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Riordan Clinic

Health Hunters Newsletter

A service of the Riordan Clinic, cofounded in 1975 by Olive W. Garvey and Hugh D. Riordan. The Riordan Clinic is a not-for-profit 501(c)(3) corporation. Go to www.riordanclinic.org to make your tax deductible donation today or visit us at 3100 N. Hillside, Wichita, KS 67219.

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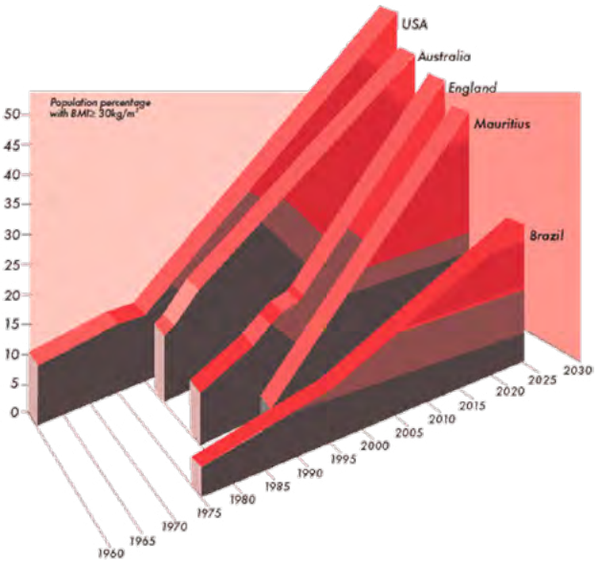
The Thyroid Link to Potbelly Syndrome

by Ron Hunninghake, MD



Potbelly Syndrome (PBS) evokes a rather benign, almost humorous, image of someone who has simply overdone the cheese cake or beer. A 'little gut' can't hurt much…can it?

Perhaps a more sinister name such as 'Potbelly Plague' would better convey the urgency of what the World Health Organization is now recognizing as "the global epidemic of obesity."

In America alone, 68% of us are afflicted. Look around: almost all of our friends, family, coworkers and neighbors carry some degree of a potbelly. Strangely, having a potbelly has become a new norm. Many of my thin patients have actually been accused of being sick or anorexic!

The potbelly is not due to subcutaneous fat that can be "crunched" away with intense calisthenics. This is persistent visceral fat situated deep in the abdomen, surrounding the visceral organs. All manner of diets, contraptions, calisthenics, weight training, liposuction, and total body makeovers will not exorcise this demonic GUT! Numerous studies have repeatedly shown that a potbelly "loss" is inexorably followed by potbelly "regain" in over 90% of cases. The latest U.S. statistics bear this out: frankly obese people now outnumber overweight people!

The problem with potbelly is not just a fat belly. With it typically comes a rising blood pressure, high cholesterol and lipids, blood sugar problems, inflammation and pain, fatigue, orthopedic issues, compromised immunity, reflux esophagitis, depression, sleep disruption, sleep apnea, CPAP machines, irritable bowel

The Thyroid Link to Potbelly Syndrome continues on page 2...

Letter from the Editor:

by Amanda Hawkinson

Obesity has swept our country like a plague. More and more people are becoming a part of this epidemic. What starts out as a couple of pounds here or there, adds up quickly, thereby, making the United States the most obese country in the world. Furthermore, Kansas is currently ranked 16th in the nation, with a 29% obese adult population (18th for a 16.2% obese child population).

This issue of the *Health Hunters Newsletter* focuses on the relationship of thyroid health and Potbelly Syndrome. There is no simple quick-fix for Potbelly Syndrome, but by learning more about the thyroid and the role it plays in weight gain and by understanding that the thyroid is one of many factors of weight gain, we can recognize the need for Self Care Reform.

We need to understand that each of us is important and deserves a long, healthy life. It is time for us to become more informed, to question diagnosis and to enjoy the outcome.

As always, thank you for reading.

Amanda Hawkinson
Editor
newseditor@riordanclinic.org

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The Thyroid Link to Potbelly Syndrome continued from page 1...

issues, higher cancer rates, type 2 diabetes, polypharmacy side effects, lost work days, interpersonal stress, increasing financial burdens and a pervasive loss of self-esteem and self-acceptance.

Potbelly Syndrome, which begins innocently as "just a few extra pounds," will slowly mushroom into the daunting prospect of life-long disease, expensive debilitation, and an increased risk of premature death. With over 100 million of Americans PBS-afflicted, medical experts are predicting that our current sickness care system will soon be swamped with the pervasive devastation of this disease.

In a previous issue of the *Health Hunters Newsletter*, I reviewed Mr. Russell Farris and Dr. Per Marin's intriguing book: The Potbelly Syndrome—How Common Germs Cause Obesity, Diabetes, and Heart Disease. Their thesis is direct and simple: could Potbelly Syndrome be triggered and sustained by an invading germ?

In contrast to the medieval images of plague with people literally dying in the streets, PBS, may start simply as a bad cold, a persistent cough, or even a moderate set of flu-like symptoms that are slow to clear. Several rounds of various antibiotics rarely solve the lingering problem.

Farris and Marin believe that the infecting germ targets weakened hosts. Chronic stress, lack of quality sleep, poor diet, toxic overload, and concurrent stealth infections such as Cytomegalovirus (CMV) compromise the immune system. Although germs in general seek suitable human habitats such as this, Farris and Marin argue in favor of one germ in particular as the root cause of the "potbelly plague."

Without going into the details of their book, they point to the infectious culprit as Chlamydophila pneumoniae—which is abbreviated CPN. CPN belongs to a class of germs sometimes referred to as middle-path germs. There are germs that kill the host or those that coexist in a symbiotic relationship such as the friendly flora of the intestinal tract. Middle-path germs exist somewhere between these two extremes. They are smart enough to not immediately kill the host, but their tendency is to progressively infect cells, slowly causing cellular dysfunction and disease, thereby insidiously robbing the host of its inherent health.

Indeed, medical research has connected CPN to a long list of health-robbing conditions that slowly develop in the unsuspecting host.

