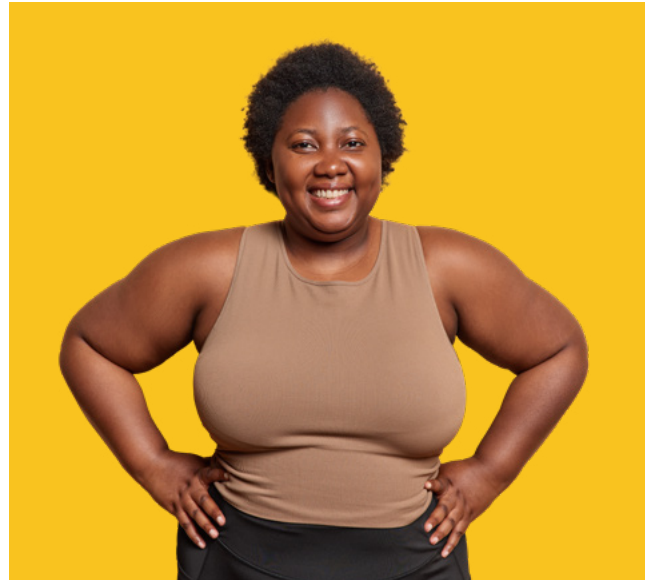
|              |                            |   |  |     |
|--------------|----------------------------|---|--|-----|
| <b>3.2.1</b> | Physical activity mandates | <b>Does the state mandate physical activity in schools?</b> | 0 = No<br>1 = Yes, but less than 60 minutes per day OR the time period is not specified<br>2 = Yes, 60 minutes per day (or more), in line with WHO recommendations | 0-2 |
|--------------|----------------------------|---|--|-----|

## Construction of the scores

Overall scores for each state are produced through normalising, weighting and combining the scores of the three pillars and their indicators.

### Normalisation

All qualitative indicator scores and the quantitative indicator 2.1.2a (monthly SNAP benefit per person) score are presented on a normalised scale, from 0 to 100 (where 100 is the strongest obesity response), allowing us to compare the relative performance of each state. The indicators are scored based on their scoring mechanism (that is, if the scoring is out of 4, a score of 4 receives 100; if it is out of 3, a score of 3 receives 100).



### EXAMPLE:

For indicator 1.2.1 (obesity treatment coverage), states are scored using a qualitative rating of 0 (no forms of obesity care are covered), 1 (one form is covered), 2 (two forms are covered), 3 (three forms are covered) and 4 (all forms are covered). On the normalised scale, states that cover all forms receive a score of 100, states that cover three forms receive a score of 75, states that cover two forms receive a score of 50, states that cover one form receive a score of 25, and states that do not cover any forms receive a score of 0 for this indicator.

For the other three quantitative indicators, for which the raw data is a percentage figure, we equated the data to the score, as it is reasonable for a state to achieve 100%.

### EXAMPLE:

For indicator 2.1.1 (level of food security), the minimum score (81%) is equal to 81 on the normalised scale and the maximum score (93%) is equal to 93.

## Weightings

Overall, weightings are intended to reflect the importance attached to each pillar of the index. In this case we judged that the aspects of obesity response covered by the Index were of equal importance, and therefore attach equal weights to the three pillars and the sub-pillars within them.

Most indicators are also weighted equally, with one exception. Under pillar 1, we assign a higher weight to indicator 1.1.3a (existence of an obesity-related policy/strategy/plan) than to indicators 1.1.3b to 1.1.3g, which assess the contents of the plan. This reflects the view that having a plan in place is a critical first step before we can assess its comprehensiveness.

Please note that, in some instances, the total weightings do not add up to 100% due to rounding.

**Pillar weights**

| Pillar                     | Weights |
|----------------------------|---------|
| 1) Policy and governance   | 33%     |
| 2) Food quality and access | 33%     |
| 3) Physical activity       | 33%     |

**Sub-pillar weights**

|   |                |
|---|----------------|
| <b>1) Policy and governance</b>                             | <b>Weights</b> |
| 1.1) Obesity-related policy                                 | 50%            |
| 1.2) Availability and affordability of obesity-related care | 50%            |
| <b>2) Food quality and access</b>                           | <b>Weights</b> |
| 2.1) Food access and affordability                          | 33%            |
| 2.2) Nutrition regulation                                   | 33%            |
| 2.3) Nutrition in schools                                   | 33%            |
| <b>3) Physical activity</b>                                 | <b>Weights</b> |
| 3.1) Physical activity among the population                 | 50%            |
| 3.2) Physical activity among children                       | 50%            |

**Indicator weights**

|  |                |
|--|----------------|
| <b>1) Policy and governance</b>                              | <b>Weights</b> |
| 1.1.1) Health policy/strategy/plan that includes obesity     | 20%            |
| 1.1.2) Definition of obesity                                 | 20%            |
| 1.1.3) Obesity-related policy/strategy/plan                  | 20%            |
| 1.1.3a) Existence of an obesity-related policy/strategy/plan | 25%            |
| 1.1.3b) Engagement with stakeholders during development      | 13%            |
| 1.1.3c) Measures for obesity prevention                      | 13%            |
| 1.1.3d) Measures for obesity management                      | 13%            |
| 1.1.3e) Targets for obesity prevalence reduction             | 13%            |
| 1.1.3f) Focus on vulnerable groups                           | 13%            |
| 1.1.3g) Obesity-related stigma and discrimination            | 13%            |
| 1.1.4) Obesity-related funding                               | 20%            |
| 1.1.5) Weight-related discrimination                         | 20%            |
| 1.2.1) Obesity treatment coverage                            | 50%            |
| 1.2.2) State-level weight loss programmes                    | 50%            |

| <b>2) Food quality and access</b>  |  | <b>Weights</b> |
|--|--|----------------|
| <b>2.1.1 Level of food security</b>  |  | 50%            |
| <b>2.1.2) Nutrition programmes for lower-income individuals</b>  |  | 50%            |
| 2.1.2a) Supplemental Nutrition Assistance Program (SNAP): monthly benefit per person, adjusted for regional price parities |  | 50%            |
| 2.1.2b) Supplemental Nutrition Assistance Program (SNAP): participation rate   |  | 50%            |
| <b>2.2.1) Taxes on unhealthy food and beverages</b>  |  | 100%           |
| <b>2.3.1) School nutrition standards</b>   |  | 33%            |
| <b>2.3.2) Nutrition education</b>  |  | 33%            |
| <b>2.3.3) Universal free school meals</b>  |  | 33%            |
| <b>3) Physical activity</b>  |  | <b>Weights</b> |
| <b>3.1.1 Promotion of physical activity</b>  |  | 50%            |
| <b>3.1.2 Access to exercise facilities</b>   |  | 50%            |
| <b>3.2.1 Physical activity mandates</b>  |  | 100%           |

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