



**Clinical Insights on
Structure & Nutrition
by Daniel Duffy, DC**

**Editors: Harry Eidenier, Jr., Ph.D
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An Excerpt From

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Gall Bladder Dysfunction

Bile is produced by the liver from toxins, cholesterol and bilirubin, then collected and concentrated by the Gall Bladder down to 1/5th to 1/10th its original volume. From here it is released for the emulsification of fats, fatty acids, cholesterol and other lipids needing to be properly digested for absorption into the circulatory system.

Beta-TCP thins the bile and **Livotrit Plus** (6 Ayurvedic herbs plus milk thistle) helps cleanse the liver. Proper natural methods almost always negate the need for surgery. Cholesterol stones are the most common and most responsive to therapy.

If essential lipids are lost into the stool, there is a deficiency in these as well as the fat-soluble vitamins, A, D, E and K, CoQ and other critical lipids. The same bile salts are usually released into the gut several times for each meal as they are reabsorbed from the gut and recycled.

Bile salts are also the elimination pathway for heavy metals and other toxins. Fiber protects bile salts from decomposition by bacteria. Incidence of colon cancer is higher in cholecystectomy populations.

Physiology: Gall Bladder and pH Regulation

Another major gall bladder mucosa function is to recover sodium, chlorides, bi-carbonates and other small electrolytes necessary for acid/base balancing, especially in light of the modern acidic diet. While the concentration of bile salts helps alkalize and maintain intestinal pH for flora, etc, this recovery of sodium and bicarbonates is critical to help to maintain a narrow blood pH near 7.4. It should be noted this acid/base functioning sees the gall bladder as an organ of selective recovery. Poor gall bladder function can add to osteoporosis or soft tissue calcification as this encourages the need for cannibalizing of calcium to help buffer the system.

The kidney and gall bladder reabsorb sodium for acid buffering of proteins. Patients, especially women, feel better after surgery because the alkaline bile goes straight into the small intestine without losing the sodium, but this sodium is lost and the body robs the bone of calcium to make up for the missing positively charged element and they end up with osteoporosis.

Physiology: Gall Bladder and Cholecystokinin (CCK)

An element of proper gall bladder function is cholecystokinin (CCK), the hormone that is secreted by the small intestine to cause the gall bladder to dump. CCK is activated by the presence of lipids and proper chyme pH due to sufficient HCl. CCK has numerous secondary actions, one of which is to cause satiety. CCK is also found in the brain.

Physiology: Gall Bladder and Electrolyte Recovery

Basically, poor gall bladder function is too often simply due to poor diet. The resulting biliary stasis, crystals or stones are the salts merely being supersaturated. Note the gall bladder is still doing its job of electrolyte recovery and concentrating of bile salts for the system's needs. This is no reason to cut it out, especially since these stones can be safely removed and/or prevented from forming. (Some of this information is from the writings of Dr. Kirk Vreeland.)

Physiology: Hydrochloric Acid and the Gall Bladder

Hydrochloric acid therapy is paramount in all gall bladder cases, use Biotics **HCl-Plus**. The cause of bile flow failure is multifactorial.

Physiology: Bile and Organic Sodium

Bile is a healing agent and antiseptic and helps colitis and requires lots of sodium to function. Bile sodium is reabsorbed in the gall bladder and will become acid if organic sodium from celery, zucchini etc, is missing in the diet Bile is made from two acids, Cholic A. and Chenodeoxycholic acid and is reabsorbed in the ileum after being used in the small intestine.

Physiology: The Need for Fiber

Too much bile in the colon causes discharge of mucus, water and decreasing dietary fat (orthodox medical advice) helps, but is not the proper correction. Fiber binds and neutralizes bile, so add fiber in the form of Biotics **Colon Plus** and totally restrict refined carbohydrates. Wrong bacteria in the colon produce Deoxycholate which shuts off bile flow. Establishment of proper bowel flora is essential, use Biotics **Biodoph-7 Plus** when necessary.

