This month’s focus is how nutrition plays a role in immune function. A proper diet can boost the immune system and help a person stay healthy and disease free even during the dreaded flu season. There are several different vitamins, minerals and food groups that fall in the immune booster category. These booster foods can increase the number of white blood cells and enhance their function while helping to flush non-functioning cells from the body. Listed below are some key nutrients and the foods where they can be found.

### IMMUNE BOOSTER NUTRIENTS

**Vitamin C**
Sits at the top of the immune boosters. It increases infection fighting white blood cells and antibodies as well as interferon, which is the antibody that coats cell surfaces and prevents the entry of viruses. It also increases HDL (good cholesterol) and decreases blood pressure, making it a key element in fighting cardiovascular disease.

Common foods containing vitamin C include: bell peppers, citrus fruits (oranges, limes, lemons), dark green leafy vegetables (spinach, broccoli, sprouts) and herbs (parsley, thyme).

**Vitamin E**
It stimulates natural killer cells that seek out and destroy germs, bacteria and even cancer cells. Vitamin E also increases the production of B-cells which produce antibodies and destroy bacteria.

Common foods containing vitamin E include: nuts and seeds (almonds, peanuts, walnuts, sunflower seeds), apples with skin, sweet potatoes and raw spinach.

**Beta-Carotene**
Beta-carotene increases infection fighting cells, natural killer cells and helper T-cells while decreasing the number of free radicals in the body. Beta-carotene is a powerful antioxidant and helps fight cardiovascular disease by interfering with the way fats oxidize in the blood stream to form plaque. Beta-carotene is converted to vitamin A in the body, which helps fight cancer.

Common foods containing beta-carotene include: naturally orange foods (carrots, pumpkins, sweet potatoes, squash), and leafy greens (spinach, kale, red leaf lettuce, turnip greens).

**Omega-3 Fatty Acids**
Omega-3’s boost immune function by increasing phagocyte (white blood cells that destroy bacteria) activity. They also protect the body against damage from inflammation due to infection. Omega-3 fatty acids and vitamin E complement each other, working together to give a major boost to the immune system.

Common foods containing omega-3 fatty acids include: fish/fish oil, flax seed/flax seed oil, walnuts and canola oil.

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**Fun Fact**

Supplements do not replace food. Through a healthy diet consisting of fruits and vegetables we can consume all of the necessary vitamins and minerals.
This month we interview senior outside hitter Qian Zhang (pronounced: Chin Zang). Qian traveled half way around the world to become a Baylor Bear and instantly brought a different dynamic to the volleyball squad. Since coming to the U.S., Qian has become fluent in a whole new language and learned about a completely different culture. This season Qian brings veteran leadership and experience to the court and now she steps off to give us a look at her life in this month’s Behind the Line.

Where are you originally from?
Beijing, China

Do you have any siblings?
I don’t have any siblings.

Is it normal in China to not have siblings?
Yes, in my generation it is. It is a government policy that families are only allowed to have one child. My parents even had to sign a form at work saying they only have one. The rules are starting to now change, and I think more families are allowed to have two kids. Also, I think families that live in the country (farmers) are allowed to have more than one child.

When did you start playing volleyball?
I started playing in elementary school. Most kids in China only play one sport growing up. My dad played basketball, but he said I was too short for that, so he put me in volleyball.

Why did you choose Baylor? Have you always wanted to go to college in the U.S.?
I knew I wanted to play volleyball in college, but I didn’t really think about coming here to play until Coach Bunn (former assistant coach Bryan Bunn) came to China and recruited me. After I looked into it, I liked the challenge of going to the U.S. and learning a new culture. I already lived away from home in middle school and high school, so I was used to that aspect of it.

What is your favorite thing about the U.S.?
The people. People here are very friendly. The first time I went to church over here a bunch of people I never met before came up to me and started talking to me. In Beijing, people really keep to themselves unless they know you.

What is one thing you do not miss about China?
The big city. In the city, you get used to ignoring the sky, you never really see the stars because of all the lights and pollution. Here it is very beautiful outside.

What is one thing that you wish was different in the U.S.?
There are parts of the culture that I am not used to. In the U.S. you are expected to find your own way to do everything, in China everything is structured. In the U.S. you are expected to push yourself, in China you are always being pushed. This has been hard for me to adjust to.

