



# Keto blood pressure & cholesterol

## Blood pressure

Insulin and Inflammation play a role and are often in conjunction with diabetes, meaning we often see diabetes and blood pressure together. Once diabetes is under control blood pressure tends to go down.

Magnesium & Potassium play an important role in managing blood pressure so eating lots of green leafy vegetables and supplementing with minerals, bone broth tend to have a positive impact on reducing blood pressure. Most patients I have worked with almost always have low potassium levels and supplementing with it has had a drastic change in their blood pressure levels.

As a precautionary measure if you have high blood pressure you should limit or remove deli products like cold cuts, bacon, sausage and pepperoni which are often highly processed with lots of preservatives typically found in. You may choose cleaner **options from brands like** Applegate Naturals, Pederson's, U.S. Wellness meats, the Jones Dairy Farm, and Naked Bacon.

## What Is Cholesterol?

Cholesterol is a fat like waxy substance made by the liver and a type of lipid (a fat like molecule that circulates in the blood stream). It has a vital function for hormone production, Vitamin D and for the membranes of every cell in the body.

You mostly hear about HDL & LDL cholesterol. The good one (HDL) and the bad one (LDL). The higher the HDL the better. If you have high LDL it has been believed to contribute to heart disease. But what was not mentioned is that LDL has other roles in the body that may cause it to elevate. LDL is an energy transport system and it also carries CoQ10 in addition to Tg and cholesterol in the body.

LDL has been vilified but the truth is that an increase in LDL helps with:

- Insulin sensitivity
- Cell repair
- Fight infection
- Reduce the risk of malignancy There is a correlation with better cognitive skills & longer life span too.

## **What Eating More Fat Can Do:**

1. Balance blood sugar levels therefore banish cravings
2. Balance moods and general emotional well being
3. Helps you stay full
4. Improves metabolism
5. Helps build cell membranes
6. Helps with the uptake of fat soluble vitamins A, D, E, K
7. Improve energy levels
8. Helps with production and balance of hormones
9. Replaces sugar as the main fuel source when you increase fat and limit carb intake
10. Needed for optimal brain health and neurotransmitters
11. Helps with inflammation especially Omega 3, anti-inflammatory
12. Helps balance cholesterol for heart health

So don't be afraid to eat healthy fats!!

## **What Happens During Keto?**

There will be initial rise in LDL cholesterol for some during the ketogenic diet as the fat cells do shrink and release some of it.

As the body becomes fat adapted it needs a new additional carriers as it uses fat as it's preferred fuel source instead of sugar and the LDL will go up and glucose, insulin and triglycerides will go down.

## **Concerned About Cholesterol?**

Get these markers checked out:

- Cholesterol: Total, HDL, LDL
- Triglycerides
- Glucose
- HgA1C
- Insulin
- Hs-CRP
- Fibrinogen
- Homocysteine
- ESR
- Oxidized LDL
- \*Lipoprotein Subfractions: LDL particle size, LDL small, LDL medium, HDL large
- \*Apolipoprotein B
- \*Lipoprotein (a) \* Family History
- Adiponectin
- Intercellular adhesion molecule-1 (ICAM-1)

Elevated cholesterol levels along with elevated HgA1c, triglycerides, homocysteine, insulin, Hs-CRP, ESR, fibrinogen, particle number and small LDL can be an issue and should be discussed with your doctor or primary care provider.

### **Proceed with caution**

Since fats are consumed in large quantities on a ketogenic diet, any *genetic condition* that impairs fatty acid metabolism precludes the use of this diet. If you have primary carnitine deficiency, pyruvate carboxylase deficiency, carnitinepalmitoyltransferase (CPT) I or II deficiency, carnitinetranslocase deficiency b-oxidation defects, medium-chain acyl dehydrogenase deficiency (MCAD), long-chain acyl dehydrogenase deficiency

(LCAD), short-chain acyl dehydrogenase deficiency (SCAD), long-chain 3-hydroxyacyl-CoA deficiency, medium-chain 3-hydroxyacyl-CoA deficiency, or porphyria a ketogenic diet is absolutely contraindicated.

While dietary saturated fat and cholesterol do not impact blood cholesterol levels in most people, they may raise total and LDL cholesterol in a subset of the population referred to as “*hyper-responders*.” If you are a hyper-responder (this is something you’ll need to determine with the help of your doctor), I recommend following a Mediterranean Paleo-style diet, an approach that is lower in fat and higher in healthy carbs like tubers instead of a ketogenic diet. Tubers are vegetables that grow under ground on the root of a plant. Some examples include sweet potatoes, cassava root, taro, jicama, and yams

## Other reasons cholesterol levels may increase

- Stressful event can increase numbers - a retest in the afternoon would be best to see if this has had an impact
- Familial hypercholesterolemia – a gene defect which would require genetic testing
- Infections (Chlamydia pneumonia, H. pylori, cytomegalovirus, herpes)
- Low thyroid function
- Leaky gut

*Resources:*

Weston A Price Foundation, Dr. Nadir Ali ([www.EatMostlyFat.com](http://www.EatMostlyFat.com))

*“The Paleo Cardiologist”* by Jack Wolfson, D.O.,

*“Lies My Doctor Told Me”* by Ken D. Berry, M.D.

**Effects of Low-Carbohydrate vs Low-Fat Diets on Weight Loss and Cardiovascular Risk Factors**A Meta-analysis of Randomized Controlled Trials

<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/409791>

Revisiting dietary cholesterol recommendations: does the evidence support a limit of 300 mg/d?

<https://www.ncbi.nlm.nih.gov/pubmed/20683785>

Apo B versus cholesterol in estimating cardiovascular risk and in guiding therapy: report of the thirty-person/ten-country panel.

<https://www.ncbi.nlm.nih.gov/pubmed/16476102?dopt=Abstract>