Obesity Risk Score Product Brief

Target User Base:

Health-conscious adults in the United States between ages 20 and 59 who want to better understand their metabolic health. These users are motivated to stay healthy but often feel overwhelmed by clinical lab reports and medical terminology. They need a simple and intuitive way to understand their risks and determine what actions to take.

Risk Scoring Methodology:

The Obesity Risk Score is built from a focused set of NHANES variables with strong evidence-based links to obesity and metabolic disease. Each variable is normalized to a 0 to 1 scale and combined into a 0 to 100 composite score. Weighting is applied based on the relative strength of each factor's association with adverse metabolic outcomes. Protective factors receive negative weights. The score is designed to be simple for consumers while still grounded in clinical relevance.

Included Factors and Weights:

The score incorporates anthropometric, laboratory, behavioral, and socioeconomic variables known to influence metabolic health. Each factor contributes proportionally according to its assigned weight.

Weighted Inputs:

- **BMI (0.225)** – Strong indicator of adiposity and chronic disease risk.
- **Waist Circumference (0.225)** – Predictive of central abdominal fat and metabolic syndrome.
- **A1C (0.175)** – Reflects 3-month glycemic control and risk of diabetes.
- **Hypertension, BPQ030 (0.175)** – Self-reported high blood pressure, strongly linked to cardiometabolic disease.
- **Triglycerides (0.10)** – Sensitive to diet quality and metabolic dysfunction.
- **Total Cholesterol (0.10)** – Reflects cardiovascular and lipid-related risk.
- **Alcohol Consumption (0.05)** – Higher intake increases risk of liver disease, inflammation, and weight gain.
- **Food Security, FSDHH (0.05)** – Proxy for socioeconomic stressors; food insecurity increases obesity risk.
- **Weight History, WHQ030 (0.05)** – Recent weight gain may indicate rising metabolic risk.
- **Smoking, SMQ710 (0.05)** – Known contributor to cardiovascular and metabolic disease.
- **Physical Activity (-0.10)** – Higher activity levels reduce cardiometabolic risk.
- **HDL Cholesterol (-0.10)** – Higher HDL is protective and reflects healthier lipid metabolism.

The final score is a weighted average of all inputs. Positive weights increase risk, while negative weights decrease it to reflect protective effects.

Key Assumptions:

- The input experience should be simple, fast, and non-intimidating.
- User data privacy must be protected and used only to compute the score.
- The score provides directional insight, not a diagnostic conclusion.
- Metabolic health is multifactorial; this tool complements but does not replace clinical evaluation.

Expected User Actions:

After receiving their score, users should be able to:

- Understand whether they fall into a low, moderate, or high risk category.
- Identify which factors influence their score the most.
- Take actionable next steps such as increasing physical activity, adjusting diet, reducing alcohol consumption, or discussing results with a clinician.

Success Metrics:

- Percentage of users who complete the calculator after starting it.
- Percentage of users who take a follow-up action within one week.
- User understanding measured by a brief comprehension or helpfulness rating.
- Score distribution that aligns with NHANES population norms.
- Alignment between score categories and clinician recommendations.