A Hopeful Follow-up to Grim Diabetes Numbers

In a development that may well have influenced companies like Coca-Cola to aggressively pursue obesity academics for Coke-funded research and favorable assessments in the media, the amount of soda Americans drink has declined by about 25% since the late 1990s, when no or little such public image campaigning needed undertaking.

The greater effect of heightened public awareness of the value of steering clear of sugary soft drinks, though (among other factors), may be the recent drop in new cases of diabetes. As reported by the CDC in December—and just after Running & FitNews® reported the unsettlingly high National Health and Nutrition Examination Surveys numbers through 2012—the rate of new diabetes cases has now fallen by about a fifth from 2008 to 2014, the first sustained decline since the disease started to explode in the U.S. about 25 years ago.

A modest decline in cases
Because it has been a gradual drop over the last several years, the improvement in the nation’s health had not previously been big enough for any one year to achieve statistic meaningfulness. But new data for 2014 confirms that the decline is real: There were 1.4 million new cases of diabetes in 2014, down from 1.7 million in 2008.

The percentage of U.S. adults with diabetes or prediabetes, at a whopping 48% as of 2012, remains disconcerting to say the least. What we are looking at is a slowdown of a huge problem of affluence that will continue to be difficult to combat.

Obesity slows—slightly
For example, the prevalence of obesity has continued to rise in even the most recent years (though no longer significantly so). In 1999 to 2000, 31% of U.S. adults were obese. By 2009 to 2010, the figure increased to 36%. This time examining NHANES data from 2011 to 2014, the CDC found that obesity prevalence had inched up to 38% in 2013 to 2014, but the difference between these most recent years was not statistically significant.

During this same three-year period, the prevalence of obesity was higher for women (38%) than for men (34%), and for non-Hispanic blacks and Hispanics relative to other ethnic groups. The obesity prevalence for youth aged 2 to 19 years held steady at 17%, with prevalence increasing with age.

And it’s worth a note of caution that the portion of Americans with diabetes in 2014 was still more than double what it was in the early 1990s. The CDC report points out that educated Americans have seen improvements, for example, while the rates for the less educated have flattened but not declined.

Women and diabetes’ ill effects
Women with type 2 diabetes are twice as likely as diabetic men to have coronary heart disease, according to a new statement from the American Heart Association, published in Circulation.

Among other surprising gender differences:
• Heart attack (M.I.) occurs earlier and is deadlier in diabetic women than men.

• Diabetic women have a higher excess risk for incident heart failure. In the Framingham Heart Study, risk was five times as high in diabetic versus nondiabetic women, and twice as high in diabetic versus nondiabetic men.

• Diabetic women are less likely to have well-controlled blood glucose and blood pressure.

• Diabetic women may require more physical activity than men to lower their cardiovascular risk.

For example, the Nurses' Health Study found that at least two hours of activity weekly was needed to derive CV benefits in women.

The AHA admits that it has yet to fully understand “how the inherent hormonal differences between men and women affect risk... This statement is a call for action to do the compelling research that is so important for all people with diabetes."

And along with that important research, continued health and dietary education and physical activity programs in our schools and communities seems equally important. It’s clear that the country may be finally starting to move in the right direction, but that we also have a long way to go to get obesity, diabetes, and metabolic syndrome more generally, well under control.


Circulation, AHA Scientific Statement, Published Online December 7, 2015, http://circ.ahajournals.org/content/early/2015/12/06/CIR.0000000000000343.full.pdf+html


Antibiotic Overuse: Another Reason to Follow Doctor’s Orders

Over the summer we looked at many of the misconceptions that exist among patients (and, more rarely, healthcare professionals) with regard to antibiotic use. Here we follow up on July/August’s depiction of a public that increasingly overuses antibiotics—most often within households that hoard older prescription medicines and misperceive their efficacy generally—with new data about childhood use and greater obesity risk later.

A longitudinal study in the *International Journal of Obesity* used electronic health records to assess physician orders for antibiotics in about 150,000 children ages 3 to 18. The cohort had been under care for at least one year before their BMI was first recorded.

Antibiotic orders both for just within the prior year and “cumulative orders,” meaning antibiotic prescriptions over multiple years, were associated with increased BMI, with the results the most pronounced in mid-teen years. Cumulative orders were associated with persistent increases in BMI, as opposed to the more reversible association noted among only prior-year antibiotic patients.
The models used in the study indicate that antibiotics could be tied to excess weight gains of 1.6 to 3.3 lbs at age 15. Specifically, the persistent association was stronger with increasing age, and among children with at least seven lifetime orders, antibiotics were associated with an average weight gain of approximately 3.1 lbs at age 15.

Antibiotic use early in life has been linked to weight gain, but until now there have been no large-scale, population-based, longitudinal studies of the full age range among healthy children. Because antibiotics are commonly prescribed for children, the findings are not good news, especially given that these children were healthy. The results also suggest that antibiotic use may influence weight gain throughout childhood and not just during the earliest years, as has been the primary focus of most prior studies.

The researchers hypothesize that antibiotics could affect metabolism and energy balance by changing the intestinal microbiota. The study further illustrates the need for patients and their parents to recognize the benefits and limitations of antibiotic use, to help avoid overuse.

The CDC survey referenced in August in Running & FitNews® found that, of almost 8,000 consumers, some 20% obtained antibiotics from a source other than their doctor or clinic, “most often grocery stores, friends and family, or leftovers from a previous illness.” The public should be reminded frequently that antibiotics are ineffective against viruses and colds. Colds are caused by viruses, and antibiotics only treat an infection that's brought on by bacteria. Antibiotics cannot fight viruses.

In addition to the weight gain they can promote in children, antibiotics can become less effective the more they are used, so it’s important to avoid taking them unless absolutely necessary.

