

ACSM **FIT** SOCIETY® PAGE*Theme: Healthy Earth, Healthy Life*

# Moving Toward an ActiveEarth

*Janet Walberg Rankin, Ph.D., FACSM*

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## Letter from the Editor

*A. Lynn Millar, PT, Ph.D., FACSM*

Welcome to the January 2016 edition of the *ACSM Fit Society® Page*. This issue will provide information on the importance of physical activity for your health as well as the health of our planet.

After you have read this information that ACSM experts have prepared for you, please feel free to share it with friends and family. We hope these articles will help you and your loved ones pursue a healthy, active life.

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**H**ow are global warming, the health care expense crisis and the value of your home connected? Although these may appear to have little connection, transportation habits are the link. Encouraging more people to walk or bike to nearby destinations instead of driving a car has numerous benefits for the individual, our communities and the country.

ACSM recommends physical activity as a means to health and a longer life. Most people are aware of this connection and yet many are not

physically active. Why? One reason is that we have designed physical activity out of our communities. Our transportation system is focused on moving more cars, faster, not on making it possible to walk or bike to our destinations.

One of the most striking examples of our passive transportation pattern is the way children get to school. While everyone I knew walked to school in the 1960s, today only about 10 percent get there actively as the majority come in separate cars. We are missing an opportunity to build physical activity into a child's day while also adding to air pollution and draining fossil fuels. Check out the ["Safe Routes to School"](#) website for tips on ways to implement a safe, active commute to school including [walking school buses](#).

Only about 11 percent of all trips and 3.4 percent of commutes to work in the U.S. are done actively. Most countries have a better record—in fact, the [National Geographic Greendex Score](#), measuring the personal environmental impact of individuals living in 18 countries, ranks the U.S. lowest in use of walking or biking to destinations. Our increasing reliance on cars, even for short trips, helps to explain why the transportation sector contributes about a third of emitted greenhouse gases in the U.S. Air pollution hurts our health by increasing lung cancer, cardiovascular disease and respiratory disease. Transportation is the largest contributor to pollution-related deaths in our country, estimated at more than 58,000 deaths per year. Interestingly, this estimate was greater than the number of fatalities from car accidents in that same year: approximately 43,500.

Finally, active transportation is good for your personal finances as well as the economic health of communities. You not only save money from paying less for gas and parking but the physical activity can also help save money by reducing medical expenses. Realtors know that people prefer walkable neighborhoods. Research shows that houses near walking and biking trails increase in value up to 30 percent.

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Many cities and communities are making walking and biking easier, safer and more attractive. Paris took the dramatic step one day this September by eliminating car traffic for 30 percent of the city. A 40 percent drop in air nitrogen dioxide was measured. More enduring changes such as addition of sidewalks, improved crosswalks and protected bike lanes have resulted in a more than 400 percent increase in bicycle commuting in cities such as Washington D.C., Pittsburgh and Detroit between 2000 and 2013.

We also need a shift in our attitudes to realize we can walk and bike to destinations. While about 27 percent of trips are one mile or less, only about one-third of these are done actively. Often that trip will actually take less time if you walk since you remove the need to hunt for a parking place. To have a personal impact, substitute short trips with biking or walking and speak up for additional safe sidewalks, street crossings and bike lanes.

ACSM is playing our part to connect the dots among climate change, disease and physical activity through the ActivEarth initiative. To read more about ActivEarth, visit the website [www.activeearth.org](http://www.activeearth.org). There are steps we can all take to solve some of the biggest personal and global challenges. You'll be helping yourself and the planet.



**in**

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# Back to the Basics: Go Outside and Play!

Dawn P. Coe, Ph.D., FACSME and Robyn Brookshire, Ph.D.



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**O**utdoor play is a sustainable endeavor that affords children the opportunity to engage in social and cognitive play in nature. Settings for outdoor play are diverse and include nature centers, national parks, local playgrounds and green, open spaces. Nature centers and national parks typically require transportation, planning and sometimes associated costs. The most popular outdoor activity for children is playing on playgrounds. Playgrounds can be found in local parks, recreation areas and public schools. Recent trends show that children are engaging in more sedentary activities that include screen time (i.e., tablets, video games), and outdoor recreation is declining.