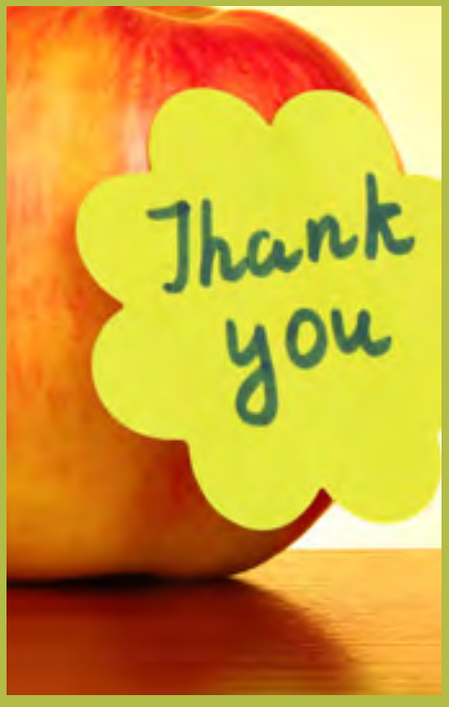
Alzheimer's disease	Lung cancer	Sinusitis	Prostate cancer
Arthritis	Prediabetes	Endocarditis	Iritis
Asthma	Conjunctivitis	Vasculitis	Encephalitis
Bronchitis	Giant cell arteritis	Syndrome X	Multiple Sclerosis
COPD (emphysema)	Hepatitis	Myocarditis	Prostatic hyperplasia
Diabetes	Hypertension	Obesity	Diabetes
Otitis	Immune suppression	Pharyngitis	
Prostatitis	Interstitial cystitis	Pneumonia	
Meningitis	Kidney failure	Gingivitis	

The Thyroid Link to Potbelly Syndrome continues on page 3...

In Gratitude...

As a not-for-profit organization, we rely on many to make our vision a reality. ***So many come together to provide our patients with a place of hope, health and healing.*** Here are just a few we'd like to thank.

- Our **AWESOME** volunteers for their unending support in all areas of our business. **THANK YOU** for your time and dedication to helping us help others.
- All individuals and groups who have donated to our cause through financial support, including:
  - In memory of James Alford "Speed" McDonald—"I wish for you to know that I selected the Riordan Clinic above all other charitable organizations as the recipient of this donation partly because of its history, its successes against intractable afflictions, and the numerous collegial friendships that Hugh Riordan, M.D., forged with other accomplished healers."
- Crestcom International for event/ meeting space rental



The Thyroid Link to Potbelly Syndrome continued from page 2...

CPN INFECTIONS LEAD TO A POTBELLY

As the CPN-infected host gets progressively sicker their inflammatory response escalates. Too much inflammation can harm the host, so the body attempts to counter-regulate this mounting inflammation with an adrenal hormone called cortisol. As the illness lingers on, more and more cortisol is pumped out by the sick host's adrenal glands. The result mimics *Cushing's syndrome*—a disease produced by a benign adrenal tumor that over-secretes cortisol. Excess cortisol causes weight gain, central obesity, fatigue, diabetes, depression, insomnia, and irritability to name just a few of the more salient symptoms of this syndrome.

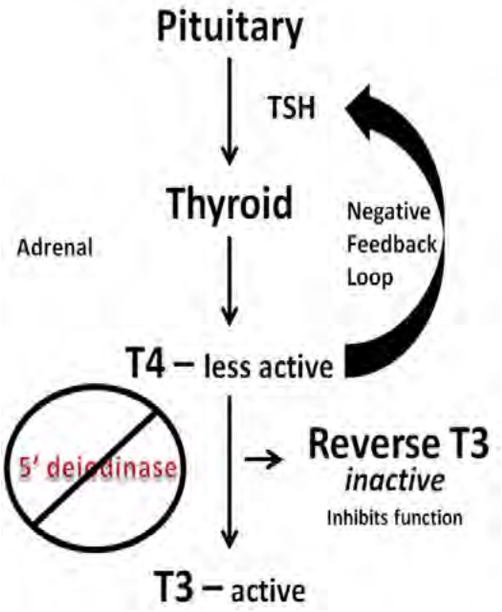
PBS closely resembles Cushing's syndrome and has been described as Metabolic Syndrome X with elevated cortisol levels. The increasing waist line, high blood pressure, high serum glucose, and the high blood lipids of Syndrome X develop in the presence of ongoing inflammation, fatigue, stress, mounting malnutrition. It is the rare physician that suspects that a persistent middle-path germ like CPN is acting as a silent terrorist inciting the genesis of the Potbelly Syndrome!

When the early stages of the infection wane, the infected individual is left with a pervasive sense of fatigue. Unexplained night sweats, generalized muscle achiness, and other low-grade inflammatory symptoms slowly emerge, ranging from strange new inhalant and food allergies, dry skin, and irritable bowel. The hallmark symptom that resists all forms of physical, medical, nutritional, and even psychological intervention—is the notorious potbelly.

The temptation is to run to the pharmacy for an even more powerful antibiotic to try and kill the CPN germ. There are protocols at cpnhelp.org that will steer you in this direction. This is like spraying for mosquitoes…without draining the swamp. Attacking the germ without addressing the web of host susceptibility factors is only half the battle…and seldom successful. To eliminate the CPN habitat, you as the germ's host must confront and correct the underlying causative factors that are forming a VICIOUS CIRCLE of chronic illness!

THE THYROID LINK

When a chain of cause-and-effect events forms a circuit or a loop, these events are said to feed back on one another. Thus, a feedback loop is a self-perpetuating sequence of recurring events that keep repeating. In the field of medicine, this is called a vicious circle, *i.e. a condition in which one disease or disorder causes another, which in turn aggravates the first condition.*



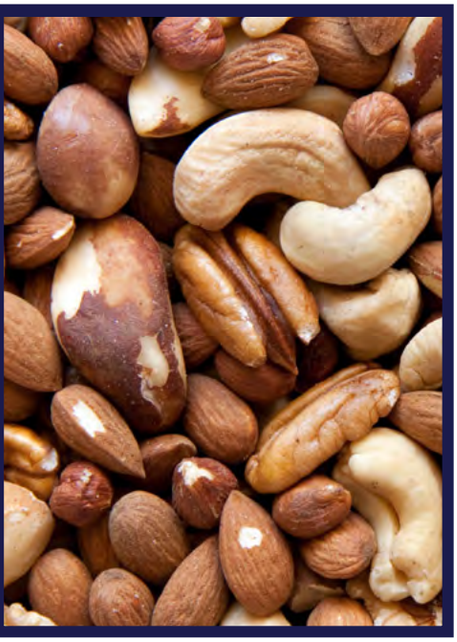
In the chart on the next page I list all the conditions, situations, and disorders that form a rather large vicious circle that I believe is perpetuating the Potbelly Syndrome being discussed here. My intention is to show how these causes acting alone or together converge on the inhibition of the 5'deiodinase enzyme pictured to the right. This serves as the thyroid link that underlies the entire PBS scenario and all of its consequences.

