



Life begins in the Gut!

Over 2000 years ago, Hippocrates, a great physician considered one of the most outstanding figures in medicine, said,

"All disease begins in the gut."

Now, 2000 years later modern medicine has proven him right. But, what if you flipped this statement to be "Life begins in the gut"? The "gut" and its health are not only critical for digestion but for life itself. Optimal nutrition begins and ends with healthy digestion.

Having a healthy digestive system is critical for all of us regardless of age. If you consume the best food and supplements and have poor gut health, you would not be able to glean the health benefits of the nutritious components fully. Improper nutrient absorption can affect every system in the body including the heart, brain, muscles, blood, kidney, and skin. The gut is responsible for these critical functions in your body:

- Digestion- Breaking down food into micro-particles
- Absorption- Converting nutrients into absorbable forms
- Elimination- Removing what's left over/toxins
- Immunity- Protect from foreign microbes either in or on your foods
 - > An estimated 70 percent of your immune function lies within or begins in your digestive tract
- · Poor digestion has a direct link to decreased energy
- Food allergies and sensitivities can be caused by poor digestion: Modern
 medicine realizes that disorders that impact every system in your body
 have a potential link to this area.
- Many inflammatory diseases have a connection to poor digestion and toxin accumulation in the body. Arthritis as well as cardiovascular, immune, ocular, structural (joints as well as skin, bone, and muscle) nervous system and more.
- Without proper digestion, you will become deficient in essential nutrients that are responsible for the health of every cell in the body.

Wouldn't it be great if there were something you could do to help improve the overall health of your gut naturally? There is such a nutritional ingredient called SBI (serum-derived bovine immunoglobulin). This information will focus on the many areas in which SBI has scientifically shown to improve gut health and support other vital areas of health and wellbeing for your body.

What is a Healthy Gut?

We need to understand more about the areas in which SBI works. To understand how to manage, treat or prevent any illness it is critical to understand what the underlying causes are and how that part or parts of the body interrelate. This couldn't be truer with regards to SBI.

What makes up your digestive System?

My philosophy of being healthy doesn't have to be complicated, here it is in a nutshell: Mouth (everything in it-tongue, teeth, salivary glands), Esophagus, Stomach, Small Intestine, Liver and Gallbladder, Large intestine and rectum. Each one of these "parts" plays a role in your digestive system being healthy.

What negatively impacts your digestive system?

There are many factors that impact digestion:

- Stress
- Diet
- Activity levels
- Fluids (good or bad and volumes)
- Travel
- Medications
- Hormone issues
- Food Allergies

This list is endless, but these are the top areas on which to focus. For simplicity, I will focus on the areas that I can help you change. If you are on a medication, have issues with stress, hormone imbalances, travel, etc. you may need to address those with your health care provider in addition to following my foundational health tips below.

Your digestive system is one of the more critical systems in your body that is often overlooked in most health care programs. I believe the digestive system is the foundation of getting healthy and staying healthy, i.e. life begins in the gut.

Inside the numbers on Gut Health in America:

- More than 60-70 million Americans are affected by digestive diseases
- Gastrointestinal disorders chronically plague more than 95 million Americans.

• Two of the top five most widely physician recommended drugs in this country are for digestive disorders.

 Digestive related problems cost Americans more than \$100 billion annually

 Colorectal cancer is the second leading cause of cancer deaths behind lung cancer.

Do those numbers get your attention? Considering these numbers and what digestion does for the body, you can see why we need to focus on either fixing our messed up digestive system or keeping it fine-tuned.

The last bullet in the introduction alone is perhaps the most critical aspect of why we need to focus in on taking care of our digestive system, i.e. gut daily and not just when something is wrong with it. Here it is: "Without proper digestion, you will become deficient in key nutrients that are responsible for the health of every cell in the body."

Think about it, if you become deficient in any one nutrient it will lead to disease. I realize this is a bold statement, but it is true. We all understand that vitamin D deficiency leads to Rickets, but we now know that it leads to other conditions such as osteoporosis, cancer, heart disease and more. We learned about scurvy as children and how the sailors' centuries ago would develop the condition from lack of Vitamin C. The same principle applies to every vitamin, mineral, amino acid, water, fat, protein and carbohydrate in our diet (or not in our diet). If you can't break down the nutrients in your foods and/or your supplements, convert some of these nutrients into the usable or absorbable form, and you can't absorb these nutrients then you will develop one or more health challenges over time. This condition could be relatively benign to you (decreased vision, joint discomfort, etc.) or life-threatening (Cancer, Heart Disease, Diabetes, etc.)