Richard Louv's [Last Child in the Woods](#) has influenced many emerging trends in outdoor play for youth. Although traditional playgrounds have been widely used, modifications and the addition of natural elements (logs, boulders, water features) may increase the novelty of the playground. Natural playgrounds



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# Urban Farming and Community Gardening: A Pathway to Healthy Eating and a Sustainable Future

Nanna Meyer, Ph.D., FACSM



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**E**arlier this month, world leaders met and signed the Paris Climate Accord, which sets forth a plan to reduce global carbon emissions over the next several decades. More people than ever (1 billion) worldwide are overweight or obese and, at the same time, hunger continues with an equivalent of one billion people living with food insecurity. These problems are not going to go away quickly, especially considering the more than two billion people who will live on this planet by 2050—and with them comes a similarly overwhelming need for increased food production and a projected further increase in greenhouse gas emissions. These global aspects of life on earth are hard to grasp and even more difficult to tackle. However, if we think of them differently, more locally, there is much each one of us can do. Let's start with food, because we all have to eat, and changing the way we eat can address both issues: reductions in CO<sub>2</sub> and improvements in health.

Let's look at urban agriculture and examine how growing some of our own food at urban farms or in community gardens can contribute to better health and a sustainable future using a duality approach: as we change one, the other changes too.

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may also include recycled materials such as tires, ropes and other loose parts (shovels, sticks, sand) in areas where children can create a variety of play scenarios. These elements allow children to engage in diverse types of play including functional, exploratory, dramatic and constructive. Playgrounds offer the opportunity for children to accumulate activity and obtain benefits from outdoor play. Health benefits include decreased risk of obesity, eye problems, and improved bone and mental health. The type, intensity and amount of play vary by age group of the child.

Current guidelines recommend that preschool children should be physically active daily for at least 180 minutes at any intensity, spread throughout the day. In addition to physical development, outdoor play also supports cognitive learning and emotional development. Free, unstructured playtime is considered a critical component of early development. Young children need opportunities with physical risk taking as they learn their own capabilities and potential; they need chances to learn to balance, maneuver and challenge their own bodies. Young children are sensory learners; they develop knowledge about the physical world through all their senses. Experiences outdoors provide much richer, multisensory visual, motor, tactile and audible opportunities. Simple backyard experiences or exposure to even small garden patches provide a host of complex phenomena to observe and prompt intense curiosity for young children. Children can develop a sense of pattern and rhythm by watching the natural processes of plant and animal growth and change. Children use loose parts outdoors to create elaborate imaginary play scenarios, such as building a train out of tree cookies, or setting up a birthday party in a mud kitchen. Imaginary play supports early social, emotional and communication skill building as children utilize their creativity and problem solving to navigate the implementation of their ideas with the challenges of playing cooperatively with peers.

School-aged children should accumulate at least 60 minutes of daily moderate (brisk walking) to vigorous (jogging) physical activity that is developmentally appropriate. Activity on playgrounds will help children improve their physical activity levels, which may translate into greater motor skill development as well as health-related fitness. Similar to young children, opportunities that involve risk-taking and physical challenges to the child enable the development of motor skill competence and improvement in fitness. Natural playground environments also provide the opportunity for active play, which allows children to use their imagination and problem-solving skills, as well as engage positive social behaviors.

Overall, outdoor play on playgrounds contributes to the physically active lifestyle behaviors of youth. Outdoor play is a sustainable activity that has positive physical, social and mental benefits for all children. Regular outdoor play should be encouraged for all youth, both in the school/care setting and at home.

The most important aspect of an urban farm and/or community garden is the fact that they create access to healthy food for all. Community gardens can replace entire grocery store sections and deliver organic fruit and vegetables seasonally and almost free of charge, although it takes some sweat to grow them! Urban farms and community gardens are great food literacy hubs where teaching and learning about food from seed to plate flows in a constant dialogue among gardeners, visitors and family members. Children especially seem to profit these types of activities; research shows that when kids plant their own seeds, nurture plants' growth, then harvest and cook, they will eat about anything green, purple, yellow, orange and red that stems from the soil. Thus, urban farms and community gardens are stepping stones for skill acquisition and behavior change and they cultivate healthy lifestyles.

