Healthy Structures for Long Life

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Editor's Note

The original manuscript of Rebuild from Depression: A Nutrient Guide contained this third part on establishing structures in life to improve our physical and mental health for years to come. It focuses on reducing toxins (which require nutrients to be metabolized) and on reducing daily hassles. Ultimately, editors decided that Part III was too much content to include with the nutrient and diet changes discussed in the book. Regardless, we are making this draft available for interested readers.

This draft will help anyone make positive changes in their health and lifestyle, regardless of whether they suffer from depression. For more information on the Rebuild book, visit the website.

The advantage of a digital file is that we can include links where appropriate to recommended products. There are links to resources and to actual suggested products. Some of the product links are "affiliate links" where we receive a referral fee if the product is purchased. This revenue stream helps pay for this content and other information freely available on the Rebuild site.

Rules and Structures

The cause of my depression in pregnancy and postpartum was a series of nutritional deficiencies. Aggravating factors were my strong allergy to corn and mild allergy to most other grains, heavy metal toxicity, and my digestive imbalance (*Candida Albicans*). None of these problems appeared overnight. My life had been too stressful and my food choices have been poor. These lifestyle choices determined the outcome long before I became pregnant and it was those choices I would have to undo if I wanted to make long-term gains in my mental health.

My new nutrient-dense diet is a necessary condition for improving my health, but it is not sufficient. Other lifestyle choices could easily undo the good that all of my dietary nutrients are doing each day. Anyone rebuilding her body from a severely depleted level can lapse into problems quickly with a good dose of stress or toxic exposure. Unfortunately, I've learned this all too well.

As the liver detoxifies foreign substances, it needs nutrients to do so. Of our depression-busting nutrients, B-vitamins, magnesium, and zinc are critical to detoxification that happens in the liver (see Yang and Yoo 1991; Campbell and Hayes 1974). The kidneys, lungs, and skin use nutrients to detoxify foreign matter. Our body's response to life stress requires nutrients (Cernak et al. 2000). Our lifestyle, then, can deplete our bodies of nutrition, even on the most nutrient-dense diet.

Any new stress on the body will require more fuel and if your stores are not sufficient or if your diet is lacking (as it often is when I go through a stressful period), then you may pay mightily for that stress. And even on some of my good days I am not always strict with my diet. I will admit right here that I cannot eat liver three times a week forever (part of my recovery regimen). Some days I find myself in a small town in the San Joaquin Valley of California where we do our business, with no packed lunch, starving, and have to grab a burrito at a local Mexican restaurant. It sure is tasty, but I do not fool myself about the quality of the oil

used to cook the carne asada and rice nor the shortening and white flour in the tortilla. On long family trips I always break the diet in one form or another. Now and then, at home, in full control of my own destiny, I break the diet and eat a food that depletes my body rather than nourishes it. Truth be told, I break the diet a great deal. Some people are very good at maintaining diligence over long periods of time. I am not.

And it is not just the diet. How would I reduce life stress over long periods of time? I could take up yoga – lots of people do and get a great deal out of it. I could do some form of meditation. I am not particularly good at any of the usual mind-body connection exercises because I suppose my rational side simply is not interested. I know they work, I just feel resistant. So, I have wondered, how will I be able to reduce the stress in my life over the long term if I cannot even BEGIN to do yoga because my conscious self is resistant to it?

Over the many decades that I have left on this earth (I hope), how do I overcome my weaknesses and keep myself as healthy as possible? The question rolls around in my head.

At first I tried to implement rules to govern my behavior. As I have noted, I am a very rules-oriented person. A certain sponge is the sponge assigned to wash dishes; other sponges are not allowed. Plates must be put in the dishwasher a certain way. The dishwasher washes more efficiently if the dishes are put in just so, even though no one else in the household can appreciate that fact.

We often use rules to make lifestyle changes:

"I will go to the gym three times a week."
"I will not eat refined flour products."
"I will take cod liver oil every day."

Rules are good. They help us identify what is important and set goals for our behavior. I make rules all the time to try to improve

my lifestyle. The problem with rules from a long-term perspective is that they can be broken. One recent rule was this one:

"The only way we will get the mail is if I walk to the post office to get it."

The post office is almost a mile away downhill. The return trip is a very good workout, particularly with the postmaster heckling you: "Hey, you look like you have the bird flu!" (It is a small community and the postmaster needs entertainment too.) In the first month of this rule, I picked up the mail three times in this manner, but somehow the daily mail arrived in our home anyway. Rules can be broken and usually are, at least in my life.

So I began to ponder what kind of plan I could put in place to increase my well-being, without relying on rules. I concocted a plan: "The Structural Approach to Recovery from Depression." Under my structural approach to recovery my primary premise is:

> ***I will establish structures in my life that will ensure that every morning I wake up, regardless of whether I eat liver that day or splurge with a forbidden food or have a stressful deadline, I will be healthier than I would have been had the structures not been in place.***

The structures themselves will make me healthier, regardless of my behavioral choices. Rules we make that change our behavior are great for good days but they don't work at all on bad days. **So now that I am strong, I am establishing structures to help me when I am weak**. The structures I have keyed in on fall into two categories and have many components.

(1) Physical: I have looked around at my physical environment with an eye toward what elements were making me less healthy. As these things go, the structures that were affecting my health the most were the most difficult to change – our air and water. But there were smaller structures as well -- my night-time access to fresh, clean air

was affecting my health. How we cleaned the house and how I cleaned my body were affecting my health. I began to identify all of my physical structures and began the long process of changing them.

These physical structures complement any rules we might create about our physical selves – most notably, what we eat and how often we exercise. But on the bad days when these rules fly out the window, our physical structures remain in place.

(2) Emotional and Spiritual: These are the structures we can establish to ensure that we have a positive outlook on life. Some of these structures might require major life changes, such as a change of job or perhaps moving closer to supportive family. Emotional and spiritual structures will vary from person to person. I will describe mine so that you can begin to think about yours.

Emotional structures too can be complemented with rules regarding our emotional well-being: stay away from negative discussions, sit in the sun and enjoy the fresh air each day. On bad days, you will do what you are going to do and throw rules out the window, but your structures will remain.

Some of these structures are difficult and costly to change; others are much easier and cheaper to change. On bad days, nothing is easy to change, so this section of the book is not for bad days. Some of these structures are big enough that they need to be put on a 10- or 20-year plan. Others you may want to cover your ears and sing "*la la la, la la la*" as you read because they may not be reasonable or desirable to change. But enough of these structures should be reasonable to change that you can make a positive impact on your health over time.

Major Physical Structures

We have control over many of our physical structures. As I describe in the next chapter, we can improve the indoor air in our homes or find a different home with better indoor conditions. We can select body care products with fewer known chemical toxins. However, our major physical structures are much more difficult to change in the short term because, unless we move to a new location entirely, only public policy will impact them. And public policy measures often take a long time to have an impact.

The quality of the air we breathe and the quality of the water we drink are physical structures that have a direct impact on us. They are difficult structures to change entirely, but they can be mitigated. We lived in a geographical region with notoriously toxic air and water. We moved and it has paid off.

Location

By the time we conceived Frederick, Sander and I were living in a nice old house that allowed us to be comfortable without being over-extended. We felt very secure, settled, and satisfied. I enjoyed gardening and helped recoup the yard from the Bermuda grass and overly-pruned shrubs. We planted a vegetable garden in the back in raised garden beds made from recycled fence wood. I spent the winter before getting pregnant in the backyard digging massive holes for fruit trees. We planted three varieties of nectarines, three varieties of apples, and two varieties of plum. With the citrus that was already mature, we would have fruit ten months out of the year. This house was certainly home.

But the house had one primary problem: It was located in a toxic area.

> *We lived in a toxic area, literally. Every morning we woke up, we were less healthy than we would have been had we lived in a less toxic location.*

Air

I always wondered how people can live in the Los Angeles area with the terrible air pollution. The air pollution in the San Joaquin Valley of California where we lived is nearly as bad. We were in a bit of denial about that reality as we built our business there and found an affordable home to buy. Sander's respiratory allergies got worse every year.

Reports surface regularly about the smog in the San Joaquin Valley. San Joaquin Valley towns regularly make the list of the most polluted cities in the country. The Visalia-Tulare-Porterville area ranked second in one report after Los Angeles both for most smog and most air particles. The microscopic particles in the air were traveling to the far-reaches of our lungs and impeding their function. But we have company: Bakersfield and Fresno regularly compete for positions in the top five. We were living in smog hell.

One of the ways the air quality is measured is by taking an average smog reading over an eight-hour period of time. If the smog exceeds federal standards for clean air, that day is a violation. For the air to be considered clean, it must have fewer than three violations over three years. From 2002-2004, in my deepest days of depression, the San Joaquin Valley Air Basin had 368 days in violation of national air standards, according to the California Air Resources Board. The South Coast Air Basin, which includes the Los Angeles area, had 293 days in violation over that same three-year period. From the perspective of the number of days of bad air, we were the front-runner, ahead of Los Angeles.

The outlook for air quality in the region is not good. To meet federal air standards, it must reduce its pollution, all while its population is expected to double over the next 35 years. In the fall of 2005, Valley officials were surprised by the decline in smog in the area, but are still trying to pinpoint the cause. But with huge population growth on the horizon, prospects are grim, particularly in light of the Valley's topography.

The San Joaquin Valley is a large agricultural valley stretching 250 miles through the middle of California. It is bounded on the east by the Sierra Nevada Mountains, home of Lake Tahoe, Yosemite, and the Sequoia National Park. It is bounded on the west by the coastal mountains of Central California. On the south, the Tehachapi Mountains and Los Padres National Forest separate it from the Los Angeles basin. Locally-produced pollution is joined by San Franciso Bay Area pollution that drifts down into the Valley and sits. And sits.

A good deal of the pollution is caused by industry. We have some of the usual industry we all associate with pollution. But as I started writing this book in August of 2005, news hit the national press that cows produce more gaseous emissions than cars. The cows themselves and their manure put off gaseous emissions. With 2.5 million cows in the region, the emissions add up. There is some controversy over whether they do produce more toxic emissions than vehicles (and I do find it a bit doubtful), but they do contribute. Dust from farms and emissions from farm equipment contribute as well. As do commuters traveling throughout the Valley to their jobs.

The poor air quality has its consequences. Report after report has come out on air pollution and asthma. About 17% of children in Fresno County have asthma. One report in the fall of 2004 argued that children who grow up in smoggy areas will have under-developed lungs as adults (Gauderman, et. al. 2004). My husband Sander had long struggled with respiratory allergies and began to develop asthma. Frederick began to show signs of respiratory allergies, a precursor to asthma.

> *Every morning that we woke up in the San Joaquin Valley our health suffered because of it.*

And while I did not have any respiratory ailments, I knew that I too was breathing in all of those toxins and that my body had only a limited ability to eliminate them and to keep me healthy at the same time. All of our toxic exposure was depleting our bodies of

nutrients we could not spare. A major train wreck was headed toward our household because of where the house was located.

We could have mitigated the effects of this exposure. People use portable air filters for their bedrooms or all-house air filters. Those filters may reduce toxins inside the house, but obviously don't clean the outdoor air. Back in college I remember reading an article about a man in the Czech Republic, then Czechoslovakia, who lived in the northern coal mining area and walked about town wearing a respirator. Back in the early 1990s he looked like a freak walking through his small town and the article highlighted his nutty, but practical behavior.

