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URL of this page: //medlineplus.gov/ency/article/003462.htm

Basic metabolic panel

The basic metabolic panel is a group of blood tests that provides information about your body's metabolism.

How the Test is Performed

A blood sample is needed. Most of the time, blood is drawn from a vein located on the inside of the elbow or the back of the hand.

How to Prepare for the Test

Your health care provider may ask you to not eat or drink for 8 hours before the test.

How the Test will Feel

You may feel slight pain or a sting when the needle is inserted. You may also feel some throbbing at the site after the blood is drawn.

Why the Test is Performed

This test is done to evaluate:

- Kidney function
- Blood acid/base balance
- Sodium and potassium levels
- Blood sugar levels
- Blood calcium level

Normal Results

The basic metabolic panel typically measures these blood chemicals. The following are normal ranges for the substances tested:

- BUN: 6 to 20 mg/dL (2.14 to 7.14 mmol/L)
- CO₂ (carbon dioxide): 23 to 29 mmol/L
- Creatinine: 0.8 to 1.2 mg/dL (70.72 to 106.08 micromol/L)
- Glucose: 64 to 100 mg/dL (3.55 to 5.55 mmol/L)

- Serum chloride: 96 to 106 mmol/L
- Serum potassium: 3.7 to 5.2 mEq/L (3.7 to 5.2 mmol/L)
- Serum sodium: 136 to 144 mEq/L (136 to 144 mmol/L)
- Serum calcium: 8.5 to 10.2 mg/dL (2.13 to 2.55 millimol/L)

Key to abbreviations:

- L = liter
- dL = deciliter = 0.1 liter
- mg = milligram
- mmol = millimole
- mEq = milliequivalents

Normal value ranges may vary slightly among different laboratories. Talk to your provider about the meaning of your specific test results.

The examples above show the common measurements for results for these tests. Some laboratories use different measurements or may test different specimens.

What Abnormal Results Mean

Abnormal results can be due to a variety of different medical conditions, including kidney disease, breathing problems, diabetes or diabetes-related complications, and medicine side effects. Talk to your provider about the meaning of your results from each test.

Alternative Names

SMAC7; Sequential multi-channel analysis with computer-7; SMA7; Metabolic panel 7; CHEM-7

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Review Date 6/20/2023

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06/01/2028

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