That urban gardens make sense economically should be easy to figure out. There are at least two pieces to this. First, growing some of our own food can help with tight budgets and ensure access to fresh and organically grown food. Second, if urban farms sell their produce at farmer's markets and we end up supporting them by making weekly purchases, the money stays close to home. If food is purchased in a supermarket or at a megastore, we will never see a dime of this money, while about half of each dollar will stay in the community when we purchase locally. In a city with one million people, this could quickly amount to \$2.5 million if each citizen spent five dollars per week on local food. Thus, growing food and selling it at a market can help alleviate economic downturns and boost budgets locally, at home and in the community.

The best part, however, about communal gardens in urban areas is their socio-cultural platform. While food is the reason everyone shows up, the community garden enables cultures to retain their traditional food systems. In this sense, a community garden provides a place for food sovereignty because those who are there can decide what they want to grow and eat. And by doing so, people exchange seeds, soil, food, recipes and stories. The socio-cultural impact of community gardens also enhances personal wellbeing, instills happiness and manages stress. Thus, while locally grown food picked on the day it ends on the dinner plate provides more nutrients than anything we buy at a store, the true happiness factor arises when work for food and a meal is shared. And this is not the type of work that encloses people in cubbies or offices without windows and stuck to their chairs. This is work outside in nature that's beautiful and that inspires everyone, as much as cooking does in the kitchen. But while sharing the meal around the table, we truly connect the dots, linking what we eat back to big issues, and this promotes civic engagement where people learn to emphasize causes outside of themselves, and thus, finding ways to live healthfully because it is simply better all together. When considering health promotion and a sustainable future, urban farming and community gardening is a pathway to health with endless opportunities, starting from seed and ending with food on the table in an awakened society.

# Creating Walkable Communities

Heidi Simon, *America Walks*



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**Walkable communities create strong, healthy and livable communities. Infrastructure that facilitates walking, such as sidewalks, safe street crossings and low auto speeds, coupled with access to everyday destinations enables people of all ages, abilities, incomes and ethnicities to walk for everyday transportation. Walking provides access to necessary goods and services, such as grocery stores and parks, and doing so helps address disparities found far too often in cities and towns across America.**

Walking is also an excellent source of everyday physical activity. Walking provides the base level of activity needed for adults and eliminates the disparity gap for Americans that lack the time and ability to dedicate time to workouts. People were made to walk, and in doing so, can take back control of their physical, mental and cognitive health.

Americans from every corner of the country and all demographics are increasingly calling for walkable communities. The [America Walks](#) program has worked tirelessly with individual advocates, local organizations and state and regional governments to answer this growing demand.

Making America a great place to walk is a responsibility shared by everyone. At America Walks, we see firsthand the dedication, passion and commitment of local organizations and advocates working tirelessly with limited resources to ensure that every community has safe, accessible walking conditions. At the 2015 National Walking Summit, more than 500 of these leaders and advocates came together to explore best practices, new research and ways to collaborate to advance the goal of making sure every American has the opportunity to live in walkable communities.

America Walks, along with 700 partner organizations, is excited by the release of U.S. Surgeon General Dr. Vivek Murthy's [Call to Action on Walking and Walkable Communities](#). This call to action, titled 'Step It Up,' provides instruction, inspiration and opportunities for governments, businesses and organizations to address the numerous barriers to safe, active mobility and promote the multiple health benefits of walking. Safe and accessible walking conditions create healthy and robust neighborhoods with improved infrastructure, booming economies and cleaner environments, all of which lead directly to increased physical activity and the resulting myriad health benefits.

America Walks will build on this excitement and continue to grow the walking movement. Everyone has the ability to create walkable communities by becoming informed and engaged community and civic leaders. You can start by exploring the resources available on the America Walks website—[www.americawalks.org](http://www.americawalks.org)—and contacting elected and agency officials at the local, state and federal levels to urge them to support legislation, policies and programs that promote and protect walking and walkable infrastructure. Together, we will continue to make America a great place to walk.

