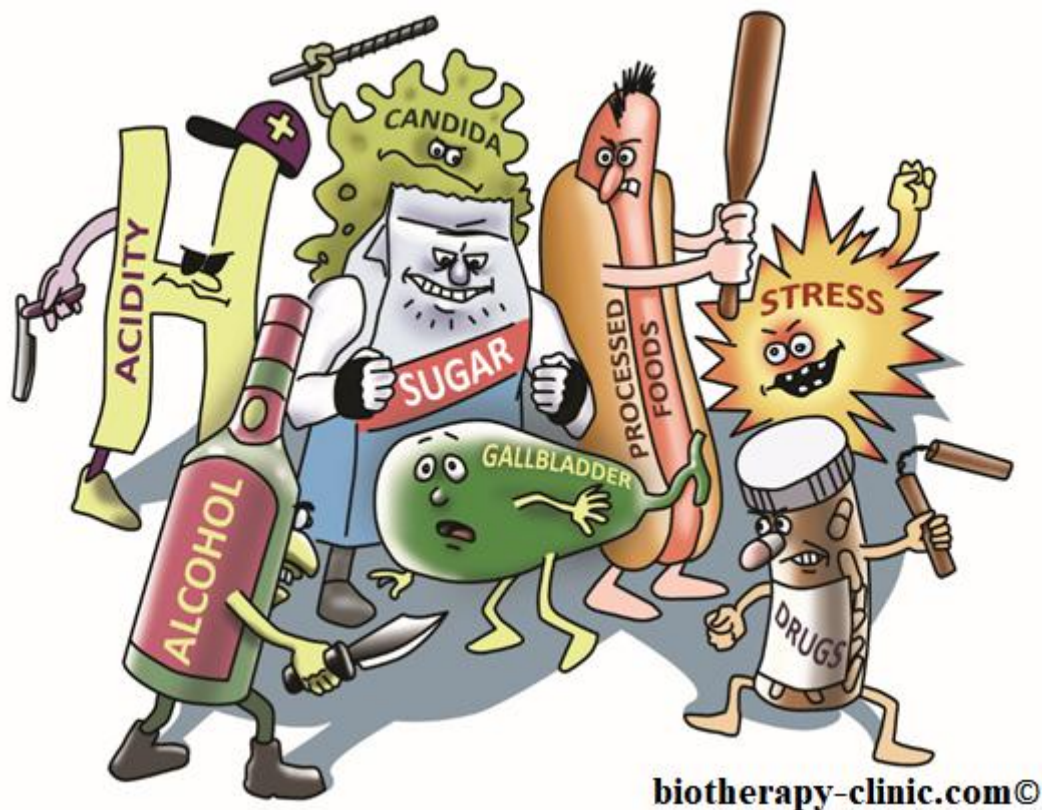


Chapter 2. What causes of the gallbladder and biliary disorders

By medical statistics, gallbladder and biliary disorders have greatly increased in the U.S. for the last 60 years. The problem is not heredity; it is too early to change our genes. It is an environmental problem, which is related to the modern lifestyle and eating habits. We look at gallbladder and biliary disorders the way that we know it today. We call it “food revolution, the disease of the civilization.” We cannot change many things in the modern world, but the understanding what is bad and what is good, may save our gallbladder and possibly our health and life. No question that the information below is also related proper digestion and health of an entire body. [1, 3, 4, 5, 6, 7]



There are various, interrelated reasons to the increase gallbladder and biliary disorders for the last decades. Knowing them may give the idea of how to prevent and heal these conditions. We will share with you the secret that even some medical practitioners do not know.

Whole body acidity is a culprit of the gallbladder and biliary disorders

The medical term for this global epidemic condition is chronic metabolic acidosis. Many nutritional researchers found that metabolic acidosis is a disease of the civilization and causes various problems such as osteoporosis, kidney stones, overweight and metabolic issues, dementia, aging, cancer and more. Over-acidity is very common today and can become a

dangerous condition that weakens all body systems. This condition forces the body to borrow alkaline minerals, including calcium, sodium, potassium, and magnesium from vital organs, muscles, and bones to neutralize the acid and remove it from the body. We described it in details in our EBook "*Healthy Pancreas, Healthy You*" and our scientific, medical articles.