Coca-Cola Funded Research Group Closes Down

In December, the embattled Global Energy Balance Network announced that it was shutting down, amid great controversy surrounding its cozy relationship with Coca-Cola. In August, Running & FitNews® reported that the not-for-profit, ostensibly set up to promote healthy body weight through diet and exercise, had received $1.5 million from Coke as startup money, according to The New York Times. The group’s vice-president, Steven N. Blair, PED, FACSM, had received more than $3.5 million in funding from Coke for research projects since 2008.

A wall of silence
The GEBN website, which has gone offline, was registered to Coca-Cola headquarters in Atlanta, which also served as the site’s administrator and featured videos of prominent research scientists, including Dr. Blair, directing attention away from diet and toward exercise in the fight against obesity.

By downplaying the role of caloric intake and dietary choices in managing body weight, many health experts felt the GEBN was directly involved in Coca-Cola’s public relations efforts to continue selling sugary drinks, despite abundant evidence that the drinks contribute to the country’s obesity crisis.

A resignation
Since the initial revelations this summer, amid almost constant pressure from public health professionals—including 36 scientists who signed a letter written by the chairman of the nutrition department at the Harvard School of Public Health, accusing the group of spreading “scientific nonsense”—Coke’s chief scientist, Rhona S. Applebaum, has resigned. Dr. Applebaum, who has a PhD in microbiology, had been Coke’s chief scientific and regulatory officer since 2004, and had helped orchestrate the establishment of the nonprofit group.

A loss of funding
In recent months Coke had also stopped financially supporting the group, making its shuttering of operations further evidence of its true purpose all along.

The University of Colorado medical school, where GEBN president James Hill is an obesity researcher and professor, returned a $1 million grant from Coke after concerns about the GEBN surfaced.

Intentions revealed
It’s clear now that Big Soda public relations strategy had been the central impetus for the establishment of the GEBN from the start. As The New York Times noted this winter, “At one food industry conference in 2012, Dr. Applebaum gave a talk outlining Coca-Cola’s strategy of ‘cultivating relationships’ with top scientists as a way to ‘balance the debate’ about soft drinks.”

And perhaps delivering the death-blow to the organization, the Associated Press published a series of emails spanning a two and a half year period between Dr. Hill and Coke executives, including one in which Dr. Hill proposed research that would help Coke fend off criticism of its sodas and snacks by shifting the blame for obesity to physical inactivity:

“I think [the study] could provide a strong rationale for why a company selling sugar water SHOULD focus on promoting physical activity. This would be a very large and expensive study, but could be a game changer. We need this study to be done,” he wrote. (Emphasis in original.)

In another he referred to his research concepts as “ideas for research projects that might be very specific to [C]oke interests.”

In yet another email Dr. Hill wrote: “I want to help your company avoid the image of being a problem in people’s lives and back to being a company that brings important and fun things to them.”

Needless to say, that is not typically how scientists discover worthwhile research topics.


Pregnant U.S. Women Routinely Gain Too Much Weight

The CDC reports in its *Morbidity and Mortality Weekly Report* that more than two-thirds of pregnant women in the U.S. either gain too much or too little weight during pregnancy, with gestational weight gain being the far more prevalent problem.

In the study, 20% of pregnant women gained less than the recommended amount of weight, and 48% gained more than the recommended amount. However, the American College of Obstetricians and Gynecologists (ACOG) reports that more than half of pregnant women in the U.S. are overweight or obese. In any case, fewer than one-third (just 32%) of women had gestational weight gain within Institute of Medicine recommendations. Women who were overweight or obese before pregnancy had the highest prevalence of excessive gain, the researchers note.

**Health implications**

The weight a woman gains during pregnancy has important health implications for both mother and child. The high prevalence of excessive weight gain, which varies with pre-pregnancy BMI, is of concern because excessive gain increases the risk for fetal macrosomia, which is defined by any baby weighing more than 8 lbs 13 oz. (and so “significantly larger than average”).

Postpartum weight retention is another risk of too much gestational weight gain, which naturally can lead to obesity in mothers—and possibly children. It has been observed before that postpartum sleep deprivation and depression are also associated with postpartum weight retention. In addition to promoting obesity and possibly depression and sleeplessness, post-partum retention, as we shall see below, is of particular concern for another reason.

**Gain between pregnancies**

A *Lancet* study has found that women who gain weight between pregnancies have an increased risk for adverse birth outcomes. The researchers looked at over 450,000 women who delivered children from 1992 through 2012.

Stillbirth occurred in 2.4 out of 1,000 second births, with risk in the second pregnancy increasing linearly with higher BMI between pregnancies. Infant and neonatal mortality occurred overall in 2.1 per 1,000, and 1.2 per 1,000, respectively. Compared with women whose weight remained stable, those who gained 2 to 4 BMI units by the second pregnancy had a 38% increased risk for stillbirth, and those who gained 4 or more BMI units had a 55% increased risk.

**Gestational weight gain recommendations**

The IOM provides recommendations promoting good health during pregnancy specific to a woman's BMI prior to pregnancy. ACOG supports the guidelines, which are as follows:

- Those with a pre-pregnancy BMI under 18.5 should gain 28–40 pounds.
- Normal-weight women (BMI, 18.5–24.9) should aim for 25–35.
- Overweight women (BMI, 25–29.9) should aim for 15–25.
- Obese women (BMI, 30 or more) should gain only 11–20.
For access to great tools including a Pregnancy Weight Tracker, a Recommended Weight Gain by BMI chart, and a BMI Calculator, visit IOM Healthy Weight Gain During Pregnancy.