As strange as is to believe, ALL of the conditions, situations, and disorders listed in the chart on page 2 INHIBIT the 5'deiodinase

The Thyroid Link to Potbelly Syndrome continues on page 4...

The Thyroid Link to Potbelly Syndrome continued from page 3...

SOCIOLOGICAL	DIETARY	NUTRITIONAL	TOXILOGICAL
Aging	Fasting	Selenium deficiency	Mercury, Lead, etc.
High Stress	Non-whole foods	Vit. A deficiency	Floride
Low self esteem	Low fiber foods	Iodine deficiency	Bromine
Depression	High glycemic foods	Zinc deficiency	Bisphenol A
Family breakdown	Packaged foods	Iron deficiency	PBDE
Cigarette smoke	Trans fats	Adrenal exhaustion	Sunscreens
Chemotherapy	Refined sugars	Vit. D deficiency	Birth control pills
Radiation	Refined fats	B12 deficiency	SSRIs, Lithium
Surgery	Convenience foods	B3 deficiency	Sealants
Alcoholism	Low fat/high sugar	B2 deficiency	Beta blockers
Comfort eating	Non-fermented soy	B6 deficiency	Amiodarone
Disabilities	Insulin resistance	Low amino acids	Methimazole

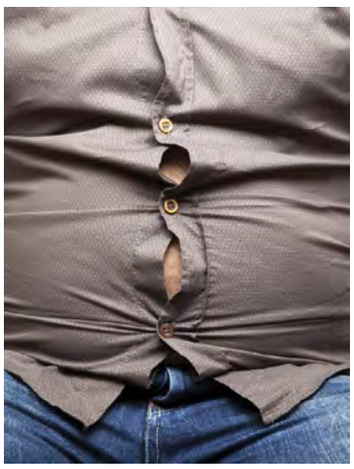


enzyme that is necessary to make the conversion of the less active T4 to the more effective and metabolically active T3. Otherwise, inactive Reverse T3 gets made.

This thyroid conversion step is crucial; because when it is inhibited the formation of the metabolically active T3 goes down. This slows down the metabolism, setting the stage for ongoing weight gain, fatigue, and the whole downward spiral of functioning that PBS patients inexorably experience. This phenomenon is called "thyroid hormone resistance." Standard thyroid blood tests do not detect it. Most doctors will test the TSH level and it will generally be in the normal range. You must ask for a Reverse T3 level. If it is elevated, think about the thyroid link phenomenon as a cause of your PBS.

WHAT IS A SYNDROME?

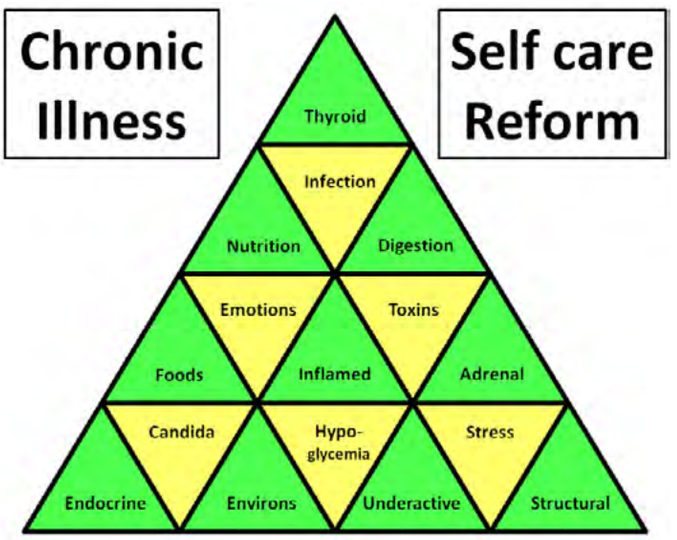
A syndrome is defined as "the association of several clinically recognizable features, signs (observed by someone other than the patient), symptoms (reported by the patient), phenomena or characteristics that often occur together, so that the presence of one or more features alerts the healthcare provider to the possible presence of the others."



Syndromes are a constellation of "recognizable features." An observer does not have to see all of the stars in the Big Dipper to recognize it as such. When a pattern is evident, the identification or "diagnosis" can be made.

In the history of medicine, syndromes are often named before the underlying cause or the elements within the causative loop are clearly identified and a treatment is found. The Potbelly Syndrome is just such a syndrome. Though you are unlikely to find it in a medical textbook, the general public almost universally resonates with the term. It clearly describes the biggest medical dilemma facing modern civilization today.

This article proposes an explanation for this syndrome… though not one that will be satisfying to most conventionally trained doctors. There is no drug or surgery to correct this illness…and I doubt there ever will be. That is because it is a lifestyle disease based upon environmental factors we are all exposed to, dietary choices we all must make, and modern societal consequences we must all live within and attempt to cope with. There is no magic pill or fix-all solution for this one.



At best, it is my hope that we will begin to approach modern chronic illnesses from a bigger perspective that encourages the individual patient to become more involved, more informed and more responsible for their overall life choices. What we seem to need more of is not "health care reform" but "self care reform." Hopefully the ever growing problem of PBS will lead us all in that enviable direction.

If you, or someone you know, could benefit from the self care reform that is recommended in this article or would like to learn more about the health, hope and healing the Riordan Clinic provides, call **316-682-3100** today.

