

# GALLSTONE PREVENTION AND CHOLESTASIS

## NUTRITION SUPPORT PROTOCOL

### Lifestyle Recommendations:

- Maintain a normal weight. Obesity increases cholesterol synthesis, which leads to more cholesterol secreted in the bile. Weight loss should occur at a steady pace, since rapid reduction can increase biliary cholesterol saturation.
- Learn to manage stress. Chronic social stress may increase bile retention and gallbladder hypertrophy, and inhibit gallbladder emptying.
- Engage in a brisk-paced aerobic activity such as cycling, jogging, or swimming for 20 - 30 minutes every day. A study of over 60,000 women showed that regular exercise reduced gallbladder-surgery risk by 20 percent.
- Be cognizant of circumstances that increase the risk of gallstone development: use of birth control pills, having a family history of gallstones, diabetes, getting little to no exercise, women having higher estrogen levels from estrogen replacement therapy (women are four times more likely to have gallstones than men).
- Consider a comprehensive lipid panel with subparticle size analysis, insulin levels, abnormal blood glucose, LFTs (liver function tests), GGT (glutathione), estrogen metabolite ratio testing, and genetic variances in detoxification pathways, such as CYP1A2, COMT, and methylation pathways, and food sensitivities.
- Practice mindful eating to optimize the cephalic phase of digestion.

### Dietary Tips and Caveats:

- Avoid or limit high fat-content dairy such as whole milk, cream, cheese, full-fat ice cream and yogurt, mayonnaise, and peanut butter; avoid eating fast foods.
- Increase fiber to at least 35 grams per day and reduce or avoid sugar to decrease risk of gallstones. Note that constipation may lead to gallstone formation. Fiber reduces absorption of deoxycholic acid, which greatly lessens cholesterol solubility in bile and promotes its excretion.
- Consider leaning more towards a vegetarian-like diet with small amounts of meat proteins.
- Follow a low glycemic diet; emphasize non-starchy vegetables and fruit; also use PaleoGreens™ and PaleoReds™ added to water or a healthy beverage. Avoid legumes at this time which can increase biliary saturation due to the saponin content of legumes. Consider taking 1 Tablespoon of PaleoFiber® at each meal.
- Strive to keep blood sugar optimal and snack on healthy fats as needed, such as coconut, nuts, seeds, avocados, and PaleoBars™ to avoid hypoglycemia. Ingestion of regular meals diminishes gallbladder storage and the interruption in recycling of bile acids.
- Substitute buckwheat for wheat. One Japanese study showed buckwheat significantly decreases gallstone formation and reduces cholesterol concentration compared to a casein diet.
- To maintain the water content of bile, drink plenty of water daily; add the juice of a fresh organic lemon to one or more servings of water.
- Emphasize omega-3 fats (salmon, mackerel, trout, herring, sardines) and omega-9 fats (olive oil, olives, almonds, hazelnuts, avocados, macadamia oil and coconut oil) to help control inflammation.
- Choose lean, clean quality protein at each meal such as chicken breast, turkey breast, lean beef, fish (especially salmon and sardines), eggs and whey protein to fuel muscles with energy; include Whey Cool™, PaleoMeal® or PaleoMeal® DF to address protein needs; avoid dairy if it causes flare-ups.

### Supplement Recommendations:

LV-GB Complex™	1 capsule with breakfast, lunch, and dinner
Phosphatidylcholine	1 softgel with breakfast, lunch, and dinner OR 1 tsp
Betaine HCl	1 capsule with breakfast, lunch, and dinner
Milk Thistle	1 capsule with breakfast, lunch, and dinner
<i>Optional if needed:</i> MagCitrates Powder for constipation	use to help promote bowel relaxation when fiber alone is not working

Note: This protocol is not to be used in acute gallstone obstruction.

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