**Exercise is indicated**

A committee opinion from ACOG suggests that women with uncomplicated pregnancies should aim for 20 to 30 minutes of moderate-intensity physical activity most days.

The risks of exercise in pregnancy are minimal. On the contrary, there is plenty of evidence and great consensus now that the changes produced during exercise are helpful to pregnancy. Exercise increases blood volume, both in circulation and for each beat pumped, improving the body's ability to deliver oxygen to tissues, which in turn greatly benefits your baby. And benefits to overweight women include reduced risk for gestational diabetes.

Discuss exercise with your doctor before embarking on an aerobic regimen during pregnancy, as there are a few contraindications to exercise during pregnancy, and your overall physical health needs to be assessed if you've been previously sedentary. Yet for women with complicated pregnancies, the committee says that bed rest “is only rarely indicated.”

Regular, vigorous exercise throughout early pregnancy does not increase the incidence of miscarriage or birth defects. Workplace stress such as standing hours on end or frequent heavy lifting are not recommended during pregnancy, but this is a far cry from even vigorous recreational exercise such as running.

**Birthing a better baby?**

For exercised babies, all aspects of fetal growth and development after birth have been shown to be equal to or better than non-exercised babies. Neither starting an exercise regimen nor continuing one results in preterm labor. Neither results in decreased fetal growth either—just decreased fetal fat, which does not result in low body temperatures as was once thought.

Also, the blood glucose of these less plump infants is perfectly normal. What's more, babies of pregnant exercisers tend to be easier to care for. They sleep through the night earlier, do not typically have colic and often self-quiet. Blind evaluations of exercised and non-exercised babies repeatedly show exercised babies need less consolation when disturbed.

**Use common sense**

Exercise enthusiast and obstetrician James F. Clapp III points out in his compendium of exercise advice for pregnant women that if it feels good, it's probably okay. Obviously, avoid any sport with the risk of projectile trauma. Also best avoided are high altitudes, scuba diving and competition in general. But even bouncing on a trampoline with proper back support is fine if there is no discomfort. Proper attention to discomfort, particularly abdominal or pelvic pain, is as important as the exercise itself. If this occurs, do not continue until the situation is clarified by your doctor.

The big four contraindications to exercise are:

- Injury
- Disease
- Pain
- Bleeding
Also, take care to avoid low blood sugar and never ignore fatigue.

CDC, MMWR, “Gestational Weight Gain—United States, 2012 and 2013,” 2015, Vol. 64, No. 43, pp. 1215-1220, http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6443a3.htm?s_cid=mm6443a3_w


Exercising Through Your Pregnancy by James F. Clapp III, MD, 2002, Addicus Books, Omaha, NE

Opioid Rx Linked to Heroin Use Later

Heroin-related deaths have jumped 39% in just one year, from 2012 to 2013, and looking over the course of the last decade, from 2002 to 2013, the rate of heroin-related overdose deaths nearly quadrupled, the Centers for Disease Control and Prevention reports.

Notably, 75% of heroin addicts today say that they used prescription opioids before turning to the drug. And according to the CDC, 45% of people who have used heroin in the last four years were simultaneously addicted to prescription painkillers. These survey results help illuminate the disturbing trend that many modern-day heroin users are arriving at that addiction from prescription pain pill addiction. The CDC states that the prescription opioid-dependent are 40 times more likely to abuse heroin.

In fact, a new study published in Pediatrics confirms the trend among young people. The objective of the study was to estimate the risk of future opioid misuse among adolescents who have not yet graduated from high school.

The researchers looked at asked over 6,000 high school seniors to complete questionnaires about drug use. The subjects were then followed until age 23. Overall, healthcare provider-recommended prescription opioid use by grade 12 was independently associated with a 33% increase in risk for opioid misuse later. Counterintuitively, the association was the most pronounced among participants without a history of drug misuse at baseline—and even among those who strongly disapproved of marijuana use.

“Legitimate” opioid use by 12th grade is therefore a strong predictor of opioid misuse after high school. The fact that this association is concentrated among adolescents who are least expected to misuse opioids should both alarm us and shed a slim ray of light on how to best combat the problem.

The study authors note, “For these drug-naïve individuals, an opioid prescription is likely to be their initial experience with an addictive substance. Most likely the initial experience of pain relief is pleasurable, and a safe initial experience with opioids may reduce perceived risk. A pleasurable and safe
initial experience with a psychotropic drug is a central factor in theories of who goes on to misuse drugs.” (Emphasis added.)

For clinical practice, the results suggest an unrecognized risk of opioid prescribing. This risk should be incorporated into prescribing decisions and patient counseling. Until recently, the short-term use of opioids to treat pain was thought to carry a negligible risk for precipitating future misuse. The current study associates short-term prescriptions with misuse for some youth.

Education and prevention efforts have substantial potential to reduce future opioid misuse among this particularly high-risk subset of young people—who after all begin opioid use with strong attitudes against illegal drug use.

The CDC also reported over the summer that “significant increases in heroin use were found in groups with historically low rates of heroin use, including women and people with private insurance and higher incomes. The gaps between men and women, low and higher incomes, and people with Medicaid and private insurance have narrowed in the past decade.”

As opium production dramatically increases in Mexico and Afghanistan—by 50% and 36% respectively, according to the United Nations’ annual World Drug Report—the necessity of combatting the surge in heroin use becomes more and more urgent.

Parents should strongly consider opting for nonopioid options for their children as the initial treatment of minor painful conditions. In yet another study, researchers recently looked at patterns of schedule II opioid prescribing and found that a “broad swath” of physicians were prescribing them, much more than previously thought. It had been the conventional wisdom that opioid prescriptions were concentrated among the top 1% of Medicare schedule II opioid prescribers. These so-called “high volume” prescribers, it turns out, accounted for only 18% of opioid prescriptions in 2013, the study finds.