I pictured our future in respirators in Visalia's old downtown.

Water

After my shock in the summer of 2003 that I had abnormally high levels of uranium in my body, I came to realize that there is a good bit of uranium in the water of the San Joaquin Valley. Uranium occurs naturally near granite deposits. The Sierra Nevada Mountains are filled with granite rock. As the rain water and snow melt makes its way down rivers and underground channels in the mountains, it is exposed to granite and uranium deposits. It is a fact of life for residents of the San Joaquin Valley that is not widely recognized.

In my initial shock over the uranium, I was certain that my levels were at the 98th percentile because of my Central and East European travels, yet the fact that the problem was local was a few clicks away. I found data on-line provided by the California Water Service Company which serves the water districts in Visalia. It provided results on uranium and other potential contaminates for the Visalia metropolitan area and some of the outlying wells. While the uranium levels did not reach the maximum contaminant level set by the U.S. Environmental Protection Agency (EPA), there is really no "good" amount of uranium in water.

The maximum contaminant level for uranium set by the EPA is 20 picoCuries per liter (20 pCi/l). The water samples for Visalia all came in below 20 pCi/l, all within federal safety limits. In the tests between 1999 and 2002 conducted by the California Water Service Company, the amount of uranium found in each sample ranged from a level that could not be detected to 11 pCi/l. The average amount of uranium was 3.7 pCi/l. So I could guess that levels of 20 pCi/l are "really bad," but I began to wonder how bad are levels that are one-half or one-fifth of that "really bad" amount.

The EPA has another index that complements its "maximum contaminant level" and that is its "maximum contaminant level *goal*" (MCLG). The MCLG set by the EPA is the amount of a substance below which there are no known health risks. For uranium, the goal is 0.5 pCi/l. In the case of uranium, the MCL is 40 times higher than the MCL goal. The average finding for uranium in Visalia is over seven times higher than the level at which there is no known health risk according to the EPA. The highest reading in Visalia was 22 times above the level at which the EPA sees no health risk. And the reality is, as a radioactive material, there is no good, nourishing amount of uranium that water can provide.

I talked to a number of professionals who test water in the Valley. They were all fascinated by my uranium test results. There were a couple of wells in the Valley, I learned, that were closed due to high levels of uranium. The rest were fine, they reported. I met one gentleman at a party and spoke with him about the issue casually. Although he did all of the well water testing for his area of the county, he never tested for uranium. He said, "You know, you don't look like you are green and glowing."

I pictured our future in respirators in Visalia's old downtown and our bodies "green and glowing."

Food

We had two primary problems in the food department in Visalia: we could not produce a sufficient amount of vegetables in our garden and we were increasingly skeptical that they were nourishing us sufficiently.

We lived on a large city lot – over ¼ of an acre – so we were very lucky compared to most city-dwellers. We had a garden with six large raised beds that we built ourselves with old redwood fencing. I rigged up an automatic irrigation system to reduce our effort. The fruit trees we planted were just a year away from producing a bounty. In the summer of 2003 on the candida diet, we ate absolutely everything that came out of the garden and we could have eaten more. We planned to relocate the fruit trees to add more full-sun space for our vegetables. But even with the plans to reconfigure, we wondered if we would have enough space to provide ourselves with fruit and vegetables throughout the year.

We also wondered how nourishing the fruit and vegetables would be. As we began to become more and more suspicious of the air and water, we also began to wonder about their impact on our food supply. Smog affects plant life before it affects humans. It can affect the leaves of vegetable crops and retard their growth. As air quality worsens, our yields would likely go down. In addition, vegetables watered with uranium water would increase our exposure to uranium.

If we were eating homegrown food grown in soil with better air and water conditions, every morning we would wake up healthier than we would have in Visalia.

Changing our physically toxic structures

The vision of us frequently in downtown Visalia in our respirators like the poor Czech man trying to extend his years in a filthy environment, "glowing" (and not in a good way) from the uranium in our water prompted us to move.

My parents put their house up for sale in the spring of 2003 and Sander and I lamented that it was a great bargain but still

unaffordable (at nearly three times what we paid for our own house). The house was also a money pit, as you might have guessed from the introductory chapter of this book. It is isolated and in a community of about 300 year-round residents. In the winter, it is 18 miles past the sign that says "No gas beyond this point." Those 18 miles take 30 minutes to drive. I grew up in the house and never in my adult life did I even ponder becoming its owner. It is a great house, but I was not interested in the rural life. Furthermore, I remember the shock of ownership back in 1982, when my parents were crazy enough to buy the house in the first place. My sister and I cried when we moved in and we faced many years of discomfort from cold winters and lack of money.

But as much as Sander and I valued civilization, we began to face reality in the fall of 2003 that, increasingly, we would not be able to meet our needs in the Valley. My parents were divorcing and neither needed a 6,000 square foot house. (And really, no one really needs a 6,000 square foot house as much as my husband Sander argues to the contrary.) My mom had already moved to a house across the street from us and needed the cash from the sale of the mountain house to help with her own purchase. The house sat on the market for six months at a bargain price that reflected the huge amount of work that needed to be done. The house is on nearly five acres of land and has clean water sources. One day in late September of 2003, my dad received a full-price cash offer on the house and that same evening I called to make him an offer to buy out his half. I was flabbergasted that he had just received an offer after six months and he was flabbergasted that I called to make an offer. We kept the house in the family and my father had to turn down the other offer – the better offer, I can assure you.

This Irving Gill house is a money pit, but it guarantees us one thing: every morning that we wake up, we are healthier because we moved here.

Our air is better

Most days when I look out of my office at the sky, I see blue. When I go on walks in the evening, the air is crisp and fresh. We are at

3500 feet elevation but we have the protection from smog of about 4000 feet elevation since a taller range of hills stands between us and the San Joaquin Valley.

Our air is not perfect. In fact, it is far inferior to what it should be. There are summer days when I look out the window or take a walk and see the surrounding trees through a haze. The different shades of green in the blue oaks, buckeyes, and manzanitas, which are a feast of contrast for the eyes on clear days, are a muted green-brown on the smoggy days.

We are on the southern edge of Sequoia National Monument, where trees and wildlife are suffering because of poor air quality. Plants are the most susceptible to smog – they might lose their leaves, grow slowly, or more slowly photosynthesize. In the nearby Trail of 100 Giants, one of the southern-most stands of the giant sequoia trees, the US Forest Service did major work clearing dead and dying trees during 2004. They removed 200 cedar and pine trees whose immune systems had been weakened by environmental pollution and which were killed by the pine beetle. In the three-year period from 2002-2004 when the San Joaquin Valley Air Basin had 368 days that violated federal air quality standards, the Sequoia-Kings Canyon National Park area had 204 days in violation. So I do not intend to paint a rosy picture of the air in the Sierra Nevada, but it is notably better than the air in the San Joaquin Valley. It has fewer bad air days and those bad air days are less bad than those in the Valley.

Frederick's respiratory allergies disappeared immediately upon moving here. Sander's asthma got worse before it got better, but he has been able to wean himself off of his medication.

Our water is better

On our new property we have two water options: well water and artesian well water. The regular well water is our most accessible option. We tested it for just about everything, including uranium. The uranium levels in our water fall within the Maximum

Contaminant Level Goal as set by the Environmental Protection Agency, or within 0.5 pCi/l. We donated our water distillation system that we used in Visalia to a high school that is building a science lab. Our "still" had distilled all of the minerals and most heavy metals out of our water in Visalia, except of course the uranium. In our new location we are able to keep all of the minerals in our water and drink right out of the tap.

Our food is better

We have nearly five acres of land. On that land we grow nearly all of our vegetables. As our orchard matures, we will have fruit nine months out of the year. For a family, we have more land than we will ever need to feed ourselves. We have a small chicken coop with a fenced-in yard for the hens. They are allowed to roam about the property to eat bugs and scratch in the soil. They fertilize it as they go. We have constructed a second chicken coop for meat chickens, but have yet to house any in the structure. I know that if I push the point and insist on filling the house with the meat chickens, I will also be in charge of the dirty deed that comes with all meat chickens. One person who volunteered to teach me to slaughter chickens uses a method of breaking their necks that would look much like swinging a lasso, but I wouldn't be holding a rope, rather the neck of a chicken. I passed. I'll make time to learn one of these days. There are methods that are a bit kinder to the bird than the lasso method.

Having plenty of land also allows us to tend to our garden in a way that increases the nutrients in our food. We have large compost bins where we put grass, weeds, and leaves from the property. They break down quickly and supply our garden with compost. We composted in Visalia as well but, again, we did not have a large enough area to meet all of our eating needs. As the grass, leaves, and weeds break down they add nutrients to the soil, which are then picked up by the vegetables and fruit growing in the garden.

Moving

Not everyone has the opportunity or desire to make a major move for health reasons. But there are many other ways to improve your health every day. A big way is by improving the quality of air *inside* your home. Contrary to what you may expect, your indoor air is probably much worse than the air we breathe in the outdoors in Visalia.

Indoor Air Structures

We were able to change some of the biggest physical factors in our toxic exposure by moving. We were also able to improve our capacity to grow our own food with our move. Before the move to the mountains was possible, we began to change smaller physical structures to ensure that we would wake up healthier each day. And after the move we continue to improve the environment in which we are living. When I am strong, I work on these smaller structures. As time marches on, I will have more structures in place so that when I wake up on a bad day, I am healthier than I would have been without the structures. It is these changes that, over the course of a few years, can pack a punch in a lifestyle that is not health-promoting.

There is an increasing amount of research on the potential dangers of indoor air in our homes. It is widely accepted that indoor air is more toxic than outdoor air, even in areas with smog problems. Inside our homes we have so many manufactured items that emit fumes regularly: plywood furniture, vinyl flooring, carpet, and others. They may have no odor and we may never notice them, but our body still inhales them and has to detoxify them. What is not yet known is the health impact of the proliferation of these chemicals.

Studies of air toxins have rigged participants up with various toxin meters that they carry around with them throughout the day. They also place a meter in the participant's home and outside in the geographic area that defines the participant's environment, such as various locations in a city. In this way, they can distinguish between the participant's exposure to toxins inside

and outside as well as any specific exposure a participant may have had over the course of a day in another venue. What these studies have found is fascinating:

- Indoor air is polluted with particulate matter, volatile organic compounds, and biologicals such as mold and mildew at levels greater than outdoor air on many items. (Kinney et al. 2002)
- Indoor air pollution exceeds EPA regulations for exposure to those substances.
- Indoor air matters: new surface materials in the home based in plastics and polymer technology cause health effects in children (Jaakkola et al. 1999, 2000, 2004).

Indoor air is a major problem because we continue to put items in our homes that emit fumes and our homes, increasingly, do not provide adequate air flow. Ahead of their time, the geniuses of the Craftsman era in American architecture, such as our home's architect Irving Gill, saw fresh air as critical to health. Homes were built to maximize air flow. Antibiotics were not available back in the early 1900s and stagnant air and unclean surfaces were big contributors to poor health. The houses built in the craftsman tradition focused on air flow throughout the house and cleanable surfaces in the kitchen and bathroom. Before homes were built, the building site was studied to assess air currents and windows were constructed to ensure that air was flowing through the house. Few new homes these days get such attention, but they need them. Our homes are filled with fumes, molds, mites, and particulate matter. As we breathe them in, our body must use nutrients to flush them out.

