

SPECIAL POINTS OF INTEREST:

- Learn about the benefits of hydration and protein supplements
- Are vitamin D supplements good for you?
- Learn some new healthy holiday recipes

INSIDE THIS ISSUE:

Probiotics	1
Hydration	2
Rebuild Center	2
Sexual Health	3
Vitamin D Supplements	4
Health Recipes	4
Protein Supplements	5

Welcome to 2017!

Here we are again at the start of a brand new year! I hope everyone had a wonderful holiday and used their time off to recharge for the coming year. I hope you enjoy this

first issue of 2017. A huge thanks to our contributors which come from multiple schools across the LSUHSC family. This issue focuses on a few special topics related to

health with a focus on health supplements. I wish all of you a happy and healthy 2017.

Rishi Trivedi, Editor

Probiotics: Conventional Wisdom

Vincent Maffei

Our gut contains trillions of micro-organisms known as the microbiota that vastly outnumber the human cells in our body. So it comes as no surprise that big pharma, academia, and individuals at home are looking for the best foods and supplements to keep our bugs healthy so that they work for us and not against us. Today, we'll discuss two myths concerning probiotic supplements, a popular, powerful, and simple approach to modifying our gut microbiota.

Myth: live cultures are the only effective probiotic
We took the opportunity to read what's out there on the internet regarding how to choose between probiotics, tips and tricks, do's and don'ts, and everything else. A common (and thoughtful) criterion is that a probiotic must contain living bacteria to be active and effective because dead bacteria don't really do anything since they're dead. This is true. Dead bacteria are not as functional as living bacteria...but what guarantees that ingested living bacteria will establish themselves within the ultra-stressful gut microbial ecosystem?

Think of it this way. The bulk of micro-organisms in our gut line the walls of

the colon, which begins at the end of the small intestine at the point where digestion and nutrient absorption are essentially complete. The majority of nutrients are absorbed before reaching the colon, so bacteria in the colon are left to compete for scraps. Probiotic supplements typically contain bacteria that are adapted to relatively safe, *in vitro* growth conditions, containing an ample energy supply. Introduction and establishment of these organisms into a scarce, hyper-competitive environment such as the colon is a significant challenge. This may point to why individuals with depleted microbiota (preterm infants, persons treated with antibiotics) benefit consistently from probiotic supplementation^{1,2}.

One alternative probiotic formulation currently under research is known as a probiotic "supernatant," referring to the byproducts of micro-organisms secreted into culture media or native biological fluids. Purifying and consuming compounds produced by beneficial bacteria may be more effective and safer than ingesting live organisms since supernatants don't compete with other bacteria for space and resources. In fact, many probiotic foods such as kefir, yogurt, kimchi, other pickled vegetables, etc. already contain these micro-

al products. In time, on-going research on probiotic supernatants will reveal their efficacy and safety in human subjects in comparison to live culture probiotics.

Myth: probiotics are safe for everyone
Probiotics have been associated with beneficial health effects such as shortening the duration of antibiotic-associated gastrointestinal symptoms. The average healthy adult (including adults with minor illness) appear to tolerate probiotic supplements and foods well without major adverse effects. In considerably ill adults, however, (e.g. immunosuppressed), probiotics may be associated with rare, but serious complications³. Since probiotic supplements are available over the counter, it is especially important that individuals use caution before purchasing a probiotic to treat their own severe illness or the illness of a friend or loved one. Healthcare professionals are especially helpful in this regard. They will be able to help you think about the risks and benefits of probiotic supplementation as well as dosing and frequency given your current health status, medical history, and data from clinical research.

Tips to increase water intake:

1. Drink a glass of water as soon as you wake up
2. Drink a glass of water before every meal
3. Drink water before, during, and after exercise
4. Add some frozen fruit as ice cubes
5. Always have a bottle of water on your desk
6. Eat your water; tomatoes, watermelon, cucumbers, cauliflower, and spinach all have high water content
7. Keep a glass bottle of water in your car to hydrate at red lights
8. Try to drink as little soda as possible
9. Get a fun straw
10. Add fresh fruit to water (it may even taste better than Gatorade)

- Eric Stockwell

Hydration

Eric Stockwell

"Water sucks, Gatorade is better." This inspirational phrase from The Waterboy wasn't meant to be accepted as truth, but many have taken this phrase to heart. Some estimate that 75% of Americans live in a chronic state of dehydration. With a human body that is about 60% water, it is surprising there is an aversion to the life-blood of all living things that is H₂O.