For comparison, California Workers’ Compensation data showed that the top 1% accounted for a full third, 33%, of all claims. While specialties in pain management, anesthesiology and physical rehabilitation had the highest rates of opioid claims, family and general medicine had the most claims by volume.

The authors of the study, published as a research letter in *JAMA Internal Medicine*, conclude: "Efforts to curtail national opioid overprescribing must address a broad swath of prescribers to be effective."

*Pediatrics*, 2015, Vol. 136, No. 5, [http://pediatrics.aappublications.org/content/136/5/e1169](http://pediatrics.aappublications.org/content/136/5/e1169)


**Foods We See Daily Factor in Our Weight**

The Halloween candy bowl…the leftover Thanksgiving pie…the office holiday cookie basket…if it seems the annual ubiquity of holiday treats contributes directly to the frequency at which you catch
yourself snacking on them, you are not wrong. It’s not surprising that the easy reach of sugary treats toward the end of the year can lead to vanquished diet plans or unwise eating choices.

But a new study of American countertops has even more interesting news about the effect food-availability can make: the types of food you leave out for yourself or your family to easily consume are very predictive of weight gain, or loss, depending on your choices.

It’s well known that the mere existence of dessert foods and other treats around us contributes to our consuming them. What’s news is how dramatically weight gain or loss fluctuated in the new study with food-availability and -placement habits.

The study, conducted by Cornell University and partially funded by the National Institute of Health, examined photographs from over 200 kitchens in Syracuse, New York. The researchers wanted to analyze the food environment in each household in relation to the body mass indices of the adults living there. It turns out that the right choice about which ready-to-eat foods are left out on the countertop may be a simple strategy to promote weight loss and improved health.

Women, in particular, seemed to be influenced a great deal by what was left out in plain view. For example, the women in the study who kept fresh fruit out in the open tended to be a normal weight compared with their peers. But when snacks like cereals and sodas were readily accessible, those subjects were heavier than their neighbors—by an average of more than 20 pounds.

When unhealthy foods are the most visible options in the kitchen, falling into habits that lead to weight gain becomes easier. Keeping those foods out of sight by sequestering them in pantries and cupboards reduces their convenience, making it less likely that they will be grabbed in a moment of hunger.

Indeed, the study found that normal-weight women were more likely to have a designated cupboard for snack items and less likely to buy food in large-sized packages than those who are obese. Women who had a fruit bowl visible weighed about 13 pounds less than neighbors who didn’t.

Although the findings are strictly correlational, the study does suggest that consciously replacing unhealthy cues with healthy ones in the home could have a real impact on a person’s BMI.

Health, Educ. & Behav., Oct. 2015,
http://heb.sagepub.com/content/early/2015/10/15/1090198115610571.full

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SIDEBAR

**Food Types With Their Correlated Differences in Body Weight**
*Compared with your neighbor, here is how much more you are likely to weigh if these foods are sitting on your kitchen counter:

<table>
<thead>
<tr>
<th>Food</th>
<th>Weight Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cookies</td>
<td>+8 lbs</td>
</tr>
<tr>
<td>Cereal</td>
<td>+20 lbs</td>
</tr>
<tr>
<td>Soda</td>
<td>+26 lbs</td>
</tr>
<tr>
<td>Fruit</td>
<td>-13 lbs</td>
</tr>
</tbody>
</table>
Lesser Known Walking Benefits

Walking as a form of exercise is easier on the joints than running, but offers many similar benefits if the duration of the walk is extended to roughly double that of a conversation-pace run. Walking is relaxing, equipment-free and nearly everyone can do it. It does not match the caloric cost or cardiovascular intensity of running, cycling or swimming, but over a one- or two-hour duration, walking can provide a considerable fat burn as well as a very good core, pelvic, thigh and calf muscle workout.

Harvard Medical School reports that walking for just two and a half hours a week can cut your risk of heart disease by 30%. It has also been shown to reduce the risk of diabetes and cancer. And walking lowers blood pressure as well as cholesterol.

Walking also builds ankle and metatarsal strength for improved balance and agility. It strengthens the muscles surrounding the knee, making it an excellent choice on off days to better prepare runners for the heavy pounding of hard training days while staving off patellofemoral syndrome. Over time, there is some evidence that walking can relieve low back pain.

In a 2010 study of healthy college students, walking measured up quite well to elliptical training—though the latter is even easier on the joints due to it being a significantly less load-bearing form of exercise. The British Journal of Sports Medicine published a study that found walking causes 112% of a person’s body weight to strike the ground with every step, compared to only 73% in elliptical training.

The students were asked to complete two quarter-hour workout sessions: one walking on a treadmill, the other on an elliptical machine. They were told to maintain a challenging pace that was nevertheless sustainable without deteriorating over the course of each session, i.e., roughly a 4 or 5 on a 10-point intensity scale. Energy consumption was monitored, and it was discovered that this remained the same no matter which machine the subjects were using.

You can, of course, pick up the intensity on an elliptical to deliver a workout more akin to running, but when intensity is bridled back, the energy expenditure of elliptical training matches that of walking—with walking being the better choice to increase bone mineral density.

Five surprising benefits of walking

Harvard Health Publications recently composed a list of lesser known benefits of regular walking. It contains a few surprises.

1. Walking counteracts the effects of weight-promoting genes. Harvard researchers looked at 32 obesity-promoting genes in over 12,000 people to determine how much these genes actually contribute to body weight. They then discovered that, among the study participants who walked briskly for about an hour a day, the effects of those genes were cut in half.

