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Are Vegans More at Risk for
Developing a B12 Deficiency?
Here's What You Need to
Know

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MEET THE STAFF

UNF COVID CORNER

BY LAURA ROGERS



It's November, and we are in full fall mode, even though it may not feel like it with this Florida weather. This month many of us will be enjoying fall-themed social gatherings focused on harvest-based foods. However, the uninvited guest needs to be acknowledged: COVID. Yes, we are still talking about this, and yes, we still need to maintain precautions. This being our second holiday season dealing with the virus, a COVID-conscious way of life has become our new norm. However, many of us do not quite know what exactly the virus does to the body. As the progression of COVID has been deemed "a rampage through the body," researchers are still learning more about the virus in an effort to help those infected. ¹

Here is a breakdown of what happens inside the body of a COVID positive person:

- Beginning in the nose, COVID is able to enter cells within the body via the cell-surface receptor angiotensin-converting enzyme 2 (ACE2).¹
- If the body is unsuccessful in combating the virus, it then migrates to the lungs. Alveoli in the lungs happen to be plentiful in ACE2 receptors.
 - There, oxygen transfer is disrupted when the immune system fights off the virus, leaving fluid in the lungs.
 - As blood oxygen levels drop, many develop acute respiratory distress syndrome (ARDS) and require the use of ventilators.
- COVID also affects the heart by entering ACE2 receptors in the lining of blood vessels, resulting in abnormal blood clots, blood vessel constriction, cardiac inflammation, and heart attacks.
- However, some believe rapid deterioration is caused by hyper inflammation of the body due to an over-release of cytokines needed to guide an immune system response.
- The kidneys are also rich in ACE2 receptors and become severely damaged due to the virus. A high number of patients are put on dialysis machines due to renal failure.
- On the other hand, kidneys can become damaged as a result of ventilator use and the excess amount of cytokines released by the body.
- The brain stem also contains ACE2 receptors, but there has not been enough research to determine the interaction of the virus with the brain.
- Many COVID patients have experienced a sense of smell loss, brain inflammation and seizures, loss of consciousness, stroke, and lack of gasping for air reflex when oxygen levels are low.
- Brain damage can also result from the excess cytokines or the abnormal blood clotting previously mentioned.



ACE2 receptors are also found in the lower digestive tract, which can cause diarrhea and other GI upset.

There is a lack of evidence whether the virus replicates in the GI tract or can be passed via fecal transmission.

-Liver damage is evident among COVID patients, but this is more likely due to treatment and body damage rather than the virus itself. 1

Unfortunately, there are those of us who have had to witness the rapid progression of this virus. However, as we all navigate life within this pandemic, treating each other with respect and kindness remains essential. Wash your hands, make a vaccination decision, and stay safe Ospreys.





PLANT POWERED PROTEIN: IS IT ENOUGH?

By: Chloe Morgan



What comes to mind when you hear the term veganism? For some, veganism might seem like a foreign concept, only familiar because of that Meatless Monday trend a friend has been trying. Others might think of hip restaurants only frequented by the upmost health-conscious. Finally, there are those who are well-versed in what it means to be vegan, and live a lifestyle exemplifying the definition. In general, a vegan diet can be defined as an extreme diet consisting of only fruits, vegetables, grains, and rejecting the consumption of any meat or animal derived products whatsoever.¹

While many of the foods consumed by vegans are nutritious whole foods, the meat, fish, eggs, and dairy that provide protein for so many are not available for vegan consumption. Without any of these common sources of protein, are vegans lacking?

A concern with vegan protein sources is that they often require more frequent consumption and consumption in greater abundance to provide equivalent benefits to the protein levels animal products offer. Common sources of vegan protein² include leafy green vegetables, legumes, soy products, and alternative milks such as oat, almond, or coconut milk.

While these plant sources can provide comparable amounts of proteins when balanced correctly, they do lack vitamin B-12. Vitamin B-12 is an essential component in DNA synthesis and contributes to the overall health of the blood and cells. Vitamin B-12 is easily obtained through consumption of most meats. Oftentimes, vegans will take vitamin B-12 supplements³ along with iron or calcium supplements as well.

Additionally, scales⁴ known as the Protein Digestibility Corrected Amino Acid Score (PDCAAS) and the Digestible Indispensable Amino Acid Score (DIAAS) both indicate that plant-based proteins are less digestible than proteins derived from animal sources.



The difference in digestibility is due to the different amino acid structures⁵ of plant-based proteins compared to animal-derived proteins. However, veganism remains a growing lifestyle choice for a reason. As is the case with many diets, if exercised correctly, vegans can in fact still receive adequate levels of protein.

However, veganism remains a growing lifestyle choice for a reason. As is the case with many diets, if exercised correctly, vegans can in fact still receive adequate levels of protein. Quinoa⁶ is a noteworthy source of plant-based protein because unlike other plant proteins it contains all nine essential amino acids. Quinoa, like most plant proteins, is also a great source of fiber. Vegan diets primarily consisting of vegetables and fibrous whole foods can provide nutritional benefits such as lowered risks for chronic illnesses including heart disease. Conversely, diets consisting of too much meat and not enough whole plant foods can increase the risk of heart disease. It is also important to note that most people who choose to follow a vegan diet typically have strong arguments for doing so, and generally put a significant amount of thought into the foods they will consume. For this reason, it is possible to balance meals appropriately to obtain suggested amounts of protein and maintain optimal health without consuming animal products.



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WORLD VEGAN DAY

November 1st

A DAY IN THE LIFE OF AN IRANIAN NUTRITION STUDENT

BY FATEMEH MIRJALILI



As a junior nutrition student, my typical day is a busy one. I want to give you a look at the workday in the life of a college student here in Iran, particularly in Yazd city. I have class five days a week (Saturdays to Wednesdays) and conditionally two or three classes per day. Today is Sunday, the second day of the Iranian week which is from Saturday to Thursday.

Around 6:15 am- wake up.

I go to the yard to take some fresh air and do some warm-up exercise to begin my day. I like to take a shower in the morning as it wakes me up.

6:45 am- Breakfast

Breakfast has become increasingly significant for me to get through these first few hours of the day. It helps to keep me energetic and on task until I can take a brain break after class. I usually have bread and cheese with walnuts or tomatoes, cucumbers, green herbs, etc.

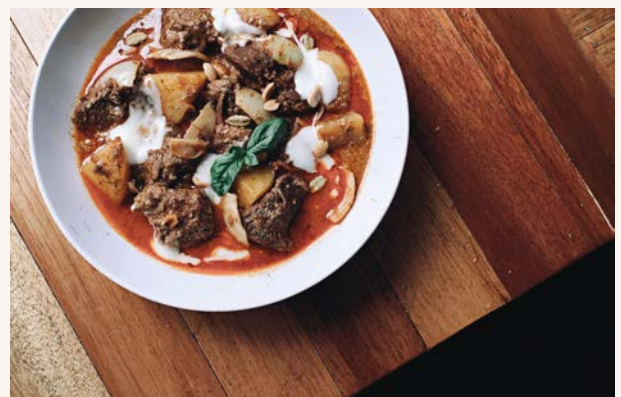
7:05 to 08:00 am- get ready

At this time, I start preparing myself, and then I ordinarily drive to the university. My classes are arranged simultaneously online and in-person (for students living in Yazd) since the dorm has been reopened just with its one-third capacity, mostly given to post-graduate students.



