Hello to all snowsports lovers. Are you tired of summer yet? Are you tired of all those bugs flying around, itchy eyes, hay fever, cutting grass, applying sunscreen, sweating, etc?

Sadly, summer actually just started on June 21, so it is here to stay still for quite a while. But, here is good news: ski and snowboard training is all around us, we just need to find it. I am not talking only about strengthening. Not even about cross-training. There are ski movements all around us. Do you have a desk job? Do you sit on a swivel chair? How many times did you turn yourself in that chair? Did you ever observe that both knees move to the side at the same time? Doesn’t that mean that both legs rotate in their hip sockets together and the same amount? In basic skiing, isn’t that what you should do as well? So, why are there so many skiers that perform sequential moves with their legs? Perhaps they never swiveled on a chair, or never put any thought to it? You might wish to read article on Page 10, where I connect a good old showering to skiing. Also, read about the running technique discussed by Dr. Campitelli on Page 2. Running is so closely related to skiing and riding, do you know why? It is so often that people blame their equipment for their poor skiing or riding. In some cases equipment may indeed be to blame, but at a lower level of skiing it is usually the technique that leaves a little to be desired. The same in running. Do you get shin splints because your shoe is worn out, or because you run on your heels? We can also learn a bunch from cycling. Now, with 100th riding of Tour de France in progress (June 29 – July 21), we should eagerly look at those racers and try to learn something from them. Like, for example, why do racers eat during their race? No, it is not just to be strong to the very end of the race, but to be strong the next day. They are preparing themselves for the next day of riding.

You probably think that I am just beating around the bush and there is no point to anything that I have said so far. But, actually, there is a point that I am trying to make. Just because we are in the midst of summer, it does not mean that skiing and riding should be out of our minds.
There is learning to be done everywhere we are, everywhere we look, in everything we hear and feel and do. We can learn from others as well. Life and living is also part of skiing and riding. So are the morals and attitudes. We are skiers and riders all year long. Enjoy the summer time. It is also part of our sport. Time to refocus, time to recharge, time to do skiing and riding in other forms and shapes. Journey of life continues.

Do you get to read any books? Through them you can do anything you want, be anything you want to be. Just think, in your mind you can ski anything, any time, anywhere. Healthy or not, able or not, your mind can still take you where you want to go. Keep your mind healthy and alive, and you can ski and ride the rest of your life. This month’s Peak Performance might be a teaser to many of you. But, don’t forget that there are places in this world that actually ski. You can also try experiencing indoor skiing. Mike Doyle had a nice write-up and listing of indoor ski places in his recent skiing.about.com. How about water skiing and other sports? How about reading and doing practically anything? Our hopes are that this issue of Peak Performance will energize you and bring skiing and riding back into your mind in case it has slipped out. I strongly encourage you to look up previous publications of Peak Performance and reread some of their great articles. Journey on to my web page that can be found at

www.mathsci.appstate.edu/~wak/

and look up all the previous issues of Peak Performance that are posted on the bottom of the page. They can easily be downloaded. Also, please, don’t hesitate to write me at Kosmalaw@bellsouth.net. Remember that our intentions for Peak Performance are to promote the snow sports to the best of our abilities, so your ideas are most welcome! Have a great Independence Day, eat lots of hot dogs, go to fireworks, be thankful for our freedom, and count your blessings.

Main Course

Treating Running Injuries: Form vs Footwear

By Dr. Nick Campitelli

Running injuries can be very frustrating for physicians as they can be extremely time-consuming, and stereotypical runners will not curtail their running to resolve an injury. If you tell a runner not to run, most of the time, (s)he will not listen to you and not follow through with your prescribed treatment regimen. This challenge leads many physicians to not treat runners. Added to this frustration is the recommendation of footgear. Whether someone has been running for many years or just starting out, the runner tends to place a lot of emphasis on what shoes to wear. Form is traditionally ignored. Runners, as well as practitioners, will typically make a change of shoes in an attempt to fix an injury.