2. Walking curbs cravings for sweets. Two studies from the University of Exeter found that a 15-minute walk can ease the desire for chocolate, as well as actually reduce the amount of chocolate people eat in stressful situations. Newer research confirms that walking can reduce cravings and intake of a variety of sugary snacks.

3. Walking reduces breast cancer risk. Researchers already know that physical activity in general lowers the risk of breast cancer. But an American Cancer Society study that looked specifically at walking found that women who walked seven or more hours a week had a 14% lower risk of breast cancer than those who walked three hours or fewer per week. Even more notable, walking provided this
protection even for the women with breast cancer risk factors like being overweight or using supplemental hormones.

4. **Walking eases arthritic pain.** Several studies have found that walking reduces arthritis-related pain, and that walking five to six miles a week can even prevent arthritis from forming in the first place. Walking is protective of the hip and knee joints in particular—the ones especially vulnerable to osteoarthritis—by lubricating them and, as noted above, strengthening the surrounding muscles.

5. **Walking boosts immune function.** A study of over 1,000 men and women found that those who walked at least 20 minutes a day, at least five days a week, had 43% fewer sick days than those who exercised once a week or less. And if they did get sick, it was for a shorter duration, and their symptoms were milder.

*Harvard Healthbeat, Oct. 2015*


http://bjsm.bmj.com/content/48/7/616.2.abstract?sid=f0e8de84-0858-40a2-833a-39f9b4958a9f
Fun You Haven’t Heard Of: Archery Tag

Popular in Canada and slowly making its way southward through the U.S., archery tag is a team-based competitive activity similar in many ways to paintball. The game entails recreational combat with archery bows and foam-tipped arrows. Players work in teams to tag opponents with arrows while running around and hiding amid a variety of obstacles in a 7,000 or more square foot space. There are already hundreds of archery tag facilities in the U.S., though few people have heard of the game, which is perfect for throwing someone an activity-based birthday party, perhaps encouraging family fitness, or even team-building with a corporate outing.

Combining elements from paintball, dodgeball and archery, the game can be played in large groups of up to 20 people. Players are provided face masks and arm guards and may shoot opponents on the head, body, bow or arrow to tag them out. Ricochets and rebound shots do not count as “hits.” When a player is hit by an arrow from the opposing side, they are tagged out and must go stand on the sidelines.

A 10-foot area in the middle of the space, known as the safe zone, separates the arena into two equal sides. Players can enter the area only to retrieve arrows and can only stay inside for up to five seconds. Players cannot shoot from, nor be shot while in, the safe zone. Players are not allowed to cross to the opposing side of the arena.

With simple rules, innovative equipment and nearly endless possibilities for gaming environments, archery tag offers a unique, athletic and fun experience for people of all ages. Games are played on military bases, archery grounds, football fields, basketball courts and of course customized facilities with inventive obstacle courses. They are also played in shooting galleries, enclosed arenas and creatively decorated warehouses that might evoke, say, a post-apocalyptic setting or medieval battlefield.

The three ways to win a game of archery tag are to knock out all of the opposing team’s five targets, tagging out all opposing players or score more points than the opposing side before the clock runs out. If you are tagged out when your teammate catches an arrow or shoots out one of the five targets, you or one other player on your team may “revive” and re-enter the match.

Teams may consist of five to ten people each, depending on the facility and specific version of gameplay. A referee ensures that no one fires at point blank range, fires broken arrows or fires those without foam tips. Face masks must be worn at all times.

Archery tag is a great way to introduce your kids—or yourself—to the sport of archery, while enjoying teamwork, strategizing and the thrill of battle. You are also guaranteed to get much more exercise than traditional straw target shooting. To find an archery tag facility in your area, visit [http://archerytag.com/locations](http://archerytag.com/locations), which boasts 462 archery tag licensees in an impressive 38 countries.


*Archery Tag*, [http://www.archerytag.com](http://www.archerytag.com)
THE CLINIC

**Modify Training to Get to Root of Knee Pain**

I’m a 53-year-old female and have been running for a year and a half. About a week ago I suddenly developed pain overnight in both kneecaps. I think this could be runner’s knee, but the pain occurs only when I’m going up or down steps, or going from a standing position to a sitting position. It hurts most when going down steps. I don’t feel it at all otherwise. I run about 10 to 15 miles per week. I run a fair number of hills because that’s all we’ve got here, but they aren’t very steep. Is it OK to continue running since I have no pain while running?

**Kim Weymark**
**Harrisonburg, VA**

It does sound as if you are suffering from runner’s knee, which is patellofemoral pain sometimes brought on by the stress of hill running, especially downhill. Be sure to confirm this with a visit to a sports medicine physician so that you can be sure this is the problem. While you can continue to run if it doesn’t hurt, I would modify your training. It is important to make sure you correct the training errors that contributed to the problem. Typically the greatest forces on the kneecap are at around 45 to 60 degrees of knee flexion.

One immediate step is to back off hills as much as possible. On hills, the knee is inevitably forced to bend more. If flats are not available, move to the treadmill. Often, when you develop runner’s knee, the vastus medialis obliquis (VMO) of the quadriceps (the inner thigh muscle that attaches to the inner aspect of the patella) is not working as well as it could. A visit to a physical therapist may be helpful to isolate and strengthen this muscle in both its lengthening (eccentric) and shortening (concentric) modes. Meanwhile, straight-leg leg lifts and terminal extensions (seated, weighted knee extensions extending from just the last 30 degrees) can begin to strengthen this muscle.

Consider purchasing a compression brace such as a Cho-Pat band that can be placed around the patellar tendon to offset the shock absorption of the kneecap. Try it on one knee and see if you notice an improvement.

