

## Care and Feeding of Growing Gobblins

Your nutrition has a big influence on how you feel and develop. If you want to look and perform like an athlete, maybe you should eat like one?

### Important Note

If you have food allergies or other medical conditions, please discuss dietary changes with your doctor or a dietitian. There are many individual variations, one size does not fit all. Just a few keywords of what can go wrong:

lactose intolerance, gluten intolerance / celiac disease, food allergy (for example peanuts), diabetes, histamine intolerance, fructose intolerance, sensitivity to fermentation in the gut, irritable bowels ...

I cannot see what happens inside you or give you a set meal plan. You must take control. Learn and think about nutrition and find out how you feel after eating (or not eating) certain foods.



See references and additional comments on the book web site.

## You are what you eat

**Everything that makes up your body comes from what you eat and drink.**

You can't pull nutrients out of thin air. By extension, you are what your prey ate.

If the animals you eat were fed garbage, they will pass it on to you.

## SAD Nutrition

Look around you – obesity, diabetes and heart disease are all too common among Big'uns. Way too many kids need braces and don't breathe properly, as their jaws did not develop properly to leave space for their teeth. Cavities in your teeth may be a sign that you are not getting the minerals you need. Was this nature's plan for us? I doubt it.

Food should nourish you, not leave you ravenous or sleepy afterwards.

SAD? "Standard American Diet". Chances are that the new generation will *not* live as long as its ancestors. Don't be a part of this statistic.

## Modern Times vs. Tradition

It is impossible for scientists to determine what is the best nutrition. Experiments are not practical. They would take too long – years or decades – and are difficult from an ethics point of view. You cannot knowingly feed people a harmful diet. There is an alternative: observe what has worked in real populations, and what didn't.

In the 1930s, dentist Dr. Weston A. Price undertook expeditions all over the world - not an easy thing to do back then - to explore the dental health and bone structure of many different tribes. He found that people eating a modern diet often had dramatically worse teeth and facial structure (which influences breathing) compared to those eating their traditional, ancestral diet. He pinned the blame on deficiencies of micronutrients (mainly vitamin D, activator X = vitamin K2, calcium, phosphorus, etc.).

He may have underestimated the influence that breast feeding and chewing tough traditional food have on the development of the jaw. Nose breathing and good oral posture may be additional pieces of the puzzle.

For example, the traditional lifestyle in the Swiss mountain valley of Lötschental included the following:

- Sourdough rye bread. This was often stored for months, think “oversize hockey puck”. Chewing this hard bread gave the jaw a good workout.
- Cheese and fresh dairy. Plenty of minerals and fat-soluble vitamins.
- Veggies and some potatoes – whatever they could grow on their meager soil.
- A little meat, maybe once a week. They couldn't afford to waste anything, so they probably ate “nose to tail”, not just choice cuts.
- Plenty of mountain sun, no vitamin D deficiency here.
- Plenty of hard farm work on steep mountainsides.
- Mineral-rich spring water.

By contrast, people down in the main valley ate soft, white bread, sugary jams, and the like. They brushed their teeth religiously, but guess who got the cavities and crooked teeth ?



Read “Nutrition and Physical Degeneration” by Dr. Weston A. Price. See the book website for a link to an electronic version.

## Food as Fuel

Our bodies are amazing chemical factories. We can extract energy and building materials from a wide range of foods. When old cells are broken down, the amino acids and fats they are made off are recycled. Even waste products such as lactic acid are converted back into glucose that your body can use. Nothing to eat? Your body can convert fat into ketones to fuel your energy-hungry brain and convert fat and amino acids into glucose (gluconeogenesis).

## Macros

Short for **macronutrients**. These are the nutrients that we consume in large amounts (tens to hundreds of grams per day). Your food is composed of these main components:

- Protein
- Carbohydrates
- Fats
- Fiber

## Micros

Short for **micronutrients**. These are **vitamins** and **minerals** that we consume in small amounts (micrograms to grams per day).

