

Energy Efficiency

— For Body and Planet —

Whether you're heating your home or moving your body, green power generation is where it's at. The idea in each case: Using the most efficient, cleanest-burning fuel possible.

By Jessica Ridenour

Back in his day, legendary smartypants Leonardo da Vinci filled notebook after notebook comparing the microcosm of the body to the macrocosm of the planet. As da Vinci, ever the Renaissance man, studied anatomy, he also studied geology, noting the striking similarities in the ways both body and earth functioned, such as how arteries convey blood the same way rivers transport water. Da Vinci understood that the body and the planet are inextricably connected in countless ways.

Half a millennia later, when we, as humans, seem to be more enamored with our modern convenience culture than our connection with nature, da Vinci's analogy takes on new urgency. Look around and you can't help but notice that

the environment is suffering—natural resources depleted, water and soil contaminated, and air, in some cities, gray with particulates. If the human body is a microcosm of the planet, and the planet is showing signs of stress, then what's going on with our bodies? While scientific advances allow us to fight once-fatal diseases like smallpox, rates of obesity and diabetes are higher than ever. What gives?

If da Vinci were here, he might argue that people living unhealthy lifestyles are facing a "personal environment" (body) crisis similar to the Earth's environmental crisis. Just as fossil fuels are guilty of polluting the environment, processed junk foods are accountable for polluting our bodies, and the health of both the planet and humankind are paying the price. ▶

The answer? It lies in our energy choices. Just as solar energy is a promising alternative to polluting, nonrenewable fossil fuels, fresh whole foods are the antidote to microwave dinners and trips through the drive-thru. The cleanest, healthiest and most efficient sources of energy all have one thing in common—they're derived directly from the sun.

Sunlight is at the heart of it all. It lights our days, creates vitamin D in our bodies and allows plants to grow. It prevents the Earth from enduring another Ice Age. Despite our fears of melanoma and premature aging, that beloved ball of gas does so much. Whatever aspect of our lives we're powering—our bodies or our many electric gadgets—we have to thank our planet's original source of energy for making it all possible.

Solar Solution

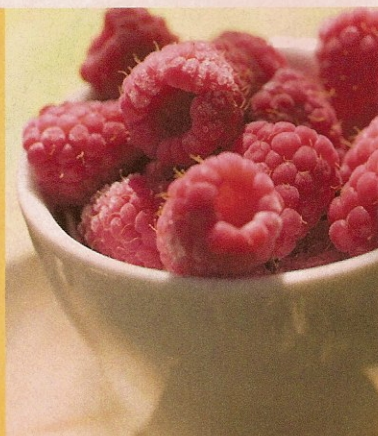
Today, 85% of our country's power comes from carbon-based fossil fuels, including petroleum, natural gas and coal. While it's true that these energy sources also originated from the sun, it took the earth millions of years to transform decaying plant and animal remains into the fuels we rely on today. After 100+ years of use, we're running out of these ancient fuels and we can't wait around another million years to make more. Which is probably good, considering fossil fuels' rap sheet is a mile long: Their combustion releases carbon monoxide, nitrogen oxides, sulfur oxides and hydrocarbons into the atmosphere, irritating the lungs and contributing to respiratory illness; oil spills contaminate waterways, resulting in loss of plant and animal life; coal mining contaminates surrounding countryside, upsetting ecosystems; and most climate scientists agree that the burning of these carbon-intensive fuels is causing the planet's temperature to rise, resulting in melting glaciers, severe weather and a host of other scary scenarios.

The good news is that there are clean, renewable, natural alternatives to these ancient energy sources. "In the long run, I think that solar energy

Energetic Eating

Jeanne Peters has worked for over 25 years to connect her clients with that feeling of aliveness that only fresh food from the earth can provide. At Nourishing Wellness (www.nourishingwellness.com), the medical center she founded with her husband, Allen Peters, MD, she preaches the gospel of healthy eating habits. Here are a few of the foods they recommend for optimum health and energy efficiency (organically sourced whenever possible):

- **Leafy greens** contain vitamins A, C and E (all powerful antioxidants), B vitamins, vitamin K, fiber and minerals (calcium, iron, potassium and magnesium). They are known to combat cancer, heart disease and osteoporosis.
- **Cruciferous vegetables** such as broccoli, cabbage and kale are off the charts for vitamins A, C and K, and are also high in folate, fiber and phytonutrients. These crunchy veggies protect against cancer and have detoxifying properties.
- **Whole grains**, such as brown rice, barley, whole wheat and oats, are loaded with minerals and fiber. Whole, unprocessed grains protect cardiovascular health and provide the fuel we need to function.
- **Legumes** are rich in fiber and antioxidants and in protein, which is necessary to build and repair tissue. They're great for cardiovascular health and they help keep cancer at bay.
- **Berries** are loaded with antioxidants, such as vitamins C and E, and phenols, as well as fiber. These richly colored fruits protect against cancer, macular degeneration, arthritis and cognitive decline.
- **Citrus fruits** are brimming with antioxidants, fiber, potassium and folate, and are great for boosting the immune system, reducing inflammation, lowering cholesterol and protecting against cardiovascular disease.
- **Nuts and seeds** provide healthy fats like omega-3s and some protein, and help to reduce inflammation and cholesterol.
- **Avocados and olives** supply healthy fats, vitamins, minerals and antioxidants; they are good for reducing inflammation and cholesterol while combating cancer and cardiovascular disease.
- **Eggs** offer protein, healthy fats, vitamins and minerals, and are helpful for keeping the eyes and brain healthy.
- **Kefir** is rich in probiotics, protein, calcium and iodine. This tangy, yogurt-like drink boosts immunity, is beneficial for bone health and protects against cancer, ulcers and inflammation.
- **Poultry** supplies the body with selenium, niacin and vitamin B6, and is an excellent source of protein.



is going to be the energy source that not only in the US—but globally—will be the source of choice," says Brad Collins, Executive Director of the American Solar Energy Society (ASES) and publisher of *SOLAR TODAY* magazine. Although solar energy currently accounts for only about 0.1% of US energy usage, its momentum is steadily increasing, with demand growing 20% to 25% each year for the past 20 years.