Even though the heat of summer has been replaced by a cool fall breeze, it is still important to drink water. Water is vital for a good state of health and wears many hats: flushing out waste products, transporting nutrients to cells, and regulating body temperature.

The amount of water required by each person is individualized. Diet, activity, size, and weather all have a substantial effect on a person's optimal

water intake. A generalized recommendation is the 8 x 8 rule - eight glasses of eight ounces of water per day. While many people need to drink more water than this recommended gallon per day, it is a great starting goal.

Can I drink too much water? Yes, but it is unlikely. Athletes are at increased risk for exercise-associated hyponatremia (EAH), a process where the kidneys are overwhelmed, and the sodium balance is disrupted. The Clinical Journal of Sports Medicine recommends, "being in tune with your body and drinking when you're thirsty - no more, no less." If you are an athlete with an intense exercise regimen, then you may want to consider supplementing your water intake with Gatorade or another electrolyte replenishing source. At the end of the day, water is the best

choice for hydration regardless of your activity level.

For the majority of the world population, it is much more common to live in a state of chronic dehydration. Dehydration can cause dry skin, muscle cramps, headaches, and other symptoms. The most alarming symptom of dehydration is food cravings, especially for sugar rich foods. Organs such as the liver use water to release glycogen. Without water, cravings begin. While it is important to follow the recommendations of drinking when you're thirsty to stay in tune with your body, you must first actually be in tune with your body. In a country where two-thirds of the population are overweight, it is doubtful that everyone is perfectly tuned into the harmony of his own body. Next time you are hungry, try reaching for one of those eight glasses of water.

Rebuild Center Update

Laura Erwin

The Rebuild Center at St. Joseph's Church, a collaboration between Lantern Light Ministries, Harry Thompson Center, and De Paul USA, provides an array of services where those in need can come to find shelter, a place of safety, and respect.

The Graduate School joins the Rebuild Center in serving lunch twice a month and since May has assisted in serving roughly 1500 meals to our local community. However, the Rebuild Center not only provides breakfast and lunch, it also provides showers, toiletries, legal aid, computer training, housing, medical & psychiatric services, and so much more. These services act to assist persons rise above poverty and promote systemic change.

Located adjacent to LSUHSC, just behind St. Joseph's church, it is a wonderful opportunity to get more involved. We meet in the first floor lobby of the MEB at noon every 2nd and 4th Wednesday of the month, walk over to The Rebuild Center, and serving takes about one hour.

If you are interested in joining us, please email the current School of Graduate Studies Vice-President of Community Outreach, Laura Erwin, at lerwin@lsuhsc.edu



Sexual Health for the Health Professional Student

Vanessa Shields and Louis Monnig

Do you consider your sexual health to be an essential component of your personal health? As a future healthcare professional do you have the knowledge, skills, and techniques to care for your patients' sexual health? Normalizing and routinizing HIV and sexually transmitted disease (STD) testing is one of Healthy People 2020's objectives, and is a hallmark of patient-centered care. Since LSU Health Sciences Center trains the majority of healthcare providers that practice in the state, it is critical we be able to tend to the health of our whole patient, not just one aspect of it. Care of our own sexual health, as well as those of our patients, is a reflection of our training and preparedness to tackle the healthcare challenges in our state.

For decades, Louisiana has struggled to improve its HIV and STD infection rates. Of the 50 states, Louisiana has the 2nd highest HIV rate and ranks number one for gonorrhea, number two for syphilis, and number three for chlamydia cases, according to the Louisiana Office of Public Health STD/HIV Program. These preventable and treatable conditions often go undiagnosed, leading to long-term health complications such as infertility, cancer, and the transmission of HIV. Contributing to these high rates, is Louisiana's lack of comprehensive, medically accurate sexual education for youth. The majority of new HIV and STD infections are between 13 to 24 year-olds. Many of these young people may be unaware of STD warning signs and unknowingly transmit the infection.