Air structures – increase air flow

There is a clear general strategy to reduce this general problem of indoor air: allow air to flow freely from the outdoors to the indoors and back outdoors again.

A key strategy for increasing air flow and reducing our toxic exposure is to open a window. Not to be overly obtuse about

definitions, for some of us this would be a rule and for others it would be more of a structure. If I have to open the window every day and remind myself to close it at night, I am essentially setting a rule about increasing the amount of fresh air. It's a good rule. However, what we do increasingly is open particular windows at the beginning of the season and leave them open until we begin to freeze. These open windows provide structures to improve our health.

Newer homes do not tend to be built with airflow in mind. Air conditioners cool them in the summer and heaters warm them in the winter. There is seemingly no reason to open a window. However, well-placed fans that help air circulate throughout the house or apartment and clean air vents and filters for heating and cooling systems are critical in newer homes.

My father has been living in a condominium with particularly poor air flow. The new carpeting he installed there when he moved in two years ago still bothers him. He is considering replacing his almost-new carpet with hardwood. It sounds like a drastic intervention but in a condo where you can't add a window, you have to pay more attention to the fume-producing products inside. But there are many measures you can take to improve your indoor air.

Air flow measures

- Determine the **natural direction of airflow** on your home site. If it is east to west, open your east and west doors and windows regularly.
- **Use fans to direct air out** the windows and doors that you do have, particularly if they do not face the direction of natural air flow.
- When replacing windows, select **casement windows** as you can afford them. The panes are designed to swing out so you have fewer fixed panes of glass than you do with double-hung or sliding windows. If you can only afford a few, place them strategically where your airflow is greatest.

- For **new construction**, have the home site assessed for airflow and choose a design plan that allows air to flow through your house.
- Use an **air filter** to filter out airborne toxins. We use a filter like this Honeywell filter when we have indoor air issues.

Our own home must have had exceptional air flow back in its heyday, based on the original architectural plans we have been able to acquire. But the problem with the house now is that original transom windows have been covered up entirely or now have fixed glass. Furthermore, the casement windows in which each pane would open out and allow for maximum airflow have been replaced with sliding vinyl windows. Compared to nearly 100 years ago, our house has one-third or less airflow, given the structural changes in the windows. We have acquired the original plans for the house and plan to restore the window details as time and money allow, starting in our bedroom where we spend the most hours in a day. Restoring the original window details is a health-enhancing structure that we plan to do over the years.

But knocking holes in the wall and filling them with a costly window is not always a reasonable short-term solution. There is a lot we can do inside our homes that will ensure that the air is less toxic and that will reduce our body's need to process those toxins with our B vitamins and minerals.

Reducing indoor fumes

Air inside our homes in the winter is much more toxic than it is in the summer. Researchers from Columbia University and Harvard University teamed up in the TEACH (Toxic Exposure Assessment, Columbia and Harvard) study to monitor airborne toxic exposure. They found that indoor air has much higher concentrations than outdoor air of many volatile organic compounds (VOCs). In their New York data, some of the key differences between indoor and outdoor air include those in the table below.

Levels of dichlorobenzene, methylene chloride, and formaldehyde are much higher indoors than out. Those plastic spray foams for insulation contain 1,4- Dichlorobenzene as do common household pesticides and air fresheners. Household sources of methylene chloride include paint strippers, spray paint, and adhesive removers. Indoor sources of formaldehyde are building materials such as plywood and particle board and adhesives for flooring. New home construction is using pressed wood products increasingly, held together with urea-formaldehyde resins.

Table 19.1: Volatile Organic Compounds, Inside and Out		
Mean level, summer	Indoor air	Outdoor air
1,4- Dichlorobenzene	108.0	4.3
Methylene chloride	8.8	1.1
Formaldehyde	20.9	5.3
Source: Kinney et al. 2002		

With homes locked up tight in the winter with homeowners trying to hold onto every bit of heat they can muster, toxins continue to be emitted and have nowhere to go. In more moderate weather, most of us open our windows and provide our homes with fresh air. But the bad news is that in warmer weather, the fume-emitting items in our home will heat up and emit even more fumes. Spring and fall are optimal seasons for low indoor emissions, but those are also periods with high seasonal allergies from outdoor air flowing in through our open windows, so we almost can't win. The key is to reduce our indoor emissions and we will be healthier all year long.

There are so many things in our homes that are culprits and some of them will take years to get rid of, usually in the context of a remodeling project. Some are fairly simple changes to make. Let's start with the simple – house cleaning.

House Cleaning

Adults with compromised immune systems or highly sensitive children are often sensitive to conventional household cleaning systems; some can even go into anaphylactic shock. And while we do not all have allergic reactions to these cleaners, our bodies still have to process their particles and that requires nutrients. Without nutrients to spare, I have turned to what grandma used to use to clean her home (when grandma moved from a tent in a farm camp to a house, that is). I have found the traditional cleaning systems to be cheaper and more effective. Now when I find myself in the cleaning aisle of a grocery store (usually by mistake), the scent is enough to knock me over.

There are environmentally-friendly products that can replace just about anything you use right now – oven cleaner, furniture wax, window cleaner. Good resources for a variety of cleaners are listed at the end of this section. But to get you started, you can easily make the changes below. The added advantage is that your children can help you clean.

Use vinegar as an all-purpose cleaner

Keep a 50-50 mixture of water and white distilled vinegar in a spray bottle. Add a drop of essential oil for fragrance. Tea tree oil will provide fragrance and is a natural antiseptic. Use for kitchen counters, heavy-use tables, and floors.

Use baking soda instead of powered cleaners such as Comet or Ajax

Baking soda is a very good product to use for scrubbing sinks, tubs, and toilets. Just sprinkle the soda on a slightly wet surface and let it sit for a few minutes before scrubbing. Besides eliminating the fumes, if there is baking soda residue in your bathtub after cleaning, you do not need to worry about the chemicals in your bath water if you take a bath. Baking soda actually cuts down my time cleaning the tub because I don't obsessively rinse the tub out afterwards.

Use club soda to clean your windows

Use it just like a window cleaner, in its full strength. It works well. Frederick often helps my mom with the job and with club soda, we don't have to worry about which bottle he is using.

Use natural dish soap

These products are increasingly available in regular grocery stores. You can also make your own, but they involve some light cooking as do traditional soap recipes. The resources below will direct you toward that adventure if you are interested.

Reduce your detergent usage

In your **dishwasher**, just fill the main detergent reservoir with detergent, not the additional slot. The extra is not necessary and this detergent is rather toxic. For **laundry**, find a natural detergent without phosphates and without the perfumes. Experiment with using less. A laundry booster like Borax will allow you to get away with even less. In the old days, grandma used soap chips to clean clothes. You can grate a bar of natural soap and add a tablespoon or two to your laundry, or keep a jar full of water to add your little "soap skeletons" to – the wedges that end up down the drain when the bar is almost finished. My great grandmother, Nana, kept a jar with soap skeletons for the laundry and for spot cleaning. But I don't think she called them "soap skeletons."

Home remodeling and furnishing

Indoor fumes come primarily from new furniture, new fabric, and flooring. As you make new purchases, keep these issues in mind:

Flooring: Carpet is made from petroleum products (unless it is a very high-end wool carpet). Vinyl flooring (and other vinyl products) emit vinyl chloride fumes. Adhesives for

carpet and vinyl also emit toxins of their own; formaldehyde is a common ingredient.

Carpet and vinyl alternatives such as ceramic tile or hardwood are much healthier options. The new linoleum products that are reemerging in popularity are made with natural products (wood, cork, limestone, and linseed oil). The linseed oil will off-gas as well, but the fumes are not considered as harmful as those from vinyl. They also allow you to clean more thoroughly than would the carpet – you can never really get all of the dirt out of a carpet and its padding with the best industrial vacuum cleaner or carpet cleaner. But if you are having carpet or vinyl installed, you might consider laying the new carpet outside for a few weeks before it is installed and keep the cats off of it. You will be much better off. Formaldehyde-free adhesives are also available.

Furniture: New furniture is often made with plywood and particle board, both of which will add to the formaldehyde fumes in your house. Upholstery fabrics are treated to resist stains, also with formaldehyde. A couch frame made with plywood, stuffed with petroleum-based foam, and covered in treated upholstery fabric is a nightmare for your home. My response to this problem is to hit antique stores. Even if the piece has to be re-covered, you can find fabric that you can launder before you use it to cover the furnishing. But to the degree that you can find a piece in its original condition with its metal springs, horse hair, and leather or cotton fabric, you will be healthier and you will also possess a piece with greater market value.

Wall coverings: Wall paint and wall board are the two primary sources of poor indoor air coming from your walls. Pressed wood wallboard emits formaldehyde. Choose an alternative wall covering for remodeling or look for new products coming out with lower levels of formaldehyde.

When painting, consider one of the many companies with "green" paint. These will have much lower fume emissions than conventional paints. Conventional paint and solvents emit fumes. And the paint in your freshly painted bedroom will continue to emit fumes for months after it is applied. If you use this paint, apply it in very warm months because it will cure faster in warmer weather. Of course if it is too warm, the paint will dry so fast that you will go crazy and that's not the purpose here either. Daytime high temperatures between 80 and 95 degrees Fahrenheit are about optimal for quick (but not too quick) paint drying. Keep your doors and windows open day and night and use a fan to keep the fumes on the move. If you are painting your bedroom, consider sleeping in another room for as long as it is reasonable.

Window coverings: Vinyl window coverings emit fumes as do vinyl floors. Drapery fabric is usually treated with formaldehyde to resist stains. Furthermore, all of these collect dust, which in itself is an irritant. Draperies usually must be dry-cleaned, which in our house means that they stay dusty. If they were dry-cleaned, they would emit dry cleaning fumes. So you can't win here either.

As you are redecorating a room, consider making your own curtains. Buy a washable fabric and wash it in warm water a time or two before sewing or hanging. We use lightweight sheer panels for the most part but we are collecting fabric to make heavier winter draperies. On my second-hand store shopping list are white, flat flannel sheets to use as liners for winter curtains. My plan is to make large pocket-panel curtains in a heavy cotton and line them with the used flannel sheets during the winter. At the end of the winter I can take them apart, wash all the pieces, and hang up the curtains without the liners.

Electric appliances: Natural gas and propane appliances emit harmful fumes. I'm sorry to bring this up to all of the

gourmet cooks out there. I'll move on quickly (especially since I have a gas cook stove).

Reducing indoor molds and mites

Molds, mites, dander, mildew, and other bacteriological toxins trigger allergies in some people, but in all of us they put at least some sort of burden on our bodies to detoxify. I find that as a person with obsessive-compulsive tendencies, these are the indoor toxins I most have to disengage from or I will go bananas. So don't use my home as your measure. I have developed a great ability to disassociate. But the mold and mite control brigades require some essentials that line up with other structures as well.

Air flow: Increasing your air flow will reduce your problem with mold, mites, viruses, and other nasties. Mold tends to build up in damp, dark areas. Air flow will reduce the dampness in the room and will discourage mold growth. Well-ventilated bathrooms and powerful vent hoods in the kitchen will help pull damp and greasy air out of your house. As a stop-gap filters like this portable air filter help too.

