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In-Pool Strength Building While you Swim By Lauren Jensen, Team Sport Beans/NTTC

To maximize your time and training efficiency, you can do several forms of swim-specific strengthening in the pool.

While strength training in the gym against resistance can also pay big dividends and comes highly recommended, do not overlook the gains you can make during the time you are already swimming in the pool. Below are some suggestions. By adding one or more of them into each swim, you will become a stronger and ultimately a faster swimmer.

1. Use all of the strokes: Butterfly is an excellent way to build upper-body strength. Backstroke stretches your pectoral muscles, preventing them from becoming over-shortened and weak. Breaststroke is a great way to build strength through your hips in a different plane of motion than freestyle, cycling and running.

2. Pulling: Doing longer sets of pulling (with or without paddles) is a great way to build upper-body strength.

3. Kicking: Just like isolating, the pull can strengthen your upper body, kicking with a board and deep water kicking using different kicks (flutter, breaststroke, egg-beater and dolphin kick) can strengthen your legs. You can also use short fins for added resistance.

4. Frog jumps and push-offs: By adding in plyometric (jumping) movements in the water, you can strengthen your legs with less risk than on land.

5. Using drag suits or other resistance: By wearing extra loose suits, T-shirts and even an old pair of running shoes, you can add some resistance and increase the workload on your upper body. Be creative and have fun with this.

6. Strength specific drills: Swimming drills, including the fist drill, Tarzan drill, sculling drills, push-back drills and vertical drills, can be put into your workout to increase the strength workload as well.

7. Pool circuit training: Swim 25-50s with strength training exercises between each length or lap.

8. Sprints: Yes, triathletes should sprint! By swimming as fast as you can, you are improving your power - your ability to produce more force in a given amount of time. Include short sprints 12.5s to 25s at least once per week.

Twenty Common Training Mistakes

by Andy Applegate @
Ultrafit.com

Here are 20 common training mistakes we see athletes succumb to on a regular basis.



1. Not having goals. Having a set of clearly defined goals will give your training direction and purpose. Goals can range from anything such as losing weight or completing a ride of x number of miles to winning XYZ stage race or even a national championship.

2. Not training with a plan. For the best chance of reaching your goals and seeing steady improvement, create a training plan and stick to it as much as possible.

3. Training too hard. While trying to build a solid endurance base you need to be sure that you're primarily stressing your aerobic energy system while training. Spending too much time at or above lactate threshold will be counterproductive to this goal during the base phases.

4. Training too easy. Conversely to tip #3, spending all of your training time in HR zone 1 will not allow you to get the most out of your training time. To get the best use of your aerobic training, spend most of your endurance training time in HR zone 2. Also, when it's time to do harder threshold and anaerobic efforts be sure to hit the prescribed intensity!

5. Relying too much on numbers. Getting data is a great way to monitor and assess fitness and training, but never neglect perceived exertion. You need to know what any given intensity level feels like and be able to relate this to the numbers you're seeing on your heart rate monitor or power meter.

6. Not knowing what "functional threshold" feels like. This effort corresponds to a 40K time trial effort. You should know exactly what this intensity feels like.

7. Not incorporating mental training techniques. All sports rely heavily on psychological aspects. By leaving your mind untrained, you're neglecting a crucial part of training for success in any sport.

8. Not striving to improve nutrition. Nutrition is always about making choices. Strive to make the best choices with the food you put in your body and you'll see the effects through improved training, recovery and results.

9. Trying to lose weight quickly while training hard. Creating too much of a negative energy balance while undergoing a high training load will often cause a lack of energy, and eventually affect training and racing quality.

Twenty Mistakes (cont'd)

10. Too many group rides. Group rides, unless they're very disciplined, usually go either too hard or too easy to help build aerobic fitness. Certainly there are times when you want to get this kind of dynamic in training, but not every day.

With a group you're at the mercy of the group dynamic and cannot control the intensity or duration of the efforts. Don't substitute interval training with group rides all the time.

11. Too hard on the hills/too easy on the downhill. Attacking the hills and recovering on the way down can be a great workout, but doing it all the time, and doing it on endurance rides, isn't the best way to build aerobic fitness.