What most practitioners do not realize is there is no evidence-based literature existing on recommending a running shoe to prevent or reduce injuries.(1-8) Following the popular paradigm of recommending a running shoe based on foot type leads to frustration as there are numerous models being introduced frequently. When we dissect the reasons that we use a particular shoe, the situation becomes even more blurred. There is no clear scientific basis for using one particular shoe model over another for given foot types or pathologies, despite what some manufacturers claim.(1) The term “appropriate shoe” is a misnomer when viewed by the outdated paradigm of selecting a shoe according to arch type, and many are still advocating shoes this way. Even the implementation of orthotics has little if any bearing on reducing or correcting injuries in runners.(9-12)

We also live in a society where people incorrectly believe they have a flat foot or over pronate. Associated with this is the stigma that foot types (especially flat feet) influence injury patterns.(13) This, however, is not true.(14)
Evidence suggests that training patterns actually play more of a role in increasing the incidence of running injuries.(15,16) The key is understanding that form and training patterns play more of a role on improving one’s running and at the same time reducing injury.(17)

**Common Approach to Running Injuries**

Before seeking treatment for an injury, most runners will run through pain thinking that it will eventually resolve. When it finally becomes too severe to continue, medical advice is usually sought. The standard protocol for a physician or sports medicine specialist treating a runner is as follows: 1. Question athletes about how many miles a week they are running 2. Evaluation of footgear 3. The number of miles on the current footgear 4. Biomechanical assessment of feet and lower extremities. If the runner is seen in a more specialized clinic, a gait analysis is sometimes performed. Overpronation is commonly diagnosed, and an effort to control this excessive motion is usually attempted with orthotics. High tech scans and pressure analysis may also be performed, although very little if any applicable information can be generated from this.

Form analysis, on the contrary, focuses more on the runner’s style with respect to foot strike, cadence, and the runner’s overall body posture. It is slowly becoming the panacea to help improve someone’s running and reduce or resolve injuries.(17,18) Runners tend to develop injuries as a result of poor or incorrect form and overuse which many times overlap.(15,19) Debate exists as to what is the “proper form” for running. Proper form will certainly vary from one runner to the next making each runner’s form “ideal” for that individual. There are, however, certain aspects of form a runner should strive to attain – adequate foot strike, cadence, and posture.

**Foot Strike**

Foot strike is the first aspect that needs to be addressed. There is a common misunderstanding that all aspects of gait, whether walking or running, should begin with a heel strike. Following heel strike, the force is carried laterally, transversing medially upon which it is increased at the 1st MPJ where the propulsion phase ends the final stage of the stance phase before leading into toe off.(20) Much of this thinking is attributed to Root, et al. Over the years, this idea has somehow carried over to running.(20) The practitioner sometimes will examine the footgear to see if any wear patterns exist that would indicate increased pronation as indicated by wear seen more medially on the heel than laterally. The problem with this pathway is that we have no evidence-based studies to indicate heel striking is the correct way to land when running. In fact, recent studies demonstrate higher injuries among collegiate cross country runners that heel strike as compared to those who forefoot strike.(21,22)

Numerous studies have compared shod and unshod runners and a forefoot strike pattern is adapted among those who run without shoes.(23-27) We all see that elite runners tend to forefoot strike more than slower recreational runners as demonstrated by Larson, et al.(28,29) Evidence exists that the human body has a natural tendency to fore-foot or mid-foot strike when running barefoot or in minimalist shoes.(23,26)
**Heel Strike vs Forefoot/Midfoot Strike**

By striking the ground with the heel first, the subtalar joint takes the brunt of the force leading to possibly over-utilizing the posterior tibial tendon. We also see that during a rearfoot strike, the forefoot (including the toes) and midfoot joints really serve no purpose in absorbing shock. If, instead, we utilize these joints with a forefoot or midfoot strike, the entire foot can pronate instead of only the subtalar joint which can achieve more absorption of the impact force. By avoiding heel strike, one can utilize the rest of the foot to absorb shock.

When we forefoot or midfoot strike, we can control the amount of pronation innately by activating our musculature (Figure 1). Consider that one common complaint of those who make the transition to minimalist shoes is “calf pain.” This is due to the activation of the gastroc-soleus, posterior tibial, flexor digitorum longus, and flexor hallucis longus muscles in efforts to slow the heel from striking the ground. They are contracting eccentrically to “slow pronation”. This does not need to be scientifically demonstrated in “future studies” as we already know that if pronation of the foot is dorsiflexion, eversion, and abduction, then these muscles collectively are contracting as they are lengthening in order to “slow” pronation. As they become strong enough, they will control the pronation that is occurring during foot strike.