8:00 am to 10: 00 am- class time

My first class today is about Medical nutrition therapy for cardiovascular disease. Compared to the previous semester, our courses in the current one are more specialized, making me feel awesome.



10 am to 12 pm - do assignments and projects

After being far from the University for a Long Time, I love going to the library and doing my assignments.

12:00 pm to 12:30 pm- weekly meeting

Our weekly meetings with the co-editor in chief and administrative assistant are on Sundays and Thursdays at noon to organize our magazine "Zeytoon" and whatever is related.

12:30 to 1:00 pm:

When I have a busy day, I am used to drinking tea or coffee in the middle of the day, helping me stay vigorous.

1:00 to 2:30 pm- class time (the second one)

In this class, we discuss some cases' diets, and we follow them to see how much adherence they have to their diets, which today is about cystic fibrosis children. I love to learn more and more about Nutrition. It is truly a worthwhile class. Being a junior student is becoming much more exciting so far.

2:30 to 3:30 pm- Lunchtime

I try to go home for lunch, but on days I have to go to the hospital in the afternoon, I do not have time to drive home. My friend Vida and I have a similar schedule; therefore, we usually go together after our class for lunch and then to the hospital.

We aim to prepare our lunch the night before, but also sometimes we buy food outside (not fast foods).



3:30 to 07:30 pm-go to the hospital for Sampling in a study

I participate in a cross-sectional study which is done through a questionnaire. My duty is sampling new cases and asking them the questions. I typically go three to four days a week there. It is a beneficial experience through which I have learned a lot.

7:30 pm to 09:30 pm -Dinner and family time

I go home for dinner and set time for a family gathering, especially my little 1-year-old nephew.

9:30 pm to 10:45 pm

Depending on my day, if I have unaccomplished work or studies, I first perform them. And if not, I may go for a walk, talk to my friends, go to bed earlier or sometimes watch movies.

Today I have work left I have to do, which is becoming ordinary by this semester.

10:45 pm to 11:00 pm- plan for tomorrow**11:00 pm- go to bed**

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PLANT POWER: VEGETARIANISM EDITION

BY: SAMANTHA DILL



What do Leonardo da Vinci, John Kellogg, and Mohandas Mahatma Gandhi have in common? They were all vegetarians! Vegetarianism, a diet that abnegates from the consumption of meat, has been around since the dawn of time. In the Paleolithic area, plants were much more accessible than animals, as it was easier to gather than hunt. Ancient Greeks believed animals had relations to humans and therefore, killing them was an injustice. The Greek philosopher Pythagoras, the creator of a certain theorem that students knew and loved in middle school, has also widely been considered the “father of ethical vegetarianism” due to his stance on reincarnation.¹ Vegetarianism is also common in the religions of Hinduism and Buddhism. Around one-third of India is vegetarian versus 12.1 million Americans out of the 320 million population of the United States.¹



Other than for religious reasons, individuals can opt for a vegetarian diet for a variety of motives. A leading rationale for the diet is on the behalf of the animals slaughtered for consumption. There is also a pitch for vegetarianism for the environment’s sake as climate change rages. For example, livestock is a major source of the production of the greenhouse gas methane. Others stray from meat for health concerns or out of fear of adverse effects of meat consumption, such as high levels of saturated fat and low-density lipoprotein (LDL) cholesterol. A vegetarian diet is said to decrease blood pressure, weight, and cholesterol serum levels.² It is associated with increased intake of folate (vitamin B9), a vitamin critical for rapid cell tissue division. Folate can be found in legumes, dark green leafy vegetables, and peanuts among other plant sources. A folate deficiency, as is a vitamin B12 deficiency, is coupled with elevated homocysteine levels and consequently, an increased risk of heart disease.



Folate is especially important in pregnancy, as a deficiency is linked to neural tube defects.² Plants are also abundant in phytochemicals, such as carotenoids, glucosinolates, flavonoids, and phytic acid, unlike animal products. Their synthesis of phytochemicals fuels the fight against free radicals, which lead to cell damage and oxidative stress. A major critique of the vegetarian diet is malnourishment via a protein and vitamin B12 deficiency. This can be a misconception, as there are multiple plant sources of protein. However, there is some validity in these claims; the “mean plasma vitamin B12 values of vegetarians” can range from 17-39% below acceptable values.¹ There are not many plant sources of B12, but it is found in small amounts in sauerkraut, shiitake mushrooms, and spirulina to name a few. For food such as produce, the consumer reaps the most benefits when it is eaten raw.

As food is processed through methods like milling and heating, nutrients are lost.¹ For example, folate’s availability is destroyed via heat and oxidation.

The importance of fortified foods in meeting expected nutrient requirements should not be discounted either, as a produce-dominated diet can be out of reach for some due to availability and expense. Overall, it is important to note that macronutrient, micronutrient, and caloric needs vary from person to person. Adequate nutrition does not fit into one box and can be achieved in multiple ways across multiple spectrums.

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NUTRITION CLUB SPOTLIGHT: SNDA

By: Laura Rogers



This month we are featuring UNF's Student Nutrition and Dietetic Association (SNDA). This club is focused on educating students on the importance of nutrition as a critical contributor to health. The mission of SNDA is to prepare students to become successful in their future careers as nutrition and dietetics professionals. This is accomplished by providing a variety of opportunities for nutrition and dietetics students to gain essential field-related experience on campus and within the community. These opportunities include volunteering, networking among peers and professionals, and getting an early start on acquiring continuous education and experience in the field. SNDA is most well known for its Apples-To-Apples mentorship program, which connects current seniors to underclassman in the dietetics program.

SNDA hosts monthly meetings, participates in UNF market days, and services the community through volunteering.

November Events:

- General Body Meeting: Uniquely Dietetics
- Wednesday, November 10th at 10 am on the third floor of the SU
- RDs with a variety of specialties will be presenting
- Market Day
- Wednesday, November 17th at 10 am - 12 pm at SU plaza
- World Fest Village theme: Food Security
- During the Holidays
- Volunteer Day: Giving Back for Thanksgiving
- A nutrition-focused event serving the community
- Date and location TBA

All SNDA meetings are held on the second Wednesday of every month at 10 am, and Market Day events are on the third Wednesday. Remember to follow them on social media to stay up to date on the many new events to come, and membership can be obtained via Perch Portal request.