How does the whole-body acidity harm the gallbladder and causes the biliary disorders?

- Precipitation of the very aggressive bile acids with irritation and inflammation of the gallbladder and spasm of the sphincter of Oddi [8]
- Formation of the gallstones [9]
- Premature activation of the pancreatic enzymes inside the pancreatic gland that create pancreatitis and sphincter of Oddi dysfunction [2]
- Decreasing amount of the bile salts in the small intestine. It badly influences in the fats' digestion and decreases the antimicrobial activity of bile leading to SIBO and Candida-yeast overgrowth [10]

Chronic acidity is created by environmental factors such as acidic lifestyle and acid-forming foods. We developed the idea about "heredity lifestyle." It means that generation by generation individuals have bad eating habits leading to whole body acidity. No wonder, that grandma, mother, and daughter have the same digestive problems and diseases.

Look what causes the whole-body acidity in modern people, and you realize why so many individuals have the problems with the gallbladder and biliary disorders and impaired digestion today. Metabolic acidosis is more common in our society primarily due to the Standard American Diet. This diet is too high in acid-producing foods like meat and cheese, white flour and rice, sugar, alcohol, dairy products, soft drinks, processed and refined vegetable oils, and too low in alkaline-producing foods like fresh vegetables. Chronic inflammation, infection, free radicals, smoking, some medications, stress, and a sedentary lifestyle tend to make the body more acid. [1]

Several doctors consider that American people are overmedicated. [11] Some of the medications may cause the acidification of the body's fluids. [12, 13, 14]

The impaired gallbladder motility, absent of normal contraction, spasms

The biliary system in your body is supposed to be like a trickling stream—but gallbladder of many modern people looks like the stagnant pond.

Everything inside our abdomen is moving. It is blood, lymph, saliva, bile, stomach, pancreatic and intestinal juices, etc. All chambers such as an esophagus, stomach, gallbladder, small and large intestines are contracted and relaxed. There is no stop. If gallbladder stops contractions, it causes the congestion of the bile, irritation, inflammation, precipitation of the bile stones.

As you know, the gallbladder function is teamwork that is closely related to the proper function of the other members of the digestive conveyor such as liver, pancreas, sphincter of Oddi, duodenum, even colon. Nervous branches and blood messengers-digestive hormones control this very complicated job. What factors can disrupt the proper timing contractions and relaxing of the gallbladder?

Stress. Everyday stress can seriously and badly influence on this regulation by increasing the level of the stress hormones. When the human being is stressed out its body averts blood supply

away from the digestive organs, which are non-essential to more critical such as heart, lung, and brain to prepare for the fight-or-flight response. It suppresses the release of bile from the liver. The gallbladder stores bile produced by the liver and then don't release this bile into the duodenum, where it assists in the digestion of fats.

When the gallbladder doesn't discharge bile for a long period of time, the retained bile concentrates and accumulates. It causes the gallbladder to enlarge. Stressful individuals are typically acidic. Acidic bile irritates the walls of the gallbladder, creating inflammation and gallstones. The gallbladder may be retaining bile for a few other reasons. Stress moves the blood supply away from the gallbladder and other digestive organs. Stress leads to spasms of the sphincter of Oddi. The stressed person is consuming food irregularly, so the trigger that gallbladder uses for when it will release bile is weak or absent.

Sedentary lifestyle and decreased physical activity make the gallbladder's muscles continuously sluggish and flabby. Then, the gallbladder walls can adhere to neighbor organs. On the other hand, any movements, gentle abdominal massage improve the gallbladder motility.

The lack of the natural stimulants for the gallbladder contractions

Fatty food is the natural stimulant of the gallbladder contractions. The wrong slogan "No fat, no cholesterol" had forced people to avoid butter, eggs, avocado, olive and coconut oil for the last 60 years. Lack of these healthy and natural products leads to congestion and gallstones. The poor eating way such as "eating on the go," eating while watching television or playing with the phone, irregular diets, "crash" dieting, fasting and wrong combinations of foods such as mixing fatty foods with starches and sugars disrupt healthy gallbladder's contractions.