For example, if you don't get enough vitamin C, you could develop scurvy. Without sufficient vitamin D, your bones will not grow properly (rickets).

I will make the bold assumption that you will grow better if you get an ample supply of essential nutrients from a nutrient-rich diet.

## Energy balance

Food gives us energy to live. This energy is usually measured in calories (kcal). We use energy to:

- Just stay alive and warm (**BMR** = basal metabolic rate).
- Do everyday activities (**NEAT** = non exercise activity thermogenesis).
- Exercise (**EAT** = exercise activity thermogenesis).

- Digest food – some energy is needed to digest what you eat (**TEF** = thermic effect of food).
- Grow – just your normal growth, or growth stimulated by your training.

There is a balance between the energy we take in by eating, and the energy we use in our daily life.

If you don't eat enough, your body will slow down your metabolism to save energy and break down body fat (good) and eventually muscle (not good) for energy. Once you have used up all reserves, you die from starvation.

If you eat just enough, your weight will remain stable.

If you eat more than you need, your body will speed up your metabolism a little bit, invest some energy in growth, and squirrel away the rest as body fat to keep you warm through the next snowstorm or famine.

Today snowstorms are countered by central heating, and famines are rare with food depots overflowing with “nutritious” choices.

It is a fine line... Fortunately, your body will tell you what you need, if you haven't forgotten to listen to its signals.

There is a famous nutrition study done by pediatrician Dr. Clara M. Davis. She let a group of young children decide by themselves what and how much to eat from a selection of *healthy* foods. While their choices were not always what Big'uns would put on a menu, the kids instinctively ate a well-balanced diet when averaged out over time, and thrived very well.

## Overfed, but Undernourished

Your body will try to get the essential nutrients that it needs. Not enough protein, essential fats, vitamins or minerals? You will be hungry for more. If you eat processed food that is energy dense, but poor in nutrients, you will have to eat an excessive amount of calories to get essential nutrients, and get fat in the process.

**Energy density**? I could demolish a 100g bag of potato chips rather swiftly, and be ready for more. Eating 700g of boiled potatoes would give me the same amount of energy (but more nutrients), and leave me stuffed.

If you eat **real food** that is dense in nutrients, but not in energy (e.g. meat and vegetables), you will probably be healthier and lean. Your choice !

## Healthy Bodyfat ?

While too much body fat is considered unhealthy, and can hinder your athletic performance, trying to be too lean is not desirable either. Males can stay healthy at a very low bodyfat percentage. Females need a bit more body fat to maintain a normal menstrual cycle.

Keep in mind that individual builds vary greatly. Don't let simplistic numbers like the **body mass index (BMI)** drive you crazy. According to this formula, I am slightly overweight at times. As a lifter I take this as a personal challenge – add some more muscle to qualify as obese ...

If you have a sturdy frame with some Troll blood mixed in, please don't try to turn into a skinny Elfin doll. Stay fit and find your own sweet spot that lets you feel and perform well.

As a growing Goblin, try not to get fat, but don't obsess about having a shredded six-pack all the time either. Your body will grow better when you don't starve it. If you want to get ripped, you can do so later. An old bodybuilder saying goes:

*You can't polish a pebble.*

## Inertially Challenged ?

If you really do have excess inventory to lose: Always get a generous supply of protein and sufficient essential fats to allow for growth of lean body mass. Reduce the overall energy consumed just a little below your stable or maintenance point. For long term fat loss, try to lose around 0.5% of your bodyweight per week. Slow and steady wins the race.

Lift weights regularly to tell your body that you want to keep your muscles. If you train as hard as you should, fat losses could be offset by muscle gains.

Ignore short-term weight fluctuations ! Do *not* change your diet based on a single weighing. Your weight can vary quite a bit depending on your bowel contents, hydration, glycogen storage, salt etc. Get on the scale each morning after your first visit to the “loo” and calculate a weekly average.