Student Nutrition & Dietetics Association



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DIWALI

Festival of lights

In India, this ***November 4th, 2021*** is
the celebration of
light over darkness and good over evil
by people of different faiths such as
Hindus, Jains, Sikhs, Muslims
and some Buddhists



STUDENT SPOTLIGHT: ANITA DIAZ

BY: CAROL RIGGINS



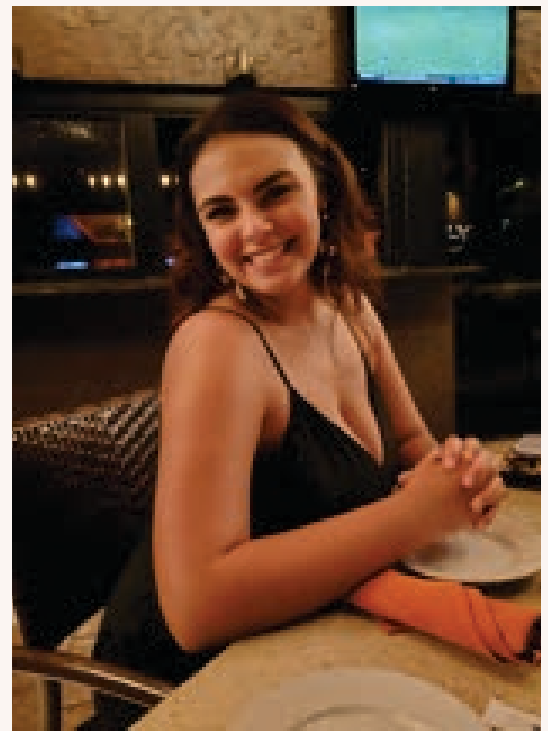
Happy November! Get your warm socks, sweaters, and hot coco ready because fall is official and we're falling for our next Student in the Spotlight, [Anita Diaz](#)! Anita was born and raised in Jacksonville and spent seven years in the theatre before enrolling in UNF. Her favorite foods are rice and beans, pad thai, donuts, pizza, chocolate, and iced coffee (yum!). Anita is currently a senior in the UNF Nutrition and Dietetics program and will be graduating next fall. She is already making a difference in the world of nutrition by working as a dietary technician at an eating disorder treatment center alongside two Registered Dietitians who also graduated from the same program here at UNF. Read further to learn more about Anita's experience thus far in the Dietetics Program!

What made you want to pursue a degree in Nutrition and Dietetics?

I first wanted to pursue a degree in Nutrition and Dietetics after learning about functional nutrition in an attempt to help my mom manage some of her health issues. I was working at a gym at the time and as I was learning more about health and fitness in general, I realized that nutrition was something I was passionate about and wanted to pursue. I wanted to help people realize that eating healthfully doesn't have to be boring, intimidating, difficult, or expensive. It can be easy, enjoyable, and affordable!

Do you have a favorite course this semester? If so, why?

I am enjoying Medical Nutrition Therapy so far! Before this semester I didn't think I would enjoy clinical nutrition, however as I learn more about it, I am finding that I am more interested in it than I initially thought I would be.



What has challenged you most during your time in the UNF Dietetics Program?

Time management has been my biggest challenge during the Dietetics program. This is a rigorous program, and the classes can be very intense. I have struggled with balancing coursework on top of my job and making personal time for myself. I am a procrastinator by nature, and I have been challenging myself this semester to put an end to that habit.

Do you have any advice for incoming students entering the nutrition program?

My advice for incoming students would be to stay ahead or at least stay up to date on assignments, but make sure you are prioritizing making time for yourself too! It is so easy to think that since you have so much work due that you don't have time to take a break or practice self-care. Those busy times are the times when you need to take care of yourself the most, so incorporate self-care into your schedule. Whether that means meditation, working out, reading, whatever it is – make sure you take time for you, and I promise it will make school and life so much better!

What do you enjoy doing most when you aren't busy with school?

When I am not busy with school, I enjoy reading, working out, practicing yoga, and going on adventures with my boyfriend. We love to find unique places to visit nearby and spend time outdoors. We recently visited Driftwood Beach in Jekyll Island, and it was so cool! It is only about 1.5 hours from Jacksonville, and it is worth the drive. (I included a picture below!) I also have a (very small) Etsy shop where I sell stickers and other things which has been a great creative outlet for me during school. It is still small, but I am hoping to grow it eventually!



Tell us about your volunteer experience. Do you have a favorite program with which to spend your free time?

Last semester I volunteered at the Feeding Northeast Florida Mobile Corner Markets, and I had a great experience. I had a lot of wonderful interactions with the recipients and I always enjoyed hearing them tell me what kind of recipes they liked to make with the food they received and what healthy foods they enjoyed eating. It was awesome to see their gratitude as well and be a part of giving back to a community of people who appreciated it. Now that I am the Volunteer Chair for NDLA, I have found some new organizations that I am interested in volunteering with, and I am hopeful that other students will enjoy these organizations as well!

What are your goals after graduating from the program?

After graduation, I am planning on either working full-time for a semester or two or going straight into an internship. I am still exploring what path I want to take as a dietitian, so I am taking time to make sure I find internships that are a good fit for me and going from there. I am also interested in being a certified Integrative and Functional Dietitian in the future and potentially running my private practice.

Do you have a traditional Thanksgiving dish that you enjoy making and that you would like to share?

I usually don't cook Thanksgiving dishes because the one year my family let me cook, I tried to make everything super healthy, which they were not happy about. However, I do have a favorite traditional dish to eat and that is yams with brown sugar! My mom has made it since I was a little kid, and it's the food I think of when I think "Thanksgiving."

Do you have a favorite inspiring quote or mantra that you live by?

I would say my favorite quote or mantra is "work hard, stay humble, and be kind." I think it's important to work towards goals and stay focused on those ambitions, but I also want to stay humble and kind in the process. I feel the world needs more kindness and it is always my goal to spread kindness as much as I can!

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Faculty Spotlight

BY: ANNA WATERMAN



Dr. Ross



Dr. Wright

Question: What is your professional background? What brought you to UNF and what are your roles here?

Dr. Ross: Before setting her sites on nutrition, she has had numerous other careers in social work, as a contractor for the EPA, and in the fitness industry as an aerobics instructor, spin instructor, and personal trainer. Being in the fitness industry led to her interest in nutrition so she decided to get her bachelor's degree in nutrition.

Dr. Ross chose to complete her dietetic internship here at UNF via the MSDI program. During her internship, she completed a specialty rotation in teaching and eating disorders. She then went on to work with a private practice at the beach entitled "Preferred Nutrition" where she honed her skills as a dietitian. During this time, she also continued to teach at UNF. She decided to continue her education and became part of the first graduating class to complete the Doctor of Clinical Nutrition (DCN) program here at UNF. Currently, Dr. Ross is an assistant professor at UNF and the program director for the undergraduate nutrition program.

Dr. Wright: Dr. Wright is a first-generation college student who was told she could become either a teacher or a nurse. Due to her love for being in a hospital setting, she decided on becoming a nurse. That all changed when she took a nutrition class during her sophomore year of college and thought, "this is incredible." She went on to receive her bachelor's degree in dietetics at Ohio State University. Upon graduating, she applied to three dietetic internships. One of the internship sites shut down, one turned her down, and she was an alternate at the last one. As luck would have it, a spot opened at the sister internship to the one in which she was an alternate. She got a call from the VA internship one week before the program started and she decided to take the spot.

As to where her career would go next, it would take a leap of faith. Dr. Wright reached out to the clinical nutrition manager at the Tampa VA. At the end of this call, she was offered a position as a general medicine dietitian. She continued to work there for 14 years.