Spring cleaning: In a perfect world, once or twice a year we would be moving all the furniture, and vacuuming and dusting all of the edges of the rooms and baseboards. We would wash the walls and launder the curtains. Cushions and pillows would be washed or well-beaten. Area rugs would be hung outside, beaten, and aired for a day or two. In a not-so-perfect world, a good goal would be to be this thorough in bedrooms and kitchens where we spend more time and hit particularly bad areas in the rest of the house as it is reasonable.

Basements and attics: Just like the rest of the house, these should be well-ventilated. Before converting a basement, make it a priority to repair all leaks and add ventilation.

Reducing indoor particulate matter

Small particles in the air make their way into your lungs and your body must process them as well. I list some of the bigger violators here.

Smoke: If you smoke, please work on quitting or at least reducing. And smoke outside. The biggest smoker in our home is a woodstove (actually three woodstoves). These stoves are the newer EPA-approved variety and are a great improvement over the stoves in the house when we purchased it, but burning wood still smokes and the smoke in the outdoor air has a knack for working its way back inside. Our second-biggest smoker is the skillet when I am making pancakes. A powerful hood vent is on our shopping list, one strong enough to keep up with the pancakes.

Lead: Lead dust is a problem in homes built before 1978. If the old paint is well-sealed under new paint, it is not a problem. The problem is the peeling and chipping paint that makes its way in small particles onto your floors and then is picked up on children's toys or on their hands as they crawl. Children are less able to process lead well and toxic amounts can cause developmental delays. Lead containment is key and professional help is necessary, particularly if you have children.

Vehicle exhaust: Vehicles produce toxic air particles and volatile organic compounds. If you have an attached garage, be wise about running your car in that garage. If it is possible, you might back the car out to warm it up. When you are returning home, you might leave the garage door open for a few minutes so that the fumes can escape. Whenever your car is running in the garage, do not leave the door open that connects your house to your garage. If you are building a new home, build a detached garage and if that's not possible, at least don't build your house around your garage with living space on top and to one side or the other.

Indoor air is becoming one of the bigger toxic issues of the day. It is possible to improve your indoor air starting today by using old-fashioned cleaning techniques and by opening a window or two for fresh air. Many of the other structures will require years or decades to implement. Put them on a long-term schedule and keep them in mind as you are shopping for furnishings or remodeling.

Summary

- **Indoor air can make you sick**. It is often worse than what you are breathing outdoors, even in the most polluted cities.
- Increase your airflow by **opening doors and windows** and using fans to direct air.
- **Remodel your home with indoor air in mind**. Avoid plastic-based products such as vinyl and formaldehyde-laden products such as plywood and wood board.
- Try to keep your house reasonably clean to **reduce dust** and **mold** aggravation.
- **Reduce particles** in indoor air by transitioning to **low-emission wood stoves,** using air filters, and installing **strong ventilation systems** in kitchens and bathrooms. **Contain lead paint** sources with a top coat of paint or by calling lead containment specialists.

Resources:

House Cleaning

Logan, Karen, 1997. Clean House, Clean Planet (New York: Pocket Books) *Find it at Amazon*.

Indoor Air

"The Inside Story: A Guide to Indoor Air Quality" http://www.epa.gov/iaq/pubs/insidest.html

Jeffrey C. May, 2991. My House is Killing Me! The Home Guide For Families with Allergies and Asthma (Johns Hopkins University Press). *Find it at Amazon*.

Food Structures

Most of the changes we should make in regard to food and eating are actually rules: "I will not eat white rice"; "I will not eat refined sugar"; "I will eat out only once a week." Again, rules can be broken and eating structures are much more difficult to establish. Here we are in an unusual position in that we can institute eating structures to some degree.

We live in an isolated area with one restaurant and two small grocery stores. With the exception of the almost-monthly Capinero dinner sponsored by the Hot Springs Capineros (a local senior group), none of the local eating options tempt us. The food is good, but it is basic American cuisine that we can fix pretty easily at home if we wanted to.

But there are structures we can establish in our own homes that ensure that the food we eat is healthier than it would have been otherwise without these structures. The key to food structures in general is reducing toxin-enhancing structures and building structures that are nutrition-enhancing. On good days you can work on each of these structures. Some are fun, while some are just a lot of work. Over months and years your food structures will become more health-enhancing.

Pantry Structures

With essentially no outside temptations save that almost-monthly Capinero dinner, our eating structures revolve around what we keep in our cabinets – **pantry structures**. If we are hungry and we want something that's not in the pantry, we are basically out of luck unless we want to drive 90 minutes round trip to procure the contraband. We do not have enough white flour in the house to make a loaf of bread. The small package of flour that my mom insists on keeping for certain gravy projects actually risks turning rancid before it gets used. We have enough white sugar to offer to guests who are drinking tea, at least for the time being. Our sugar has crystallized and has to be poked and pounded to get out a teaspoon's worth.

We discuss deliberately what ingredients are "allowed" in the house. A current discussion revolves around caffeinated beverages. We all recognize that black tea and coffee are doing none of us any favors. We all try to stay away from them, but when they are in the house, we risk indulging on bad days and becoming re-addicted. Removing them entirely is the only way to ensure that we will not be drinking them. We could procure the contraband in town on the two days a week or so we go to business meetings, but the rest of the days we would be safe from our own vices, even if we are having a bad day. But so far, if you come to visit us, we are able to offer you a variety of caffeinated beverages.

What we do keep in the pantry is actually rather limited, given that the primary elements of our diet are meat and vegetables. We do keep a freezer full of grass-fed beef so that we always have access to quality meat.

Here's what we have cut out of our pantry over the years (loosely in this order):

- Any food with artificial colors or flavors.
- Artificial sweeteners, including aspartame (NutraSweet) and Splenda.
- Any food made with partially hydrogenated vegetable oils. These are the trans-fatty acids in many boxed and bagged items; these fats are now required to be displayed on food labels.
- Items with refined sugar. This includes white and brown sugar.
- Items with high fructose corn syrup which aggravated our corn allergies.
- Items with refined flour. Now and then Sander would buy "enriched wheat flour" by accident and argue vehemently that it is not refined. Unless it says "whole wheat," it's out of the pantry.
- Items with wheat or corn. We're all at least mildly allergic, even if it's whole wheat, so that's out now too. Wheat and

corn allergies are common, so you might want to add some alternative grains to your pantry as insurance.

I know, there is nothing left to eat. Start with one category and then cut out another. If you can cut all these things out tomorrow, you would reach better functioning sooner, but I know that these changes in themselves can drive people crazy. At the very least, take a long-term strategy and plan to cut out one of these categories from your pantry every month or every three months. If you can keep it out of your pantry, it is less likely to be in your life and you will be healthier.

Food storage

How that food is stored in the pantry or refrigerator is an important structure. The cheapest food storage containers are plastic. But the problem is that plastic is reactive to foods. When foods touch the plastic, the substances in plastic leach into the foods. And then we eat the food. The Food and Drug Administration admits that plastic containers leach chemicals into foods, but argues that the levels are too low to have a toxic effect (Meadows 2002). But even at low levels, your body must use its nutrition fuel to detoxify those substances.

We have been in a gradual process of shifting from plastic to glass and ceramic storage. The cheaper plastic containers are the first to go to recycling or to Goodwill.

Glass storage is great because if it is food-grade, it can be used for cooking, storing in the refrigerator, or for freezing. Canning jars fit this category as do glass storage containers – anything Pyrex-like works well. I like this product by Snapware which actually has plastic snap-on lids. The plastic does not touch the food and it is lighter-weight, making the containers easier to handle.

The key with using glass for ovens, freezers, and refrigerators is that you cannot subject the glass to dramatic changes in temperature or it will break. We let food cool a bit before putting it into the refrigerator. The refrigerator is a good intermediate stop

for any food before it reaches the freezer. Of course, this extra step means that our food often gets put in the freezer in plastic. We're working on it.

In the class of glass storage containers, mason jars – the jars used for canning – are by far the least expensive and most versatile. We have an assortment of wide-mouth jars so that we can use the same lids for all. We use the quart jars for leftover sauces and homemade butter and half-gallon jars for soups, yogurt, and kefir. Wide-mouth pint jars are available as well that are half the height of a quart jar. They are great for small left-overs, as are the containers by Snapware.

From the old retreat days at this house, we have also inherited quite an assortment of old gallon-size pickle jars that we use in our refrigerator for large left-over dishes such as soup. Delicatessens are good places to ask for used, one-gallon glass jars. It's worth a shot, though it takes some serious cleaning to remove the pickle smell. We have collected various other glass storage containers from second-hand stores and some new items as well. The biggest adjustment with glass storage is that the containers are heavy, they "clank," and they are breakable. To reduce the weight, you might buy the containers that come with plastic lids, but just don't fill the food to the top.

We store and freeze in stainless steel as well, though we have found fewer inexpensive sources that rival the glass mason jar.

Child-friendly containers

Plastic version	Healthy alternative
Baby bottle	Glass bottle
Sippy cup	Klean Kanteen sippy
Straw cup	SIGG, Klean Kanteen
Plastic food bowl	Wooden or stainless steel bowl

Cookware

The wrong cookware will put more into your food and your air than what you bargained for.

Non-stick coatings

Non-stick cookware, notably the popular brand Teflon®, has made the news recently because researchers are questioning its safety. For decades Teflon®'s maker DuPont, has warned not to heat Teflon® above 600˚F because at about 680˚F, Teflon® will emit six toxic gases into the air. There have been studies of birds dying from these fumes. But even when the cookware reaches 446˚F, researchers argue that it begins to emit toxic particles. For an interesting discussion, visit the Environmental Working Group at http://www.ewg.org/reports/toxicteflon/es.php.

I use Grandma Emary's cast iron skillet because I cannot be trusted to cook at low temperatures. Come over some morning for pancakes. I cook my pancakes in coconut oil with a smoking point of 350˚F. I am sure the skillet exceeds that temperature. I have hit the smoking point with olive oil on occasion (which is a bad idea because olive oil should not get that hot). The smoking point for light olive oil is 468˚F. I am certain I regularly exceed 446˚F with my cooking and on occasion have exceeded 600˚F before I turn down my skillet, realizing that I am about to burn down my kitchen. The recent research reports on Teflon® are aimed at cooks just like me. A lot of birds would die in my kitchen if I used Teflon®, if I had any birds in my kitchen.

Aluminum and stainless steel

For non-stick cookware, the biggest consumer red flag is emissions. For other cookware, it is leaching. Metals from the cookware may leach into your food in small amounts.

When Sander and I got married, we received a beautiful set of anodized aluminum cookware made by a higher-end cookware company. I have considered keeping them just to hang in the kitchen and marvel at their beauty, but then I would have to dust them. Small amounts of aluminum move from the pan into the

food. Some people argue that the levels of metals are insignificant. Use your own judgment. Your body uses your nutrients to eliminate those small amounts of aluminum.

Stainless steel pots and pans contain chromium and nickel, metals that you can become toxic in if you are over-exposed. Stainless steel, then, is not ideal cookware either, particularly for frying when you are using spatulas to move food around. Scraping the cookware will move more small amounts of chromium into your food.