You Need a Healthy Gut to:

There are many benefits of a healthy digestive system:

- Improves the Immune System
 - > Supports overall Immune function
 - > Protects against harmful bacteria, viral, yeast or fungi growth
- Improved Cardiovascular Health
 - > Lower Cholesterol
- Improves nutrient digestion and reduces digestive tract disorders
 - > Protects against Stomach Ulcers
 - > Reduces constipation
 - > Helps reduce the impact of Crohn's disease
 - > Helps reduce the effects of Ulcerative colitis
 - > Curbs the effects of GERD/Acid Reflux
 - > Helps reduce Colic
 - > Reduces IBS
 - > Helps reduce Diarrhea
- Improves skin appearance
 - > Eczema
 - > Acne
 - > Psoriasis
- Decreases food allergies
 - > Food allergies are linked to conditions such as:
 - Arthritis
 - Attention Deficit Disorder/Attention Deficit Hyperactive Disorder
 - Depression
 - Hay Fever
 - Asthma

Just by reviewing the lists above, we can see why maintaining a healthy gut is essential. Most people focus on the digestive issues only when discussing gut health such as heartburn, acid reflux, diarrhea, constipation, IBS, IBD, etc.

yet now you can see that it plays a significant role in your overall health and wellbeing. In this informational booklet we will discuss the benefits that Immunolin(SBI) can have on supporting and maintaining gut health, immune health, and overall wellbeing.

What Is SBI?

SBI is a highly digestible protein dietary supplement derived from bovine serum that is particularly high in immunoglobulins. Just as consumers use colostrum supplements originating from cattle, SBI comes from cattle as well. SBI is manufactured using a tightly-controlled and highly reproducible process at an FDA-inspected facility. SBI is particularly rich in the immunoglobulins IgG, IgM, and IgA. SBI is also high in other naturally occurring beneficial components such as Transferrin, Cytokines, Interleukins, Interferons, Lymphokines and Albumin. In addition, it is rich in growth factors.

Immunoglobulins Found in SBI

Immunoglobulins are also known as antibodies. They are made by the body's immune system in response to a foreign substance called an antigen such as a bacterium, viruses, fungus, animal dander, or cancer cells. These antibodies (immunoglobulins) attach to the foreign substances, i.e. bacteria, virus, abnormal cells, etc. so the immune system can destroy them. When an immunoglobulin attaches to the antigen, it renders the antigen inactive, preventing the antigen from finding its target. For example, if you have a virus cell floating around in your body and it becomes attached to the right immunoglobulin (antibody), the virus-cell will be unable to attach itself to a healthy cell, which causes infection. Another great example is an immunoglobulin (antibody) attaching itself to a toxin, which prevents that toxin from being absorbed into the bloodstream.

In both instances, the antibody has effectively neutralized the foreign invader. Immunoglobulins can also tag these same foreign substances (virus, bacteria, toxin, etc.) with a coating so that it can be recognized as foreign so other immune cells will recognize it and destroy it. In this case, it is like marking the "bad guys" with dye so the police can catch them. In the case of our immune system though that foreign entity is marked and then ingested or destroyed by immune cells.

Both mechanisms are essential for a properly functioning immune system. Unlike antibiotics, immunoglobulins also allow the immune system to accurately recognize foreign invaders while ignoring good bacteria that are part of the body's natural environment.

Why is this important?



A person experiencing decreased immune function is at higher risk of developing frequent colds and flu. With a compromised immune system, initially mild infections may become more serious. A person may be born with an immune system that produces low levels of antibodies in general, or the immune system may generate low levels of antibodies in response to certain diseases too.

Types of Immunoglobulins

Immunoglobulins are plentiful in the human body. One-third of the proteins found in blood are immunoglobulins. The body's mucous membranes (the protective barrier that runs from the tip of the sinuses to the bottom of the intestinal tract), tears, lungs and other orifices all have immunoglobulins coating them. *This is particularly important in the digestive system*. All that enters the body through the mouth goes into the digestive system, so it is a major site of invasion by viruses, bacteria, and other foreign invaders. While the body has many defenses, immunoglobulins are a critical component of the defense network. Immunoglobulins are the specific protein used by the body to "flush" foreign organisms from the intestinal tract.