12. Tapering too much or too little for an event. Andy Coggan says "form equals fitness plus freshness." Finding the right amount of time you need to taper for a specific event is crucial. Taper too much and you lose fitness, not enough and you get to the event fatigued. Experiment with this before your primary "A" race of the season.

13. Not involving friends and family in your athletic dreams and goals. Having a good support system is crucial to helping you reach goals and maintain a balanced life. Don't leave your family and friends out.

14. Not keeping a training log. A training log can help discern what types of specific training work best for you. Problems, fatigue or injury as well as better than expected results can be traced by looking back through a training log.

15. Not including skill/technique/economy drills in training. No explanations needed here. Improving economy will make you a better rider ... period.

16. Not training core strength. Your core stabilizes every pedal stroke. No matter how strong your legs or aerobic system, if your core fatigues or cannot stabilize these forces, you will not ride to the best of your abilities. Take the time to strengthen it!

17. Not fueling properly before/during/after workouts. Topping off and replenishing glycogen stores is essential for optimum training and recovery.

18. Not hydrating properly before/during/after workouts. Important enough to be listed separately from the above. Even a small percentage loss in body weight due to fluid excretion will cause a drop in performance.

19. Not training your limiters. It's easy to train your strengths, but don't neglect the weaknesses -- especially if a particular weakness stands in the way of reaching your goals.

20. Not having enough fun. Never forget to have fun training and competing. After all, isn't this the primary reason to do it in the first place?

Runner's Trots by John Post, MD (from his blog)

What are runner's trots? The sometimes sudden urge to have a bowel movement while running. Some complain of this being a near explosive feeling, it spoils runs, and comes out of nowhere to runners of all levels of experience. It can be a quite frustrating problem to solve.

This problem affects 20-25% of all long distance runners at some point in their career, including the author. If you have it, you are not alone! It seems to occur with the longer or harder runs when blood may be shunted from the GI tract to the working muscles. In most of us this isn't a big deal but in others it can lead to diarrhea. As noted above, this feel can be almost explosive in nature and that if something isn't done about it quickly, well, there's going to be a problem! I've read that it's sometimes considered more common in the lactose intolerant.

Many will discuss this with their family physician, and frequently, even a colonoscopy can be recommended. Unless you are having bloody diarrhea, I think you can pass on the colonoscopy. (Had you nervous there for a minute didn't I? Actually, a colonoscopy is less of issue than you might think as I can say from personal experience as a > 50 year old male.)

So, if you happen to be suffering from this condition, here are some suggestions:

- Maintain adequate hydration
- Avoid caffeine as it's a colonic enhancer
- Try to eat several hours before you run
- Plan your route to include a rest room (I run near a golf course with lots of them)
- Avoid warm fluids before a run
- Limit high fiber foods in the days before a race
- Consider a trial of limiting dairy foods for a couple weeks
- Increase exercise intensity, gradually letting your body adapt to the up/down motion



And, the one you won't want to hear, a reduction in exercise. Some have the best results when they can reduce the intensity of exercise SIGNIFICANTLY for a few weeks with a gradual return to the previous high intensity workouts. One good time to do this is after your "A" race when you'd normally back off a little anyway.

I can remember folding up toilet paper and putting it in my running shorts "just in case" as the Beatles might say, I had to "Do It In The Road." It will go away, but it may take some changes on your part, and, sorry to say, some trial and error.

The Dirty Dozen: Top Twelve Foods to Eat Organic by The Daily Green Staff



ORGANIC
FOOD

Not all of us can afford to go 100% organic every time we shop. The solution? Focus on those foods that come with the heaviest burden of pesticides, additives and hormones. According to the Environmental Working Group (EWG), consumers can reduce their pesticide exposure by 80% by avoiding the most contaminated fruits and vegetables and eating only the cleanest. If consumers get their USDA-recommended 5 daily servings of fruits and veggies from the 15 most contaminated, they could consume an average of 10 pesticides a day. Those who eat the 15 least contaminated conventionally grown produce ingest less than 2 pesticides daily.