Tag Sale Shopping List

- Cast iron cookware
- Enameled cast iron cookware
- Glass food storage
- Glass baking dishes

We have transitioned to cast iron skillets and stainless steel soup pots. For baking, we use ceramic and glass. We were lucky enough to inherit some fine cast iron cookware from various grandmothers and so we were fairly ready for the transition, as much as we lament losing the beauty of the anodized aluminum cookware. We have found some fine enamel cookware at second-hand stores both for baking and food storage.

With money to buy new, I would absolutely buy cast iron enameled cookware. The gold standard in the industry has been Le Creuset but it is prohibitively expensive. As cast iron enamel has become more popular, **a competitor has entered the market with products as good, but for half the price or over one-quarter of the price of Le Creuset**. You will find the best deals at Amazon as Amazon vendors compete for your cookware dollar: cast iron enamel.

Summary

- Pantry: Don't keep food around that you shouldn't eat.
- Storage: Transition from plastics to glass and stainless steel.
- Cookware: Use grandma's cast iron or enameled cast iron for frying; use glass and ceramics for baking.

Body Care Structures

We all use some assortment of body care products every day: soap, shampoo, antiperspirant, make-up, lotion, and others. Most body care products contain known toxins such as petroleum-based paraben preservatives in shampoo and lotion, artificial dyes and fragrances, and small amounts of metals. The conventional wisdom is that we are not likely to absorb the toxic matter through our skin. Furthermore, the amount of toxic matter is too small to affect our health anyway.

But the Environmental Protection Agency has an interesting article on its website called the "Dermal Exposure Assessment" (Environmental Assessment Group, 1992). They review studies of skin absorption using mice, rats, and other unlucky lab animals and discuss the factors that increase absorption rates. Factors that increase our skin's absorption of toxic chemicals (or beneficial skin treatments for that matter) are the following:

- If your skin is damaged, your absorption rate will be much higher.

And to a lesser degree:

- Areas with fine, tender skin will absorb more.
- Areas with more hair will absorb more.
- If your body is warmer (as it is in a bath or shower), you will absorb more.
- Older skin absorbs more.

So we do absorb some portion of these body care products we use every day. We might not have an allergic reaction to the product, but our bodies must process the toxins nonetheless and we know that processing requires nutrients that we can't afford to lose.

And here is the really great news: reducing this exposure is pretty easy and a lot of fun. To help you improve your exposure, there are some great websites that analyze specific products. So a good first

step in each of these categories is to find a product that is less toxic than one you already have. When you run out of shampoo or lotion, you can go to this website by the Environmental Working Group:

http://www.cosmeticsdatabase.com/

You can find out how your old product rated and you can locate a less toxic product. In doing so, you have saved your body from using your nutrients to process those extra toxins. You have established a structure very simply and probably without much money.

But it gets better because for each type of body care product we use, there are some great experiments that you will surely want to try at some point, in the name of health of course (and because new beauty approaches are always a bit exciting).

Cleansing and moisturizing

Lotion and creams

On my 30th birthday my mom bought me a high-end skin care cream. I used it diligently and my skin improved. Some seven years later, my skin feels like the skin of a baby and I use nothing other than what is in my kitchen cabinets to care for it. I have a much better outcome now than I did with that cream and I do not have to worry about where I am going to find another $70 to replace it (or who knows how much more today). I also don't have to worry about the chemicals that make up the product.

I use extra virgin olive oil on my arms and legs in lieu of a moisturizing lotion and I also use it to clean my face. For my skin, olive oil is far superior to any method I have used.

On my arms and legs I rub extra virgin olive oil into the skin and then I rub it off with a warm, wet washcloth. Rubbing the oil into your skin works it into the pores; the process of rubbing massages your skin. Rubbing off the oil keeps your skin from having an oily

residue. In the winter when I would otherwise be applying lotion to my scaly legs and hands multiple times a day, I use this method about once each week and never have scaly skin.

You can use a similar method to **clean your face** (which will also moisturize your face). In the winter I use olive oil, massage it deeply into my face and neck, let it sit as I shower, and rub it off with a warm wet washcloth. In the summer, I add some castor oil to the solution since castor oil is drying and my skin is more greasy in the summer. I do not use a facial moisturizer with this method. It is unnecessary for my age.

(Update: As the hands of time turn, I have added a moisturizer in the winter. I combine a moisturizer from this company – here is their organic line. I use their cleanser as well but prefer their mandarin line to the organic line. In the winter, I do add oil to the moisturizer, but simply putting a few drops of oil onto my hand, adding some moisturizer, and mixing the two. My oil of choice is now marula oil. We actually discovered marula oil at a natural living trade show when the vendor insisted we put some on the back of our hands. Later in the day, we were searching our goodie bag for the sample to try to figure out what the magic oil was. I alternate marula oil with emu oil because alternating every few days is apparently the best approach.)

Part of the key is diet and the extra Omega 3s in your diet are the first of a two-prong strategy against dry skin. Your skin regenerates about every three weeks and uses beneficial oils to build skin cells. With a diet richer in these fats, your skin will be more naturally moisturized from the inside. (A high EPA Omega 3 like this one is a good bet because of the importance of EPA and brain health.)

Soap

Soap is a fun category for health structures because there are so many handmade soaps available in specialty stores and online

made with luxurious and exotic oils that you may become a collector.

The natural, handmade soaps that are available increasingly are made using the same process that our grandmas or great grandmas used to use. They contain water, lye, some sort of fat (animal or vegetable, though animal fat is the traditional fat), and usually an essential oil for added scent. Endless variations of soaps are available because of the wide variety of fats – coconut oil, palm oil, shea butter, emu oil, and others – and the wide variety of essential oils – tea tree, rose, peppermint, cinnamon, lavender, and many more. As an aside, the lye -- the stuff you find in the grocery store with the products to unclog drains -- is toxic and has to be handled very carefully in making the soap, but it goes through a chemical process in the cooking that renders it safe and so your finished soap is also safe.

Find some fun soap. In my experience, most homemade soaps are made with fats that render a harder soap that actually lasts longer in the shower than conventional soaps available at the grocery store – they don't disappear in a few days, as many soaps will.

You should know that as you start to use these soaps, you will be tempted to make them yourself. There are great resources on the Internet for this purpose. Just watch your lye by wearing proper protective gear (as all instructions will repeatedly warn you). You don't need further toxins to detoxify and you want to keep your eyesight.

Resources:

Colleen K. Dodt, The Essential Oils Book: Creating Personal Blends for Mind & Body *Find it at Amazon.*

Karyn Siegel-Maier, The Naturally Clean Home: 101 Safe and Easy Herbal Formulas for Non-Toxic Cleansers *Find it at Amazon*.

Shampoo

At the beginning of this process I took a shampoo inventory here in the house and found no shampoo without a paraben preservative (a petroleum-based preservative) or without diazolidinyl urea (which contains formaldehyde).

I asked my father-in-law about the paraben preservatives. In his years with Mobil Research and Development, he was one of their key chemists working on zeolyte technology – a technology that helps separate crude oil into such as gasoline and kerosene. It is that technology which allows for a fairly cheap paraben market. He argues that although the paraben molecules are microscopic, they are hydrophobic and would repel from our wet scalp as we applied the shampoo to our head. He urged me to worry about more important matters, but the fact is I no longer use shampoo. It was a simple change to make in the grand scheme of things. And as I see it, hydrophobic or not, we press our luck when we apply shampoo under warm water which opens our pores. The simultaneous scalp massage would not do us any favors either. It seems unlikely that all of the petro-chemicals wash their way down the drain.

I would like to claim that I started on the no-shampoo path because of these health-promoting structures. I did not. In fact, when I was thinking about giving up shampoo, I pictured my hair back in high school when we first moved to this house in the mountains. The water system failed many times and we were without water for days at a time. For some months we were without hot water because a reset button on the water heater needed to be "reset" and we did not know it. We just thought it was broken and were too poor to fix it. If I washed my hair on Day 1, by the end of Day 2 the grease would set in. By Day 3 I looked like a raga-muffin. I did not think I could live without shampooing my hair every day (or at least every other day in a pinch). So I never imagined that I would be shampoo-free.

And then an unfortunate event happened that caused me to re-test all of my assumptions about body odor and greasy hair. We

had a small leak in our propane line and the propane company put us on lock down: we had no hot water for two weeks. It was October, so a cold shower was far more miserable than going shower-free and stinking. I took a shower on a Thursday morning and then another on the following Wednesday. My hair was retched by Saturday, after two full days without shampoo. But in Week Two, my hair was surprisingly reasonable-looking from Wednesday shampoo through Sunday, after four full days without shampoo.

I remembered some of the testimonials of people who use no shampoo: the greasy hair is a result of your body producing oils to compensate for the oils removed by the shampoo. The less shampoo you use, the less oil your body will produce to compensate. With the help of a hot water outage, I decided to wean myself off of a daily shampoo. At first I began to wash my hair every third day and thereby decreased my exposure to shampoo ingredients by nearly 70%.

But establishing these structures has changed my motivation in life and, frankly, I became curious. I wondered how long I could go without shampoo.

Three months. That is how long I went without any kind of shampoo or soap on my hair. I cleansed my hair with baking soda and rinsed it with a solution of apple cider vinegar and water.

There is a fairly small but growing movement in this country called "no 'poo." "'Poo" here is of course a pejorative abbreviation for the word "shampoo." My "wash" technique is one of the more common in this movement:

> **Wash**: Apply a baking soda paste to your moist scalp. For long hair, part hair in various places to apply the paste to your scalp. Once you have applied the paste over your whole scalp, gently massage it. Let the paste sit for much of your shower or bath. Rinse well with very warm water. Turn your

head down, look at the floor, and rinse the hair on the back of your scalp. A good rinse is the key to grease management.

Rinse: Use a rinse of about 10% apple cider vinegar and 90% water. I keep a quart-sized container in the shower for the purpose and a gallon of apple cider vinegar nearby for hair rinses and hot baths. Pour the mixture over your hair. Turn your head down again and pour again over the back of your scalp. Rinse again thoroughly with very warm water.

When I am home, I use nothing for my hair other than baking soda and apple cider vinegar. But I have found that when I travel my hair tends to get a bit nasty, probably because of differences in the water and local climate. In my travel kit I keep a "shampoo bar" to wash my hair and an eight-ounce bottle of apple cider vinegar to dilute and rinse.

Shampoo bars are a good alternative to shampoo if the baking soda routine has no appeal to you. The process used for making shampoo bars is the same as for making natural soaps, however makers of shampoo bars use oils that are appropriate for different hair types. Shampoo bars may also contain oils that will make more lather – such as coconut oil – so that you don't have to give up that luxurious aspect of washing your hair.

There is online store with shampoo bars for different hair types. It sells samples so you can buy several and try them out:

www.chagrinvalleysoapandcraft.com/shambar.htm

(Update: I use shampoo these days mainly because whenever I traveled, the local water did strange things to my hair.)

Antiperspirant

And speaking of body care, the lack of hot water for that two-week period also made me realize that my body odor simply is not as bad as I thought it was. In the second week of our outage, I did not even take a sponge bath and as I journeyed to our neighbor's house to use their facilities in preparation for a business meeting

the following day, I noticed that I was not even leaving a trail of stink behind. Once I had showered, I did notice that the clothes I had been wearing were definitely in need of laundering, but for one week without a shower and about five mornings of exercise in that time and, frankly, without a whole lot of changes of clothing (because why bother if you haven't showered in a week?), my stink levels were far lower than I would have predicted.