With her sights set on becoming an internship director, Dr. Wright decided to continue her education by pursuing a Ph.D. She completed her Ph.D. in education and leadership and also became a site visitor for ASCEND. Her dream of being an internship director came to fruition when Bay Pines VA wanted to start its own internship. There, she started a dietetic internship program. After she had been with the VA for 20 years, she decided it was time to move to higher education. So, she left the VA to come to UNF where she was the internship director for 2 years. Although she loved UNF, this was a really tough period because she was a single mom and was away from her support system. She decided to take a job at USF to be closer to family but left on good terms and stayed in contact with the senior leaders at UNF who became her mentors.

At USF, Dr. Wright started a minor in nutrition and later an internship/master's program.

After being at USF for 6 years, Dr. Wright had the opportunity to interview at UNF for the DCN program director position. This came at the right time because, as the only dietitian at USF, she missed the comradery of other dietitians and dietetic students. Dr. Wright accepted the position to start and direct the DCN program here and states that it was "the best move I ever made."

Over the years, Dr. Wright has had what feels like multiple careers within the field of dietetics - Ranging from being "diehard clinical," to a public health role with her research on HIV, then more community and global nutrition with her fight against food insecurity here in Jacksonville and her research in Ghana.

Currently, Dr. Wright is the department chair, co-director of the DCN program, and director of the Center for Nutrition and Food Security which includes the Meals on Wings program.

While reflecting on both of their journeys in the field of dietetics and the diversity that this field has to offer...

Dr. Ross: "that's what is so great about this field, there's so much you can do"

Dr. Wright: "You have to go for things. Like Dr. Ross going for DCN, it was a lot of time and money, she had small children, but you have to go for things! This field is so wonderful, so many opportunities."

Dr. Ross: "It's not just about being in the hospital. That's just one aspect and while it is great, this field has so much more to offer."

Dr. Wright: "You want to practice at the top of your game. If you're going to be a clinical dietitian, be the best clinical! Be on rounds, have the doctors listening to you. If you're in the community or an entrepreneur, be the best that you can, Practice at the top of your game!"

Dr. Ross: "Understand how broad our scope of practice is and then work to broaden that scope even further. And go there! Keep pushing."

Question: What do you feel makes the program at UNF unique and sets it apart from other programs?

Dr. Wright: "One thing is that students have professors, not teaching assistants and they are all practitioners. The faculty is very approachable, very pro-student. Dr. Ross is always available for her students. Dr. Arikawa in the DCN meets with some students who are struggling, every week, even on Sundays! Nowhere will you find a program like this."

Dr. Ross: "We greatly value mentoring and that aspect of teaching at UNF."

Dr. Wright: "You can't find that (the mentorship) at any other university."

Dr. Ross: Another thing I talk about with prospective students is the opportunities here that link back to the faculty. The staff here are connected. Former internship directors are employed here; the staff knows people and shares those connections with the students so there are opportunities to get involved at local, state, and national levels if that's what the student wants. This is a BIG piece of what makes this program great.

"You and I [Dr. Ross and Dr. Wright] are boots on the ground" For example, at Meals on Wings we "wash the dishes, get the food, we are very hands-on." And that applies to everything that we do, not just at MOW. We are very connected to the students, being able to just talk with them and be involved.

Dr. Wright: "One example of how the faculty cares is when covid hit, we had a virtual graduation for our department that was so personalized (Huge credit to Mrs. Baron for putting a ton of work into that)."

"Graduations are so great, dressing up in your gown for your parents to see, but this was so personal. We did it again this year because we thought, 'they deserve this, they have worked so hard.' The graduates all got to say something, the parents of the graduates all got to be right there, it was so personal and so special. This is just one example: The program really cares; we really care about the students."

"You [as a student] may also get many opportunities to apply what you have learned in the community. As an internship director, that was one thing I noticed about UNF students, they had experience. They have talked to patients and led grocery store tours. In MNT [Medical Nutrition Therapy], you will lay hands on a patient, you will counsel a patient, you really get to do these things ahead of the internship. That's such a great advantage."

Dr. Ross: "That's a big focus for us when talking about the curriculum. We're constantly thinking of ways to improve the curriculum. We're always evaluating what worked well and what didn't. What are internship directors saying? I survey them and they give really great specific feedback." This helps us better prepare our students.

Question: What has been the biggest obstacle in making this program as amazing as it is today?

Dr. Ross: The focus is on treating the whole person. What was always said in my private practice was "Why would I give you something that you can tear out of a magazine in the waiting room." Looking at the whole person, treating them from a holistic mindset: mind, body, and spirit; asking the patient what it is that they need. Hopefully, we are shifting there.

Dr. Wright: "In MNT you will learn the nutrition care process, and at the center is the individual. It is ALL about individualized care which takes into account their abilities, their goals, their fears."

So, do you feel like that's how you have tailored this program over the years, to account for the individual and their educational needs?

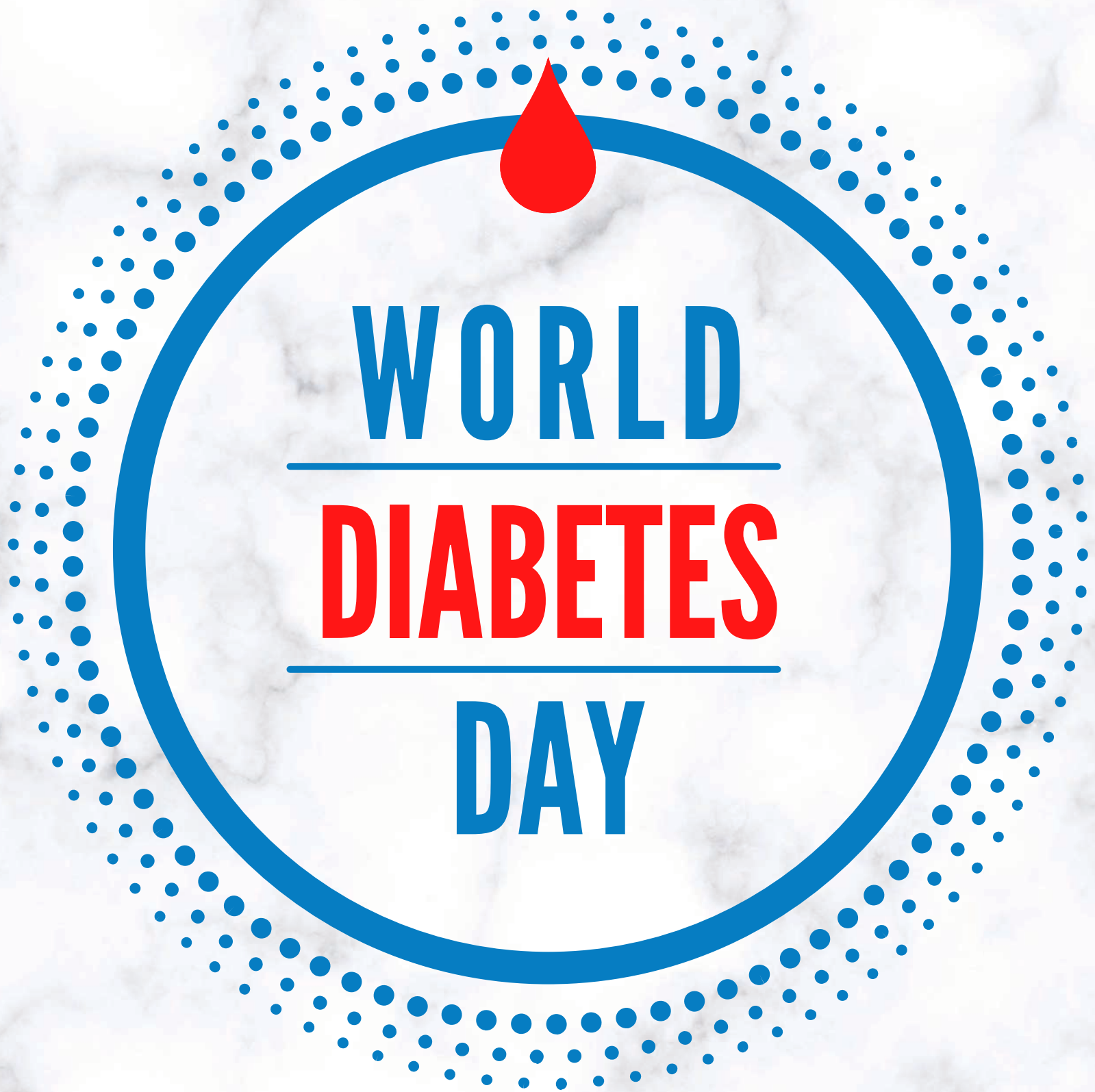
Dr. Ross: "I think we do. Everybody has a different situation; we really try to work with the students. We've always really tried to work with students. It doesn't have to be one certain way all the time. How can we set you up for success without losing the rigor and making sure that you are still prepared for your next step? So yes, I think it does carry over."