EWG has been publishing guides to the "dirty dozen" of most pesticide contaminated foods since 1995, based on statistical analysis of testing conducted by the USDA and the FDA. According to EWG analyst Chris Campbell, the new dirty dozen only reflects measurable pesticide residues on the parts of the foods normally consumed (i.e. washed and peeled). We have listed these 12 foods in the following pages. Can't find organic versions of these foods? We list safer alternatives that contain similar valuable vitamins and minerals. It's also important to remember that this dirty dozen list provides no information about antibiotics or hormones, or about the impact of producing food on the surrounding environment. It is for this reason that we point out some of the most important foods to buy organic, when taking a more holistic approach.

1. **Peaches:** Multiple pesticides are regularly applied to these delicately skinned fruits in conventional orchards. Can't find organic? Safer alternatives include watermelon, tangerines, oranges and grapefruit.
2. **Apples:** Like peaches, apples are typically grown with the use of poisons to kill a variety of pests, from fungi to insects. Scrubbing and peeling doesn't eliminate chemical residue completely, so it's best to buy organic when it comes to apples. Peeling a fruit or vegetable also strips away many of their beneficial nutrients. Can't find organic? Safer alternatives include watermelon, bananas and tangerines.
3. **Sweet Bell Peppers:** Peppers have thin skins that don't offer much of a barrier to pesticides. They're often heavily sprayed with insecticides. Can't find organic? Safer alternatives include green peas, broccoli and cabbage.
4. **Celery:** Celery has no protective skin, which makes it almost impossible to wash off the chemicals that are used on conventional crops. Can't find organic? Safer alternatives include broccoli, radishes and onions.
5. **Nectarines:** There were 26 different types of pesticides found on tested nectarines. Can't find organic? Safer alternatives include, watermelon, papaya and mango.
6. **Strawberries:** If you buy strawberries out of season, they're most likely imported from countries that use less-stringent regulations for pesticide use. Can't find organic? Safer alternatives include blueberries, kiwi and pineapples.
7. **Cherries:** Even locally grown cherries are not safe. In fact, cherries grown in the U.S. were found to have three times more pesticide residue than imported cherries. Can't find organic? Safer alternatives include blueberries, raspberries and cranberries.
8. **Kale:** Traditionally kale is known as a hardier vegetable that rarely suffers from pests and disease, but it was found to have high amounts of pesticide residue when tested this year. Can't find organic? Safer alternatives include cabbage, asparagus and broccoli.
9. **Leafy Greens:** Leafy greens are frequently contaminated with what are considered the most potent pesticides used on food. Can't find organic? Safer alternatives include cabbage, cauliflower and Brussels sprouts.
10. **Grapes:** Imported grapes run a much greater risk of contamination than those grown domestically. Vineyards can be sprayed with different pesticides during different growth periods of the grape, and no amount of washing or peeling will eliminate contamination because of the grape's thin skin. Can't find organic? Safer alternatives include blueberries, kiwi and raspberries.
11. **Carrots:** In Europe pesticides commonly used on carrots, parsnips and onions will be banned within the next decade. The U.S. has yet to catch up with its European counterparts, so organic is the way to go with carrots. Can't find organic? At least be sure to scrub and peel them. Safer carrot alternatives include sweet corn, sweet peas and broccoli.
12. **Pears:** As insects become more resilient to the pesticides used on pears, more and more chemicals are used. The safest bet is to go organic. Can't find organic? Safer alternatives include grapefruit, honeydew melon and mangos.



The Top 8 Race Fueling Mistakes Made By Ironman Triathletes by Ben Greenfield

After Ironman Coeur D' Alene, I had the chance to talk to many of the athletes that I coach about their day. Some did well. Others struggled. And typically, the struggles were more nutrition-related than pacing-related. So here are the top 8 fueling mistakes that I was able to identify, and the lessons you can learn.