**Running Shoes**

Examining the categories of traditional running shoes reveals that manufacturers have created them according to three foot types – flat foot, normal arch, and high arch. The AAPSM has defined the categories as maximum stability, stability, and neutral. For example, ASICS defines their stability category shoe as “Structured Cushioning.” According to ASCIS, “the structured cushioning is designed for runners who pronate slightly more than...
normal and generally have a normal arch.”(33) This infers that the runner is heel striking. Otherwise, why would there be a need to control motion? Some of the normal pronation that is encountered when a runner forefoot or midfoot strikes could be inhibited by this motion-controlling apparatus.

**Why then are running shoes created with a thick cushioned heel and motion control support? That question is debatable, but it is clear that over the past 40 years we have seen no reduction in injury rates and marathon times have remained unchanged. Many physicians still abide by the rule of changing your shoes every 300-500 miles. This became popular after a study in 1984 that demonstrated shock absorption loss after 250-500 miles of running.(34) Since then, studies have actually demonstrated as absorptive qualities of a shoe are lost, the foot becomes more stable leading to the likelihood of reduced injury with more mileage.(35-37)**

At the same time, the notion that runners with a high arch “need a great deal of shock attenuation because they don’t absorb shock naturally through pronation,” implies that we need to pronate to absorb shock. It becomes extremely crucial to look at pronation on terms of the entire foot as opposed to only the subtalar joint because more shock attenuation can be achieved utilizing the forefoot and midfoot. Even if we consider implementing an orthotic into the shoe to control pronation, we have to consider the goal of this. The orthotic for an over-pronator is typically designed to control motion at the subtalar joint that results in increased pronation. With forefoot striking, we have to look at this from an entirely different perspective in which the orthotic would not serve the same purpose; therefore, its use is of question.

**Landing**

Where the foot strikes in relation to the rest of the body is also crucial. To increase efficiency and reduce shock to the lower extremity, the foot should be landing under the body’s center of gravity or close to it. This engages the body’s natural spring mechanism by utilizing eccentric contractions of the muscles at the ankle, knee, and hip, during landing (Figure 2). In contrast, heel striking with the leg reaching in front of the body’s center of gravity results in the leg impacting in an extended position increasing the force to these joints (Figure 3). Even if one heel strikes with the foot below the center of gravity, one will lose part of the spring as the reduction of direct force by its conversion to rotational force through the ankle is lost.

**Cadence**

Cadence is another piece to the puzzle. Cadence is the number of steps a runner takes per minute. Examining elite runners and marathoners, it has been determined that achieving a cadence of 180 steps per minute or higher
will result in increased efficiency. (38) Running with a forefoot strike pattern makes it easier for one to increase cadence. (23) This high cadence keeps the runner closer to the ground reducing vertical motion that is associated with increased impact forces. (23) Shorter strides are associated with a higher cadence, but as speed increases the stride length will also increase. (23, 27, 32) It is important to understand that cadence should not vary with speed. For example, if running a 10 minute mile or slower, cadence should remain at 180 or greater. Faster paces such as 5:00 to 6:00 per mile can sometimes reach cadences of 200 or greater. The key is to understand that shorter strides and faster turnover will increase efficiency and reduce ground reactive forces.

**Posture**

Finally, the body’s overall posture also needs to be assessed. This can be somewhat confusing because some running instructors advise to keep an upright posture while others will advise to “lean forward.” Both are actually correct. The body’s overall position should be erect, but it should be falling forward. The term “leaning” should not occur at the waist such as bending over but the entire body should be angled forward (Figure 4). Running in place and then leaning forward to begin movement will help to teach this concept. This increases efficiency by utilizing forward momentum as opposed to decelerating with each step which recruits more musculature.

**Conclusion**

Focusing on these steps discussed will help to improve a runner’s efficiency leading to reduced injury. New Balance has partnered with Kurt Munson, a well known running shoe retailer from Michigan, and created the educational concept known as Good Form Running. (18) Good Form Running teaches these steps in a simplistic manner, and specialty running shoe stores across the United States are holding clinics to instruct this.