Vitamin Special
15% Off
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Iodoral 12.5mg
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Sale: $22.27

Catemine (I-Tyrosine)
Regular: $40.32
Sale: $34.27

Selenium
Regular: $20.90
Sale: $17.77

New Zealand Bovine Thyroid
Regular: $28.35
Sale: $24.10

UltraLean Appetite Control
Regular: $35.70
Sale: $30.35

(look at Know Your Nutrients for more information about this supplement)

Know Your Nutrients:
Thyroid Supporters

by Amanda Hawkinson

Hypothyroidism is a thyroid problem that occurs when the thyroid gland does not create and secrete enough hormones to maintain the normal metabolic rate of the body. The root cause of most symptoms of thyroid problems is improper metabolism in the body. Symptoms can arise in any part of the body because thyroid hormones are used by almost every cell and organ in the body. Supplementation is a helpful way to get in control of your thyroid. Some thyroid supporters the Riordan Clinic recommends are:

Iodoral

A tablet that contains iodine and iodide, Iodoral is absorbed into the bloodstream and works quickly to promote healthy thyroid function, support a balanced mood, assist in regulation of healthy blood pressure, and support healthy breasts, ovaries, uterus and prostate. It is also know to boost immune function, help normalize metabolism, increase energy and lessen fatigue, and optimize iodine levels if you have a deficiency.

Catemine (l-Tyrosine)

Catemine combines the amino acids l-Tyrosine and the active form of vitamin B6 to replenish norepinephrine, which can be depleted by stress, overwork and certain drugs, in the brain. In essence, it is designed to naturally enhance one's mood, along with a balanced diet. It is also the precursor to two thyroid hormones.

Selenium

Selenium is a trace mineral and it is essential to good health; however, it is required only in small amounts. Selenium is integrated into proteins to make selenoproteins. These important antioxidant enzymes help prevent cellular damage from free radicals, the natural by-products of oxygen metabolism that contribute to the development of chronic illness. Selenoproteins also help regulate thyroid function and play a role in the immune system.

New Zealand Bovine Thyroid

Bovine Thyroid is available in various forms, from powder to tablet. By assisting the thyroid, Bovine Thyroid promotes thyroid health and functioning, plus healthy energy levels, thus allowing the thyroid to function properly and sustain the normal metabolic rate of the body.

UltraLean Appetite Control

UltraLean contains nutrients, herbs, and neurotransmitter precursors that support insulin action, glucose homeostasis, healthy body composition, and appetite control. Not only does it increase energy and enhance mood, it also balances hunger and supports healthy metabolizing of food and nutrients.

Dr. Ron Hunninghake speaks to Wichita Chamber members at the Sunrise Scrambler in April 2012.

Riordan Clinic
A Finalist for the 2012 Small Business Awards

The Riordan Clinic has been selected as one of 5 finalists for the Wichita Metro Chamber of Commerce 2012 Small Business Awards. In an effort to support entrepreneurship in the Wichita community, this 8th annual program offers recognition to small businesses for their achievements and contributions to the community by offering the opportunity to showcase their company, share their story and be rewarded for their efforts.

In the application process, The Riordan Clinic was asked not only to provide revenue and profitability information, but also narratives in five main judging elements: community contribution and involvement, diversity, employee relations, entrepreneurship, and leadership and performance. These narratives are available to read on our website, www.riordanclinic.org.

The winner will be announced at the awards ceremony luncheon on May 9, 2012 at the Drury Plaza Hotel in downtown Wichita.

Foods to Naturally Support Thyroid Health

by Laurie Roth-Donnell | Master Herbalist and Holistic Health Practitioner

The thyroid gland controls our rate of metabolism and simple foods can either stimulate or suppress its optimal function. In hyperthyroidism (overactive thyroid) symptoms such as over activity, loss of weight, insomnia, bouts of diarrhea, feeling warm, shaky and nervousness are common symptoms. In hypothyroidism (underactive thyroid), the typical signs include lack of energy, sensitivity to bright light, constipation, irregular periods, chills, hair loss, dry skin, forgetfulness, and weight gain. Many times the body suffers from an over stimulated endocrine system triggered by stress, ingesting stimulants, iodine deficiency, or estrogen dominance, which interfere with proper thyroid function.

The pituitary gland controls the thyroid and adrenal glands, therefore, the nutrients involved in hormone production and regulation of all three glands is particularly important. A combination of vitamins C and B complex, especially B3 and B5, Manganese, Zinc, Selenium and the amino acid Tyrosine (from which Thyroxine is made) all play a role in thyroid health. Caution is to be taken with the supplementation of calcium, magnesium, and potassium, as these are beneficial, but in excess can cause elevated pulse rate and trigger increased thyroid activity. The New Optimum Nutrition Bible recommends avoiding all stimulants, engaging in regular exercise and following supplement therapy: multivitamin, multi-mineral, vitamin C (1,000 mg), Manganese (10 mg), Kelp with Iodine and Tyrosine (2,000 mg- for hypothyroidism only).

The first natural line of defense for mild cases of hypothyroidism is increased exercise and adding iodine sources to your diet (assisting thyroid production of the metabolism-regulating hormones thyroxine (T4) and triiodothyronine (T3)). Dietary supplements containing animal sources of thyroid hormones and nutrients like selenium also support a healthy thyroid. According to Dr. Andrew Weil, one should avoid raw cruciferous plants as they contain phyto-chemicals known as goitrogens (compounds that induce goiter formation by interfering with the synthesis of the hormone produced by the thyroid). The cooking or fermentation process inactivates goitrogen, negating the dangers.

Author Ken Blanchard in What Your Doctor May Not Tell You About Hypothyroidism details foods that may interfere with prescription thyroid medication absorption, as well as, foods that might inhibit T3 production, wherefore should be avoided. His list contains beverages such as caffeinated or decaffeinated drinks and soda pop. He also suggests avoiding fats such as butter, lard, vegetable shortening, peanuts, pine nuts, root or starchy vegetables such as carrots, corn, potatoes, sweet potatoes, and winter squash. Cruciferous vegetables including arugula, broccoli, cauliflower, Brussels sprouts, cabbage, watercress, bok choy, turnip greens, rutabaga, Napa or Chinese cabbage, daikon, horseradish, radishes, kohlrabi, and kale are all goitrogen rich produce. Although these foods are extremely healthful and contain isothiocyanates that break carcinogens down in the body, when ingested uncooked by someone with compromised thyroid function, may further suppress thyroid activity. Blanchard also cautions against eating soy or soy related products including soybeans, soymilk, and protein powder, which have also been shown to suppress thyroid function.

Thyroid friendly foods include beans, water herb teas, olive oil, flaxseed oil, safflower oil, almonds, walnuts, low fat meat, rice, and vegetables (except cruciferous of course). Coconut oil contains lauric acid, which stimulates thyroid function, increasing metabolism and

Foods to Naturally Support Thyroid Health continues on page 7...