There are five major types of immunoglobulins (antibodies) in the body.

- IgG antibodies are found in all body fluids, and is the most common antibody (75% to 80%) of all the antibodies in the body. IgG antibodies are critical in fighting bacterial and viral infections. IgG antibodies protect you against infection by "remembering" which germs you've been exposed to before. If those germs come back, your immune system knows to attack them. IgG antibodies are the only type of antibody that can cross the placenta in a pregnant woman to help protect her baby.
- IgA antibodies are detected in areas of the body with a mucous membrane such the nose, breathing passages, digestive tract, ears, eyes, and vagina. IgA antibodies protect body surfaces that are exposed to outside foreign substances. IgG is also found in saliva, tears, and blood. About 10% to 15% of the antibodies present in the body are IgA antibodies.

- IgM antibodies are found in blood and lymph fluid and are the first type of antibody made in response to an infection. They also stimulate other immune system cells to destroy foreign substances. Your body produces IgM antibodies when you're first infected with new bacteria or other germs.

 They're your body's first line of defense against infections. When your body senses an invader, your IgM level will rise for a short time. It will then begin to drop as your IgG level increases to protect you long-term.
- IgE antibodies are found in the lungs, skin, and mucous membranes. Your body makes IgE antibodies when it overreacts to substances that aren't harmful, such as pollen or pet dander. They are involved in allergic reactions to milk, some medicines, and some poisons. IgE antibody levels are often high in people with allergies.
- **IgD** antibodies are found in small amounts in the tissues that line the belly or chest. How they work is still not clear.

The levels of each type of antibody can give your doctor information about the cause of a medical problem.

Research studies provide evidence that the diversity of immunoglobulins and proteins found in SBI are safe and help improve digestive health and nutritional status by decreasing immune activation through mechanisms that involve antigen binding and strengthening gut barrier function.

Other goodies found in SBI

Transferrin: Transferrin is a term that describes a family of iron-binding protein with antiviral, antibacterial and anti-inflammatory properties. Transferrin has been utilized in the treatment of such diseases as cancer, HIV, herpes, chronic fatigue, candida albicans, and other infections.

Cytokines: Cytokines are small protein molecules that are the core of communication between immune system cells, and between immune cells and cells belonging to other tissue types. Poor cellular communication leads to abnormal function or autoimmune conditions. Cytokine modulation may offer tremendous benefits to individuals affected by immune deficiencies, chronic diarrhea, and inflammatory disease.

Albumin: Albumin is one of the most abundant proteins found in the blood. Albumin maintains the fluid balance in the body. It helps prevent the blood vessels from leaking too much. Albumin also has a role in repairing tissue and helping the body grow while transporting vital hormones and nutrients around.

Insulin-like Growth Factor I and II: (IGF-I & IGF-II): IGF I & II affect how the body uses fat, protein, and sugar. IGF-I is one of the only substances known to stimulate the repair and growth of DNA and RNA, making it one of the most powerful anti-aging substances. IGF-I has been clinically proven to help increase lean muscle mass and may help regulate blood sugar and cholesterol levels.

SBI vs. Colostrum and IgY supplements

Most people have heard of colostrum and its use for both immune and gut health, but most have not heard of IgY. IgY is being used as a supplement for gut health by promoting the destruction of harmful bacteria in the intestinal tract. Let's break it down so you can be an informed consumer. First, let's discuss the source of each ingredient. SBI was discussed earlier so we won't get into it here and as for colostrum it is obtained from cows as part of their first milk and IgY is produced from eggs.

When comparing all three, SBI would be considered a *next-generation* product because it possesses numerous advantages over the other two ingredients. These benefits include both nutritionally and with the number of other beneficial components mentioned above. SBI has three times more IgG and total immunoglobulin compounds as found in colostrum products, and there is no IgG found in IgY products. Keep in mind that IgG antibodies are considered the most important antibodies for fighting bacterial and viral infections. Additionally, the iron-binding capacity of SBI can function to reduce free iron in the gastrointestinal tract through iron-binding by transferrin and may inhibit the growth of disease-causing bacteria.