Dr. Wright: "I think it's really evident and strong now but has always been the heart of this program and how Dr. Rodriguez built this program to be."

Editor's Notes: These two women are not only brilliant and incredibly hard workers, but they also care deeply about the nutrition programs and the students at UNF. If you are a current or prospective student who are thinking about becoming a registered dietitian, these are the ladies you want in your corner! If you have questions about the nutrition and dietetics programs at UNF, you can contact them with the information provided below.

~Kindly,
Anna Waterman
Editor-in-Chief

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November 14



Are Vegans More at Risk for Developing a B12 Deficiency? Here's What You Need to Know

BY HALEY BROCK



Vegan and vegetarian diets have been growing in popularity recently, especially as consumers have started to have more interest in what makes up their food. A vegan diet is a diet that contains absolutely no animal products, such as honey, milk, eggs, meat, fish, and cheese. While a vegan diet is usually rich in fruits, vegetables, legumes, whole grains, nuts and seeds that provide many of the necessary micronutrients our bodies need, it can sometimes fall a little short, especially when talking about vitamin B12.

Vitamin B12 has the largest and most complex structure of all the B vitamins and is important for many functions in the body like DNA synthesis, myelin synthesis, and energy synthesis. Vitamin B12 is only synthesized by microorganisms, which means it is never found naturally in the plant-based foods that make up a vegan diet (unless the food has been contaminated or fortified).¹ Vitamin B12 is only found in animal-based products like milk, dairy, meat and eggs. Vegetarians can suffer from

suboptimal B12 levels simply by restricting their meat intake.

It used to be thought that B12 deficiency was an extremely rare condition that only occurred in strict vegans or vegetarians, but many other populations are subject to B12 deficiency as well. B12 deficiency is relatively common among the elderly, lacto-ovo-vegetarians, people who take metformin for diabetes, people who take long-term antacid drugs for heartburn, pregnant women, and people who have had surgery that removes the part of the bowel that absorbs B12.¹ Signs and symptoms of B12 deficiency include pale or jaundiced skin, weakness and fatigue, the sensation of pins and needles, issues with balance and coordination, dizziness, breathlessness, disturbed vision, and irritability or mood changes.

To prevent vitamin B12 deficiency, it is absolutely essential to take a supplement or obtain vitamin B12 from fortified foods like nutritional yeast, plant milks, breakfast cereals, tofu, and dairy-free yogurt. In fact, just two tablespoons of nutritional yeast contain the US RDA for B12 and gives food a nice, cheesy flavor!

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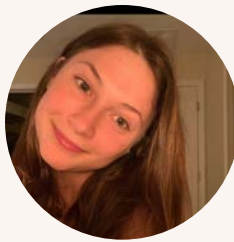
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Autumn Butternut Squash & Spinach Rigatoni

By: Paige Courtier



Ingredients:

- 4 cups butternut squash, cubed
- 2 cloves fresh garlic, minced
- 1 vidalia onion, diced
- 5 oz fresh spinach
- 8 ounces rigatoni or pasta of choice
- 2 tablespoons olive oil
- 1 cup vegetable broth
- ¼ cup plant-based or dairy parmesan cheese
- Red pepper flakes, to taste (remember a little goes a long way!)
- Salt, to taste
- Pepper, to taste
- Toasted pine nuts, to garnish (optional)



Recipe:

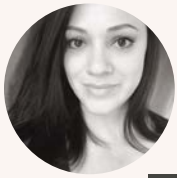
- Preheat the oven to 400°F.
- Peel, deseed, and cube the butternut squash.
- Place squash into a bowl and toss evenly with olive oil, salt, and pepper. Arrange evenly on a lined baking sheet.
- Finely dice the onion and mince the garlic, set aside.
- Once the oven is preheated, place the butternut squash into the oven and bake for 20-25 minutes.
- Cook pasta according to instructions.
- In a large skillet, heat 2 tablespoons of olive oil.
- Add in the garlic, diced onion, salt, and pepper (be careful not to burn the garlic). Sauté until the onion becomes translucent.
- Add in the vegetable broth, parmesan cheese, and red pepper flakes. Simmer over low heat for about 5 minutes.
- Drain the pasta, then add to the skillet.
- Add butternut squash and fresh spinach to the skillet, cooking until the spinach wilts down.
- Serve with more parmesan and toasted pine nuts, if desired.