Patient Profile:

by Kameron Hodges, RN

In December 2011, a young, single mom came to the clinic saying that she felt like "her body was shutting down." She was suffering with severe fatigue, irritability and mood swings, as well as anxiety, depression, and lack of concentration. She had difficulty sleeping at night, yet struggled to stay awake at her job.

Her weight gain was sudden and noticeable; she said, "It felt like someone was airing up a balloon inside me." In addition to these symptoms, she complained of painfully achy joints and muscles, irregular menstrual cycles, itchy skin, dizziness and lightheadedness. What concerned her the most, however, was the numbness and tingling in her arms and legs. Her primary care physician, concerned she had early signs of multiple sclerosis (MS), prescribed an expensive and uncomfortable MRI scan.

Once at the Riordan Clinic, a thorough medical history, focused assessment, and series of laboratory tests were completed. It was determined she was suffering from a low functioning thyroid, or hypothyroidism. Lab results revealed that although she had a normal Free Triiodothyronine (T3) level and her Free Thyroxine (T4) was moderately low, her Thyroid Stimulating Hormone (TSH) was 20 times the normal level. Results like this indicate that the pituitary gland has recognized that the thyroid function is compromised. After this recognition, the pituitary gland then attempts to boost the thyroid by secreting excessive amounts of TSH.

Once the problem was identified, treatment could begin. The patient was placed on Armour Thyroid, a desiccated (dried) porcine thyroid, which is a natural alternative to commonly prescribed synthetic thyroid replacement therapies. Shortly after beginning treatment, all of her symptoms improved, some disappearing all together. Over the months following her visit to the Riordan Clinic, the weight she gained has come off with little effort. Overall, she reports a better quality of life, for herself and her family.

Foods to Naturally Support Thyroid Health continued from page 6...

weight loss. I recommend using culinary grade coconut oil when baking and cooking. Dulse, a red algae, is rich in iron and loaded with essential minerals, B vitamins, C, A, and E vitamins and is particularly high in iodine, a metabolic mineral very important for the thyroid gland and brain function. In addition, dulse has the highest frequency of all essential minerals, acts as a controller for calcium metabolism, and protects the brain by destroying toxins in the blood before they pass through the blood-brain barrier. Dulse can be purchased in a powder form and added to your favorite smoothie. Natural sources of iodine include sea foods such as bass, cod, halibut, perch, pike, red snapper, shad, sole, sturgeon, swordfish, tilefish, rainbow trout, and yellowtail. All great sources of natural iodine.

The incident of mild hypothyroidism in the United States is estimated at thirty percent in women. Many women, later in life, commonly confuse the symptoms of thyroid malfunction with those of menopause, going years without a proper diagnosis and treatment plan. In order to monitor your thyroid health, testing after the age of 35 is recommended. Please visit your primary care physician regarding testing and treatment options if you are experiencing any symptoms of thyroid over or under activity.

Sources:
Dr. Andrew Weil, (http://www.drweil.com)
The New Optimum Nutrition Bible, by Patrick Holford
What Your Doctor May not Tell You about Hypothyroidism, by Ken Blanchard
Laurie@DonnellsHealingGarden.com

RIORDAN CLINIC RESEARCH INSTITUTE

Riordan Clinic Research Institute Has Developed and Patented a Process for the Assessment of the Energy Metabolism in Patients with Chronic Fatigue Syndrome

Riordan Clinic scientists Dr. Nina Mikirova, Dr. Joseph Casciari, and Dr. Ronald Hunninghake have patented a new technology that may help doctors determine the severity of fatigue in their patients. The research, recently published in the January/February 2012 issue of the journal, *Alternative Therapies*, is entitled "The Assessment of the Energy Metabolism in Patients with Chronic Fatigue Syndrome by Serum Fluorescence Emission."

Chronic fatigue syndrome (CFS) is characterized by long-lasting disabling fatigue. It includes non-specific symptoms such as weakness, malaise, subjective fever, sore throat, lymph node pain, and decreased memory. There are no conclusive diagnostic tests for CFS. Since the underlying mechanism for CFS is not known, finding reliable biomarkers for diagnosing are important.

The purpose of this study was to examine the use of serum nicotinamide adenine dinucleotide (NAD(P)H) levels as a metabolic marker of fatigue state and alterations in metabolism and homeostasis in CFS patients.

The Riordan Clinic scientists have developed a method of determining NAD(P)H levels based on fluorescence emission of serum at 450 nm. Serum NAD(P)H concentrations were compared for subjects with CFS and healthy controls. NAD(P)H concentrations in the serum of CFS subjects averaged 8.0 ± 1.4 (SD) uM while those in healthy controls averaged 10.8 ± 0.8 (SD) uM, a

Riordan Clinic Research Institute continues on page 8...

Volunteer Appreciation

On April 18th, the 2012 volunteer appreciation luncheon was held at Café Comotara, where volunteers and members of our staff enjoyed lunch and camaraderie.

The Riordan Clinic staff would like to thank our wonderful group of volunteers for their time and dedication given to help us help others. Our volunteers gave 1000 hours of their time in all areas of our business: helping in the laboratory, research, and gardens; serving guests during the lunch and lectures; food preparation in the café; administrative filing, copying, and data input; laundry; creating packets for patients; writing articles for our newsletter and organizing the audio visual area—to name a few.

Your commitment has been invaluable to our mission.
THANK YOU!

Riordan Clinic Research Institute continued from page 7...

statistically significant difference ($p < 0.001$).

The sensitivity (detection of positives) and specificity (non-detection of negatives) of the test in matching CFS patients to control subjects at NAD(P)H cut-off of 9.5 uM were 0.73 and 0.98.

The researchers also compared NAD(P)H concentrations to other endocrine and metabolic parameters. A factor analysis, based on the correlation matrix between all variables, demonstrated that the best correlations were between the NAD(P)H, serum coenzyme Q10 and urine pyrroles.

As coenzyme Q10 is the component of a complex series of reactions that occur within mitochondria, the function of Q10 ultimately is linked to the generation of energy within the cells. The correlation between the lower level of coenzyme Q10 and lower NAD(P)H signals for patients with CFS suggests lower bioenergetics for these subjects.