Additionally, SBI is non-dairy (no lactose, casein, beta-lactoglobulin, or butterfat) and egg free. These substances can trigger an adverse immune response in those with allergies or sensitivities to either dairy or eggs. In summary, SBI contains more nutritional and physiologic components to aid the body in immune and digestive support than both IgY and colostrum with the added benefit of having less impact on allergies and sensitivities.

Areas Where SBI Shines on Health

There are three key areas where SBI use shines: Gut Health, Immune Health, and Sports/Active Lifestyle Health. Since this book is titled "Life begins in the Gut," let's start by discussing the many benefits of SBI on digestive health. There is a vicious cycle that occurs in the gut that is a leading cause of many health-related problems. It goes something like this:

- 1. Something foreign enters the digestive system and triggers or starts the negative reaction in the Gut. These foreign things can be an antigen (virus, bacteria, fungus, yeast, cancer cell, etc.), environmental toxins, toxins produced by the body and or by yeast and bacteria.
- 2. These triggers then lead to changes in your intestinal lining, intestinal inflammation, and gut barrier dysfunction. In short, the lining of your digestive system especially in the small and large intestine is sort of like a screen in the window of your home. The screen is designed to let the fresh air in, toxic air out (smoke from cooking, smells, etc.) and keep the bugs (mosquitos, flies, etc.) out of your house.
 - In the body though, this screen is the lining of your Gut and is designed to let nutrients and water into the bloodstream and toxins out of the bloodstream. The minute we have a breach (hole in the screen), then things that are supposed to be kept out can get in, and that leads to problems. Who wants more insects in their home? Same holds true with the digestive system.
- 3. The next step in this negative process is when these foreign invaders, i.e. protein molecules, viruses, bacteria, toxins, etc. get into the body as mentioned in my example in step 2 above.
- 4. The last effect of this negative cycle is the damage that is done to the body by those foreign invaders and the body's reaction to them. This will often trigger allergies, auto-immune diseases, diarrhea, nutrient depletions (malabsorption), water malabsorption, and most of the conditions mentioned at the beginning of this book on what may happen with a faulty gut or digestive system. Nothing good comes from this.

This cycle or wheel can keep spinning and spinning until people develop poor health and diseases.

SBI is beneficial in helping the body not get to step one above. Research on the mechanism of action of SBI to help maintain gut barrier function by binding to most of those antigens (bacteria, virus and fungal) that trigger the cascading cycle of destruction of the gut lining. This mechanism involves the immunoglobulin attachment to potentially toxic bacterial antigens that generally are found in the digestive tract due to the breakdown of bacteria (toxins) or by consuming contaminated food/water. The binding or attaching to these antigens prevents them from passing through the digestive lining which helps reduce the release of more inflammatory chemicals by the body. Simply put, this process of attaching to the bad guys helps decrease the chance of these toxins and foreign invaders into the bloodstream to wreak havoc in the body.

In short, SBI binds to inflammatory antigens, helps maintain gut immune balance, support the gut barrier function (screen) and improve nutrient and water utilization. This is a win, win, win, win situation for gut health and the health of your whole body.

Irritable Bowel Syndrome (IBS) with Diarrhea

Irritable Bowel Syndrome (IBS) is a functional disorder. This means that the bowel does not work correctly. With IBS, the nerves and muscles in the intestine are extra-sensitive. For example, the muscles may contract too much when you eat. These contractions can cause cramping and diarrhea during or shortly after a meal. Or the nerves can be overly sensitive to the stretching of the bowel (because of gas, for example). Cramping or pain can result. The main symptoms of IBS are:

- Abdominal pain, cramping or bloating that is typically relieved or partially relieved by passing a bowel movement
- Excess gas
- Diarrhea or constipation sometimes alternating bouts of diarrhea and constipation
- Mucus in the stool

According to the International Foundation for Functional Gastrointestinal Disorders website, approximately 10-15% of people worldwide have IBS. Among patients, about 40% of people have mild IBS, 35% moderate IBS, and 25% severe IBS. Many people don't recognize IBS symptoms. IBS is one of the most common disorders seen by physicians. They also estimate both direct

medical expenses and indirect costs associated with loss of productivity and work absenteeism to be \$21 billion or more annually.