November 28th -
December 6th

Happy Hanukkah





SHOPPING IN SEASON: BEETS

BY: TANYA RIGGS

The Versatile World of Beets:

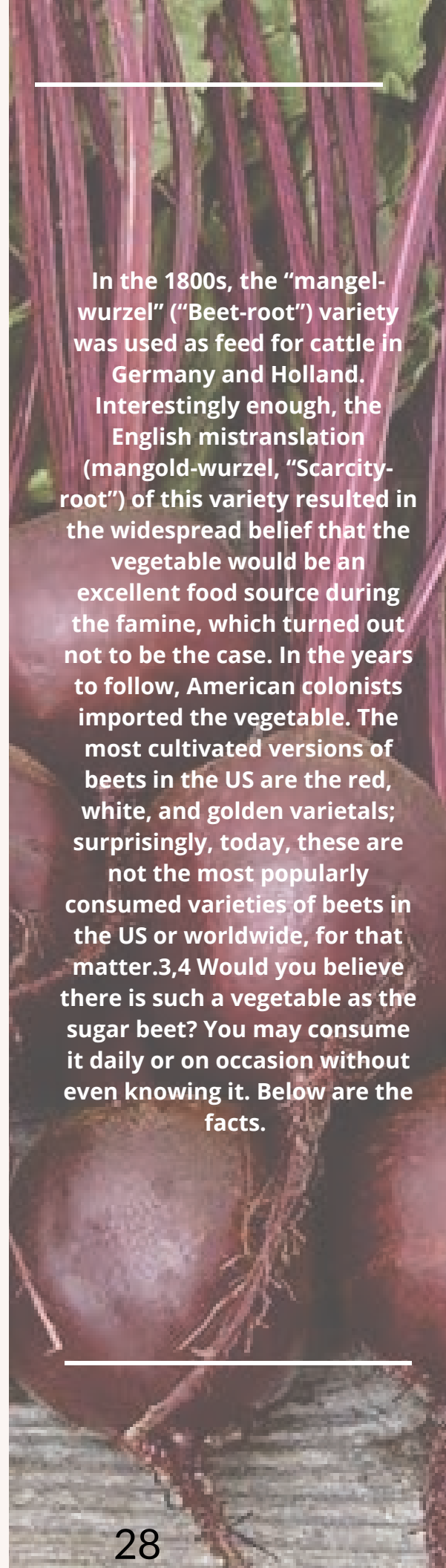
Ah, fall is here, and what better way than to celebrate autumn than with one of the most delicious and robust vegetables around! In today's kitchens, the beet is not as widely consumed as other root vegetables like the potato and onion; however, this humble root vegetable was once a staple of past civilizations. Moreover, past civilizations showcased the beet's origin in a very different light. There are many varieties and uses for beets and many health benefits associated with them. With this information, it is no wonder why in recent years, beets have steadily regained popularity in the eyes of chefs and novice domestic chefs alike. This article will showcase the distinct charm and benefits of beets worldwide.^{1,2}

Agricultural History:

Beets or, *Beta vulgaris* ssp. *vulgaris*, known scientifically, are a very diverse species providing 57 different varieties of produce found around the world. Beets, named for their resemblance to the Greek letter Beta from its swollen, turnip-like appearance, resemble a Greek B.^{2,3} The origins of beets can be traced back to ancient Greek civilization as they are strangely coveted only for their edible leaves or better known as "chard." The first recording of domesticated beets dates back to 2000 BC, which was grown by both Greeks and Romans. The cultivation of beets for their root(bulb) was first recorded in Germany in the late fifteen hundreds. Chard's medicinal qualities also date back to this time.³ The more familiar and widely consumed portion of the vegetable was not utilized until the third century AC and was coined the "Beetroot " and was cultivated to produce white and red varieties. These German versions of beets were procured from the seacoast of the Mediterranean as it was found growing wild. Termed the "Roman beet" utilizing both the bulb and leaf chard of the vegetable, it was brought into acceptance throughout Italy. Over this time in its development, Italy cultivated most of the hybrid versions that we see today.^{1,3}



In the 1800s, the "mangel-wurzel" ("Beet-root") variety was used as feed for cattle in Germany and Holland. Interestingly enough, the English mistranslation (mangold-wurzel, "Scarcity-root") of this variety resulted in the widespread belief that the vegetable would be an excellent food source during the famine, which turned out not to be the case. In the years to follow, American colonists imported the vegetable. The most cultivated versions of beets in the US are the red, white, and golden varieties; surprisingly, today, these are not the most popularly consumed varieties of beets in the US or worldwide, for that matter.^{3,4} Would you believe there is such a vegetable as the sugar beet? You may consume it daily or on occasion without even knowing it. Below are the facts.



Preparation/Consumption:

Beets can be consumed in many different ways. Beets are utilized in their raw form in products like natural food dyes and paints which can produce a wide array of hues from black to eggshell white.

They are also consumed in their raw form in cold-pressed juices and smoothies. Beets can be roasted, pickled, dehydrated, irradiated, and fried. When handling this moisture-laden vegetable, it is suggested to use gloves and leave an inch or so of the green tops to minimize dying and bleeding during preparation and storage. If storing beets and beet greens in the refrigerator, wrap in a damp cloth or plastic wrap. This packaging will allow them to retain their natural moisture and pH allowing them to last for several weeks. Beets can be stored in the freezer, but practice caution as a maximum 3-inch bulb yield the best preservation. Wash and sort by size and leave ½ inch tails, so they do not bleed when boiled. You can store them for up to six months. Once thawed, you can boil them until tender. It will make slipping the skin off easier. Pickling is common in the fall and winter months as they can stay fresh for a year. Beet greens can be prepared similarly to collard greens and kale.^{1,9} I enjoy them sautéed in EVOO and fresh garlic or featured in a mixed green salad.

Health Benefits:

Beets are a great source of vitamins, minerals, and antioxidants. In 1, 100mg serving, beets offer 2.8g of fiber, 16 mg of calcium, 23 mg of magnesium, 325 mg of Potassium, 33 IU of vitamin A, 109 µg of Folate, and 20 µg of Beta Carotene. Beets also contain Folate, which is known to decrease serum homocysteine and in turn, decrease inflammation and risk of heart disease. Consuming adequate amounts of Folate in your diet, especially in older adults has shown benefits of overall health.^{1,9,10,11}



In closing, beets are far more than just a vegetable that is featured in seasonal dishes or found in a popular cold-pressed juice at your local juice bar or farmers market. They are something more remarkable than all of those things. What is hardly utilized in today's kitchen is far more abundant in its processed form without public knowledge. Its impact is not fully understood or appreciated, even though it is a staple of our current society. It is so prominent that it's hard to believe the average person is unaware of the amount of beet product they consume. I would consider this information more enlightening and profound than startling. With that being said, I hope that we all come to embrace beets for their genuinely remarkable potential and diversity. Embrace and incorporate these triumphant vegetables in your fall & winter-themed dishes this year!

The Sugar Beet:

Sugar beets are featured as their segment as it is the most abundantly cultivated and consumed beet worldwide. The following information feels more like a PSA versus facts, but I assure you that it is pretty fascinating stuff and something I learned myself recently! The average American consumes 152lbs of sugar annually.⁵ Of that amount, a good portion of Americans are consuming refined sugar in various amounts. Now what you probably don't know is that the refined, natural sugar you're consuming is not all from sugarcane but comes from the "sugar beet."



What is a sugar beet, you ask? It's a beet by any regard; however, during the mid-1700's German chemist Andreas Margraff found that both the white and red beetroot contained high amounts of sucrose, the chief chemical compound found in sugar that gives it its sweet quality. Margraff postulated that the modification and extraction of this compound was possible and that if grown in temperate climates, would be ideal for manufacturing sugar for more global demand.