An inverse correlation was found between the level of serum emission and the level of pyrroles in urine. The pyrroles are often elevated in patients with mental illness. This molecule is well known for bio-toxicity and is associated with emotional stress.

As a result of the study, researchers proposed that fatigue level and metabolic slowdown in CFS patients can be evaluated and monitored by serum NAD(P)H concentration measurements.

The measurement of the fluorescence of reduced nicotinamide adenine dinucleotide in serum provides a non-invasive assay to estimate metabolism and fatigue levels in CFS patients. Following patient NAD(P)H levels over time may aid in selecting therapeutic strategies and monitoring treatment outcome.

To read this and other articles written by Riordan Clinic researchers, visit our website at www.riordanclinic.org.

Lunch & Lecture Series 2012

Dr. Ron Hunninghake

The Thyroid Link to Potbelly Syndrome

Presenter: Dr. Ron Hunninghake

Date: Thursday, May 10, 2012
Time: 12:00 p.m. to 1:00 p.m.
Cost: $10—Lunch is included.

Potbelly Syndrome now affects 2/3 of Americans. All kinds of weight loss efforts are tried and partially succeed, but 90% of those efforts result in the regain of weight. Why such dismal statistics?

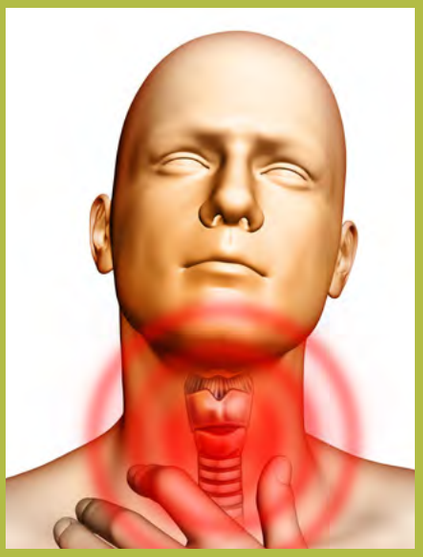
A new theory of causation now blames a germ that is triggering chronic inflammation and disruption of the thyroid function. Come and find out how you can improve thyroid function and overcome the germ that is triggering the Potbelly Syndrome.

If you are unable to attend in person check out this lecture on **live webcast.**

Reservations are required. Call **316-927-4723** or email us at **reservations@riordanclinic.org**

Lab Special

Thyroid Profile



Determine if your thyroid is functioning properly.

THYROID PROFILE:

- TSH (Thyroid Stimulating Hormone)
- Free FT3 (Free Triiodothyronine)
- Free FT4 (Free Thyroxine)

Regular: $229

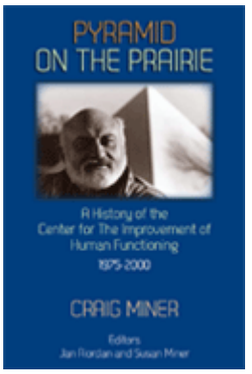
SPECIAL: $160.30

save 30%

For more information about the Riordan Clinic health center call 316-682-3100

Pyramid on the Prairie

A History of The Center for the Improvement of Human Functioning 1975–2000



Written by Kansas historian, Craig Miner

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Studies Find that Folate Reduces Risk of Colorectal Cancer and Adenomas

A couple of speculative reports caused a small panic when they suggested that taking folic acid – the form of the vitamin used in most supplements – could increase the risk of developing colorectal cancer. The idea was repeated by doctors, newspaper stories, and on the internet, and it was starting to become a medical urban legend.

But it's apparently false. Two new studies have found that both folic acid and folate (the form found in plants) are associated with a significant reduction in the risk of colorectal cancer.

Edward Giovannucci, MD, of Harvard University, and his colleagues drew on data from two large studies, which included more than 151,000 women and 51,000 men. Between 1980 and 2004, 2,299 of the subjects were diagnosed with colorectal cancer, and 5,655 were diagnosed with colorectal adenomas, a type of growth that could be either benign or precancerous.

People who had consumed relatively large amounts of folate or folic acid (from supplements or fortified foods) for 12 to 16 years were about 30 percent less likely to develop colorectal cancer. Similarly, high folate or folic acid intake for four to eight years was associated with a 30 percent lower risk of adenomas.

There was no relationship between folate or folic acid and a greater risk of colorectal cancer or adenomas.

Multivitamins also had benefits. People who took them for more than 15 years had a lower risk of colorectal cancer, while taking them for less time lowered the risk of adenomas.

In another study, Victoria L. Stevens, PhD, a researcher at the American Cancer Society, Atlanta, Georgia, and her colleagues analyzed data from studies of more than 56,000 women and 43,000 men. They found that both folate and folic acid were associated with lower risks of colorectal cancer, and that total intake of the vitamin was related to a 19% lower risk of the disease.

"Intake of high levels of total folate reduces risk of colorectal cancer; there is no evidence that dietary fortification or supplementation with this vitamin increases colorectal cancer risk," wrote Stevens and her colleagues.

One of folate's roles is in the regulation of our genes. The vitamin plays an essential role in the production of chemical units called "methyl groups," which attach to genes and then regulate their activity. This process is known to turn off many of the genes involved in promoting cancer.

References: Lee JE, Willett WC, Fuchs CS, et al. Folate intake and risk of colorectal cancer and adenoma: modification by time. *American Journal of Clinical Nutrition*, 2011;93: 817-825. Stevens VL, McCullough ML, Sun J, et al. High levels of folate from supplements and fortification are not associated with increased risk of colorectal cancer. *Gastroenterology*, 2011;141:98-105.e1. ❑

Perspectives

The Problem with Too Much Salt

The ancient human diet contained several times more potassium than sodium, and our bodies are better suited for metabolizing the former. The problem? Today's diets often provide 10 times more sodium than potassium.

High sodium intake in the form of salt is strongly associated with hypertension and heart disease, but some of the evidence is conflicting. Part of the reason is that researchers have focused more on sodium than the amount of potassium in diets.

A couple of recent studies seemed to upend the link between sodium and heart disease. These studies showed little relationship between sodium and heart diseases.

Then earlier this month, an article in the *Archives of Internal Medicine* looked at the relationship of both sodium and potassium to heart disease. The researchers showed that a high intake of sodium

More research summaries on next page

combined with low intake of potassium increased the risk of heart disease by more than two times and increased the risk of cardiovascular death by almost 50%. A high sodium-to-potassium ratio also boosted the risk of death from any cause by 50%, suggesting an even broader impact on health.

