

## **Glossary continued for Extended Blueprint Participants**

### **Selenium Serum**

**What it is:** Selenium serum testing measures the concentration of selenium in the blood. Selenium is a vital trace element that plays a crucial role in maintaining antioxidant defense systems and supporting immune function.

**High results may suggest:** Elevated levels can indicate selenium supplementation or exposure to selenium above recommended levels, potentially leading to selenosis, a condition marked by symptoms such as gastrointestinal distress, hair loss, and neurological abnormalities.

**Low results may suggest:** Deficiency in selenium can impair immune function, increase susceptibility to illness, and, in severe cases, cause heart and bone muscle disorders. It highlights the need for dietary adjustment or supplementation to achieve optimal selenium status.

### **Vitamin E (Alpha-Tocopherol) Serum**

**What it is:** This test measures the level of alpha-tocopherol, the most active form of vitamin E in the serum. Vitamin E is a key antioxidant that protects cell membranes from oxidative damage and supports overall health.

**High results may suggest:** Excessive vitamin E supplementation. While toxicity is rare, very high levels might interfere with blood clotting and increase the risk of hemorrhage, especially in individuals taking anticoagulant medication.

**Low results may suggest:** A deficiency in vitamin E, which could lead to neurological problems, muscle weakness, and impaired immune response, indicating the need for dietary improvement or supplementation.

### **CA-125 (Age 50+ Women Only)**

**What it is:** CA-125 is a protein that is a tumor marker, often measured in women over the age of 50 to assess the risk of ovarian cancer.

**High results may suggest:** Elevated levels can indicate the presence of ovarian, endometrial, peritoneal, or fallopian tube cancer. However, high CA-125 can also be seen in non-cancerous conditions such as menstruation, endometriosis, and pelvic inflammatory disease.

**Low results may suggest:** A low CA-125 level is considered normal and suggests a lower likelihood of ovarian cancer, but it does not completely rule out the possibility.

## **NT-proBNP (Age 60+ Only)**

**What it is:** NT-proBNP is a marker of heart stress and function, particularly useful in diagnosing and managing heart failure in individuals over 60.

**High results may suggest:** Elevated levels are associated with heart failure and can indicate the heart is under stress, struggling to efficiently pump blood. It may also suggest other conditions such as left ventricular hypertrophy or acute coronary syndrome.

**Low results may suggest:** Lower levels of NT-proBNP in this age group are generally indicative of a lower risk of heart failure and good heart health.

## **Beta Carotene**

**What it is:** Beta Carotene is a precursor to vitamin A (retinol) and is a potent antioxidant. The test measures the level of beta carotene in the blood.

**High results may suggest:** Elevated levels are typically due to excessive dietary intake or supplementation. While not toxic, very high levels can cause carotenemia, a condition that turns the skin yellow-orange, especially on the palms and soles.

**Low results may suggest:** Low levels can indicate inadequate dietary intake of beta carotene or malabsorption issues, potentially leading to vitamin A deficiency if not addressed.

## **Lead Whole Blood**

**What it is:** This test measures the level of lead in the blood. Lead is a toxic metal that can cause harmful effects on almost every organ and system in the body.

**High results may suggest:** Elevated levels indicate lead exposure or poisoning, which can lead to neurological problems, abdominal pain, anemia, and kidney dysfunction, necessitating immediate intervention to reduce lead exposure.

**Low results may suggest:** Low or undetectable levels are expected in the general population, indicating no significant exposure to lead.

## **Magnesium RBC**

**What it is:** This test measures magnesium levels inside red blood cells, offering a more accurate reflection of body magnesium stores than serum magnesium levels alone.

**High results may suggest:** Elevated levels are rare but may occur with excessive intake of magnesium from supplements or antacids, leading to diarrhea, nausea, and abdominal cramping.

**Low results may suggest:** Deficiency can cause muscle weakness, cramps, cardiac arrhythmias, and increased irritability of the nervous system, indicating the need for dietary adjustments or supplementation.

## **Mercury Whole Blood**

**What it is:** The test measures the level of mercury in the blood, reflecting exposure to this heavy metal.

**High results may suggest:** Elevated mercury levels can result from occupational exposure, consumption of mercury-contaminated seafood, or exposure to mercury-containing products, leading to neurological and renal impairment.

**Low results may suggest:** Low levels indicate minimal exposure to mercury, which is the expected norm in individuals without specific exposure risks.

## **Vitamin A Serum**

**What it is:** This test measures the level of vitamin A in the serum, essential for vision, immune function, and skin health.

**High results may suggest:** Excessive intake of vitamin A, possibly from over