Be *very* patient, and trust the process !

## Exercise to lose Weight ?

How much energy would it take to lift a ~ 40 kg / 90 lb Goblin from sea level to the top of Mt. Everest ?

$$400 \text{ N} \times 8848 \text{ m} \sim 3.6 \text{ MJ}$$

This is equivalent to just one kilowatt hour of electricity, or about 860 calories. The energy in less than three pounds of body fat would be enough to lift our hapless Goblin to the edge of space (about 100 km up, assuming you have a suitable bean stalk and oxygen mask handy).

Your body is not 100% efficient, but that's a *lot* of climbing to lose a little bit of weight. Activity is good, but I hope you will agree with this saying:

*You can't out-exercise a bad diet.*

Instead of doing hours of ~~slave labor~~ cardio exercise, eat sensibly and lift weights to build muscle, which will raise your base metabolic rate and use energy all the time.



## Eat to Grow ?

To add muscle, your body needs:

- Protein
- A little bit of fat
- Some energy
- Water

If your body thinks that it is starving, it will not expend scarce energy on growing muscle that will use up even more energy. It will be more willing to grow when you are in a slight energy surplus.

If you find it difficult to get enough energy in, you can take in more energy-dense fats, and drink calories (for example, whole milk + protein + some fruit + a little nut butter).

Keep in mind that growing muscle is not a fast process. If you overeat consistently, you will just add more fat. Muscle tissue contains surprisingly little energy compared to body fat (lean turkey breast about 1100 calories per kg). Again, slow and steady wins the race.

## Protein

*I love animals – they're delicious.*

*(seen on a bumper sticker)*

Your body cannot thrive, and certainly not grow muscles, bone, and skin, without a sufficient supply of essential amino acids supplied by protein. Active growing Gobblins should aim for 1.5 to 2g of protein per kg (0.7 to 1g per lb) of body weight.

Protein provides 4 calories of energy per gram, but it takes a lot of energy to digest it. Your body will use amino acids as building blocks first, as they are not an efficient energy source.

### **Good protein sources include:**

- Meat (most species, preferably grass fed, not processed or cured - even better if you have to chew a bit, or gnaw it off the bone)
- Fish (often rich in good Omega 3 fats)
- Eggs (whole, for example as scrambled eggs)
- Milk, cheese, yoghurt
- Lentils, beans, peas

### **Protein sources that I avoid:**

- Processed meat (some consider the added nitrates a cancer risk)
- Pork (they don't get the best feed – you are what your prey ate)
- Soy (some consider soy to influence hormone balance)
- Protein bars (expensive candy, witches brew of ingredients).
- Ready-to-drink protein (expensive, rarely the best quality protein, packed with preservatives and other nasties).

### **Protein first - include a protein-rich food with each and every meal.**

If you cannot get enough protein with your regular meals, drink a good quality protein powder mixed with water or milk.

- Whey protein digests quickly, for example before or after training. Casein / milk protein digests more slowly and may be better at night.
- Vegans should consider a protein blend (for example, pea + rice protein). Single component vegetable proteins usually don't include all essential amino acids in the right proportions.



## Fats

*If olive oil is made from olives, what is baby oil made from ?*

Fat is a very dense energy source – each gram provides 9 calories of energy. A single pound of fat can keep a Goblin going for about two days. Even a lean person – say 10% bodyfat – still has plenty of energy in reserve.

Kids can metabolize fats at a faster rate than most Big'uns, comparable to well-trained athletes. Maybe this is a superpower you should try to keep ?

Besides protein, we need essential fatty acids to survive. Omega 3 fats are particularly important for your health and brain development. Omega 6 fats are also considered essential, but they should be in a reasonable balance to Omega 3 – usually we get more than enough.