Physiology: Vitamin C and Cholesterol

Vitamin C deficiency causes a decreased ratio of cholesterol to bile acids. With increased liver and blood cholesterol, use Biotics **Mixed Ascorbates**. Secretin from the small intestine stimulates liver bile flow and requires, Vitamin C, niacinamide, Mg, thyroxine and cholesterol. Consider using Biotics **Mixed Ascorbates**, **Bio-GGG-B**, **Mg-Zyme** and **GTA** where necessary.

Physiology: Bile and the Ileocecal Valve

Bacteria refluxing back through a loose ileocecal valve into the terminal ileum or bacteria from the stomach due to decreased HCl results in the bactericidal breakdown of bile to deoxycholic acid and lithocholic acid so bile goes into the gall bladder at a pH of 7.8 to 8.6 and comes out 4.0 to 8.0.

Diagnostic Criteria

Thick green bile indicates pH of 4.5 (abnormal); thin, yellow bile indicates a pH of 8.5 which is considered normal.

Notes/Discussion

Associated conditions are sore nipples in females w/↑urine bilirubin, biliary stasis, constipation, cystitis, diabetes mellitus, indigestion, dupuytren's contraction, ankle edema, jaundice, liver disease, and nightmares. Iodine irreversibly inactivates mucinase – the old saying is that iodine loosens, Iron tightens, Bile dries, calcium calms, phosphorus speeds us up and potassium slows us down.

The Gall Bladder Flush

To flush stones drink apple juice (bottled organic, but preferably fresh juiced if possible) throughout the day for two days (four 8 ounce glasses/day). Then swallow two tablespoons of olive oil with lemon juice to stimulate gall bladder contraction.

An optional method is to replace apples with beet greens. Cook beet greens in water, eat the greens and mix the water with tomato juice and drink. Hot water dilutes bile, so drink hot water and cold pack the gall bladder. Use Biotics **Liquid Iodine** and **Beta-TCP** to thin the bile. Use coffee enemas to flush the liver.

This writer has seen patients begin to pass dozens of stones on the first day of the raw apple juice fast program. When using the recommended nutrition and stones are present, always use **Disodium Phosphate** (Standard Process Labs).

Clinical Nutrition Applications

Primary Supplemental

Beta-TCP (lowers viscosity of bile, activates gall bladder emptying)

Phosphatidylcholine (physiological detergent, cholagogue)

Hydrozyme (support for gastric and pancreatic enzymes)

Secondary Supplemental

Disodium Phosphate (liver stimulant)

Beta-Plus (bile salts, bile flow stimulant, use for patients with cholecystectomy)

Synergists

Super Phosphozyme Liquid (especially with nausea, helps relax muscle spasms in calcium deficiency)

Bio-GGG-B (enzymatic antispasmodic)

Somatovisceral Applications

Reflex Therapies

The popliteus muscle circuits are related to the gall bladder, check spine at T4L1 in stones, sand and gravel, T9RS in gall bladder inflammation, in nervous gall bladder look for right superior buttock line and adjust T9RS on the most painful point of the transverse process (all spinal adjustment are based upon positive AK challenge).

Check gall bladder against small intestine (NL points). Palpatory pressure pain up under the rib just medial to the xiphoid process indicates stones. Pain about three finger widths inferior to that indicates sand and gravel and pain just below the anterior midline of the lower border of the rib cage indicates gall bladder inflammation.

George Goodheart, DC described “the law of the Sphincters” that states that dilation of one sphincter dilates all sphincters. This writer discovered the Buccal Reflex which appears to be a sphincteric action in the cheek directly related to bowel function, especially in the constipated Patient.

Patients suspected of spasm of the sphincter of Oddi often show evidence of the need to eliminate the sign of the Buccal Reflex to help relax the sphincter of Oddi. If sphincters operate in a general fashion through the autonomic nervous system it is quite possible that flaccidity of the ICV (a loose ileocecal valve) may indicate flaccidity of the sphincter of Oddi and all other sphincters.