As healthcare professionals, we should consider sexual health and wellness as just another component to our overall well-being, no different from our physical, mental, or dental health. Working through any discomfort on our end is important because up to 20% of people living with HIV are unaware of their status, and a missed asymptomatic chlamydia infection can have serious

consequences for females such as infertility, miscarriages, and pelvic inflammatory disease. Furthermore, with reports of antibiotic resistant gonorrhea rising, it's more important than ever to educate yourself and your patients. For example, a gonorrhea/chlamydia urine test will completely miss local infections in the oral cavity or anus.

So what can you do? Take an accurate and complete sexual history of your patients and treat it like another part of their routine health screenings...because it is! The CDC recommends "routine voluntary HIV screening as a normal part of medical practice, similar to screening for other treatable conditions." CDC recommends using the five Ps to collect sexual history. The five P's include: partners, practices, prevention of STDs, past history of STDs, and prevention of pregnancy. Is your patient having sex with men, women, or both? It is appropriate to ask if your patient is having vaginal, oral, or anal sex because it determines from which anatomical sites you will collect specimens. What does safe sex look like to them? Are dental dams or condoms used? What about pregnancy prevention? Remember, prefacing sexual history questions as "awkward" may prevent patients from being forthcoming about their sex lives, keeping you from being able to deliver quality care.

An important way to become more comfortable discussing sexual health with your patients is by taking agency over your own sexual health. Putting yourself in the position of your patients is the best way to understand their experience. The more familiar you are with sharing your sexual health information with providers, the better able you will be to have these conversations with future patients. So where should you start? The CDC is a great place to learn the basics of these diseases and how to take a sexual history. The Louisiana Office of Public Health publishes detailed reports every year containing epidemiologic data for HIV, gonorrhea, chlamydia, and syphilis infections, so you know exactly what we are at risk for in our communities.

You may have heard professors say that teaching a subject is the best way to understand it. If you'd like to get out there and

practice talking frankly about sex, consider volunteering with the New Orleans Adolescent Reproductive Health Project (NOARHP), an Inter-Professional Student Alliance (IPSA) project for future healthcare providers at LSUHSC.

In closing, as healthcare providers, we play a vital role in empowering our patients with the knowledge and know-how to stay healthy, and identifying and screening for STDs is only part of the story. We have a responsibility to take medicines directly as prescribed, inform partners they need to be tested, strive to practice safer sex, and understand how health disparities impact our patients. For example, providing an accurate sexual history can be particularly challenging for lesbian, gay, bisexual, and transgender (LGBT) patients of any age due to stigma and discrimination they may have experienced, especially in healthcare settings. Making assumptions about the sexual orientation of your patient or feeling embarrassed about taking sexual history limits your ability to provide patient-centered care. Furthermore, STD and HIV infections in Louisiana disproportionately impact black youth. Historic structural and institutional inequalities—such as discrimination and racism in healthcare, housing, education, and employment—have limited access, screening, and preventative healthcare for people of color in particular. Recognizing that these barriers exist and that they contribute to health disparities, will help us deconstruct them and ensure STD and HIV education, prevention, and treatment are available to all our patients.

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Vitamin D Supplements: More Questions than Answers

Krishna Patel

Vitamin D supplementation has been one of the most controversial nutrition topics over the past decade. It has a vital role in health with defined functions in calcium absorption and bone strength. Vitamin D is not abundant in food with the main dietary sources being eggs, fish, and fortified dairy products including whole milk. The sun plays a vital role in the production of vitamin D which is part of the reason that getting regular exposure to the sun is beneficial.

Vitamin D is used clinically to treat adults with diseases caused by vitamin D deficiency. In adults, vitamin D deficiency can cause osteomalacia which causes a softening of bone that can cause a variety of clinical sequelae. In children, vitamin D deficiency can cause rickets which can cause similar issues.

