

# Basic metabolic panel

A metabolic panel, often referred to as a comprehensive metabolic panel (CMP) or basic metabolic panel (BMP), is a [blood test](#) that provides information about the body's overall metabolic status and the functioning of various organs. It includes a set of blood tests that assess different components related to metabolism and organ function. Here are the common elements included in a basic metabolic panel:

## Electrolytes:

[Sodium](#) (Na): Sodium plays a crucial role in maintaining fluid balance in the body.

[Potassium](#) (K): Important for nerve and muscle function, including heart muscle.

[Chloride](#) (Cl): Helps regulate fluid balance and maintain electrical neutrality in cells.

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## Kidney Function Markers:

**Blood Urea Nitrogen (BUN):** Reflects the amount of nitrogen in the blood that comes from the waste product urea. Elevated levels may indicate kidney dysfunction. **Creatinine:** A waste product produced by muscles. Elevated levels can be a sign of impaired kidney function.

**Liver Function Markers:**  
**Albumin:** A protein produced by the liver that helps maintain blood volume and pressure. **Total Protein:** The total amount of proteins in the blood, including albumin and other proteins. **Alanine Aminotransferase (ALT) and Aspartate Aminotransferase (AST):** Enzymes that indicate liver health. Elevated levels may suggest liver damage or disease. **Alkaline Phosphatase (ALP):** Enzyme found in the liver and bones. Elevated levels may indicate liver or bone issues. **Glucose:**

**Blood Glucose:** Measures the amount of sugar (glucose) in the blood. Elevated levels may indicate diabetes or impaired glucose metabolism. **Calcium:**

**Calcium (Ca):** Essential for bone health, muscle function, and nerve transmission. A basic metabolic panel is commonly used in routine health assessments, monitoring chronic conditions, and evaluating the impact of medications on organ function. It provides valuable information about the health of the kidneys, liver, and overall metabolic balance.

The results of a metabolic panel are interpreted in the context of the individual's medical history, symptoms, and other diagnostic tests. Abnormalities in the values may indicate underlying health conditions that require further investigation and management.

It typically includes several common blood tests that assess various aspects of electrolyte balance, kidney function, and acid-base balance. The specific components of a basic metabolic panel may vary slightly depending on the laboratory or healthcare provider, but the following are commonly included:

## Kidney Function Tests:

[Blood Urea Nitrogen](#) (BUN): Measures the level of nitrogen waste products from protein metabolism, which can indicate kidney function.

**Creatinine:** Reflects kidney function and is used to estimate the glomerular filtration rate (GFR), a measure of overall kidney function.

**Glucose:** Measures the amount of sugar (glucose) in the blood and is used to evaluate blood sugar control and screen for diabetes.

Acid-Base Balance:

**Carbon dioxide** (CO<sub>2</sub>) or **bicarbonate** (HCO<sub>3</sub><sup>-</sup>): Reflects the body's acid-base balance and helps assess kidney and lung function. The basic metabolic panel is often ordered as part of a routine health check-up, pre-operative evaluation, or to monitor certain medical conditions. It provides valuable information about the body's overall metabolic status, electrolyte balance, and kidney function. Abnormalities in these values can indicate various health conditions or provide insights into organ dysfunction.

It's important to note that the basic metabolic panel is a subset of a comprehensive metabolic panel (CMP), which includes additional tests such as liver function tests and total protein.

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