## Q&A

*James MacDonald, M.D., FACSM*



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**Q: I've read how active commuting can be a good way to get fit and decrease pollution. Could you give me some details about how much better biking to work (as opposed to driving to work) can be for me and for the earth?**

**A:** We love the idea that you are considering active commuting, and you've hit on two of the benefits. We'll address the two points you are asking about in your question, but, first, let's define some terms.

"Active commuting" is human-powered commuting. Biking is an example, as you have pointed out. Walking is the most common example. There are some people (especially those with access to showers at work) who may even consider running to work. Skateboarding is a popular form of active commuting for kids and some adults, and in some communities people are known to [kayak to work!](#)

Now, to address your question, let's begin by exploring the benefits of active commuting from a fitness point of view. How much better is biking to work, for instance, than driving to work? There are different ways we can look at this. In terms of calories burned, very few are burned in the process of driving, which is, in essence, sitting. The average travel time to work in the [United States is 25.5 minutes](#); that means driving to and from work each day involves on average almost an hour of simply sitting!

The [rate at which calories are burned in biking](#) depends on several factors, including speed and the weight of the individual. On average, a man weighing 180 lbs. and biking at moderate effort can expect to burn 650 calories per hour, but this is a rough estimate.

Second, what are the benefits of active commuting to the environment? To start with, biking to work (or walking to work) is an activity which produces essentially no air pollutants. Driving to work? [Cars using gasoline will produce almost 20 pounds](#) of CO<sub>2</sub> for an average commute, the principal 'greenhouse gas,' and cars using diesel fuel will produce 22 pounds. Of course, there are other pollutants produced by the operation of a car (carbon monoxide and sulfur dioxide among them.)

Some nifty calculators can be found online where you can calculate how many calories you have burned, how much toxic emissions you have avoided producing, and even how much money you have saved when you bike rather than drive!

The production of a bicycle will produce a carbon footprint, no doubt. Both the production and the transport of the bike's components will leave a footprint. But there is no question that that footprint is much, much smaller than a car's. And as for walking—well, that involves nothing more than footprints. Just footprints.

So, as your "green' friends" t-shirts might say: show how much you "love your mother"—walk or bike to work!

**Q: You have me convinced. I'm going to start biking to work (and have my kids bike to school.) What are some things I need to consider to make this happen?**

**A:** For biking to work, start with getting a bicycle, of course! Hybrid bicycles work well for bike commuting, as they combine

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the beneficial attributes of a road bike (lighter frames) and a mountain bike (wider tires.) Some advocate the use of electronic bikes, which provide many of the benefits of bicycling but can give an assist on hills and leave the commuter a little less sweaty when reaching their destination.

The next most important thing is your bicycle helmet. This is mandatory equipment, and not [just for kids](#).

The commute itself is something to consider. What are the distances involved? How safe are the roads? What attire will you use on the bike, and what attire may you need to step into at work? Will you carry clothing and other needed work items in a pack on your back or in panniers that attach to your bike?

You'll want to think of what you'll do when you get to your end destination. Does your work place have a shower or other facilities should you need to wash up? Is there a place where you can lock your bike up safely? Is the lock-up place covered (rainy days can make for wet bike seats?)

We've intentionally written these as a series of questions, as the answers will need to be individualized for you to realize your intentions. There are many online websites and other resources that can help with the planning process. Some resources include:

- [The League of American Bicyclists](#)
- [National Highway Traffic and Safety Administration \(NHTSA\), 'Kids and Bicycle Safety'](#)
- [Safe Routes To School National Partnership](#)
- Local bike shops are usually a great resource for
  - Obtaining necessary equipment
  - Giving advice regarding safe biking routes

When you and your family begin active commuting, you will be contributing to your own health and the health of the environment. Good luck!



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## Energy Bars, Gels & Electrolyte Replacers: Are They Essential Sports Foods?