#8: Not adjusting salt intake to weather. Ironman CDA was cold, wet and windy - but hot for several weeks leading up to the race. As a result, many athletes were prepared with race day fueling plans that including several electrolyte capsules per hour or "pre-mixed" salt in their drinks. But without the anticipated amount of sweating, they experienced bloating, water retention and upset stomachs. **Lesson: be flexible with your salt plan.**

#7: Not accounting for water in liquid calories. Do you mix your calorie in powder form with water, or get it pre-mixed? Although you should be taking in the equivalent of 1-1.5 bottles of water per hour, this **includes** the liquid that you take in from these calorie sources. Two athletes forgot this fact, and ended up with an extra 16 oz of water per hour, and the subsequent stomach distress and sloshing! **Lesson: calculate how many ounces of water are in your liquid fuel, or use solid fuel (i.e gels/gummies) and plain water.**

#6: Getting tired of their chosen fuel source. Sure, you practiced with your brand of choice for 5, 6, 7, maybe even 8 hours during training. But did you plan and prepare for how many gels you'd want at 10 hours? 11? 12? If you're not ready for the time in Ironman when your body says, "ENOUGH ALREADY OF THE LIQUID SUGAR!", then you can crumble, and begin grabbing other fuel sources. Sources you haven't practiced with. And sometimes the stomach doesn't like that. **Lesson: Ironman is not a buffet restaurant. Stick to your fueling plan, have iron-will and self-control.**

#5: Losing track of what was eaten. As I rode my mountain bike around the Ironman run course, I would occasionally shout out to athletes, "How much have you eaten/drunk?" Often the response was a shoulder shrug or throw-up and confused hands. If you want to have zero guesswork in Ironman, you must know, at any point in the race, exactly how much you have eaten and drank. You cannot turn your brain off and just shuffle along. **Lesson: math, math, math. Add up those calories, and break it up between swim, bike and run, which leads to #4...**

#4: Not replacing calories/salt/water loss from the swim. You're out there exercising for 1 to 2 hours. In normal circumstances, you wouldn't get out and walk away without replacing all that fuel you burnt, salts you sweated and water you lost. This is asking for an early bike bonk. **Lesson: in the first transition tent or in the first 5 minutes of the bike, make sure that you eat as many calories, electrolytes and water *as you would have consumed had you been able to eat while your were swimming*.**

#3: Eating too much before getting off the bike. Several athletes experienced sloshing, gurgling, and gassy guts within a mile into the run. There are two reasons for this, and the first is obvious: eating or drinking too much on the bike. The second is not so obvious: eating or drinking too much in the last 30-40 minutes of the bike. **Lesson: taper your calorie and water consumption in the final 5-8 miles of the bike to as little as possible to avoid a full gut feeling on the run.**



#2: Forgetting to eat during the run. This completely destroyed the marathon for one athlete. Getting carried away with what started off as a fantastic race, he set his pace and got into his zone on the run, and began hammering away excellent splits. He ran through every aid station focused completely ahead. And at 10 miles, he crumbled. **Lesson: no matter how good you feel, remember to eat. Do not fear the almighty gel.**

#1: Mixing sugars. This was the biggest mistake and caused more trouble than anything else. Without getting into the science of it in this post, let's just say that fructose sugar is "selfish" and very easily competes with other sugars for transport from the small intestine into the bloodstream. Consumption of a pure fructose beverage with other long-chain sugars (i.e. Maltodextrin) typically found in gels will draw extra water into the GI tract and can cause stomach upset and diarrhea, especially if you haven't trained with fructose sugars. Athletes who had never taken Gatorade in training took a sip here and there on the bike, and 80 miles in, they were hunched over their aerobars with twisted stomachs. **Lesson: stick to one fuel source as much as possible, and preferably one "type" of sugar.**

It is now my job as an Ironman triathlon coach to sit down and create a roadmap for these athletes that ensures the same mistakes are not made twice! Please learn from their errors, take some notes, and have a smart and enjoyable race. Just shoot me an e-mail if I can help, or for a detailed roadmap to eating, check out my new book, "Holistic Nutrition for Ironman

Training and Racing Etiquette from USAT Multisport 101

The next time someone blows by you on their \$6,000 aero carbon fiber rocketship bike or swims over the top of you like they are wrestling an alligator, smile and say, "Thank you. Have a great day!"

While that may be a difficult thing to do in reality, there are some things you can do in terms of etiquette and sportsmanship to ensure that you and your fellow competitors have a great race or training day.

Below are a few suggestions on multisport manners. I'm sure many of you have a long list of etiquette violations you would have liked to offer to some athletes but the best thing you can do as a coach and athlete is to be a mentor and example. Actions will speak louder than words in training and racing.