Normal volume of the stomach acid is a natural stimulant for the releasing of bile and pancreatic juice. The conventional medicine focuses on "the high stomach acidity" and acid reflux by extensively using acid-suppressing drugs. It also suppresses the releasing bile and pancreatic juice with bicarbonate, enzymes. [16]

One of the enemies of the gallbladder is alcohol. **Alcohol** is severely toxic and acidity-formed substances, but everything depends on of "How long and how much." Heavy drinkers have the high risk of developing of alcoholic fatty liver, cirrhosis which encourages the stone formation and gallbladder inflammation. People with pancreatitis due to their gallstones can exacerbate their condition by drinking excessive amounts of alcohol.

Medications. Medications can destroy the proper gallbladder and the sphincter of Oddi work in various ways. For instance, many treatment substances, which cause mouth dryness, suppress the autonomic nervous system signal to gallbladder contractions. They create the "dryness" of the gallbladder, as well. Some water pills may lead to dehydration, loss of the minerals and consequently to severe gallbladder inflammation. [15] Some medications suppress the nervous system. A slow nervous system can cause a "sleepy" gallbladder, as well.

On the other hand, opioid painkillers may contract the gallbladder and sphincter of Oddi for a long time. Medical research showed that stomach acid suppressors such as omeprazole were associated with a decrease in gallbladder motility in 79% of patients. [16]

Hormonal and metabolic issues

Gallstone disease is a common disorder all over the world. Between the several risk factors for gallstone formation one of the most important is female gender. Rates of gallstones and subsequent gallbladder surgery are two to three times higher among women than men. "The Four

F's" refers to risk factors for gallstones in women: **F**emale, **F**orty, **F**atty, **F**ear. Pregnancy is also the primary risk factor for gallstone formation.

Female sex hormones are likely responsible for the increased risk. Estrogen enhances the secretion of cholesterol, causing supersaturation of bile cholesterol and the formation of cholesterol gallstones. Thus, hormone replacement therapy in postmenopausal women and oral contraceptives has also been reported to be associated with an increased risk of developing gallstones. [21]

The life shows that the gallbladder and biliary disorders strike women with weight issues mainly at the time of the changes of the hormonal balance such as puberty, pregnancy, and menopause.

The medical studies confirmed that the prevalence of gallstone disease was found to be higher in obese, belly fat, fatty liver individuals, and subjects with high blood cholesterol or triglycerides. This condition is a part of the metabolic syndrome with the insulin resistance.

The epidemic of obesity and the metabolic syndrome are very frequently present in the industrialized world. The metabolic syndrome is the cluster of the symptoms such as overweight, belly fat, high blood pressure, high cholesterol, triglycerides, and sugar in the blood. We can add here the fatty liver and pancreas. What happens here? "Low fat, low cholesterol" diet pushes people to avoid fats and eating a lot of carbs such as sugars, sodas, white flour and rice with producing much glucose. If foods are full of the carbohydrates for a long time, pancreas pumps a lot of insulin, but cells don't listen to a signal of insulin. The blood level of this hormone goes up causing the insulin resistance. Insulin is a storage hormone. Too much insulin leads to conversion of the carbohydrates to fats, cholesterol, and triglycerides. In turn, it causes an acidic condition, type II diabetes, high blood pressure, spasms of the vessels, cardiovascular disorders.

For the last 60 years, doctors and researchers found that the metabolic acidosis induces insulin resistance. And insulin resistance has been currently positioned at the hub of the digestive and metabolic disorders leading to heart attack, stroke, diabetes, chronic pancreatitis, dementia, even cancer, and numerous gastrointestinal disorders. [22]

But what it does for the digestive system and partially for the gallbladder? High cholesterol and triglycerides in the blood mean the high amount of them in the liver, pancreas, and bile, and precipitation of the cholesterol gallstones.