Outside these two scenarios, things get murky. Even within bone disorders such as osteoporosis, experts disagree over

whether patients should take vitamin D supplements. For many years vitamin D was a cornerstone of osteoporosis treatment after clinical trials showed it was able to reduce bone fractures in elderly women. However, recently, secondary analyses have found that the benefits may have been skewed by inconsistent baseline levels of calcium and vitamin D.

The explosion of vitamin D as the hot supplement led to its study in other diseases outside the skeletal system including cancer, cardiovascular disease, obesity, metabolic syndrome, and autoimmune diseases. Thus far studies have been equivocal with reports on their benefits and harms both being equally prevalent. For example in cardiovascular disease: patients that suffer heart attacks have lower levels of vitamin D, however supplementation with vitamin D was not found to reduce its incidence.

The Institute of Medicine

(IOM) and United States Preventative Services Task Force (USPSTF) have reviewed all of the evidence surrounding health benefits of Vitamin D and do say there is benefit to supplementation. They found that 600 Internal Units is adequate for adults with higher doses not providing more benefit. Bone health is the primary benefit seen, but to this date there is no clear evidence supporting Vitamin D's role in preventing heart disease, cancer, autoimmune or neurologic diseases. In most cases, experts disagree on whether or not vitamin D supplementation is warranted. However, the one thing that experts do agree on is that vitamin D supplements are recommended for individuals with low baseline vitamin D levels whether that be due to inadequate intake or decreased sunlight exposure. So, before reaching for the supplements, first try and get a little more sunlight and a more balanced diet.

Pumpkin Zucchini Chocolate Chip Bread

Katie Melder

1 ½ cups whole wheat flour
1 tsp Baking soda
¼ tsp Salt
2 tsp Cinnamon
1/8 tsp Nutmeg
1/8 tsp Ginger
¾ cup canned Pumpkin
1 cup shredded Zucchini, squeezed of excess moisture
1/3 cup Honey
1 tbsp Olive or coconut oil
1 Egg
1 tsp Vanilla extract
½ cup Almond Milk
½ cup Chocolate chips

Preheat oven to 350 degrees
Grease a 9 inch loaf pan with nonstick spray
Combine flour, baking soda, salt, cinnamon, nutmeg, ginger. Whisk together in a large bowl.

In a separate bowl, combine pumpkin, zucchini, honey, oil, egg and vanilla. Mix until well combined and smooth. Whisk in almond milk.

Add wet ingredients to bowl with dry ingredients and mix until just combined.

Fold in most of the chocolate chips. Pour the batter into the loaf pan, and sprinkle the remaining chocolate chips on top.

Bake for 45-50 minutes or until toothpick comes out clean. Cool for 10-15 minutes in pan, then remove and allow to cool for an additional 15 minutes before slicing.

Recipe adapted from Ambitious Kitchen



Roasted Brussels Sprouts with Toasted Pecans and Avocado

Katie Melder

1/4 cup pecans
 1 1/2 lb. fresh Brussels sprouts, stems trimmed and cut in halves**
 1 tbsp balsamic vinegar
 1 tbsp olive oil
 2 medium avocados, peeled and diced
 1/2 tsp. chopped thyme salt
 Nonstick spray
 *wash earlier in the day, moist sprouts will not roast properly
 Preheat oven to 450F

Place pecans on a baking sheet and roast 3-4 minutes. Remove from oven and place pecans on cutting board to cool.

Whisk together balsamic vinegar and olive oil in a large bowl. Toss brussels sprouts in bowl with vinegar oil mixture. Spray baking sheet with non-stick cooking spray and spread sprouts across pan.

Roast for 15 minutes. Then turn brussels sprouts over and roast for an additional 10

minutes or until nicely browned.

Chop the now cooled pecans. Add pecans, chopped avocado, thyme and salt to bowl. Gently mix.

Toss the hot brussels sprouts with the avocado/pecan mix. Season to taste.