During training:

- Be on time for the group ride, runs and swims. No one wants to wait around.
- Don't ask your running partner to carry the gels or water just because they have pockets.
- Don't make workouts races. Why bike or run with someone if you continually pull ahead?
- Do ask permission to swim in a lane before getting in at the pool.
- If there are two swimmers in a lane there is no need to circle swim but more than two you will need to circle swim in a counterclockwise direction.
- To pass another swimmer in the lane, tap their toes and then quickly accelerate around them.
- No spitting or snot blowing when pack riding! Pull away from the group when spitting or snot blowing.
- Always ride as straight a line as possible when group riding or racing.
- When braking on turns and descents be sure to announce "braking" so others know you are slowing down.
- Ask your running and cycling partners to select the route and don't take

pleasure in pushing them during aerobic sessions. ~ We are all guilty of this!

- If you are pacelining during a training ride, be sure you understand the rotation so that you keep the pack moving in a smooth order.
- Set the example for the other athletes during training. Be a mentor not a monster training partner.
- Do point out road hazards and signal your intentions on group rides. This includes commenting when cars are up and back (when two abreast) and when you are stopping at a traffic light.
- Do smile a lot and make positive fun conversation. **No one likes a whiner/complainer.**
- If you are training on the local running track stick to the outside lanes if you are a slower runner or recovering. Let the speedsters have the inside lane.
- When walking always stick to the outer lanes.
- If you are trail running or riding let the person on the way up have the right away.
- Dogs are great companions on the trails but keep them away from other runners and riders. I've seen some terrible falls occur because a dog got tangled up in someone's feet running.

At the race:

- Don't monopolize someone's time race morning with chit chat. They and you should be focusing your energy on the race, your equipment and the course.
- Observe all race rules at all times.
- Don't use a radio headset during the bike or run.
- Don't place your bike and equipment on top of someone else's in the transition area. Respect the athlete's space and equipment.
- If you are a slower rider stay on the right side except when passing. Keep a straight line when riding. Only discard your water bottles and trash at an aid station. If you have to discard a bottle, make sure you throw it away from the other athletes.
- There is no littering on the race course.

- If you have mechanical problems, pull off the course on the right. Always let the rider ahead know you are passing on the left. And above all obey all safety rules on the course.

- Keep your pets at home if you are racing. Do you really need another distraction?
- The swim is always tough, but I've seen athletes actually push and crowd others away from their start positions. Don't grab, push or pull others during the swim. It's not combat swimming!
- During the run keep to the right except to pass. When you do pass someone or see them at the turnaround offer a word of encouragement.
- Be careful at the aid stations. This is usually the area where most of the items like gel packs and bottles are dropped and the pavement can be extremely slick. There is plenty to drink for everyone. Give each other room to drink and go.

After the race:

- When you cross the finish line, don't be dramatic. You did a good job by finishing, now remove your chip or number, get a drink and move away from the finish chute without a lot of drama.
- Treat the finish line workers with respect. Your day is over, they still have a lot to do.
- After you recover a bit, cheer on the other competitors and talk with the athletes.
- If you stick around for the awards, then wait until all the awards are given out. I know it is tough at times but support the other competitors until the end.
- Good or bad race - "Be your own HERO!" after the race. Smile, hold your head high and take pride inside. You stepped up to the start line and you did it, you put yourself in the heat of competition and you finished even if the only person you were competing with was yourself!

Volunteers and Race Directors:

- Thank them! Never ever yell at the race volunteers.

Over-Reaching versus Over-Training: Gaining the Benefits, but Avoiding the Pitfalls

By: Alex M. McDonald, MD & Professional Triathlete

Every athlete has and will experience periods of fatigue throughout their athletic career, regardless of whether they are a professional athlete training 30 hours a week or a busy professional trying to squeeze in a lunch time workout. When there is an imbalance between training and recovery, exercise and exercise capacity, and stress and/or stress tolerance, over-training is often the result. Endurance athletes are particularly vulnerable to over-training. Unfortunately, due to differences of opinion amongst exercise physiologists, lack of well-designed studies, and poor topic definitions, most people hold a relatively limited understanding of the subject matter and its nuances.