But what most people miss in this discussion is that most dietary sodium doesn't come from the salt shaker on your dining table. Rather, it's added to packaged and prepared foods before you even buy them. Packaging – that is, boxes, cans, bottles, jars, tubs, and bags – indicate that food has been processed. Processing usually reduces the nutritional value of foods while increasing both the salt and sugar content to seduce your taste buds.

Vegetables and fruits are great natural sources of potassium, while also being low in sodium. So the research on sodium and potassium really points to two different types of eating habits: high-sodium diets reflect to the overconsumption of packaged, convenience, and fast foods, whereas high-potassium diets reflect eating habits that focus on a lot of vegetables and fruits. *–JC*

Taking Prenatal Multivitamins May Lower Autism Risk in Kids

Many different environmental factors seems to influence the risk of autism in children, and a new study suggests that women who take multivitamins before or during their pregnancy have a lower risk of having children who develop autism.

Rebecca J. Schmidt, PhD, of the University of California, Davis, and her colleagues studied 429 children with autism, ages two to five years, and compared them with 278 children with normal development.

Overall, children whose mothers took prenatal multivitamins for at least three months early in their pregnancy were 28 percent less likely to develop autism.

The risk of autism was particularly high – four and one-half times above normal – if the mothers did not take prenatal vitamins and if they also had a genetic variation known as MTHFR 677 TT. The MTHFR 677 TT variation interferes with the body's use of folic acid, which is critical for normal fetal development during the first few weeks of pregnancy.

Another genetic variation called COMT 472 AA in mothers was associated with a seven time increase in the risk of autism in their children, if the mothers did not take prenatal vitamins.

"Periconceptual use of prenatal vitamins may reduce the risk of having children with autism, especially for genetically susceptible mothers and children.

Reference: Schmidt RJ, Hansen RL, Hartiala J, et al. Prenatal vitamins, one-carbon metabolism gene variants, and risk for autism. *Epidemiology*, 2011;22:476-485. ❑

Sunlight and More Vitamin D Help with Rheumatic Diseases

Spending more time in the sun – what a team of researchers calls climatotherapy – results in significant increases in vitamin D and improvements in a variety of rheumatic diseases.

Marco Harari, MD, of the DMZ Medical Center Spa, in Dead Sea, Israel, and his colleagues treated 60 Norwegian women and men, with an average age of 62 years, for three weeks. The patients were divided into three groups: those with chronic pain syndromes, low back pain or fibromyalgia, and rheumatoid arthritis.

On admission, only 36.7% of the patients had optimal vitamin D levels, 40% had adequate levels, and 23.3% were deficient. The treatment protocol included daily sun exposure, soaking in the Dead Sea and mineral waters, mud applications, and fitness classes.

By the end of the 21-day study, the patients' vitamin D levels increased by an average of 25%. Overall, patients had a 60% decrease in pain.

Other research has shown that vitamin D plays a key role in the regulation of immunity, both in fighting infections and in modulating auto-immune reactions.

Reference: Harari M, Dramsdahl E, Shany S, et al. Increased vitamin D serum levels correlate with clinical improvement of rheumatic diseases after Dead Sea climatotherapy. *Israel Medical Association Journal*, 2011;13:212-215. ❑

High-Dose Alpha-Lipoic Acid, an Antioxidant, Aids in Weight Loss

Taking large amounts of alpha-lipoic acid can lead to a modest but meaningful amount of weight loss.

Alpha-lipoic acid plays a crucial role in mitochondrial bioenergetics, a process in which food molecules are burned for energy.

Ki-Up Lee, MD, of the University of Ulsan College of Medicine, South Korea, and his colleagues treated 360 obese men and women who also had high blood pressure, type 2 diabetes, or elevated cholesterol levels. The subjects, whose average age was 41 years, were asked to take 1,200 mg or 1,800 mg of alpha-lipoic acid or placebos daily for 20 weeks.

In both of the groups taking alpha-lipoic acid, the average weight declined significantly as early as four

weeks into the study. However, by the end of the study, only people taking 1,800 mg of alpha-lipoic acid daily mantained significantly greater weight loss compared with the placebo group.

People taking the larger amount of alpha-lipoic acid lost an average 3% of body weight, whereas those in the placebo group had a 1% loss of weight. Furthermore, many of the people taking 1,800 mg of alpha-lipoic acid lost more than 5% of their weight.

People taking alpha-lipoic acid used the R-lipoic acid form of the vitamin.

Reference: Koh EH, Lee WJ, Lee SA, et al. Effects of alpha-lipoic acid on body weight in obese subjects. *American Journal of Medicine*, 2011;124:85.e1-85.e8. ❑

Cutting Calories and Losing Weight Improves Sleep Apnea

Going on a very low-calorie diet and losing weight can lead to striking improvements in obstructive sleep apnea, according to a study by researchers at the Karolinska Institute in Stockholm, Sweden. The institute is the Swedish equivalent to the U.S. National Institutes of Health, which conducts research on a wide variety of diseases.

Sleep apnea is characterized by cessations in breathing while sleeping. Most of the people who suffer from it are overweight or obese, and they are at risk of developing many other health problems.

For one year, Kari Johansson, a PhD student, and her colleagues treated 63 men, ages 30 to 65 years, who were obese. Forty-four of the subjects completed the entire study.

The subjects were initially placed on a 550-calorie daily diet for seven weeks, followed by a two-week transition to a 1,500-calorie daily weight-maintenance diet for the rest of the study. The subjects were closely monitored, coached by a dietitian, and participated in monthly group therapy meetings.

The researchers tracked patients with an apnea-hypoapnea index, which reflected the total number of times in which breathing ceases during each hour of sleep. At the start of the study patients averaged 36 episodes of interrupted breathing per hour.

After being on the very low-calorie diet, the average number of sleep apnea episodes decreased by 21 per hour. The subjects had also lost an average of almost 40 pounds of weight.

After a year, the number of sleep apnea episodes averaged 17, down from 36 per hour. Weight loss at the end of the study averaged 26 pounds.

Patients with the most severe sleep apnea at the beginning of the study improved the most, as did those who lost the most weight.