It wasn't released until half a century later how to extract this product for global use.^{1,3} Napoleon was one of the most prominent proprietors of the crop and encouraged its research mainly to reduce Europe's reliance on West-Indie export. Being that it is a high-priced and unattainable product for most Europeans, he provided them the ability to dominate the sugar market. During Napoleon's rule, there were over 79,000 acres in production, with more than 300 small factories erected in France. Post-rule west-indie production trumped the European market; however, the decline of slavery in the West Indies helped Europe reclaim its sugarbeet production as its chief sugar commodity.³

Even more fascinating is that there were many failed attempts to bring sugar beet into production in the US. It wasn't till the 1850's that Mormon pioneers began to cultivate and produce the product as a more independent means of providing revenue. In 1852 they opened the first long-term factory near Salt Lake City with a machine bought from England brought by wagon from Utah to Kansas. Due to unsuccessful attempts to produce crystalline sucrose, this attempt was a bust. This factory was the first of many trial and error attempts to create sugar beet sugar. Researchers later found that the most significant variable affecting the production was the sugar beet seed purchased from Europe. The USDA and researchers found that they could produce the right product by using home-cultivated sugar beets.³ In the present day, the US has ranked 3rd in global production of sugar beets at 29.8 million tons annually.^{3,5,6}

US Agriculture: Seasons/Regions/Production:

Back to the general, more encompassing product; beets. Beets are a more versatile vegetable as they can be grown throughout most of the year. Beets are in season from summer to winter.⁷

Beets, primarily the sugar beet, are grown in the upper Midwest, such as Michigan, Minnesota, North Dakota, Great Plains, Colorado, Montana, Nebraska, and Wyoming. Beets can also be found growing in far western states like California, Idaho, Oregon, and Washington. 1.1 Billion acres with an average of 32 tons are harvested annually.⁸

Recipe:

This recipe is for all levels of the domestic chef. This recipe is one of my favorites, and I can recreate it year-round. Thank you, Barefoot Contessa, for this delicious creation!! I prefer golden beets as they are sweeter and less earthy. This recipe is sure to be a crowd-pleaser and will be your new, go-to accompaniment with any protein and is a yummy addition to a potluck! I crave this all the time; I'm sure you will too!

Pro Tip: Replace the almonds with lightly pan-toasted pistachios.

Balsamic Roasted Beet Salad

SERVES 6 | LEVEL: INTERMEDIATE

8 medium-size beets, tops removed and scrubbed
1/2 cup balsamic vinegar
1/2 cup good olive oil
2 teaspoons Dijon mustard, such as Grey Poupon
Kosher salt and freshly ground black pepper
4 ounces baby arugula
1/3 cup roasted, salted Marcona almonds, toasted
4 ounces soft goat cheese, such as Montrachet, crumbled

Directions:

Preheat the oven to 400 degrees Fahrenheit.

Wrap the beets individually in aluminum foil and place them on a sheet pan. Roast them for 50 minutes to 1 hour, depending on their size, until a small sharp knife inserted in the middle indicates that they are tender. Unwrap each beet and set aside for 10 minutes, until cool enough to handle.

Peel the beets with a small, sharp knife over a piece of parchment paper to prevent staining the cutting board.

Meanwhile, whisk together the vinegar, olive oil, mustard, 2 teaspoons salt, and 1 teaspoon pepper and set aside. While the beets are still warm, cut each one in half and then each half into 4 to 6 wedges and place them in a large mixing bowl. As you're cutting the beets, toss them with half of the vinaigrette (warm beets absorb more vinaigrette), 1 teaspoon salt, and 1/4 teaspoon pepper.

Taste for seasonings.

Place the arugula in a separate bowl and toss it with enough vinaigrette to moisten. Put the arugula on a serving platter and then arrange the beets, almonds, and goat cheese on top. Drizzle with additional vinaigrette, if desired, sprinkle with salt and pepper, and serve warm or at room temperature.¹²

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DON'T FIGHT THE PHYTONUTRIENTS!

BY MELISSA BRENNAN, M.S.



Not everyone chooses to follow vegan or vegetarian diets, but there is no denying that adding plant-based meals or snacks into your weekly menu is a great way to increase your intake of phytonutrients, fiber, vitamins, and minerals. Here are three easy ways to implement more plant-based meals into your diet:

Experiment with seasonings.

When creating plant-based meals and snacks, they don't need to be boring and one-note. While someone may prefer a simple plate of raw vegetables, adding seasonings, simple sauces, or vinaigrettes to the preparation process can amp up flavor profiles and make meals more exciting. Creating a plant-based pesto mixed with vegetables and roasting until slightly crispy can make for some dynamic flavors. Using different vinaigrettes for fruit and vegetable salads is another way to create a plant-based meal with more interest. Spending some time in the fresh herb section of the grocery store as well as the spice section can help you see more flavor profiles available for you to try and experiment with.

When in doubt, hide them!

While bringing out the natural flavors of fruits and vegetables can be a fun and delicious way to make produce the star of the show, sometimes you may just want the produce to play a background role. Hiding fruits and vegetables in your meals is another way to increase your intake and create healthful meals. Smoothies are an excellent example of a plant-based meal that can be delicious and hide a plethora of fruit and veggies. There are many combinations you can create that are delicious, fulfilling, and nutritious. Adding in a tablespoon of cocoa powder and a tablespoon of peanut butter can mask the flavor of any greens, like spinach and kale. Consider adding vegetables like zucchini, carrots, celery, and eggplant to sauces for pasta dishes. This can ramp up the nutrients and flavors in the dish, while still presenting as a comforting meal.



CREATE COMPLETE PROTEINS!!