What is over-training?

Over-training results when stress, from both training and nontraining stressors, overwhelms the body's ability to recover adequately. There are two different well-recognized forms of overtraining, Short-Term Overtraining (STO) and Long-Term Overtraining (LTO). An important point to understand is that the physiologic stress of training does not exist in a vacuum. Training stress is in addition to the numerous other stressors that affect a person, such as work, family commitments, financial stress, etc. Therefore, when thinking about training stress and overtraining, all of life's stressors must be balanced against an athlete's ability to recover.

STO or "over reaching" is a condition of peripheral fatigue that may last a few days to a few weeks and is readily reversible. STO is associated with fatigue, reduction or stagnation of lactate threshold performance capacity, reduction of maximum performance capacity, and competitive ineffectiveness. LTO is a condition of both peripheral and central fatigue. It has many of the same symptoms as STO, but it can last for weeks or months, and some physiologists believe it can last for years, a condition known as Chronic Fatigue Syndrome (CFS). STO can develop into LTO, which is more difficult to recover from, especially if an athlete does not correct the stress imbalance that has caused STO.

Symptoms

The clinical symptoms associated with overtraining can be divided into the sympathetic and parasympathetic types, based upon the predominance of symptoms. Sympathetic symptoms are those of excitation and restlessness, whereas parasympathetic symptoms include apathetic behavior and inhibition. The parasympathetic form of overtraining is far more common in endurance athletics.

Athletes may present with various signs and symptoms of short-term overtraining, over reaching, and long-term overtraining, however, some commonalities exist. Examination of heart rate can be an indication of stress on the body. When an athlete approaches an overtrained state they may have an elevated resting heart rate. Additionally, in workout, heart rate variability may be decreased and an athlete may not be able to elevate their heart rate. Physiologists believe this may be a protective mechanism that helps the body to prevent further injury when already in a compromised state.

When overtrained, athletes often feel as if their muscles are heavy or overloaded, regardless of the amount of time spent warming up. This may be a result of additional fluid being shifted to the muscles in an effort to clear by-products of exercise and tissue damage. Delayed Onset Muscle Soreness (DOMS) is a very common symptom of tissue damage that occurs 24-60 hours post exercise. However, in an overtrained state, this soreness may persist for prolonged periods of time, even after light exercise.

There is also a less well-defined psychological component to both short and long-term overtraining. Often athletes report feeling "stale," both physically and mentally tired. There may also be mood disturbances or changes that are often noticed by friends and family long before an athlete is aware of them. These changes may be a result of various changes in neurotransmitters that may develop in the face of overtraining. Lastly, for some athletes eating habits and sleep habits can be altered which may contribute to changes in body weight, often weight loss.

The above mentioned symptoms are ubiquitous in the athletic community. There are times when an athlete is fatigued and needs to train through that fatigue in order to gain fitness. Concern for pushing the body into an irreversible over trained state need only arise when a combination of these symptoms persists for three to five days. There is a delicate balance between STO/overreaching and LTO. Overreaching is a frequently employed method to build fitness and help an athlete reach their training potential (which should only be done with the unbiased perspective of a coach.) The ability of an athlete to recover and rebound from STO is a good indicator of the stress balance in their life. A good indication of going too far with their training is when this rebound is impaired.

Over-Reaching V. Over-Training (cont'd)

The science behind overtraining

The precise mechanism of overtraining is unknown. The syndrome and its clinical manifestation can best be explained as a stress response. There are many theories, yet for numerous reasons the condition is very difficult to study, in part because there is a huge spectrum and no clear indication in any specific individual of what specifies short-term and what specifies long-term overtraining. This makes many of the studies on overtraining very difficult to interpret, because some claim that much of the research conducted on athletes with STO syndrome are not long-term enough. Regardless of these pitfalls there is some information that has been determined and is worth examining, although it must be done with a critical eye.