I began to wean myself off of antiperspirant/deodorant as a result. I found a spray bottle we had used for diapering, added rubbing alcohol and a few drops of tea tree oil to the bottle and spritzed the mixture under my arms when I noticed a bit of a stink welling up (witch hazel and tea tree oil work as well). The tincture kept the stink at bay. It's great for days at home when such issues don't matter much anyway, nor does a trip to the bathroom for an extra spray.

But for days out I found a great product called "Funk Butter" by Oyin Handmade, an online store. What a great name for a product that reduces stink and wetness with a combination of odor-absorbing baking soda and moisture-absorbing clay. My husband uses Tom's of Maine's natural deodorant and it works very well for him but he has less of a stink problem. Products like "Funk Butter" are the bigger gun for people with bigger needs.

Makeup Structures

With this framework of reducing toxic exposure, women probably should not wear makeup at all, but as time marches on for me, I am pretty sure I will not be giving it up. I don't wear makeup every day as a compromise, but I do wear it.

Mineral makeup is probably our best bet. It does have small particles that we breath in as we put it on and we likely absorb some of it, but its ingredients simply are not as bad as more traditional makeup lines. I have tried quite a few mineral makeup lines. Some are not worthy of trying again, but a number of them offer value and quality. I have landed on this company that also

has an organic skincare line (you can search through their products and find makeup as well). That organic line is actually a huge value but it is their Green Tea/Mandarin line. It appears they have a special offer on an "age-defying" system. I've tried a number of the products in that line and have been pleased. Their mud mask is fantastic (and for both men and women). It's worth taking advantage of that offer.

Fabric Structures

In the fabric department, there are two primary issues to consider: (1) Your laundry technique to keep debris, detergent, and other deleterious dinge off of your clothes; (2) Whether the fabric itself is emitting toxins that your skin can absorb. The first issue – laundering – is an easy structure to impose and is fairly non-controversial. The second – fabric types – is more difficult and much more controversial.

Petro-fibers

I visited Sander's family and friends in Bucks County, Pennsylvania one holiday season and said to Sander before we left, "I must remember to ask your dad about polyester because I just don't get what a polymer is. You know, the stuff in polyester fibers made from a barrel of oil?"

Sander's father worked for many years as a chemist for Mobil Research and Development, developing zeolyte technology – the stuff that breaks down crude oil into various parts used for petroleum products. His name is on 72 of the patents held by Mobil, now ExxonMobil. I thought he could give me some intuition on how to turn a barrel of oil into a dress shirt or pantyhose, because I just did not get it.

As the trip passed and I missed many opportunities to discuss polymer chemistry with Ernie, I found myself at a party with some sharp chemists. As I helped our young children share the holiday toys, I asked the grandfather of one child about his profession. "I am a chemical engineer and specialize in industrial

textiles." I leaned in close and began a discussion while the children returned to a state of nature behind me.

Together he and my father-in-law likened making polyester fabric to making spaghetti. Molecules are linked together and then heated. They are pressed through a screen – picture spaghetti coming out of a pasta maker or play dough coming out of those play dough presses. It is cooled and maintains a solid form in the shape of a thread. Some fabrics such as nylon have filigree-size presses, others are larger. The threads may be made with different textured surfaces so that they can take dye or be extra fluffy or frilly.

A discussion continued over the dinner table about whether these petro-chemicals in clothing could be harmful to your health. The chemists made the fairly widely accepted argument:

1) The molecular size of the petrochemicals in synthetic fabrics is too large to be absorbed into the skin.
2) The chemicals are hydrophobic so they will naturally repel from the moisture of the skin.
3) It is the manufacturing process itself that is highly toxic and can have an environmental impact (though they emphasized the government regulations to reduce that impact).
4) The oil residue on the clothing left by the manufacturing process would be washed off by the factory, before it hits the garment industry.

They argued that while wearing polyester was safe, making polyester is another matter. They were likewise concerned about processing cotton for clothing. They described the dust and chemical particles that fill the air as cotton is processed. In both cases, they pointed out that formaldehyde is used to protect new clothes from wrinkling and staining and recommended washing new clothes thoroughly before wearing them.

But the alternative argument is that not only are laundry techniques important, but also that polyesters and other synthetic

fibers contain monomers, molecules that were supposed to get linked into the polymer chain but never made it and went along for the ride anyway. They will emit fumes and be absorbed into the skin under this argument. Further, as the fabric breaks down due to normal wear, the molecule could be absorbed into your skin. This is an area without a lot of research, but the theoretical argument in itself is enough to send people to specialty clothing stores for organic cotton or other organic natural fibers.

Organic natural fibers might not only keep you safe from roaming petroleum monomers, but also from pesticides used on fibers that might also make their way into your skin and create a larger nutrient burden for your body. Organic natural fabrics are very expensive, so a good place to start would be bedding and pajamas since your body spends so much time in contact with them. But an even less expensive and less controversial place to start is on cleaning your clothes.

Importance of laundry techniques

Even opinions of mainstream chemists suggest that we should be concerned about chemical residues in our fabric when we purchase new clothing. They do not agree that we absorb toxins into our bodies from petroleum-based polyesters or from arsenic-laced cotton. But it is much less controversial that our clothes have toxic residues that will affect our health. From normal wear and exposure, our clothing will also collect unhealthful particles every day. This is where the importance of a good laundry system comes into play. The task is fairly simple on its face: clean and rinse. But the devil's in the details.

Back when I started using cloth diapers for Frederick I nearly went crazy with stinky diapers because I did not have enough understanding of wash principles. Balance is critical: you need enough detergent to latch onto the dirt and pull it out of the fabric so that it can be washed down the drain in the rinse cycle. But if you have too much detergent, it will latch on to all the dirt yet it will not all be rinsed away. The key is to use just enough detergent to get out the dirt but not so much that you cannot rinse

it all out. With too little detergent, muck remains on your clothes. With too much detergent, muck and detergent remain on your clothes.

To complicate matters, all of us have different water. Clothes washed in hard water tend to hold onto their dirt. Hard water requires more detergent as a result. Clothes washed in soft water need much less detergent.

That I would even be concerned about clothing in this context might seem like my problem with obsessive-compulsive behavior never went away. But becoming a mother and seeing first-hand the relationship between diaper types and rashes has made me think much more about what we put next to our skin. In our transition to cloth diapers, it became clear that Frederick's one disposable diaper a day – his night-time diaper—was the culprit in his on-going rash. The rash disappeared when we switched to cloth diapers full-time. Some babies react to the fabric of cloth diapers. Babies are so sensitive that they are not as able to process skin irritants as are adults, so rashes are more common. As adults, we can process those irritants. But the fact remains that we *have to process them* and processing them requires nutrients.

Rinse your clothes well and try to find a detergent or soap with a lower toxic score than you are using today.

Summary

- **You absorb toxins through your skin**.
- **Use body care products that have a lower toxic load**. Check the toxic scores of your product in the online database provided by the Environmental Working Group.
- Use **laundry techniques** that will thoroughly rinse dirt and grime out of your clothes.
- Consider **organic, natural fabrics**.

Resources:

A web-based database with "toxic scores" for thousands of skin care products:

http://www.cosmeticsdatabase.com/

The National Institutes of Health National Library of Medicine website provides a household product database. Search for your cleaning products and follow the links on toxicology research for the ingredients:

http://hpd.nlm.nih.gov/

Emotional Structures

Poor emotional health in itself increases the nutrient load on your body. When your body is in a state of stress, it requires more nutrition and will burn through your stores if you are not providing it with the nutrition it needs. Studies have shown that stress can cause magnesium depletion (Cernak et al. 2000).

Researchers have also found that daily stressors are some of the best predictors of ill-health. A daily ritual of losing your keys or your wallet, fighting traffic, and worrying about money are the ticket to emotional instability. In fact, these daily stressors are better predictors of health than major life changes or our own position in the social structure. That is to say that we may have lost our spouse or our job, we may be poor, but better predictors of our health are whether we face daily hassles. This is good news in a sense. It is impossible to change the fact that we lost our job and it is difficult in the short term to change our income status. But we do have some control over the hassles we face daily in our lives and we can set up structures to mitigate them.

Reducing Hassles

The daily hassles research has two sides: hassles and uplifts. Hassles are the daily events that have a negative impact on our mental health; uplifts have a positive impact. Our goal is to establish structures to minimize the hassles and maximize the uplifts. If we establish these structures on good days, then on bad days we will have fewer hassles in our lives and more uplifts. As you begin to establish these structures, concentrate on those related to hassles. Uplifts are important, but hassles affect your health negatively more than uplifts affect it positively. So in the face of limited time (which is itself a hassle), work first on reducing the hassles in your life. The biggest hassle that most of us have, regardless of our objective circumstances, is our finances.

Finances

While Sander and I have had a good financial situation, our contracts are funded with “soft money” – government grants that

are renewed on an annual basis. Congress or the state legislature could at any time yank the rug out from under a grant program (and us). Getting the rug yanked rarely happens in normal times but with the economic climate of the early 2000s, there were many times we have wondered what our business' lifespan would be.

And then with me chopping contracts here and there as a result of therapy, our business income is not what it could be. And the fact is, all of us worry about money in one way or another. Fuel costs are rising and the cost of consumer goods is following. New families have to think about all of the expenses associated with children, including college savings.

In our house, as our own financial worries increased, I began to establish financial structures. The idea I employed here is like the rest of the structures – I am emotionally healthier each day because I have employed financial structures that have reduced my worry about finances, even on bad days.

First, I recognized that many of the lifestyle choices we have made will also allow us to live cheaply if we need to do so. We have a garden, an orchard, a chicken coop for laying hens, and a chicken coop for meat chickens. We could live off the land if we needed to do so. We do not do that now because we do not have the time and because we are all hesitant to help the meat chickens make their final step to our table. We would have no problem with either of these issues if we ran out of money. It has helped us just to realize this fact.

And then on one of my good days I got a bee in my bonnet to tackle this finance problem a little more. I pulled out the electric bill and rather than just become shocked, write a check, and walk away, I looked at it in detail. Tackling the problem like a data analyst, I set up a spreadsheet to track the bills. From June 2004 through May 2005 our electric bill averaged $229 per month. We used 50 kilowatt hours a day over that one-year period. When you consider that the house does not have air conditioning and is heated with wood, our electric bill was big. Our neighbors use about seven

kilowatt hours per day and while they live in a small modular home and have only two adults compared to our three adults and one child, I just felt like I could not rationally justify a seven-fold difference in our usage.

We replaced a 60-cubic-foot commercial refrigerator with a 17-cubic-foot Energy Star model. We spent about $1500 switching the water heater and dryer to propane and replacing two 30-year-old freezers with one Energy-Star-rated freezer. The new propane appliances are outside, so we have fewer worries about the impact of fumes on our health. Sander diligently changed nearly all of the light bulbs in the house from incandescent to compact fluorescent bulbs.