Interestingly, children tend to run this way when they are unshod and playing outside. (39–41) The younger they are, the more noticeable this is as their gait has not been altered by wearing footwear. As for pediatric shoes, America Academy of Pediatrics recommends not wearing shoes until it is necessitated by the environment. (42) This helps to encourage natural foot motion, thereby enabling adequate development and strength gains.

A final point that is crucial in mentioning is training patterns. Most recreational runners and even elite runners tend to train too hard. (17) Improving the body’s aerobic capacity means to continuously train at an aerobic rate. (17) This is best achieved through the use of a heart rate monitor. Training too much at too high of a heart rate can lead to overuse injuries. (17) Runners too often focus on maintaining a pace instead of listening to their body and their training becomes borderline anaerobic. (17)

Obviously there is more to running than discussed here but having this, as a foundation, really helps anyone just beginning running or even those who have been running for many years. It is crucial for physicians treating running injuries to understand this.

In conclusion, it seems that most practitioners are straying from the path of helping a runner by focusing on shoes as opposed to form. The term “appropriate shoe” is a misnomer when viewed by the old paradigm of selecting a shoe according to arch type, and many are still advocating shoes this way. A running shoe should allow the foot to function as it was designed to – naturally without inhibiting motion. Adding cushioned heels and motion control mechanisms can inhibit this. By viewing shoes as the first line of treatment for most conditions, we must make sure this does not interfere with the foot’s natural function.

The shoe should feel comfortable initially (not with time) without a need for the foot to “get used to the pressure pushing against the arch.” A gradual adaptation to this way of running is obviously needed or injury can result as our feet and bodies may have been accustomed to a different form and supportive shoe. The approach is very similar to creating a program for someone just beginning to run.

**References**


Dr. Campitelli is a podiatrist in Akron, OH specializing in foot and ankle surgery with an interest and enthusiasm for running as well as helping runners with injuries. For the past several years he has been treating running injuries in patients by fixing their form and transitioning them to minimalist shoes.

His blog www.drnicksrunningblog.com is intended to provide the most up to date and comprehensive information on running and training for endurance events. Have a question about a running injury or training program and live to far away to see Dr. Nick? You can reach him via email at: feet@me.com. Speaking Engagements Dr. Campitelli lectures nationally on running injuries, shoes, running firm, and training regimens. For more information or to discuss scheduling a lecture, direct all inquires to: feet@me.com.

Tribute to My Father Vino

By Chris Anthony

The ski industry has relied on various approaches to introducing more people to the sport. Some are measurable and receive support through a variety of means, while others are difficult to properly account for on a spreadsheet. Ironically, it’s the latter that often have the greatest impact.

Probably the most significant and immeasurable is the passion of a parent who drag their youngster to the mountain after letting them walk around on the living room carpet in their 30-cm plastic skis for days on end. It is that parent who fell in love with the sport and will go to the ends of the earth to share it with the next generation.

Of course their agenda may be a little selfish as to try and get the son or daughter to fall in love with skiing so they in turn can go ski more. But no matter what the motivation, this is most likely how a majority of the population is introduced to skiing or riding. At least this is how I was taught.

An Early Start

My father, Vino Anthony, definitely had his skiing addiction, and when I arrived he took no pause in his efforts to get me up to speed as soon as possible. First on his back, which is in fact my first memory, and then on skis the moment I could walk (at around 18 months).

He was already a ski instructor as it was the only way he could afford to participate in the sport. He remained an instructor and a member of PSIA for more than 50 years. He did so for my sister and I, as this would make us
eligible for our own ski passes. My mom could not escape his addiction either. She had to embrace it and soon helped with the cost by running a children’s ski school as a second job.

**Getting Families on Snow**

As we all know, skiing can be somewhat costly. But what the marketing experts and statisticians can’t measure is the numerous creative ways some families are able to get their kids on snow and keep them there.

My dad had to be one of the more creative. Maintaining his full-certification status and teaching on the weekends as a second job was not enough. He decided to start a kids ski program at Copper Mountain and then, literally on top of his primary business of being a jeweler, open up a ski shop called the Kids Ski Equipment Company in Denver, Colorado.