**Robert Meislin, MD**
**Phoenix, AZ**

**Aching Hamstrings After Just Sitting**

Several years ago I pulled the hamstrings on both legs. I slipped on a rock and fell into a splits position (not while running). My doctor advised me to start a flexibility program to stretch the hamstrings during the healing process so that they would not shorten as a result of the injury. While I was able eventually to return to my regular mileage, my hamstrings have given me trouble since and as a result limit my running. Now I have trouble sitting for any length of time before my hamstrings begin to ache. The pain is at the upper attachment of the muscle. At times the entire buttocks and sacroiliac are flooded with a dull pain.

**Mark Ambrovich**
**South Bend, IN**

Hamstring injuries can be difficult to heal and often require a more comprehensive approach to rehabilitation. Strengthening the muscles is as important as maintaining flexibility. Since the hamstring
acts on both the knee and the hip, it is important to do hamstring strengthening exercises for both knee flexion and hip extension. Exercises should be performed in both a concentric and eccentric fashion, that is, exercises should activate the muscles while they are shortening and lengthening. This can be accomplished by performing exercises with both a slow up and a slow down motion. Compression shorts or a compressive thigh sleeve may also help alleviate some of your discomfort. However, you may be acting on an erroneous assumption at this point.

Your hamstring problems are getting worse with symptoms extending beyond the original injury. Buttock and sacroiliac pain suggest that the lumbar spine may be involved and you may need to be evaluated by a physician who has expertise both in sports injuries as well as the lumbar spine. Sciatic nerve impingement (pressure on the sciatic nerve from the spine) can cause the symptoms you describe including pain in the low back, buttocks and hamstrings, and these problems would require treatment different from the treatment for a chronic hamstring pull. Make sure that your doctor has considered and ruled out all the possible causes of pain in this region.

Robert Wilder, MD
Charlottesville, VA

Return to Running After Hernia

I have an inguinal hernia that is causing discomfort and need advice regarding treatment and how it will affect running and participating in other sports. If I have it repaired, when can I run again, and how should I progress?

Stephen Caicedo
Youngstown, PA

A hernia is the protrusion of any structure, usually the bowel, through a weak point in the abdominal wall. The most frequent mechanisms of injury are repetitive lifting activities, activities that increase intra-abdominal pressure (such as weightlifting) or a sudden blow to the lower abdomen (such as the impact of handlebars from a bicycle). Most often there is a preexisting condition such as abdominal muscle weakness or a congenital defect. Hernias are noticed when they cause symptoms of bulging and possibly pain. An inguinal hernia is the most common type that occurs in adults. They are classified as indirect, direct or femoral.

Indirect inguinal hernias account for 50% to 70% of all hernias. They are considered “congenital.” In over 80% of male newborns, the path the testis follows as it descends into the scrotum remains open. By the age of two, about half remain open, and by adulthood only 25% remain open. Clinical symptoms often do not appear until years later.

A direct hernia is acquired and is usually seen in males over 40 years old. This type of hernia occurs when increased intra-abdominal pressure causes a protrusion through the posterior abdominal wall of the inguinal canal as a result of weakened abdominal wall muscles. A femoral hernia is less common and typically occurs in females.

Most hernias can be diagnosed by a physical exam. Sometimes a special X-ray using a contrast dye is needed. The treatment for large or painful hernias is surgical repair. Surgery is necessary to prevent incarceration and strangulation of the herniated bowel, which can cause serious complications. You should not neglect it or delay a consultation with your doctor.
Here are the standard recommendations for returning to sports following a hernia operation:

- Avoid activities that stretch or pull the abdominal muscle for the two weeks following the operation.

- Progressive resistance exercises and conditioning can begin at two to three weeks.

- Abdominal strengthening can begin after the fourth week.

- For indirect hernia repairs, an athlete can return to non-contact sports at six to eight weeks and contact sports eight to ten weeks after surgery.

- For direct hernia repairs, an athlete can return to non-contact sports at eight to ten weeks and contact sports at 12 weeks after surgery.

If your surgery can be performed laparoscopically, your layoff will be much shorter than if your surgery is performed through an abdominal incision. For laparoscopic repairs you may be able to return to walking/light running, as you feel ready, probably within two to four weeks. For your return to your running program, start out slowly with walking, then alternately walking and jogging. As is always true whether you are a new runner or returning from a layoff, reconditioning should proceed gradually in order to avoid injury. Limit your increases in mileage and speed to 10%, as a rule of thumb. What that means is to make a gradual, gentle progression. Stop and rest if you feel discomfort. If it persists, contact your doctor.

Troy M. Smurawa, MD
Clermont, FL

Orthotics—Or Your Feet—Can Change Over Time

I purchased orthotics about four and a half years ago when I injured first one foot, then the other. Now the pain is recurring. Do these hard plastic orthotics wear out? In the intervening years, have more comfortable materials become available?

Darren Thompkins
San Francisco, CA

Yes, orthotics can wear out over time, and the needs of your foot can also change. If the problems with your feet and the resulting pain are identical and the orthotics you’ve had were effective, then you may be able to have them refurbished. However, there are many types of materials that can be used for the orthotic along with shock absorbing materials for top-covers and extensions that you might find more comfortable. It would be a good idea to have your feet re-evaluated, since they have begun to give you trouble, to determine the options available.

Janet Simon, DPM
Albuquerque, NM
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The Back Page

Team VA and Team MD Split 2015 Potomac XC Cups
New stars emerge as Individual Champions led by 9th grader Theresa Long in Seeded Girls

10th XC BORDER WAR Celebrates the Cross Country Battle along the Potomac (River) Ideal racing conditions coupled with sunny skies showcased the 10th running of The Battle of the Potomac XC Championship in all its splendor. Aerial drone cameras captured the rolling hills, the Christmas Tree Farm and the lifting smoke from the chicken barbecue cookers. Yes, this is cross country at its finest. Nicknamed the “XC Border War” after its first few years, the 10th anniversary event brought back a bit of symmetry to the event as Maryland Boys defended their Potomac XC Cup title and the Virginia Girls got back on winning ways after a two year run by Team Maryland’s girls.