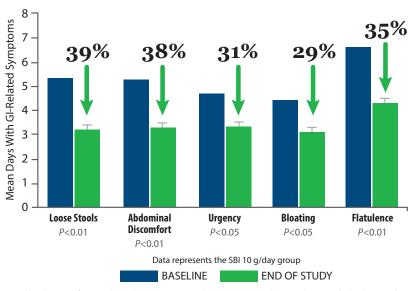
The symptoms of IBS can cause discomfort ranging from that of a nuisance to genuinely distressing. The most severe symptoms leave victims unable to participate fully in life and work. Promoting good intestinal health can help to lessen the occurrence and severity of symptoms and allow more normal life. SBI has been shown to help improve and maintain overall digestive health.

The proof is in the Research

Chart 1 below shows the improvements in symptoms when compared to their baseline. For patients taking SBI over a 6-week period. The patients taking placebo showed no improvements over their baseline. Notice the impressive effect SBI can have on bowl function and GI comfort.

Chart 1

Decrease in Mean Number of Days With Global IBS-D Symptoms*



Wilson et al. Evaluation of serum-derived bovine immunoglobulin protein isolate in subjects with diarrhea-predominant irritable bowel syndrome. Clin Med Insights: Gastroenterol. 2013; 6:49-60

Chart 1 is just the tip of the iceberg when it comes to the amount of successful research involving SBI and IBS-D. There are a combined 6 randomized controlled trials, open-label studies, retrospective studies and patient surveys involving almost 1500 people showing the benefits of SBI with people suffering from gastrointestinal conditions including IBS-D.

Inflammatory Bowel Disease (IBD) with Diarrhea

Inflammatory bowel disease is an umbrella term for several different types of maladies that cause inflammation in the small intestine and colon. The two most commonly diagnosed are Crohn's disease and ulcerative colitis. Ulcerative colitis is a disease that causes inflammation and ulcers in the lining of the large intestine. Crohn's disease differs from ulcerative colitis because it causes inflammation deeper within the intestinal wall, usually in the small intestine where it joins the colon.

The symptoms and severity of IBD vary among patients. Symptoms may include:

- · abdominal cramps or pain
- diarrhea, sometimes with blood in the stool (bowel movements)
- fever
- weight loss

Patients with mild or no symptoms may not need treatment. Prolonged inflammation can lead to many more severe health issues, decreased nutrient absorption and toxin removal. No medication can cure IBDs. Patients with an IBD can experience periods of remission (reduced inflammation) lasting months to years during which their symptoms improve. Remissions usually occur because of treatment with medications or surgery, but occasionally they occur spontaneously, that is, without any treatment.

Since there are no cures for IBD, the goals of treatment are to send IBD into remission and improve the quality of life. Germs activate the immune system and trigger an inflammatory response that can cause flare-ups in IBD symptoms. The natural immunoglobulins in SBI may help to neutralize these pathogens and reduce production of this inflammatory response. The reduction of inflammation and the impact on potentially reducing an autoimmune response plays a crucial role in the health of those with IBD.

The proof is in the Research for IBD

Just as with IBS-D above, numerous studies evaluated the benefits of SBI in those with varying levels of IBD. In all, 11 studies involving almost 600-participants in total have provided the data showing that supplementing with SBI has a positive impact on those suffering from IBD.

Other Digestive Disorders and SBI's Success

HIV-and Infectious Associated Enteropathy with Chronic Diarrhea:

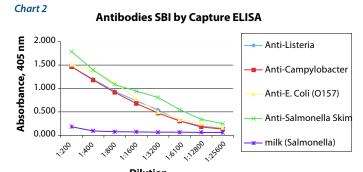
Enteropathy is a disease of the intestines, usually the small intestine. Both HIV and other infections can lead to chronic diarrhea. Thought to be due to direct or indirect effects of HIV on the digestive lining.

SBI may help manage the GI symptoms associated with conditions in which chronic diarrhea is present. The same holds here. There have been two trials with a combined 117-patients with HIV-associated enteropathy with chronic diarrhea completed. Results show a significant improvement in these patients.