Nancy Clark MS, RD, CSSD



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*"I don't like gels, so I only drink water on my long runs—but how can I keep myself from bonking at mile 18?"*

*"I'm training for an Ironman triathlon. Which products are best to replace the electrolytes I lose in sweat?"*

*"Do PowerBars have special performance-enhancing ingredients?"*

**I**f you are among the many endurance athletes who have no idea which engineered sports foods are the best choices to fuel your sport, welcome to the club! Advertisements have led many active people—not just marathoners and triathletes, but anyone who breaks a sweat—to believe that energy bars, gels and electrolyte replacers (among other commercial sports foods) are a necessary part of a sports diet. While there is a time and a place for pre-packaged sports foods, many active people needlessly spend a lot of money misusing them. The purpose of this article is to help you become an informed consumer.

### Pre-exercise energy bars

While fueling with a pre-workout "high performance" energy bar is one way to energize your workout, you could less expensively consume 250 calories of Fig Newtons or a granola bar. All will offer the "magical" energy source that muscles need for a high-energy workout: carbohydrate!



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The best pre-exercise snacks are foods that digest easily and do not talk back to you. Standard supermarket foods can do that as well as engineered products. Experiment to determine which foods settle best in your body during exercise.

Pre-exercise Snack	Calories	Cost	Cost/100 cals
PowerBar Performance Energy Bar	240	\$1.49	\$0.62
Clif Bar	240	\$1.25	\$0.52
NatureValley Granola Bar (1 packet)	190	\$0.32	\$0.17
Fig Newtons (1 pkt)	200	\$0.54	\$0.27

## Gels

While some runners and cyclists love the convenience of gels (such as Gu, Clif Shots) during training sessions that last longer than 90 minutes, others dislike their consistency or the way they might create digestive issues. Gels generally offer 100 calories from some form of sugar. If your body is not accustomed to digesting that particular type of sugar, you might end up with undesired pit stops. Always experiment with new products such as gels during long training sessions!

Some popular alternatives to the 100 calories of carbohydrate (sugar) in the gel include gummy candies (Swedish fish, gummy bears), twizzlers, gumdrops, peppermint patties, marshmallows, whoppers, M&Ms, maple sugar candy and/or swigs of honey or maple syrup. The trick is to figure out how to carry the fuel (and how to keep it from melting in the heat). During exercise, you want to target 200 to 300 calories per hour (depending on your body type and sport), so read the label's nutrition facts to determine the right amount to have available.

## Electrolytes

You can find an abundant amount of electrolytes (electrically charged particles, most commonly known as sodium, calcium, magnesium, and potassium) in “real foods”—including fruits, vegetables, grains, meats, and dairy foods. These real foods are generally far less expensive electrolyte replacers.

Sodium enhances fluid retention and helps keep you hydrated better than plain water that goes in one end, out the other. Yet, sports drinks are actually low in sodium compared to what you consume in your meals. Many sodium replacers have far less sodium than you may think.

People who sweat heavily might lose about 1,000 to 3,000 mg sodium in an hour of hard exercise. Here are options for replacing these sodium losses:

Commercial Sports Food	Sodium	Salty Food	Sodium
Endurolytes, 1 capsule	40 mg	Dill pickle spear	350 mg
PowerBar Electrolytes	250	Beef Jerky, 1 oz	600
Gatorade, 8 oz	110	Salt, 1/4 tsp	600
Gatorade Endurance, 8 oz	200	Bouillon cube, Herb-ox	1,100

Replacing electrolytes is most important for athletes who sweat heavily for extended periods in the heat. This includes double sessions of pre-season football, as well as long-distance racing cyclists. Yet, these athletes often are able to ingest lots of sodium in the pre-exercise, during and post-exercise food they consume in order to sustain that level of endurance. For example, the football player who has a high-sodium ham and cheese sandwich with mustard and dill pickles can bypass the Gatorade at lunch.

When you know you will be exercising in hot weather, choose some salted foods (i.e., sprinkle salt on an omelet, pasta, or sweet potato) before you exercise in the heat. Getting a hefty dose of sodium into your body before you even start to exercise has been shown to retain fluid, delay the rate at which you might become dehydrated, and enhance endurance.

## The bottom line

While sports foods have their time and place, make sure you actually need them before you spend your money on them! Not every athlete needs to pay the price for pre-wrapped convenience.