It was a dominant win by the Maryland Boys who have only faced a true challenge in 2 of the 10 Border War Championships raced. The Virginia Girls got back to holding the Potomac XC Cup after a two year reign by Maryland’s Girls. The individual Seeded Champions followed suit as a local Montgomery County MD boy took top honors. Wooton HS’ Colin SyBing ended his fall “cross” season with a 13 second win over local Quince Orchard HS’ top runner Liam Walsh. The surprise winner of the day was in the Girls Seeded race. A homeschooled freshman pulled away from West Virginia’s 2-time 3A State Champion Abby Colbert to earn her first major win in cross country. Theresa Long is no stranger to the Smokey Glen Farm course as she won the Middle School race In a previous effort.

The 10th Battle of the Potomac XC Championship results tie back to the first year of the state vs state race when there was just one Potomac XC Cup to hold for bragging rights. In that year, Team Maryland edged Team Virginia based on the strength of the Maryland Boys. In fact in its 10 year history, the Maryland Boys have won 9 out of 10 times. For a while, it looked like the Virginia Girls would maintain the same level of dominance, yet in 2013 the Maryland Girls brought more speed and followed up that upset win in 2013 with a 2nd straight team victory in 2014. It was fitting in our 10th year the the Team Virginia Girls won over a Maryland Girls team that officially was one finisher short from scoring. Even if Maryland had a 10th runner (scoring is 10 deep) who had finished 1st, the Virginia Girls’ depth was too much to overcome.

Some elements of the XC Border War #10 remained the same. The drumline kept the runners’ beat, the video crew shot cool new footage including a drone pilot providing a new view of Smokey Glen Farm, and the staff cooking that famous Smokey Glen Farm smoked chicken. When all 6 races had been completed, the smoked chicken beckoned the runners and the aerial drone with camera had landed.

The Battle of the Potomac XC #10 celebrated 10 years of MD dominating the Boys competition in all but 2 of the 10 yeas and VA Girls winning all but 2 of the 10 years. It was fitting that our primary Youth Fitness Honoree, Kaitlyn Davis, was a past 2-time champion, a scholar athlete at NC State University and now an elementary school teacher.
Our male honoree was Lee Degfae who went on to All-American Honors at Virginia Tech in track and cross country. Lee was a past winner for Team VA in one of two years that the Virginia Boys won the Potomac XC Cup. Each of these past champions has gone on to post-college careers and are role models for all high school athletes on how to balance a college sports career and an academic career pursuit. Lee lives in Atlanta where he works for Wells Fargo Bank.  Kaitlyn resides in the Raleigh NC Tri-Cities area where she is an elementary grade level teacher.

American Running produces and hosts the event as part of its commitment to improving the physical activity and fitness levels of all America’s youth. The middle school race will expand and be a link to future high school cross country runners. That tie was evidenced by the win in the Girls Seeded race, a former middle school competitor and past winner. Additional photos and updates will be posted on the Battle of the Potomac XC site – www.battlaxc.com  Results are posted on RUNHIGH.com (www.runhigh.com) and on the host site, www.battlexc.com.

**Virginia has its Day at National HIGH SCHOOL X-COUNTRY Finals – NXN in Oregon  & Footlocker in San Diego**

**Fayetteville-Manlius Girls dominant again at NXN; Rainsberger wins Girls Title; Clinger the Boys**

**Loudon County Starts Kelati and Hunter win National Crowns at Footlocker**

**NXN 2015 in Oregon:**  Ideal racing conditions are never the phrase uttered when it comes to cross country nationals at Nike’s Premier team-focused National Cross Country Championship (NXN). It is routinely overcast with drizzle with a waterlogged course that brings out the toughest in XC racing. NXN moved to Glendale Golf course to many coaches and observers’ applause in 2014, after several years of waterlogged and mud-filled sections of the course at Portland Meadows Race Track (course is inside the outer thoroughbred horse track). Footlocker on the other hand is set in San Diego (except for a 2 year run in Orlando) and almost always is raced on a sunny day with temperatures in the 60s. The Balboa Park course is known for a hill you hit twice and a dust cloud that can get kicked up by the field of 40 runners in each race.

NXN 2015 saw slightly less water on the course from its debut at Glendale in 2014. Over 3 inches of rain fell the night before the 2014 NXN races, which added some slip-sliding drama to how runners would attack the relatively flat course. In 2015 Oregon had been dry for almost all of November then comes December and rain. Come race day it was a light rain or drizzle that kept the course moist.

The big news at NXN each year is can Fayetteville-Manlius (F-M) out of the Syracuse NY region win the Girls Team Title once again.  It was really big news in 2013 when Wayzata out of Minnesota came in an upset the perennial winners who had won the previous 7 NXN titles. In 2014, Head Coach Bill Aris of his “STOTAN XC CLUB (club name for the high school team) not only won the Girls Title but his Boys Team matched the Girls team and secured the Boys NXN Title.  He is now mentioned as the most dominant High School Cross Country coach of all-time. Since the advent of the Nike Cross Nationals in 2004, only his New York State rival from Saratoga Springs and the Wayzata Minnesota team have carried the NXN Star Trophy home from Oregon.  The girls race was first and soon it was clear that F-M’s Girls were back to their aggressive ways and would not be stopped for a 9th title.  They had the team scoring lead at the
mile and stayed out in front for the entire race. Since first place was apparent, more interest focused on who earned the other 2 podium spots. The surprise this day was the strength of the California schools. One knock in the earlier years was that California schools were not ready for the muddy conditions of Oregon. That has changed. This year, the top California girls team from Great Oak (Temecula, CA) took 2nd and another California school grabbed 3rd. It became a NY – CA set of 4 when it was announced that Saratoga Springs was back in top form with a strong 4th place finish.