Also after one year, half of the patients no longer needed to wear a type of mask to improve breathing while sleeping, and 10% of them had a complete remission of their sleep apnea.

Reference: Johansson K, Hemmingsson E, Harlid R, et al. Longer term effects of very low energy diet on obstructive sleep apnoea in sohort derived from randomised controlled trial: prospective observational follow-up study. *BMJ*, 2011;342:d3017. ❑

Selenium Supplements Lead to Improvements in Cholesterol

Taking selenium supplements can lead to reductions in total blood cholesterol and improvements in the “good” high-density lipoprotein (HDL) form of cholesterol.

Margaret P. Rayman, PhD, of the University of Surrey, United Kingdom, and her colleagues recruited 501 subjects, ages 60 to 74 years. The subjects were divided into four groups, which received 100, 200, or 300 mcg of high-selenium yeast supplements, or placebos, daily for six months.

People taking 100 mcg of selenium had an average 8.5 mg/dl decrease in their cholesterol levels, and those taking 200 mcg of selenium had an average 9.7 mg/dl decrease.

Those taking 300 mcg of selenium daily had just a 2.7 mg/dl decrease in their cholesterol. However, this group was the only one to have a significant increase in HDL cholesterol – an average of 2.3 mg/dl.

Reference: Rayman MP, Stranges S, Griffin BA, et al. Effect of supplementation with high-selenium yeast on plasma lipids. *Annals of Internal Medicine*, 2011;154:656-665. ❑

Folic Acid, Leafy Green Veggies Linked to Smarter Students

Swedish researchers have shown that students who have a relatively high intake of the B-vitamin folic acid get better grades at school.

Torbjorn K. Nilsson, MD, PhD, of Orebro University Hospital and his colleagues analyzed the grades and diets of 386 15-year-old boys and girls who were finishing their school year. After adding the grades from 10 core classes, the researchers found that the teenagers who had a higher dietary intake of folic acid also had higher academic scores.

The students did not eat fortified foods or take supplements during the study. Therefore, the most likely source of folic acid was leafy green vegetables.

According to Nilsson, teenagers are at risk of low folic acid intake and, consequently, higher homocysteine levels.

Reference: Nilsson TK, Yngve A, Böttiger AK, et al. High folate intake is related to better academic achievement in Swedish adolescents. *Pediatrics*, 2011; doi10.1542/peds.2010-1481. ❑

Quick Reviews of Recent Research

• FDA warns that drugs can lower magnesium

Acid-blocking proton-pump inhibitor (PPI) drugs interfere with the absorption of vitamins B12 and C. In a safety announcement, the U.S. Food and Drug Administration (FDA) warned that the use of PPIs for more than one year also interferes with magnesium absorption. PPI drugs include Nexium, Prilosec, and Prevacid. In 2009, 21 million prescriptions were filled for these drugs. Low levels of magnesium can cause muscle spasms, irregular heartbeat, and seizures.

http://www.fda.gov/Drugs/DrugSafety/ucm245011.htm#Safety_Announcement

• Formula-feeding boosts prediabetes risk

Italian researchers studied 350 overweight or obese eight-year-old children. Children who were fed formula as infants had greater insulin resistance, a sign of prediabetes, compared with children who had been breast fed. The researchers concluded that "formula feeding seems to be associated with reduced insulin sensitivity and increased insulin secretion in overweight and obese children."

Manco M. *Journal of the American College of Nutrition*, 2011;30:29-39.

• Sugary soft drinks raise disease risk factors

Consuming any type of soft drink increases the risk of inflammation, diabetes, or heart disease, according to a study by researchers in Switzerland. The researchers recruited 29 healthy young men to participate in six three-week tests of different soft drink formulations. The daily 20-ounce (600mL) soft drinks provided one of the following during each phase of the study: 40 grams of fructose, 80 grams of fructose, 40 grams of glucose, 80 grams of glucose, or 80 grams of sucrose. One of the three-week tests focused on dietary advice to lower fructose consumption. Low-density lipoprotein (LDL) particle size was reduced – worsening a risk factor for heart disease – after consumption of the high-fructose and high-sucrose drinks. The other fructose-containing beverages resulted in similar changes. Fasting blood sugar and C-reactive protein levels also increased after consumption of the soft drinks.

Aeberli I. *American Journal of Clinical Nutrition*, 2011; doi 10.3945/ajcn.111.013540.

• Potato chips pack on the pounds

Researchers at Harvard University analyzed changes in dietary habits and weight gain in more than 120,000 American men and women between 1986 and 2006. They found that potato chips were associated with the greatest increase in weight, followed by all other forms of potatoes (e.g., fries) and sugar-sweetened soft drinks. Weight loss was associated with the consumption of vegetables, whole grains, fruits, nuts, and yogurt.

Mazaffarian D. *New England Journal of Medicine*, 2011; 364:2392-2404.

• Fish oils beneficial after heart procedure

Doctors from Krakow, Poland, treated 53 patients with balloon angioplasty and stents to improve blood flow through their arteries. Twenty-four of the patients were treated with aspirin and clopidogrel (Plavix) to prevent clots, and 30 patients were treated with these drugs plus 1 gram daily of omega-3 fish oils (which included 460 mg of EPA and 380 mg of DHA). Patients receiving the omega-3 fish oils had lower levels of thrombin, a clotting factor. They also formed clots with a different structure that allowed the body to break them down with greater ease.

Gajos G. *Arteriosclerosis, Thrombosis, and Vascular Biology*, 2011;31:1696-1702.

• Low vitamin D raises infection risk in infants

Infants with low levels of vitamin D are more likely to contract a serious lower respiratory infection called respiratory syncytial virus (RSV). The research, conducted in the Netherlands, found that infants were six times more likely to develop RSV during their first year of life if they had low levels of vitamin D.

Belderbos ME. *Pediatrics*, 2001: doi 10.1542/peds.2010-3054.

• Supplement reduces preeclampsia risk

Researchers in Mexico tested the effects of a nutrition bar fortified with L-arginine and antioxidants on 672 women at high risk of developing preeclampsia. Consuming two bars daily, providing 6.6 grams of L-arginine, 500 mg of vitamin C, and 400 IU of vitamin E led to a significant reduction in the risk of preeclampsia.

Vadillo-Ortega F. *BMJ*, 2011: doi 10.1136/bmj.d2901.

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