It was not to make money, but to make clothing and equipment affordable for us as a family, and other families alike. Yes, his selfish act to keep himself on snow put many other families on the snow in a more affordable way as well.

**Brainwashing Tactics Pay Off**

He also had a love for the culture of the sport. We were surrounded by it through images, films, and events. Ironically, the films I’m talking about are the Warren Miller films we would make an annual pilgrimage to see, and which would make us want to immediately get on the slopes. It was all part of his brainwashing tactics. It worked.

As a parent, he coached. But not too much, like I feel so many parents do today. He ultimately let me go and be inspired by many other people along the way. I’m not sure what his plan was – other than to share the joy of such an amazing sport. But it took me on a path for which I will be forever indebted. A debt I cannot repay, although I certainly tried. I did my parents a bit of money on tuition by acquiring a scholarship. And eventually, through my sponsorships, I was able to gift him some equipment. But nothing will ever repay the gift of skiing.

**A Debt I Can Never Repay**

Over the last few years, the true reward of the sport gave back to us both in dividends by letting us travel together and see different parts of the world from a variety of mountain ranges. Not too many sports promote this kind of father-son relationship. Sure, baseball and football allow for playing catch in the yard or the park. But skiing put you on mountains! And with his fantastic eye through the lens, my dad also had material for his other hobby, photography.

Recently my father dropped me off to get on a private jet headed across the world to find powder. He was proud that it was skiing that allowed this moment to happen. As I crossed the ocean in the direction of Japan, my father ran back home to get his skis and prep for a ski program we would host together in Italy. He took a fall while skiing on an intermediate run he had skied so effortlessly countless times before.

**Lucky for the Shared Experiences**

It might be the “effortlessly” that got him. I’m not sure and we will never know. But this was not any old fall. This one cracked his helmet and took him out of the running for the next Olympic games. This one made me realize – as my father laid for months in the ICU – how special this sport is and how lucky I was to have a parent share it with me. This fall made every drive up the I-70 corridor a kind of memory lane, with a soundtrack made
up of every song played in the tape deck on our way to the mountains for skiing when I was in elementary school.

It reminded me of every turn, every trip, every competition, and – most of all – that day my dad put me on his back to go skiing.

This article was originally posted by Peter Kray on PSIA webpage found at www.thesnowpros.org on June 17. Peter is the Lead Content Officer for PSIA-AASI.

Chris Anthony, a Big Mountain skier is a Colorado native and longtime Vail resident. For a good portion of his life, Chris competed at an international level, including World Cup, as well as traveled as an athlete and on-screen personality with the Warren Miller Film Team. Chris has filmed with the legendary action sports production company for 23 years and continues to do so currently. His feats are displayed in the annual Warren Miller feature film as well as numerous television programs and documentaries such as “Warren Miller Global Adventures.” Chris is a former Alaskan Extreme Skiing Champion, a veteran of 9 World Extreme Skiing Championships, and US Heli Ski Association Level 3 Mechanized Ski Guide.

Between film shoots and sponsor appearances Chris manages specialized ski programs under his company “Chris Anthony Adventures” in Alaska, Italy and Colorado. Additionally, Chris co-hosts the “Camp of the Superstars” every August in Portillo, Chile. Also, Chris is available for speaking engagements. His website is www.chrisanthony.com.

The above photo of Chris was taken by Braden Gunem during the Warren Miller Entertainment shoot in Kazakhstan this past winter.

Also, we sadly have to add that Vino Anthony, who had his skiing accident on January 22 resulting in 8 brain surgeries, passed away at his home on June 19.

Training

Ski Training in a Shower

By Witold Kosmala
PSIA-E Alpine, Level III

I must be crazy, but it seems like no matter what I am doing in life, I make a connection to skiing. Here, let me share one of these things with you, and you can decide for yourself how passionate I am about skiing. Maybe some of it will rub off on you.
When I am in a shower standing on one leg while washing the foot of the other leg, I make the following connections to skiing.