We all mourned the loss of incandescent lights. Sander tried to outlaw one of my mom's antique lights with the same zeal as I was outlawing other things around the house. I admire his diligence now but at the time I was horrified that he would outlaw an antique lamp in a 100-year-old house. It just wasn't right. And the compact fluorescent lights just didn't seem right either – they come on dim and they hum. I could not imagine living with them on a long-term basis and we agreed that any light bulbs that were a particular bother would get changed back to incandescent bulbs. Then a new electric bill came and the only change we had made was the light bulbs. Our usage was 7 kilowatt hours a day lower than we expected. There have been few complaints about the compact fluorescent bulbs since that day.

All in all, we have reduced our bill to under $40 per month for a savings of $190 per month. We paid our start-up costs in the first year.

But more than the savings, the process provided me with great psychological benefits. The electric bill was always something we knew we needed to work on but never found the time to do so. Every month it nagged at us as that large chunk of change headed out the door. Simply tackling this nagging issue made me feel better. I also felt greatly empowered with the knowledge I gained

in the process. I learned how to compare the cost of electricity and propane. It is a simple calculation but one I had never been exposed to before. The energy cost of our electric water heater and dryer was over twice that of their propane-equivalents.

I began thinking about all of our household operating systems in a new way and felt a new level of control over life. Control over *anything* is a powerful feeling on those days when everything feels out of control. And every day we wake up, our household is costing us less and weighing on our minds less because of these changes we made in the summer of 2005.

Another financial structure you can establish easily is to find and join a food co-op to reduce food costs. The co-ops have wholesale prices on bulk items like grains and legumes, nuts and seeds, teas, coffees, sugar, spices, packaged food items, nutritional supplements, body care products, and just about anything else you shop for at a market.

I provide information in the Appendix on several large food co-ops in the United States. There may already be a local group in your area that orders from one of these co-ops. If there is not, consider starting a co-op with your friends or neighbors, a group large enough to meet the minimum order but not much larger. Large co-ops take more time to organize.

Every few months I revisit this category and try to create new financial structures. Some have been easy and cheap: purchase containers for travel food that both fit in the cooler and fit the food we take with us regularly. If you don't have the proper tools, you are not likely going to brown-bag it.

Update: I have to say that all of these changes have served us well, here in financial Armageddon in 2010.

The Sound of Silence or "Goodbye Commercial Refrigerator"

When I went off to Santa Clara University back in the late 1980s, I adjusted quickly to the city noise. I lived in a dorm near a major airport, train station, and three large freeways. On my first visit back home to California Hot Springs, the silence was so "loud" that I had a difficult time sleeping. That first night home a cricket's chirp seemed deafening.

It has been a long time since you could hear that cricket's chirp in this kitchen.

When this house was operated as a retreat house, my parents had the need for a large commercial refrigerator. When we bought the house in 2004, we acquired the refrigerator. It was a 60-cubic-foot giant and it was LOUD. Think airplane hanger. We knew it was an energy hog and we hated yelling over the compressor when it kicked on. But it was here and we used it, to the tune of over 10 kilowatt hours a day.

We arranged an appliance swap with the local church – our commercial stove and refrigerator for some labor on a house kitchen project. The stove left us in the fall and the refrigerator left yesterday. The guys from the church showed up, packed that baby up, and the silence in our kitchen seemed deafening once again. At least 20 times today someone has asked "is the power out?" – a question that became the joke for the day and likely much longer. When our new 17-cubic-foot Whirlpool is running, it sounds like a faint hum. When it is not running, it is quiet. Absolutely quiet.

Chirp, chirp.

Other financial structures in our household will take time and money. We plan to install a rainwater collection system to store rainwater to irrigate the garden. This will reduce the summer electric bill because of the cost of running the well to water the garden. It will also reduce our dependence on the electric grid.

We also plan to reduce electric usage by converting our well to a storage tank system rather than a pump-on-demand system. At the same time, we will install a solar pressure pump and a lower horsepower pump. Not only will we save on utility bills, we will have water during electric outages, assuming that we also have sun. This project will require some more serious money but we expect the current pump is on its last leg and this project may get completed out of necessity. When it is complete, our on going household costs will be lower and our concerns about being left in the lurch if the electrical grid goes down will be eased. With this approach, over time, our regular household expenses will decline and, as a result, so too will our stress levels.

Don't lose it

Financial issues are huge and weigh on all of us, but even relatively small daily hassles weigh on us and add to the burden we are carrying. One of those seemingly minor things that adds up and can affect us in a major way is misplacing things. Keys and wallets are at the top of the list of usual suspects.

We can misplace our keys and wallets anywhere and it is sometimes hard to avoid, particularly if we are wearing clothes without pockets or at social events (like weddings and formal occasions) where we do not necessarily have the same gear that we have every day. We change our purses or just carry a small coin purse, we stuff our keys somewhere-or-other. These circumstances are hard to avoid and we will probably always be wondering about those keys.

But what we can avoid is losing our keys and wallets in a more likely place: our own home. I am the queen of lost "driving necessities." I return home holding a wallet, keys, sunglasses, and a child. The one of those four things most needy at the moment gets my attention. So far, the neediest has never been the wallet, keys, or sunglasses. They get left wherever it is that they land. Sometimes I pay attention to where that landing place is and

about half of those times that I pay attention, I actually remember the location later.

My husband directs me to a basket in our bedroom for these perpetually lost items – "just put them in the basket." But the structure is ineffective because given the circumstances of my return home, I will never go out of the way to drop these items off in the bedroom. In this case, the obvious solution is to find a vessel of some kind for these items, placed right by the front door. The build-up of clutter near the front door is a problem in itself, but a vessel of the right size with a lid is a good solution to this daily hassle and it does not have to add to clutter. If you are a perpetual loser of such important items, establish a structure to reduce your losses. Life will be easier.

What's for dinner

Both planning meals and actually cooking them are hassles that plague us daily. It is not only expensive to be on a good diet, it is labor intensive. And if you come home from work or from a day out and have nothing to eat and no plans for dinner, your blood pressure will rise. Restaurants provide us with good outs for these times, but we need to establish structures to reduce our dependence on food sources that are not providing us with the nourishment we need.

Ten-minute meals

Meal planning requires some short-term and long-term planning on your good days. The first, easiest, cheapest thing to do is to put a list on your refrigerator of ten-minute meals. When you are busy and stressed, your mind will shut down and you will not remember even the most simple meal plans. But if you can walk to your refrigerator to your ready-made list, you might decide to eat at home instead of eating out. You may save money and, with a good list, you will add nutrients to your body. It is true that not many ten-minute meals exist and those that do are not necessarily the epitome of health. But when you sit them beside a fast-food burger, only part of which actually came from a cow or steer, you'll be doing better than you would have otherwise. On our own ten-

minute list is scrambled eggs, salad topped with canned salmon, sandwiches, tuna salad, cucumber salad topped with protein (feta cheese, chicken, crab). The list on your refrigerator is in itself a structure because it will always be there to help you in a bind. You may decide to disregard it, but you will find it useful on occasion as well.

Power Hour

Dedicate one additional hour this week to your own fast food preparation. In that hour, you can make a good salad dressing, marinate meat to cook the following day, culture your yogurt or kefir, and start to ferment a vegetable that is in season. Just one hour will make a difference. And, yes, if you are prepared with the ingredients, it is possible to complete all of these tasks.

Making a good salad dressing will take fifteen minutes and you can make enough to last you for weeks. Make a new dressing every two weeks and you will not run out and you will have variety. If you have a few more minutes, wash and tear your lettuce and store it in a slightly opened bag in the refrigerator. The pre-washed lettuce products have been treated to increase their shelf life, so they are not ideal but certainly better than fast food. Lettuce plus a homemade salad dressing topped with canned salmon and sunflower seeds as a meal is a very good replacement for just about any meal out and will add depression-buster foods to your diet.

Meat is easy to cook if it is already marinated. Think about the meat that you buy that is marinated and the meat that is not marinated. It is so much easier, psychologically, to cook that already-marinated meat. But marinated meats are expensive and you are limited in the cuts you can get. There are many simple marinades that take five minutes to prepare. Make the marinade, rinse the meat, place the meat in the marinade, and put the meat in the refrigerator. Fifteen minutes of your life may pass you by in the meantime, but you will be ready to throw it in the oven or on the grill in a day or two or three (marinating meat is easy and flexible that way). After you cook the meat, set some aside, cut it

up, and freeze it. It will be ready as a topper for salad or rice in a future ten-minute meal.

Spend fifteen minutes of your hour tending to a cultured milk product. You will save money by culturing yourself and you will likely have a product filled with more beneficial bacteria that will aid your digestion and add vitamins and enzymes to your diet. I provide directions in the Appendix.

Experiment with fermented vegetables. Fermented squash and peppers make excellent salad toppers. You will chop them to the size you desire, salt them, press them into a jar or crock, and check them every day or two. The initial chopping and salting time will be under fifteen minutes. Think about the jars or crocks you have available in advance and experiment with the vessel that works the best. Ferment fresh produce that you have too much of, that is in season, and that you are able to acquire cheap or free. Add to salads and sandwiches or eat as a salad unto itself. I provide instructions in the Appendix.

In one hour you can prepare salad dressing, marinate meat, make yogurt, and ferment a vegetable. This hour will then provide you with some additional emergency food for the rest of the week and will at least reduce your dependence on food that is not nourishing for you. The hour in itself is not a structure because you do have to do the work each week. But if you can work an hour on one of your good days to prepare these basic ingredients, your week will be much better even if it is filled with bad days. You will stress a little less about what's for dinner and you will be providing your body with more needed nutrients than you would otherwise.

Commuter Chaos

My father commuted one hour each way to work for twenty years, but he commuted from the Sierra Nevada mountain range in California to the San Joaquin Valley. Most of the drive is beautiful and he certainly had no other traffic to contend with. Save the few times we broke down and had to walk miles for help, this is the way to commute. My commute is similar now, though I only drive

it once a week and in that one day I get lost in thought as I drive that lonely mountain road.

But when I am in the Los Angeles area or in the San Francisco Bay Area of California, it is another matter entirely. In that case if I am pressed for time, have a demanding child in the car, or am just generally out of sorts, I probably lose a year or two of my life from the stress alone. And even on our lonely little road, my son sometimes drives me crazy. "Mama, tell me a story." You cannot tell a child "I am too tired" if that child is also too tired to be reasoned with. These kinds of situations need plans and if our cars are structured properly, our days will be that much easier.

As I see it, we need two types of items in our cars at all times: 1) things that make us feel good and productive and 2) things that help us entertain others with minimal effort. If we can use fifteen minutes on a good day to get the proper tools in our cars, our bad days will better.

Productivity in itself is an "uplift": we feel good when we are productive. So the best strategies for car tools are things that will help us feel productive. Libraries stock many books on tape to help us relax and learn. There are many motivational products on tape to help keep us directed. Meditation and prayer on tape is a new and growing niche. My mom has actually recorded Scripture prayer CDs professionally to be used by commuters.

But our children or our friends will not always appreciate our prayer CDs. Put tools in your car to placate your passengers. Our car is stocked with children's music, but that is rarely ever sufficient for a drive to town. Frederick's little request "tell me a story" is sweet but when I am tired and I say "do you want to hear about the time I milked the goat again?" the answer is usually "no" and I am out of luck. I carry a hand-held digital recorder for writing ideas and now use it in the car for Frederick. "Frederick, let's work on your book." He does most of the talking and would otherwise be mute without the thrill of the recorder. It is such a

small thing but that recorder in the car makes a big difference in my life on some days.