The Boys Team title was also focused on California. The Boys team from Great Oak had garnered big team wins all year and had dominated the California State Meet. The Great Oak boys did not disappoint. Their top 5 pack was fairly close and up in the top 50 early on. The surprise team that was racing hard was the American Fork team from Utah. Their #1 guy was right up front trying to win the Boys Individual Title (Clinger outsprinted the Midwest’s Ben Veatch to get the low #1 card for Great Oak). It became a Western States or Southwest Region day as Great Oak held on for their first NXN title with Clinger leading his American Fork team to the Runner-up spot.

Leaving NXN that day were several top runners who had the opportunity to qualify for the other National Cross Country Championship in San Diego, Footlocker. They were able to race and earn a NXN spot with or without their team on one weekend and then race the Footlocker Midwest Regional on a subsequent weekend. Many coaches and athletes grumble each year about this inequity nationwide.

FOOTLOCKER 2016 (follow up to previous FitNews story on Drew Hunter and Weini Kelati of Virginia).

Ben Veatch was a close 2nd at NXN the previous Saturday in the grey skies and light rain of Portland Oregon. San Diego was its usual sunny day in the 60s on the following Saturday morning, although rain had fallen a few days earlier that kept the dirt from flying in a cloud at the Morley Field Course at Balboa Park. Veatch was not the boy in the spotlight that day. It was Drew Hunter from Loudon Valley HS in Northern Virginia who had the bulls eye on his back. He had run a 14:20 5K on a course in Virginia earlier that was the fastest boys cross country time all year. He had set the Footlocker South Course record on a course that was slightly lengthened from the previous year. Could Drew be the first Virginia boy to win since 1981?

The girls race had 3 girls getting most of the pre-race hype. One was Drew Hunter’s “county neighbor” in Loudon County Virginia in Weini (Way-Nee) Kelati. This was going to be Kelati’s final cross-country race of her short high school career. Weini had just turned 19. She also had won all her races in the fall and had up’d her mileage to levels few high school girls ever approach – 80-85 miles per week.

Drama in both races upfront only materialized in the last 50m of the girls’ race as Weini Kelati grabbed an early lead and ran wire-to-wire to win her first Footlocker title and first by a Virginia girl since Northern Virginia’s Erin Keogh won back to back titles in the mid 80s. Drew Hunter matched Kelati’s aggressiveness and seized the lead at 900m and opened up a historic lead of 17 seconds by the 2-mile mark. In fact his mile and 2 mile splits were as fast as anyone had raced the Morley Field course. Only Drew’s pace would be his competitor this day as he ended up winning by 12 seconds with the 11th fastest all-time finish.

For only the 2nd time in Footlocker history did one state bring home two Footlocker Champions in the same year. It was just not Virginia but Loudon County Virginia in the fairly populous area of Northern VA
that did it in 2015. Back in 2005, California had two Champions in AJ Acosta and Jordan Hasay. Both ended up with stellar careers at Oregon with Hasay running professionally on the Oregon Project Team coached by Alberto Salazar.

RUN BOSTON 2016! Join the AMAA MARATHON TEAM in support of the “NATIONAL RUN A MILE DAYS YOUTH FUND”

Final Openings are available through mid January. Fundraise for the YOUTH FUND, attend the AMAA Boston Sports Medicine Symposium and then run the fabled marathon!

Once again, AMAA and its parent organization the American Running Association (ARA) are fortunate and privileged to have a block of “Invitational Charity Entries” into the 2016 Boston Marathon®. The NATIONAL RUN A MILE DAYS Program is the main cause for the youth fitness efforts of ARA and AMAA. Since 2007, what started out with a handful of schools and community groups has grown to over 30,000 students in 25 states with AMAA physicians and ARA member PE teachers leading the way. The “NRAMD YOUTH FUND” brings together elementary and middle schools plus some community organizations that are committed along with ARA and AMAA to increasing the physical activity levels of all boys and girls through running. It’s not just running but focusing on the “mile” as the starting point to get as many kids as possible committed to more physical activity while at school and at home.

AMAA does its part by spreading the word on the effects that Childhood obesity and “overweight” conditions are leading to a generation of youth who may not outlive their parents. With a better nutrition plan, eating smaller portions and combining diet with an active walking and running program. That is where the “NATIONAL RUN A MILE DAYS YOUTH FUND” comes into play. The Invitational Entries that AMAA sells are mandated to be valued at $5000. The Boston Athletic Association (BAA) and its partners want all charity partners to do well and put their energy and funds raised back into Communities from Greater Boston to around the country. AMAA and ARA are doing their part. In 2015, American Running added a “MILE DAYS TOUR” to both the East and West Coasts. Staff and our partner at YOUTH RUNNER Magazine visited schools, track meets and other “NATIONAL RUN A MILE DAYS” host sites to promote the efforts of running the mile and to hand out special tee shirts to staff and leaders at the Mile Days’ schools and host locations. Students at these schools also received “ARE YOU A MILER?” tees to let everyone else know that they ran the mile and can you run a mile too?

Information on the AMAA YOUTH FUND MARATHON TEAM can be found on the AMAA Sports Medicine website – www.amasaasportsmed.org - Click the Boston 2016 Info links and email ARA Staff – amaa@americanrunning.org for details of joining out AMAA Youth Marathon Team and the AMAA Sports Medicine Symposium on Marathon weekend at the AMAA headquarters, the Colonnade Hotel