There are several ways to harness the sun's energy. The simplest is passive solar heating, in which buildings integrate large south-facing windows and other materials that slowly absorb and release the heat of the sun; according to ASES, this could reduce heating bills as much as 50%. Another option is solar hot water heating, which uses a roof-mounted solar collector to produce hot water for a home or business.

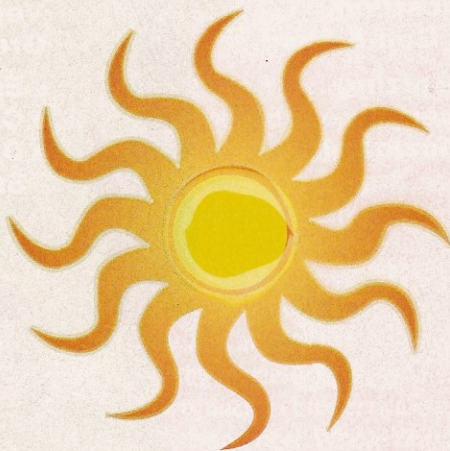
When most people think about solar energy, though, they're envisioning that field of flat, blue-tinged panels sprawled out across a rooftop. These photovoltaic, or PV, arrays convert sunlight directly into electricity; modern PV panels can achieve anywhere from 10% to 20% energy efficiency. While that doesn't yet match the energy efficiency of fossil fuels, which are 30% to 40% efficient (keeping in mind that energy efficiency is the ratio of the work we get out of a machine to the amount of energy put into a machine), solar energy doesn't pollute and is infinitely available—there's no million-year wait to refuel. Solar efficiency levels are increasing constantly—consider that the first solar cells built in the 1950s had efficiency levels of less than 4%—and will someday likely top those of fossil fuels. As Collins sees it, using more solar energy is good for public health, creates jobs and will improve national security—no more reliance on foreign oil.

Eating for Energy

The sun not only provides a clean, efficient way to power our homes and businesses, but it also supplies the cleanest, most efficient fuel for our bodies: Vegetables, fruits, grains—basically anything that comes from the earth. All living things depend on sunlight for food: Green plants use the sun and carbon dioxide to make their own food through the process of photosynthesis; animals and humans eat the plants, thereby completing the food chain. Food in its natural state, nourished by the sun, comes ready-made with all the nutrients we need for optimal health. Processed junk foods, like dirty fossil fuels, are many steps removed from the sun's energy and have little to offer—all they do is pollute the system.

"Nutrient-based calories are really the best bet for our body's efficiency," says El Segundo, California-based nutritionist Jeanne Peters. Nutrient-dense foods, she explains, give us more bang for our buck, so we can eat less and yet feel satisfied because we're getting the nourishment we

need. People can eat calorie-dense foods and still be starving because they're not getting what their bodies require, which can trigger overeating. "People can't figure out why they feel like they're always craving," says Peters. "And then I look at what



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but for our bodies as well.

they're eating, and realize oh, well, maybe the reason why they're craving is because they're really craving something that has real food value."

Think of the body's cells as microscopic power plants. They need the right kind of fuel to make the machine, or in this case, the body, do what it's supposed to do. The body's power plant can't function without a daily dose of proteins, carbohydrates, fats, vitamins, minerals and water. These are the substances that allow the body to perform its daily activities, including heart, lung and organ function, as well as the building and repairing of tissue. Foods with *phytochemicals*—disease-fighting, free radical-blasting, plant-derived compounds—also top Peters' must-have list. "Phytochemicals subdue what I call this 'oxidative rust' that we all have. We're all basically rusting, because we live in a dirty world."

Whole foods, fresh from the earth,

are the best options to prevent that rust and keep your power plant working at peak performance. "I really try to teach people the sense of aliveness," says Peters. Eating a potato chip, she explains, doesn't really create any kind of excitement in the body except perhaps in the mouth. "But you eat something like a fresh peach and there's just more of a reaction throughout the whole body, more sense of aliveness or a feeling of connection." (For a list of vital food groups, see the box on page 40.)

Peters, who considers herself an environmental nutritionist, also notes that the healthiest foods are also the best for the environment. When you consider the energy required to process and ship a bag of chips, not only is their nutritional value nil but their environmental footprint is enormous. "One of the most impressive things that people could do for themselves, if they wanted to make a difference for themselves and for the planet," says Peters, "would be to shop at a local farmers' market, to participate in a CSA (community supported agriculture). You're getting fresher food that way and the food has a face on it, which is really important to people these days."

You don't have to be Leonardo da Vinci to deduce that using clean, efficient energy is the key to keeping our bodies and our planet in top form. Just remember that our health and the health of the big ball of clay we live on are forever intertwined, and the sun is the heart of it all. ■

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Be Sure to Get Your Bs

Your personal power plant can't run efficiently without the vitamin B complex, which assists in the enzymatic reactions that create energy within cells. Stay stoked with Bs by eating a wide variety of whole foods, including organic produce, unprocessed grains and lean animal proteins, and by taking a comprehensive B supplement.