- This one is obvious: I make one leg squats. Strength is important for skiing.
- This one is also obvious: I make connections to balancing, both lateral and fore/aft. For every action, there is a reaction. For every unnecessary move you make when skiing, you have to make yet another move to counteract that unnecessary move. Can you keep in balance while wiggling your body?
- This one is less obvious: I try to make circles with my body and feel how the foot reacts to moving pressure. I feel how much more I can move to the little toe side then to the arch of my foot. I feel how pressure moves from one toe to the next and no toe is skipped. Isn’t that how you feel your toes inside your ski boot?
- This one is also obvious: I take turns in standing on each leg equally long. It is important to practice the same drill on each leg, so no leg will be favored.
- This one is perhaps strange, but for me washing one foot in the air also relates to speed control on my skis. Here is what comes to my mind. When my balance is just a little off, then I can correct it with minor pressure changes in different parts of my foot. But, if I am too far from being able to catch myself, I have to bail out and put my other foot down or grab a railing, especially that the shower floor is somewhat slick. The same goes for speed management on skis. If the speed goes up just a little from my comfort zone, I can somehow correct it by small movements, like a bit higher edge, smaller platform angle, more pressure on the big toe of the outside ski, a little hook at the end of a turn, a little more block when planting a pole, an earlier turn, a turn in a friendlier spot on the slope, holding on to a turn just a bit longer, forming a firmer platform, or doing some other things. But, if my speed exceeds a possibility of returning to the comfort zone, something drastic might need to be done (equivalent to putting my other foot down in the shower.) This drastic something might be a serious skid, running out in a traverse, making some awkward body movements, or perhaps even falling.
- Here is another connection. I vividly notice that when I am standing on one foot on a slick shower floor, my head movements mass up my balance big time. If I think that I have a bottle standing on top of my head, I have no problem staying in balance. Can you see a connection of this to skiing? So many people wobble their heads and expect to ski well.
- How about where the eyes go? I noticed that I might be in balance when I look straight ahead, but when I look far down to wash my other foot, my balance becomes questionable. I am not talking about tilting my head down, just moving my eyes and nothing else. Now, do you remember ski coaches telling you where you should look while skiing? Where you look greatly impacts skiing.
- Here is the last one, for now. Close your eyes and now wash your foot. Can you keep balance just as good as when eyes are open? Do you think eyes play an important role in skiing, and not just to see where you are going and anticipating, but in keeping balance?

So, crazy or not, you can get a lot of ski training done in a shower just by washing your feet. Besides, you are also surrounded by water.

Health Course

Q Angle and ACL Injuries

By Witold Kosmala
PSIA-E Alpine, Level III

“Q angle” is an abbreviation for the quadriceps femoris muscle angle. It is the angle between the quadriceps and the patella tendon. The Q angle is best measured when standing with the normal weight-bearing forces being applied to the knee joint.
To measure the angle draw a line from the anterior superior iliac spine to the center of the patella, and draw the second line from the center of the patella to the tibial tubercle. This small angle is the Q angle. The normal angle in males is 13 degrees and 18 degrees in females. Q angle is larger in females due to their proportionally wider pelvis and knees closer together. See the diagrams.

It is more advantageous for athletes to have smaller Q angle. Larger Q angles create more stress on a knee due to the greater torsion applied between the femur and the tibia. Larger Q angle goes hand in hand with pronated and flattened feet. Furthermore, larger Q angle causes the quadriceps to pull on the patella effecting the knee alignment resulting in poorer forward propulsion and worse shock absorption.

Research shows that women athletes are four to six times more prone to injuries of the ACL than male counterparts playing the same sports. The biggest reason for more injuries is due to anatomical differences, the Q angle being the most significant. Other reasons for increased risks are that strength and agility are usually not developed from a very young age. The lack of large and more powerful muscles is due to women’s hormonal differences from men pertaining to circulation of androgens. Doctors say that quadriceps should be twice as strong as the hamstrings. ACL injuries are more prone to occur if there is muscle imbalance. In addition, estrogens increased during the menstrual cycle, increase the laxity in connective tissue. Thus, during those times the woman athlete is more susceptible to an ACL injury. The estrogens also provide more endurance, which will allow female athletes to exercise longer, causing more stress on their joints. In addition, because of the increased body fat ratio of a female, stress on the joints is also increased.