Update: My big thing these days is making use of voice recognition software. In your commuting time, you could dictate articles or punch lists that the software would turn into text files. It can be a huge time-saver once you get into the rhythm. I'm using the industry leader, Dragon by Nuance. The best deal on it right now appears to be at Amazon for the latest version (Dragon Premium 11). That premium version allows you to dictate right into your computer or into a digital recorder. If you are just dictating into a computer, you can use the standard version. Mac users will use this dictation software and a second one for transcription from a digital recorder.

Get some rhythm

Have either of these been a hassle for you in the last month?

> "Too many responsibilities."
> "Too many things to do."

Would you say they are somewhat severe, moderately severe, or extremely severe? These Daily Hassle Inventory items may be affecting your health (Kanner et al. 1981).

We are all too busy. Having too many responsibilities is one of the top ten daily hassles identified by the original daily hassles research. And we all tend to suffer from some combination and proportion of two problems: over-commitment and daily inefficiencies. We know we need to limit our expectations of what we will accomplish, try to simplify life, and reduce our commitments. We can establish rules to say "no" to too many commitments and some of us will be better than others at keeping those rules.

We can also start to establish efficiency structures to aid us in this problem. Errands are a huge chore and they seem to multiply proportionately to our inefficiencies and lack of planning. Not only

can they be inefficient, but they can be full of hassles. On days that are not crazy, think about the following issues:

- **How can you organize your shopping to reduce your errands?** Keep a running list of what you need and only do errands once a week. You will find that you spend less and save time. Supermarkets are almost too accessible and tempt us to go into them every day. Meal planning will reduce your shopping time.

- **What is the easiest way to exit the parking lot of whatever store you frequent?** Sometimes a more circuitous path will be a less stressful one.

- **How can you organize your shopping so that you make more right turns than left turns?** I drive through a sleepy neighborhood near Frederick's school, a road not often traveled but one that allows me to make a right hand turn into traffic. It probably does not save me any time, but it saves me stress.

- **How should you park your car so that it stays as cool as possible?** I find a shady spot if it's available even if I have to hike in to shop. The cool car is a relief and the hike is not such a bad thing either. But otherwise, I park south facing and put up a sun shade.

Work rhythms

But besides being burdened by too many activities, many of us are burdened because we feel inefficient in our primary work responsibilities. Small business owners may suffer most from this phenomenon because work never ends. All waking hours are hours we should be working. If we are inefficient in those hours we will wake up the next morning with the same burden and it will start all over again. Students are another group plagued by this problem. There literally is no end to the possible work that students can do.

But there are two problems with this attitude toward work. First, we need a break. We all know that, but we never give ourselves one. Second, productivity breeds productivity and inefficiency breeds inefficiency. One inefficient day will likely breed another and another. Rhythm is an important thing and we all need to figure out for ourselves when we best do the work that is paying the bills.

Some people are morning people, some are evening people. Some work well for three days straight and three days off and still others work best for three hours straight and three hours off. Take a look at yourself and determine when you work best. Set up structures that allow you to work under that particular schedule. And unless the world is going to end if you don't finish your project, stop working according to the schedule you have established and then do something in your life that will also help you feel more productive and efficient. Establish new structures to improve your health. If your regular work day was not as productive as it could have been, your productivity on another project in this hour could provide you with good momentum for the following day. Over time as you work during your best hours, you will find your efficiency increasing. Efficiency breeds efficiency.

With the time you save being more efficient, don't add more commitments to your schedule. More things on the list add to your hassles. Rather, fill the time with activities that will be "uplifting." Doing yard work, cooking, exercising, reading, spending time with family, getting in shape, and staying in shape are activities that are associated with good mental health – they are "uplifts." If new structures free your schedule up a bit, fill in your extra time with these activities.

Increasing Uplifts

What has made you feel good in the past month? Getting fit? Feeling healthy? Feeling satisfied with your home? Reading? Spending time with family? The more you engage in activities that make you feel good, the less likely you are to experience bad

health outcomes. Of course these issues are interrelated. As our health worsens, we are less able to engage in the activities that would normally make us feel good. But in the case of depression, you can increase your chances of engaging in uplifting activities on your bad days if you are strategic on your good days. On your good days you can establish structures that will help you engage in uplifting activities on all days, whether they are good, bad, or in between.

Reading and writing

We are a family of readers and writers but have done very little of either since having Frederick. Upon moving to California Hot Springs, we began to realize that our home was not set up to encourage reading and writing. We had few comfortable chairs or couches for reading. Those that were comfortable had no adequate lighting. Since both reading and writing can be great stress-relievers, we needed structures in our home to encourage those activities. When I felt like reading or writing, I was missing the moment because I did not want to find a lamp I could read by. Setting up reading and writing areas is a good example of an easy structure to establish to encourage relaxing behaviors.

Writing helps me process my experiences and is generally therapeutic. But I have found that it is not enough to promise myself to write when I am feeling bad, because I will not do it. I entertained imposing a strong writing structure on myself: writing a column for the local paper about our home renovation, one that would have allowed me to examine in a humorous way all of those things about the house that were haunting my thoughts. I wrote several "practice" columns to see if I could pull it off. In the process of writing, I began to write this book instead and ran out of time for the columns. A weekly column would be the ultimate in writing structures and one I still consider.

Home Comfort

When we moved to California Hot Springs, we were so behind in our work because of my depression that boxes sat unpacked and

the house remained decorated pretty much as my parents had decorated it over the previous two decades. We added some of our own furniture, but it largely disappeared in the 6,000 square feet. The house looked like my mother and even she agreed that it was time for a change. It was also time for some major de-cluttering, since we never really moved in with any great organizational plan in mind. The disorganization and lack of aesthetic appeal can take their toll on a depressed or even marginally-depressed person and should be on the to-do list for good days. Having a home interior that is pleasing is on the top ten list for uplifts in the original hassle/uplift research. Your home's interior is easy to improve and, actually, much of this work can be done on marginally bad days.

I hit a bad snap after moving here and was not productive in my for-pay work. I had the urge to see something moving forward and was determined to arrest a potential slide into depression by accomplishing something. I worked little-by-little over the course of two weeks to declutter and redecorate our main living areas. We had acquired a few antique decorator items in the previous few months, which sat piled and added to the clutter. My mom had collected quite a few baskets and pottery items over the years from second-hand stores that were lined up in various cubbies looking like clutter.

I took the few new things we had purchased and reorganized the rest of the items that were already in the house for a whole new look, worthy of a do-it-cheap decorator show on HGTV. (Without television, I find a precise comparison difficult.) The house is gaining a whole new Craftsman look for the first time in many decades, thanks to a few purchases and to my mom's love of pottery and wicker.

We walk through the house and feel great satisfaction. The effect on our mental health is subtle but definite and the effect carries through to good days and bad days, improving them all in a small way.

Laughing Structures

When I first talked to one of our doctors about my postpartum depression he told me that I needed to laugh more. He suggested I get some funny books or movies. I was a bit disgusted because, after all, if I could laugh I probably wouldn't be depressed. But that's the response of a depressed person.

The fact is that the process of laughing changes us. You cannot laugh a big belly laugh and not feel better than you did before that laugh. Even in the depths of depression when you are not likely to laugh a big belly laugh, it's hard not to chuckle over very funny material.

Find some very funny material that will at least start the chuckling. The belly laughs will follow as you feel better. And get DVDs and videos. Depressed people don't tend to have the focus to read. Let the television do the work for you and focus on enjoying the humor.

The structure for you is to find the material and have it available in your house for very bad days and in the evenings when you need to unwind. In that event, your content is controlled and you are not going to find yourself watching mindless television that otherwise does nothing for you. (I am the expert on mindless television-watching, which is why we don't have cable or satellite television service anymore.)

Here are my picks:

- **Johnny Carson Classics**. My mom says that this love was passed down to me with my vitamin and mineral inheritance. I'm a third-generation Johnny Carson lover.

- **The first few seasons of *All in the Family***. Few people can beat Carroll O'Connor and Jean Stapleton. Some of the episodes tug at your heart strings but, in the main, the show is hilarious. Carroll O'Connor died in the middle of my depression and it was some time before Sander informed me.

He didn't want to send me into a down-cycle, knowing how much I love Carroll O'Connor's humor and acting.

- **Anything with Redd Foxx**. I doubt that he could be anything but funny. I laugh out loud and my sides begin to ache when I watch him.

- **Anything with Ellen DeGeneres**. She's still alive so you can watch her every weekday afternoon on television if you are lucky enough to have cable, satellite service, or a good antenna. Tape the show each day and watch it to wind down or, if you are TV-less, grab a DVD of her stand-up comedy shows.

Strategic downtime

Think about what makes you feel good, even in small, subtle ways. On your good days, try to establish structures so that on your bad days you have more feel-good experiences.

I like the smell of eucalyptus. It reminds me of my grandma and grandpa's house in Teviston. The house was poor in just about everything, but it was rich in eucalyptus and at least three generations of Roses carved their names into the "Rose Tree" across the street until the tree was harvested for fire wood by its owner. It's best not to memorialize a tree on someone else's property. I smile every time I smell eucalyptus. It's such a small thing, but it is an easy structure for me to set in place. I can make eucalyptus sachets, candles, soap, swags, or just about any other craft. It may help no one else in the house because they have no association with the Rose Tree, but I will smile. And when my sister visits we can smile together and make eucalyptus candles.

I also love fresh air. It is nice that there are strong health reasons for fresh air because now I have double the reason to increase fresh air in my house: it makes me smile and it keeps my body from working as hard to filter out indoor air toxins. Pleasant

smells and fresh air are both "uplifts" for me and for many other people.

Completing a task is the third most common "uplift" that people experience, according to the flagship article in the field (Kanner et al. 1981). It is third after relating well to spouses or lovers and after relating well with friends. Completing a task will make you smile. And if that task is one that will help you smile day after day, you will have established a structure in your life that will increase your "uplifts." Over the course of your life if you continue to establish these structures, you will be healthier than you would have been otherwise. It really is that simple. And it's much like the mountain of sand sitting outside my bedroom. If I just carry two buckets a day of sand to its final destination, by the time this book is published no one but my neighbors will know how long that mountain sat there.

Building structures for life

We have so many opportunities to build health-promoting structures. The building just requires a slight mind-shift, some planning and preparation, and some start-up dollars in some cases. Some structures will even save money.

Think about what structures are in place in your life that may be harming your health. Put them on the list to work on during your good days. You will be surprised at how many things you can change in the course of one year.

Some structures are even great to implement on bad days. Body care structures can be great bad-day activities. A soothing Epsom salt bath will allow your body to absorb magnesium and, while bathing, you can hydrate your arms and legs with olive oil. You can try cleansing your face with olive oil in the way I describe in the body care chapter. A long, hot bath can work wonders. If it is also providing you with magnesium and helping you avoid conventional soaps and lotions, you've saved that much more nutrition from being used up on detoxifying your body.

Be advised that this new thinking will change you. You will not be able to add anything new to your house or to your lifestyle without giving some thought to the impact it may have on your health. You might decide: to heck with the health effect, you want it anyway. In that case, at least you've done an informal cost-benefit analysis in your head.

Progress is the key. Add progress to a 30-year plan and we might really get something done.

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