Understanding Protein Supplements

Anand Kanwar

In recent years, thanks in large part to some comical viral videos, protein supplements have become a product thought to be consumed largely by young male weightlifters. Even a cursory YouTube search yields numerous videos showing so-called “bros” pretending to be addicted to such products. As entertaining as these videos are, they fail to illustrate that protein supplementation has benefits for many different patient populations. Let us take a brief look at the types of protein supplements available and the literature supporting their use. Walking into a nutritional supplement store can be intimidating for the naïve customer. It can be tough to make sense of the veritable bestiary of protein supplements one encounters at such places. Two very popular formulations of protein are whey and casein, which differ from each other in basic measures such as absorption and bioavailability. Whey proteins are milk-derived proteins with numerous constituents, primarily beta-lactoglobulin, alpha lactalbumin and branched-chain amino acids. Upon consumption, these proteins are delivered rapidly from the stomach to the small intestines for digestion and absorption. Casein proteins are constituted primarily by alpha(s1)-casein, alpha(s2)-casein, beta-(casein) and kappa-casein, all of which are fairly hydrophobic. Casein proteins, on the other hand,

coagulate when introduced to the acidic environment of the stomach and thus are transported from the stomach to the small intestines more slowly compared to whey proteins. This property of caseins makes them attractive for slow and sustained nutrient delivery.

Several studies support the use of both whey and casein proteins in a variety of settings. Several early studies have established the benefit of protein intake above the recommended daily intake in athletes undergoing both strength and endurance training. More recently, a study performed at the University of North Carolina showed the benefit of pre- and post-training intake of both whey and casein proteins by female athletes. This study involved female basketball players who underwent baseline measurements and underwent a controlled resistance training program while consuming a constant amount of whey or casein proteins daily. Upon completion of 8 weeks of training under this regiment, improvement was seen in several physical measures alongside a decrease in body fat percentage and fat mass and an increase in lean mass. There was no difference seen in the whey vs. casein groups. While these studies show that protein supplementation in young, healthy individuals can improve physical metrics and performance, they are not necessarily appli-

cable to sicker, older patients in whom nutritional and metabolic requirements may be altered.

A very recent RCT performed in Brazil showed that whey protein supplementation in women who were status post Roux-en-Y gastric bypass surgery and experienced weight regain. Compared to the control group, the intervention group (i.e. the whey protein consumption group) experienced more body weight and fat mass loss. In even these patients, whose GI anatomy differs significantly from the healthy athletes mentioned previously, protein supplementation showed a similar benefit.

Lean muscle mass loss associated with aging may be another target for protein supplementation. In March, the American Journal of Clinical Nutrition reported the results of a randomized, placebo-controlled, double-blinded study that evaluated the use of numerous supplements in sarcopenic elderly individuals. The study demonstrated an increase in fat-free mass, skeletal muscle mass, and strength along with an improvement in abilities to perform activities of daily living in the intervention group compared to the placebo group. In conjunction with age and ability-appropriate exercise, nutritional supplementation appears to have significant benefits.



LSU Health Science Center Wellness Center

450-A S. Claiborne Avenue
New Orleans, LA 70112

Phone: (504) 568-3700

Fax: (504) 568-3720

E-mail: wellness@lsuhsc.edu

Be healthy, be fit, be balanced!

The Healthy Balance is a student run newsletter with the goal of providing information intended to promote health and wellness to students and employees of LSUHSC as well as throughout the New Orleans area. We are comprised of graduate and medical students, as well staff from the Wellness Center and the Campus Assistance Program who are passionate about good health.

If you are interested in submitting an article for publication, have an idea of something you would like to see covered in an upcoming issue or just want to give some feedback please contact Rishi Trivedi (rtrive@lsuhsc.edu)



Updated Wellness Center Hours

Based on the needs of the LSUHSC community, the Wellness Center has adopted new extended hours that are listed below. A huge thanks to the Lifestyle Advocacy Committee for their efforts!

Mon-Thurs 6:30 AM - 8:30 PM

Fri 6:30 AM - 7 PM

Sat 9 AM - 3 PM

Only have a few minutes to get a quick workout in? Try the 7 minute workout which only requires a wall and a chair, perfect for getting a little exercise in to refresh your mind during a marathon study session! The exercise is based on high intensity interval training and the results were originally published in the American College of Sports Medicine Health and Fitness Journal. See the cartoon on the right and search the internet for 7 minute workout for more information.