Some things that can decrease the potential knee injury in a female is
- increasing leg muscle strength to help support the knee
- improving agility
- wearing custom-made orthotics (at least temporarily) to help with alignment
- nutritioning well and taking necessary supplements to normalize hormone levels
- avoiding abrupt changes in direction during intense competition and controlling jumps
- controlling weight to take strain off the knees.

Let’s Be Honest! Cellulite Bites!

By Coach Lydia Martinez

Sure, we all worry about a little too much jiggle in the wrong places, especially if we think it’s likely to be
noticed. But even worse than being a little rounder than you’d like is the day you catch a glance and BAM: you had no idea it was there. Depressing!!!

**Where does cellulite come from?**

Although it is often considered to be a result of obesity, cellulite actually has little to do with being overweight. It can just as easily appear in women of normal and even below normal body weight.

The fatty tissue immediately below the surface of your skin rests on top of (and is bonded to) a firm layer of muscle fiber and connective tissue. Before cellulite shows up, the outer surface of the skin is smooth and supple (no bumps and no ridges). The skin is smooth because the surface of the fatty tissue just below the skin is also smooth.

The fatty layer just below your skin is (and remains) smooth and supple as long as the fiber and connective tissue remain strong and flexible and the fat cells remain healthy.

The dimply, bumpy texture we call cellulite begins to occur when the structure of the muscle fiber (kind of like muscle atrophy) and connective tissue begin to weaken (lose collagen). When the cell walls weaken, the cells begin to "sag" and this "sagging" is what accounts for the "orange peel" or “cottage cheese” look of cellulite. The weaker the cells become and the larger the fats cell become, the worse the sagging and the worse the cellulite.

**What are the factors that influence whether you will develop cellulite?**

Genetics can partially determine muscle fibers and connective tissue. Gender male versus female, men naturally have more muscle fiber layers in specific areas then women (hips, butt and thighs). Hormones play a key role in the production of fat cells and how we age (collagen breakdown). Bottom line how you move and eat.

**So what is the Cellulite fighting cure?**

*Did you know the wrong activity (exercise) can actually make cellulite worse?*

Muscular Stimulation (activity) specific movement that targets strengthening the muscle fibers and connective tissue.

*No matter what someone tries to tell you there are foods that will make your cellulite worse.*

Shrink the fat cell (proper nutrition) specific foods that contribute to stabilizing blood sugar levels, proper use of insulin, and balance hormone.

*The right amount and purity is key to having an anti-cellulite combination. You can’t get it all in your diet.*

Supplementation (combination of EFA’s and Antioxidants) Essential fatty acids help attract water to dehydrated cells and connective tissue and maintain cell hydration. EFAs are also fundamental in removing fat from the cells. Antioxidants stop the free radical damage that weakens the dermis and connective tissue that results in lumps and dimples.

**Lydia Martinez (Coach Lydia) CFT, NESTA child nutrition specialist, Behavioral Modification Coach, Author, Speaker, Director of a multi-million dollar lifestyle weight loss program, Creative Director for the #1 family lifestyle program in the USA. You can read my life story in – Coach Lydia’s No-nonsense Guide to Getting Off Your Butt, Out of Your Rut, On With Your Life. See www.alifenow.com.**
Turn to Wisdom

- Don’t be mad at others because they sin differently than you do.
- Be more concerned with your character than your reputation, because your character is what you really are, while your reputation is merely what others think you are.
- The difficulty is not so great to die for a friend, as to find a friend worth dying for.
- Nobody who ever gave his best regretted it.

Thoughts for the Month

- What is referred to in skiing by “A-frame,” and is it good to have it or not?
- At ski areas, what is referred to as corduroy? What are the pros and cons to it, if any?
- Do you know which moves on skis or boards are active and which are passive? Or does it matter? How do you practice passive moves?
- What do cushiony running shoes and shaped skis have in common?
- Can you tell what radius turn is Chris Anthony performing in his photo on page 10?

Elaborations on last month’s Thoughts for the Month.

Question: Which State in the US has most people?
Answer: See page 15.

Question: What should be happening to your inside arm when you are turning on your skis?
Answer: It needs to move down the hill. If it follows the shape of the turn, then you are rotating.

