

Cardiac Efficiency

The Art of Measuring Blood Pressure / Cardiac Efficiency and the Meaning Behind These Numbers

The patient is seated in a chair and made to relax for ten whole minutes, before the cuff of a manually pumping digital blood pressure measuring machine is placed on the upper left arm. After manually pumping, the blood pressure (BP) is measured along with the heart rate/pulse (P).

Thereafter, the patient is asked to stand up and this measurement is once again immediately repeated. The standing blood pressure (BPs) and the heart rate/pulse (Ps) is also noted.

The interpretation of these numbers (pertaining to *cardiac efficiency*) is as follows:

1. In a normally healthy young person, with good cardiac efficiency; the systolic, the diastolic, and the heart rate should increase by 10 to 15 points upon standing up.
2. A poor or small increase in any or all of these numbers is indicative of poor cardiac efficiency.
3. A fall in any of these numbers is indicative of a serious cardiac inefficiency or inefficiencies and a foreboding of an eminent cardiac event.
4. Tachycardia is indicative of a serious overall nutritional deficiency pointing principally to an *intracellular magnesium deficiency*.
5. Bradycardia is indicative of a very serious overall nutritional deficiency pointing principally to an *intracellular magnesium deficiency*.

Cardiac Efficiency

- BP = 110 / 70 mm Hg (Systolic / Diastolic)
- P = 70 beats per minute (after 10 mins. rest)
- BPs = 120 to 125 / 80 to 85 mm Hg (after immediately standing up)
- Ps = Standing Heart Rate = 80 to 85 beats per minute (must increase ↑ on exercise)
- No increase in BP or Heart Rate indicates Poor Cardiac Efficiency
- Falling ↓ BP or Heart Rate (Pulse) is indicative of an Serious Cardiac Inefficiency and is a foreboding of an *Eminent Cardiac Event*.

Improving Cardiac Efficiency

Replenishing magnesium and bringing the Intracellular levels to Optimum Values is the trick to improving “Cardiac Efficiency” and normalizing blood pressure and heart rate.

Serum Magnesium

Internationally accepted Standard Reference Range:

1.8 to 3.0 mg/dL (0.7 mmol/L to 1.2 mmol/L)

Optimum Desirable Value:

2.4 to 2.8 mg/dL (1.0 mmol/L to 1.2 mmol/L)

(as per International Standards of Preventive and Anti-Aging Medicine)

Intracellular Magnesium

(also know as RBC Magnesium / Erythrocyte Magnesium)

Standard Reference Range

**4.2 mg/dL to 6.8 mg/dL
(1.75 mmol/L to 2.8 mmol/L)**

Optimum Value

**5.5 mg/dL to 6.0 mg/dL
(2.3 mmol/L to 2.5 mmol/L)**

Magnesium – Dietary Supplement

RDA = Recommended Daily Allowance = Elemental Magnesium 350 mg/day

ODA = Optimum Daily Allowance = Elemental Magnesium 600 mg/day

Therapeutic dose of Intracellular Organic Magnesium = 1400 mg/day in 4 equally divided doses.

350 mg Elemental Magnesium with other supporting Nutrients when orally delivered at **Intracellular levels, q4h, for **minimum of six months** will help to raise serum Magnesium to 2.4 mg/dL.**

Around this time please do a serum magnesium test after discontinuing all magnesium supplementation for a **minimum period of 7 days.**

Continue Intracellular Magnesium supplements with other supporting nutrients thereafter till serum magnesium reaches Optimum serum level of 2.4 mg/dL (1.0 mmol/L) given above.

If serum uric acid or creatinine levels are above Optimum and closer to the upper end of the Standard Reference Range, please **discount all serum mineral levels including magnesium by 10% to 20% to arrive at the **true (retained)** serum levels.**

Renal Profile	Optimum Level	Std. Reference Range
Blood Urea Nitrogen	12.0 mg/dL	7.0 to 18.0 mg/dL
Serum Creatinine	0.8 mg/dL	0.5 to 1.5 mg/dL
Serum Uric Acid	4.0 mg/dL	3.6 to 7.8 mg/dL

If Blood Urea Nitrogen (BUN) is at the lower end of the Standard Reference Range or below normal, it means that there is a serious “Nitrogen Imbalance” in the body caused by very low dietary protein intake. In that case readings in the Renal Profile will be inconclusive and should not be relied upon.

If there is no protein / nitrogen deficiency in the body, and the serum creatinine and serum uric acid are much higher than the Optimum Levels, it would be advisable to first detoxify the kidneys to lower these numbers and bring the kidneys to perfect functioning.

If in doubt about a possible kidney malfunction (Renal Insufficiency), please do the serum Cystatin - C Test.

The Cystatin - C test helps identify kidney dysfunction at earlier stages, before symptoms appear and Creatinine levels rise. Again, this is a serum protein and will be inconclusive in case of a serious protein / nitrogen deficiency in the body.

A kidney malfunction (Renal Insufficiency) invariably causes Renal Induced Hypertension. This does not respond to hypertension lowering drugs like Amlodipine or Atenolol. The solution to lowering such Renal Induced Hypertension is to first Detox / repair the Kidneys and bring the Renal Profile to Optimum levels given above.

CYSTATIN C

Cystatin C (cysteine protease inhibitor) is a serum protein that is filtered out of the blood by the kidneys and that serves as a measure of kidney function. An increased serum Cystatin C corresponds to a decreased GFR (glomerular filtration rate) and hence to kidney dysfunction.

The Cystatin C test helps identify kidney dysfunction at earlier stages, before symptoms appear and creatinine levels rise.

It also helps predict impending cardiovascular problems such as heart attack, stroke etc, in the elderly, as increased serum Cystatin C levels correspond to increased Homocysteine levels which is an independent risk factor for the premature development of coronary artery disease and thrombosis. Homocysteine is used in screening individuals who may be at risk for heart disease and stroke.

Another advantage is that, unlike creatinine, blood levels of Cystatin C are less influenced by age, gender, race, or muscle mass, which makes this a better indicator of kidney function. Hence, Cystatin C test is a more accurate to the standard creatinine test to screen for and monitor kidney dysfunction in those with suspected or known kidney diseases.

Cystatin C has nothing to do with the statin drugs that are used to lower cholesterol. Cystatin C levels may be affected by some drugs: corticosteroids can increase levels while cyclosporine can decrease them.

Measurements can be made and interpreted from a single random blood sample.

Standard Reference Range:
Male & Female: 0.53 to 0.95mg/L

Optimum Desirable Value:
Male & Female: ≤ 0.7 mg/L

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