SBI and Immune Health

The immune system is the body's means of protecting us from foreign organisms or substances such as bacteria, yeast, fungus, toxins, and allergens. Because people encounter these things every moment of each day, it is essential to maintain a healthy immune system. In addition, common everyday psychological and physical factors such as stress, poor nutrition, dieting, travel, and strenuous athletic training may tax a person's immune system and cause it to function at less than optimal levels.

Since immune studies are challenging to perform on humans due to health risks, the majority of studies completed are done on animals. Immunoglobulins like those found in SBI have used in young animals for several decades now. The use of immunoglobulins has improved not only immune function but also growth. A sick animal doesn't thrive as a healthy one will. As mentioned previously in this book when discussing the beneficial components of SBI, i.e. immunoglobulins we can see why SBI assists the immune system. By reducing the burden on the immune system and the digestive lining, we also improve the nutrients needed to support the function of the immune system. SBI has several antibodies already produced to help the fight against some of nature's



more significant infections. See Chart 2 for the details of SBI vs. E. coli, Listeria, Campylobacter and Salmonella.

SBI and Sports/Active Lifestyle

Many consumers may look at SBI as another natural protein source since it is an excellent source of protein (amino acids). This is a valid thought and can be part of an athlete's daily protein benefits. In addition to being another

great protein source, SBI's impact on immune and

digestive health bodes well for athletes and active people. For those who are involved

in more intensive or lengthy activities,

the immune system will become

suppressed and increase the risk of becoming ill. It has been shown, that extended aerobic exercise increases free radicals in the body. Without supplementing with antioxidants, this free radical build up can lead to more severe health issues-even if the person is in excellent "physical" shape. This places athletes at an increased risk of succumbing to an infectious illness during this time.

SBI serves as a supply of both immune enhancing and growth promoting proteins that provide a promising addition to the

nutrition regimen of fitness enthusiasts. SBI has also

shown to help increase the transport of amino acids throughout the body, thus assisting in regenerating these tissues after exercise.

SBI would be an excellent addition to any pre-workout supplementation, intra-workout branch chain amino acid (BCAA) formulas and any post-workout protein supplementation. SBI mixes well in water or other sport-beverages of choice.

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Other Common Questions You May Have about SBI

Will SBI harm my good bacteria or my probiotic supplement?

The short answer is no. Even though the immunoglobulins in SBI have been shown to bind to a variety of bacterial antigens, like the those that naturally occur in your digestive tract, studies show that SBI does not adversely affect the growth of probiotic or commonly found good bacteria in your gut. In fact, immunoglobulins that are specific to good bacteria likely provide a health benefit by supporting homeostasis and supporting gut your immune system. We have good and bad bacteria in our gut. Probiotics are a great way to add more good bacteria to help balance the microbiome. The challenge is, probiotics are often in competition with bad bacteria, especially when you gut is out of balance. Since SBI only targets the bad bacteria, it could be assumed that probiotics would have less competition from bad bacteria when colonizing in the gut.

How safe is SBI?

Numerous animal and human studies have been conducted to provide evidence of the safety of SBI. Over 250 people have been exposed to SBI in documented clinical studies for a minimum of 1 day to a maximum of 24 months with doses ranging from 5 to 20 grams per day. Additionally, there are no known side effects associated with consumption of SBI.

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Putting a Bow on It

As stated in the introduction of this book, over 2000 years ago, Hippocrates said,

"All disease begins in the gut."

But, in our case, we flipped his statement to be

"Life begins in the gut."

The "gut" and its health are not only critical for digestion but for life itself. Optimal nutrition begins and ends with a healthy gut.

As you can see, the discovery and research done with SBI build a strong case for adding it to your daily supplement program. Whether you have immediate needs due to gut health problems, immune challenges or even active lifestyle/sports needs OR you are the "Pillar of Health," SBI can provide your body with the added help it needs. You are keeping in mind the whole time that the health of your Gut is the beginning of life or the end of it somewhere down the road.





Dave Foreman RPh, ND

David is a pharmacist, author and media personality known to consumers internationally as, "The Herbal Pharmacist." His background in both pharmacy and natural medicine put Foreman in an elite class of health experts who can teach integrative medicine practices. Foreman's focus is to help consumers achieve the health and vitality they seek by teaching his 4-Pillars of Health: Diet, Exercise, Spirituality and Supplements. Foreman is a graduate of the University of South Carolina College of Pharmacy, currently serves on Organic & Natural Health

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