The sense of staleness that many LTO athletes begin to experience is believed to be a dysfunction of the neuroendocrine system, localized at the hypothalamic level. The neuroendocrine system is a highly complex organization of hormones, neurotransmitters, nerve cells, portions of the brain and various other parts of the body that affects nearly every organ system in the body as well as many global functions. The central control for the neuroendocrine system is a portion of the brain called the hypothalamus. Several hormones and neurotransmitters, namely Growth Hormone (GH), cortisol and Adrenocorticotrophic Hormone (ACTH) have been found to be low in individuals who may be over trained, indicating a hypothalamic dysfunction. There have also been studies which show minimal changes in hormone levels themselves, but a decrease in sympathetic activity, which may reflect a central nervous system cause of an overtrained state.

Much of this research has given rise to attempts to be able to accurately and quickly detect a state of overtraining to allow athletes to better walk the fine line between STO (resulting in improved athletic performance) and LTO. Many potential markers of overtraining, e.g. anemia (low red blood cell count), leucopenia (low white blood cell count), iron deficiency, reduced serum protein, glucose, triglyceride, triglyceride-rich cholesterol, free fatty acid, increased plasma norepinephrine levels, bio markers of oxidative stress and decreased basal catecholamine (stimulating neurotransmitters) excretions, have had poor results when trying to determine if any would be objective and reliable markers for an athlete on the edge of overtraining. At present there is no adequate test to prevent or diagnose overtraining.

Keep in mind that although there are numerous studies on the causes of overtraining, many of them have conflicting data or data that cannot be readily compared due to different characteristics of athletes and measures of study endpoints. Regardless of the causes of overtraining, it is clear that it results when total bodily stress exceeds the individual coping capacity.



Risk factors

Although the causes of overtraining are debatable, the risk factors that lead to the root causes of overtraining are better understood. They include:

- * Training too much, too soon (follow the "10% rule": do not increase your training volume by more than 10% from one week to the next or without taking adequate rest weeks).
- * Incorporating too much high intensity work into a training week or a single day. For example, combining two high intensity variables into one training session, such as performing hill repeats in the middle of a long run, or completing 2 or 3 high intensity lactate threshold sets in a week
- * Not incorporating adequate rest periods into a training plan
- * Poor recovery habits, such as inadequate sleep or poor nutrition
- * Balancing too many stressors outside of training

Over-Reaching V. Over-Training (cont'd)

If an athlete's training occasionally fits into the examples above or fits into one or two of them only, then the likelihood of slipping into an overtrained state is relatively low. However, as more risk factors are added, the chances of overtraining increase. The bottom line is that inadequate recovery and/or increased volume of training at a high-intensity level is most likely the common cause of overtraining.

Recommended treatment & guidelines

The treatment for overtraining is rest. LTO requires complete recovery and can take weeks to months and some believe possibly years in the case of chronic fatigue syndrome. It may take months to regain fitness that is lost during this period.

The goal of many athletes is to occasionally have their training result in over-reaching but never to the point of LTO. Determining where this line is can be very difficult, in part because of variability between athletes as well as variability within a single athlete from year to year and even within a single season. The line between overreaching and long-term overtraining is in a constant state of flux and very difficult to accurately pinpoint. As a result many athletes, coaches and exercise physiologists take steps to gain a little extra insurance to make sure they do not cross that line. That is not to say that following some of the guidelines suggested below will prevent overtraining; only a well organized and athlete-specific plan can accomplish that. The following are simply some extra easy ways to give added insurance to make sure an athlete does not slip:

1. Glutamine is a branched chain amino acid that is an important fuel for cells of the immune system. Some studies have found that plasma glutamine concentrations were decreased in over trained athletes and after long-term exercise. Branched chain amino acid supplementation during long-term exercise was shown to prevent this decrease in the plasma glutamine level. However, it is not clear whether glutamine supplementation may prevent overtraining or that low levels may simply be a result of overtraining. That being said supplementing with glutamine or foods rich in glutamine after a long or hard training session may help to ward off overtraining, or at the very least bolster the immune system.

2. An athlete's diet is an important source of recovery and in particular protein has been shown to be an important component to prevent long-term overtraining. There are physical and psychological differences among athletes that could put them at greater need than other healthy persons. Additionally the timing of this protein intake is important as well, particularly post-workout. Education as well as a consultation with a sports nutritionist may be an important way to prevent overtraining.