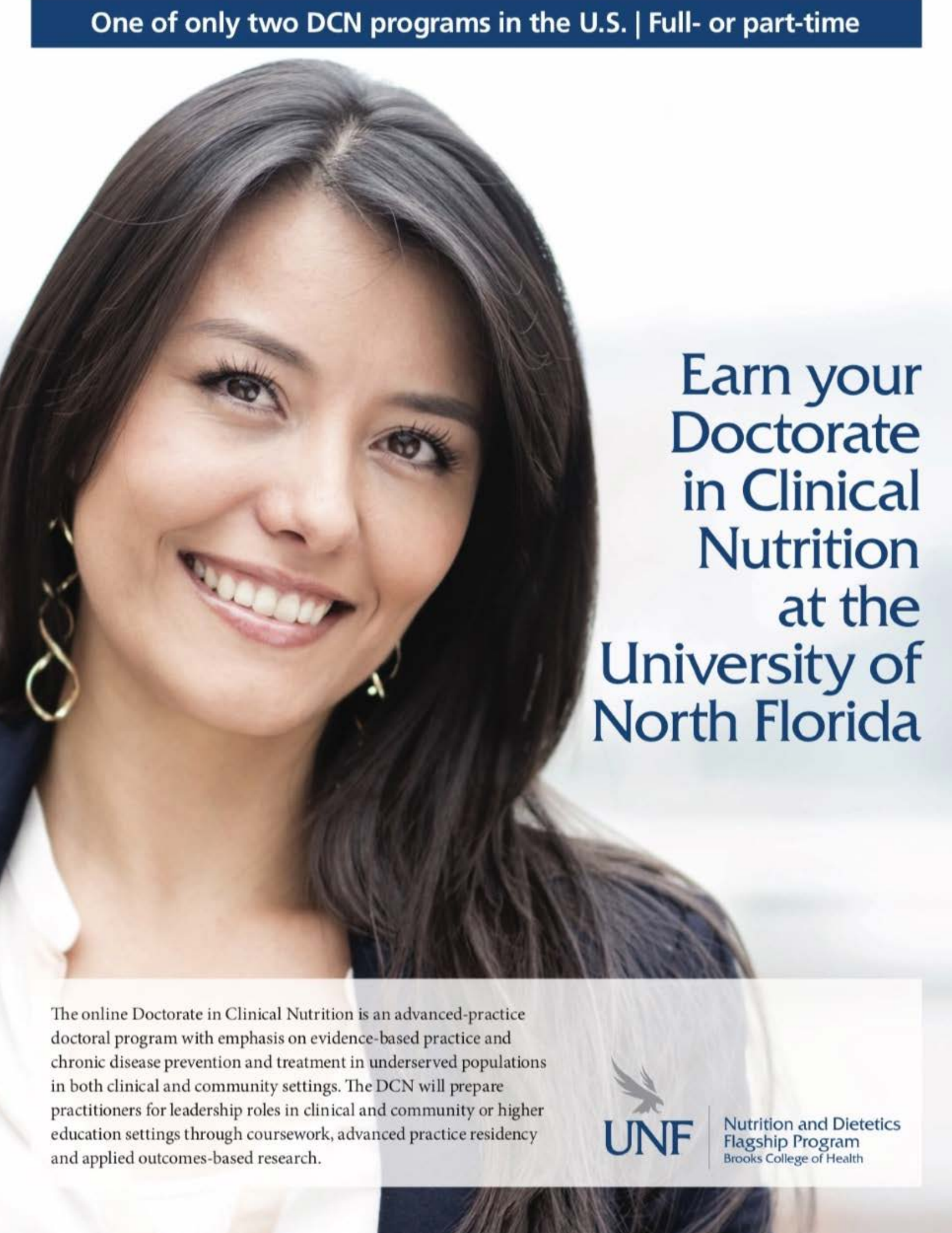
Create complete proteins.

When creating plant-based meals it's important to consider the quality of the protein you are consuming in your overall diet.¹ Protein can either be complete (contains all the essential amino acids that the body needs) or incomplete (missing one or more of the essential amino acids that the body cannot make). Some complete plant sources of protein are soy products, including tofu and edamame. Incomplete protein sources include legumes, nuts, seeds, whole grains, and vegetables. When creating meals, combining incomplete protein sources throughout the day can create the complete proteins that your body needs.

For example, mixing rice and beans can create a complete protein and just happens to be a great base for a burrito bowl! Making a peanut butter and jelly sandwich on whole-wheat bread can create a complete protein source throughout the day can create the complete proteins that your body needs. For example, mixing rice and beans can create a complete protein and just happens to be a great base for a burrito bowl! Making a peanut butter and jelly sandwich on whole-wheat bread can create a complete protein source as well. Mixing and matching different plant-based ingredients can help you reach your health goals whether you are on a plant-based diet or not!



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Can athletes be plant-based?

By: Brianna Brand



No matter what diet an individual chooses, they all have one thing in common; the consensus that the more whole plant foods an individual consumes, the better it is for overall health. In athletes, studies show that exercise leaves the body in a state of oxidative stress¹; it is believed that vegan diets reduce this inflammation due to the high levels of antioxidants and phytochemicals in the diet when done correctly. Despite the high micronutrients and minerals the vegan diet provides, some nutrients may need to be supplemented in select individuals. For vegan athletes, supplementation of iron and creatine may benefit their performance considerably.

There are two types of iron: heme iron found in animal products and non-heme iron found in plants. Although the vegan diet is high in non-heme iron¹, a significant amount more of non-heme iron needs to be consumed to reach adequate iron needs because the human body does not as easily absorb compared to heme iron. Iron depletion harms athletic capabilities because iron is essential for oxygen transport² throughout the body. In most cases, male athletes can get sufficient iron on a vegan diet. However, female athletes have a much higher chance of developing anemia¹ due to higher iron needs related to blood loss during menstruation.

Just like the average omnivore athlete, a vegan athlete will be able to reach their full athletic potential so long as their training and diet match their goals. In many studies comparing endurance,





strength, speed, and power, the differences¹ between athletes on either a vegan or non-vegan diet were negligible when calories, macronutrient ranges, and training were matched. Interestingly, it was found that those on a vegan or vegetarian diet were more sensitive to supplementation of creatine² than those practicing an omnivore diet, likely because creatine is only found in the diet through animal products. This can make creatine supplementation a great advantage to vegan athletes that participate in high-intensity exercise, such as weightlifting or sprinting. Creatine is naturally occurring in the body. When creatine is taken exogenously³ by vegans or non-vegans, it improves recovery time, ATP (energy) synthesis, strength, and fat-free mass composition. In terms of calorie and macronutrient comparison between a vegan diet vs. an omnivore diet, data indicates that a vegan diet is often lower² in calories, saturated fat, sodium, and calcium. Vegan athletes should follow similar protein recommendations as their teammates when it comes to protein. For example, the current recommendation¹ is that endurance athletes consume 1-1.6 g/kg of protein a day, and for higher intensity or strength, they should consume 1.6g/kg/day. Like with iron, there is a difference between plant protein composition and animal protein. Animal protein is categorized as a complete protein. In contrast, plant protein is considered an incomplete protein, meaning that it does not contain all the essential amino acids needed for protein synthesis. However, it is possible to

combine different sources of plant protein to make a complete protein. Because of this, it is recommended for vegans to get their protein from various sources. It may also be beneficial to aim for the higher end of the protein range² to make up for the incomplete protein sources. Aside from hitting the appropriate protein goal, someone on a vegan diet may benefit from supplementing specific amino acids. One of which is beta-alanine³, an amino acid found primarily in meat, poultry, and fish and is a precursor for carnosine. Carnosine is stored in the muscle tissue and is linked³ to better performance, recovery, and growth. To conclude, those who are practicing a vegan or vegetarian diet will still have comparable performance and muscle growth potential to their omnivore competitors so long as their training and nutrition match their outcome goals. Of course, just like with any diet, supplementation may be needed to get in all the proper nutrients.

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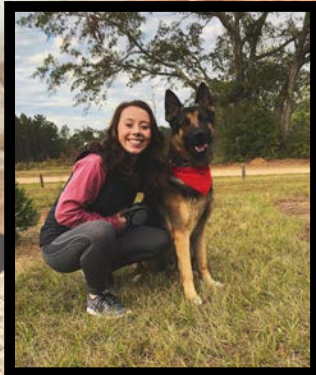
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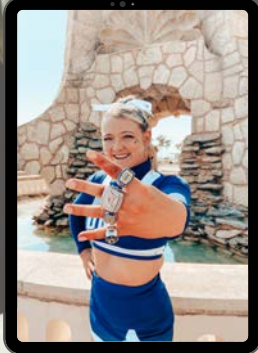
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