What is your favorite holiday?
My favorite holiday has always been Christmas. This is even more so now, the only time I get to go home and see my family is at Christmas.

Who are the people in your life that you admire?
Lang Ping is one of the great volleyball players in China, and she was a championship coach for the U.S. during the 2008 Olympics.

Qian is a social butterfly! Her first two years at Baylor University she kept to herself, but now she has opened up and shown me her bubbly personality. She has grown in her faith and I can see a new light of happiness shining through her.”

-Zoe Adom
HEALTHY HABITS

Low Back Pain:
Low back pain is a common, nagging ailment that many people experience. If not handled correctly, it can move from minor annoyance to major injury. For those who expect high performance out of their body, but also spend several hours seated in class or behind a desk, low back care becomes increasingly important. Here is some helpful knowledge, along with smart tips on how to maintain a strong and healthy back.

The Science:
Lordosis is the medical term that describes the natural inward curve of the low back. Though it may sound like a scary term, lordosis is completely normal and is part of a healthy spine. Hyper-lordosis is what becomes problematic. Hyper-lordosis is an excessive arch in the low back and usually is associated with a protruding gut and a forward pelvic tilt. Everyone is built differently, so having a large arch does not necessarily mean someone is hyper-lordotic. As the arch in the low back increases, so does the stress at the bottom most vertebrae which become compressed together. What begins with pain can move to a multitude of injuries including a herniated or slipped disk if the problem is not addressed.

How to Improve Hyper-Lordosis
There are many causes of hyper-lordosis and most can be remedied with simple healthy lifestyle choices. Listed are some common causes and tips to correct them.

Common Causes for Hyper-Lordosis

CAUSE: Excessive Belly Fat
Excess belly fat can pull the pelvis forward causing anterior pelvic tilt which increases the risk of lordosis.
CORRECTIVE: Lose Your Belly Fat:
Start by eating healthier by consuming less processed foods such as fast food, soda and sugary snacks. Eat more whole foods such as lean meats, veggies and fruits. Coupled with a regular training schedule, this will increase metabolism, decrease fat, and increase muscle.

CAUSE: Prolonged Periods in Seated Position
This can cause hip flexors to shorten or become tight, which pulls the pelvis forward, increasing anterior tilt and the chance for hyper-lordosis.
CORRECTIVE: Sit Less
This may be difficult or impossible due to the nature of someone’s job or school work, but try to avoid sitting when it is not necessary. Also, it is important to maintain good posture when seated. Avoid slouching or hunching over.

CAUSE: Tight/Short Hip Flexors
In relation with cause #2 this can increase the chance of hyper-lordosis. This particular cause can be largely due to genetics, but there are still ways to help remedy tight hips.
CORRECTIVE: Foam Roll and Stretch
Stretching regularly, foam rolling and even yoga can help keep hip flexors limber and loose. Also, stay hydrated to ensure muscles are supple and pliable.

CAUSE: Weak Posterior Chain and Shoulders
Having a weak posterior chain, especially in the rear delts, can lead to inwardly rotated shoulders. This is commonly viewed as a slouching posture. The slouched position causes anterior tilt starting at the head and neck and continues all the way down to the pelvis, increasing the chance of hyper-lordosis.
CORRECTIVE: Train Posterior Chain
Training the posterior chain, which is essentially everything you see on the body when you look at the backside, is imperative to maintaining balance. Especially when working the upper body, it is important to incorporate pulling or rowing exercises. For every press a person does, they should do at least one pull.
In this month’s edition of the Athletic Performance newsletter we will introduce the 11th building block of success - skill. Skill is defined as having the knowledge and ability to properly execute the fundamentals. With repetition we can gain expertise, but only through inspired repetition can we achieve our highest potential. This block is developed through dedication to a higher standard and growing with those around us. The challenge is to recognize a talent, then dedicate the time necessary to develop it. The process is never easy, but it is important to embrace it fully. The physical and mental strain will be high, but through perseverance, attention to detail and effort we can turn talent into skill and skill into production.

“A winner is someone who recognizes a God given talent, works their tail off to develop them into skill and uses this skill to accomplish their goals.”

-Larry Bird