3. Lastly the most important piece of the entire puzzle is to know your individual body and be aware of over-reaching and long-term overtraining symptoms. It is okay to over-reach a few times throughout a training year. However, it is important to recognize it and take the necessary steps to recover, completely rest for a day or two followed by a few days of light activity. If symptoms persist or reoccur within a few weeks, it may be time to tone down your training plan and allow your body to fully rest and recover. Additionally if symptoms are severe or do not improve with rest, consulting a sports medicine specialist or healthcare provider is recommended.

Conclusion

Overreaching and LTO are poorly understood and there is a significant amount of mixed data on the subject. However, these syndromes can be controlled to ensure that there is a well thought out and organized training plan that is appropriate for the athletes' abilities, both physically as well as appropriate for their lifestyle. An athlete should always be aware of the early signs and symptoms of overtraining as well as focus on the "details of recovery," including proper nutrition, hydration, sleep and limiting other stressors. This is of utmost importance during a recovery week or day. Remember to never compromise recovery for another hard session. The key to athletic improvement is gradual progressive training stress and recovery.



Chicken and Strawberry Salad
from **Cooking Light**
submitted by **Kathleen Taylor**



Ingredients

Dressing:

- 1 tablespoon sugar
- 2 tablespoons red wine vinegar
- 1 tablespoon water
- 1/8 teaspoon salt
- 1/8 teaspoon freshly ground black pepper
- 2 tablespoons extra-virgin olive oil

Salad:

- 4 cups torn romaine lettuce
- 4 cups arugula
- 2 cups quartered strawberries
- 1/3 cup vertically sliced red onion
- 12 ounces skinless, boneless rotisserie chicken breast, sliced
- 2 tablespoons unsalted cashews, halved
- 1/2 cup (2 ounces) crumbled blue cheese

Preparation

1. To prepare dressing, combine first 5 ingredients in a small bowl. Gradually drizzle in oil, stirring constantly with a whisk.
2. To prepare salad, combine romaine and next 4 ingredients (through chicken) in a bowl; toss gently. Place about 2 cups chicken mixture on each of 4 plates. Top each serving with 1 1/2 teaspoons cashews and 2 tablespoons cheese. Drizzle about 4 teaspoons dressing over each serving.

The Board of Directors, Sponsors and The Calendar of Upcoming Events...

Board of Directors

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We would like to extend a
generous thank you to our
truly amazing sponsors!



July/August Calendar

Training Opportunities:

- Whitworth Masters swimming through July => Times: Mon-Fri @ 5:30-7:00 am. Contact Kevin Wang @ kwang@whitworth.edu Masters swim will begin again at Whitworth in late August, early September.
- Throughout the summer => check the Tri Forum for outdoor group rides, open water swims and/or runs.
- Started June 1st: Liberty Lake Swims at 5:30 pm! Check the Tri Forum for details @ the training link!

Races/Runs:

- July 18th: Tiger Triathlon @ Colville, WA

- July 26th: Race the River Sprint Tri @ Cd'A, ID
- Aug. 1st: Medical Lake Mini Tri @ Medical Lake, WA
- Aug. 2nd: Troika Triathlon (Half IM) @ Medical Lake & Spokane, WA
- Aug. 4th: Hot Summer Nights 5k #1 @ 6 pm @ North Spokane, WA
- Aug. 8th: Coeur d' Alene Olympic Triathlon @ Cd'A, ID
- Aug. 9th: Whisky Dick Olympic Triathlon @ Ellensburg, WA
- Aug. 11th: Hot Summer Nights 5k #2 @ 6pm @ North Spokane, WA
- Aug. 16th: Lake Stevens 70.3 @ Lake Stevens, WA
- August 18th: Hot Summer Nights 5k #3 @ 6 pm @ North Spokane, WA

Upcoming Events:

- HOT SUMMER NIGHTS at Twigs!!! A 5k run series on Tuesday nights in August, all races start @ 6:00 pm from the north side Twigs area. Watch the Tri Fusion website for more details and race registration.
- Oktoberfest 5k Cross Country Race: Second annual race on October 24, 2009. Registration available now!

Next Membership Meeting:

- Wednesday, August 19th, 2009 @ 6:30 p.m.: General membership meeting at Twigs on the northside at Wandermere.