There are medical studies, which found the correlation between lower thyroid function and gallstone disease. It is known that low thyroid means lower metabolism with an overweight issue. Subsequently, it causes a change in the composition of the bile, low bile flow. Low thyroid function leads to the Sphincter of Oddi dysfunction and its spasm. All of these can create inflammation, pancreatitis and gallstone formation. [17, 18]

Parasites

The Centers for Disease Control and Prevention (CDC) wrote "Most people think of parasitic diseases occurring in poor and developing countries, something they might pick up on an overseas trip. However, parasitic infections still occur in the United States, and in some cases, affect millions of people. Often, they can go unnoticed, with few symptoms. But many times, these infections cause serious illnesses, including seizures, blindness, heart failure, and even death. Anyone, regardless of race or economic status, can become infected, although minorities, immigrants, and people living in poor or disadvantaged communities appear to be most at risk." [19]

Giardia, Opisthorchis, and flukes are common parasites, which reside in the gallbladder and bile ducts, especially in small children causing inflammation and pigment (dark) gallstones.

Dysbiosis (Candida-yeast overgrowth, SIBO)

The human digestive system is the harbor for the myriad of microorganisms. Some of them are called as beneficial intestinal bacteria because they promote digestion, support the immunity; control the overgrowth of the opportunistic infection. Dysbiosis is a medical term for situation when the beneficial bacteria are gone and opportunistic microorganisms such as harmful bacteria, yeast and parasites take over the gastrointestinal tract. So, the Candida-yeast overgrowth and SIBO-small intestine bacterial overgrowth occur. Besides, dysbiosis creates the chaos to complete digestion; it also badly influences on the function of the gallbladder and sphincter of Oddi leading to gallstones and inflammation. [20]

Deficiency of the vital nutrients

The Standard American Diet (SAD) is the typical eating habits of the majority of Americans. It is high in meat, animal fat, dairy, sodas, sugar as well as refined, processed, and junk foods. It is full of the “empty” calories and deficient in the vital nutrients such as vitamins, minerals, trace elements, essential fatty acids, bile salts, natural digestive enzymes, bioflavonoids, etc. This diet makes human being overweight, prone to the chronic diseases. It also causes the severe body acidity, changes the composition of bile leading to gallstones and dysbiosis.

Genetic problems

You were told that you have gallstones because your mother and grandmother had it and it is your heredity problem connecting to your genes. It is not entirely correct. Human genes do not change so fast. It may be likely “the heredity of the lifestyle” when Grandmother taught her daughter how to prepare and eat the foods. And then, in its turn, she teaches her daughter to eat in the same way. Real genetic diseases of the biliary system are very seldom, but an overwhelming majority of gallbladder problems are related to the lifestyle and eating habits.

The most individuals do not pay attention to the digestion symptoms considering they are normal. Only RUQ pain or gallbladder attack brings them to the ER in hospital or doctors.

The symptomatic treatment just masks the clinical picture and do not focus on the roots of the problems. Knowing the reasons for the gallbladder’s issues may give you a clue to change something in your life. It can save your digestion, save your gallbladder and, in some cases, save your life.

Interesting facts at a glance:

- **The gallbladder and biliary disorders have significantly increased in the U.S. for the last 60 years.**
- **They are not genetic, but the environmental problems including the modern lifestyle, eating habits, using alcohol, some medications.**
- **Whole body acidity is a culprit of the gallbladder and biliary disorders.**
- **Whole body acidity-Chronic Metabolic Acidosis leads to various hormonal and metabolic problems such as weight issue, diabetes, fatty liver and pancreas, high level of the blood cholesterol and triglycerides, gallstones, etc.**
- **Stress, sedentary lifestyle upset the normal motility of the gallbladder and sphincter of Oddi.**

- **Hormonal changes, especially women hormones, lower thyroid, stress hormones severely disrupt the function of a gallbladder and the sphincter of Oddi.**
- **Some conventional medications, which affect the nervous system, water pills, painkillers, stomach acid suppressors can cause the gallbladder disorders.**
- **Parasites, dysbiosis, and deficiency of the vital nutrients also severely influence on the digestive system and gallbladder particularly.**
- **Heredity of the lifestyle and eating habits, but not the genes, may explain why the gallbladder problems strike some families so often.**

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