Question: Is it really that bad when skiers drop their head? Why or why not?
Answer: Dropping head is normal for beginning skiers. They want to see their skis and how they interact with the snow. For more advanced skiers, this is just a bad habit. If all you do is just tip your head down, then it is not so bad; it mostly only inhibits vision. But tipping head without making other movements is usually not the case. With the head go shoulders, and chest drops and collapses moving hips back. All of sudden back of your legs are pushing against your ski boots and controlling your skis becomes a real issue. Now you look like you are bowing.

When you are driving a car or just walking, do you look down on your feet? Yes, first time drivers do not really know where those pedals are, so they look down. But soon they get to feel those pedals and quit looking down and start looking at the hood of their car. That normally does not last long either, and looking farther ahead emerges. The same goes with walking. We look under our feet when the surface is unpredictable. So, why do skiers continue looking down? Maybe because no one told them not to? Maybe they don’t care to see where they are going? Maybe they do not care if they hit someone? Maybe they are listening to music and not realize what they are doing? Or, maybe they are shy?

Proper head “home position” is crucial when skiing. It affects your entire body. Ideally, when moving pretty slowly, your nose should point in the direction where you are going to be 2 or 3 ski lengths from where you currently are. Of course, faster you go, further down the hill your nose should point.
In order to keep your head from dropping:

- Think about looking ahead. This might not work if your eyes don’t look straight out your head.
- Push your helmet low on your forehead. It will block your vision enough so that you will automatically lift your head up.
- Stand taller.
- Move your hips forward.
- Have someone ski in front of you backwards and have them ask you to look at them whenever your head drops.
- Have someone video you from the side, so you can see your head’s position for yourself.

Potential dangers in improving head position:

- You lift your head, but do not correct the rest of the body’s “home” position.
- You lift your chest up excessively and stand too much like a soldier.

This and That

**HOW MANY PEOPLE ARE IN THE US?**

The following information comes from the U.S. Census Bureau.

In the middle of 2012, the population of the USA was about 314,165,191 people. It means that by population the United States is the third largest country in the world (following the People’s Republic of China and India). It is also known that the world’s population equals to about 6.8 billion people. Thus, about 4.5% of all people on the Earth live in the USA.

It is expected that the population of the USA will reach 400,000,000 people in 2042.

More than eighty percent of the USA population live in cities and suburbs. California and Texas are the most populous U.S. states, and New Jersey has the highest density ration in the country. More than 430 persons live on a square kilometer there.

The table below will give you information about the eleven most populous states by August 15, 2012.

<table>
<thead>
<tr>
<th>State</th>
<th>Population</th>
<th>Percent of U.S. total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>38,053,956</td>
<td>12.11%</td>
</tr>
<tr>
<td>Texas</td>
<td>25,901,361</td>
<td>8.24%</td>
</tr>
<tr>
<td>New York</td>
<td>19,465,197</td>
<td>6.20%</td>
</tr>
<tr>
<td>Florida</td>
<td>19,057,542</td>
<td>6.07%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>12,902,379</td>
<td>4.11%</td>
</tr>
<tr>
<td>Illinois</td>
<td>12,869,257</td>
<td>4.10%</td>
</tr>
<tr>
<td>Ohio</td>
<td>11,736,504</td>
<td>3.74%</td>
</tr>
<tr>
<td>Michigan</td>
<td>9,876,187</td>
<td>3.14%</td>
</tr>
<tr>
<td>Georgia</td>
<td>9,792,653</td>
<td>3.12%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>9,656,401</td>
<td>3.07%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>8,821,155</td>
<td>2.81%</td>
</tr>
</tbody>
</table>
Announcements

• Scott Marland was elected Board Chair for the National Ski Patrol on Apr. 22. Scott Marland, who has served as the assistant board chair under departed chair Burt Mitchell, has been appointed the new board chair in an election by the board of directors on April 17. Scott’s service as both assistant board chair and as chair of the Planning Committee has been exemplary. The NSP staff looks forward to working with Scott in his new role. At the same conference call on April 17, John Lawson was named the new assistant board chair and Bill Hummer was named the new Planning Committee chair. See www.nsp.org.

• Hey, you all out there in the West!! Do you ever get to ski terrain like this? Envious? (I wish I could say that Eastern skiing is like this all the time.)

Pet of the Month

Is this really the best we can do?