### **Good fats:**

- Fat from fish (high Omega 3 content)
- Fat from meat (preferably grass fed)
- Fat from whole eggs
- Milk fat (butter, milk, cheese, preferably raw and not homogenized)
- Extra Virgin Olive oil
- Avocado and coconut
- Nuts and nut butters (use sparingly, like a condiment). Read the labels: peanut butter should be made of peanuts and salt, *nothing* else.
- Seeds such as sunflower, pumpkin, flax seed. Watch out for phytic acid (see the page on antinutrients).

### **Fats that I avoid:**

- Hydrogenated / hardened oils like margarine and shortening. They are pure evil, a source of harmful trans-fats.
- Vegetable oils like peanut, sunflower, canola etc. They are heavily processed, and considered by some to promote inflammation. They contain Omega 6 fats that we get more than enough of.
- Most fried foods, as they are typically made with the cheapest fats.

I use butter and olive oil for my cooking. I don't deep-fry anything.

## Fiber

*Your gut: Resistance is futile – you will be assimilated.*  
*Fibers: Keep trying...*

Food fiber is a form of carbohydrates that is not easily digestible, and does not provide much energy. That does not mean that it is useless !

- The bacteria in your gut love fiber.
- Some fiber in your diet provides bulk for easier elimination and helps keep your colon clean.
- Fiber-rich foods are more filling, and slow down digestion of carbohydrates.

### **Some good sources:**

- Vegetables
- Whole fruit

### **Fiber sources to be careful with, as they contain antinutrients:**

- Lentils, beans, peas
- Nuts and seeds
- Whole grains such as oatmeal

## Antinutrients

There is an important “gotcha” about some foods widely considered healthy, such as whole grains. Minerals and vitamins are concentrated in the husk and germ of grains. Unfortunately, so is **phytic acid**, which hinders the absorption of minerals like iron.

The phytic acid content can be reduced through traditional cooking techniques like soaking, germination, or fermentation. For example, the process of traditional sourdough bread making greatly reduces phytic acid. Another way is to get rid of the fiber altogether, for example by milling white flour or polishing white rice.

The effect of phytic acid can be reduced by taking in some vitamin C (ascorbic acid from food or supplement sources) at the same time. Eat oatmeal with fruit, add some kimchi to your rice etc.

Plants don’t necessarily want to be eaten, so they create toxins like **lectins**. Lentils and beans must be soaked and cooked properly.

Some veggies are also out to get you. Spinach and Swiss chard are loaded with **oxalates**, especially when raw. Sweet potatoes and dark chocolate (sigh) are also high in oxalate. A sufficiently large dose could kill you. A smaller, but frequent dose could contribute to kidney stones (deposits of calcium oxalate). They won’t kill you, but you might wish you were dead. Minerals like calcium and iron will bind to oxalic acid and get excreted, so the nutritional value of spinach is overrated. If you can squeeze open the can with your hands like Popeye, you probably won’t need any boost from the spinach ...

## Water of Life

Just like Humanlings, Goblins cannot survive for long without water.

The color of your urine gives you “too much information” on your hydration status. If it is water clear, you may be drinking too much. If it is light yellow, you are doing fine. If it is darker, drink more.

### Good drinks:

- Mineral-rich water (tap, bottled water, or remineralized filtered water).
- Diluted fruit juice. A little dash goes a long way.
- Herbal tea.
- Fruit and vegetables include a lot of water.
- Milk, if you tolerate it. Don’t “go mad = Gallon of Milk a day”.

### Avoid:

- “Dead” reverse osmosis or demineralized water.
- Soft drinks of any kind. You don’t need the sugar or extra acid. Diet soda may not have any calories, but the acid will still attack your teeth.
- Straight fruit juice – sugary rocket fuel, even if it is 100% natural.
- Sports drinks with lots of sugar and artificial coloring. If you want electrolytes, you can get them for less silver in the form of salt and minerals.
- Energy drinks, “pre-workout” supplements or coffee – as if small Goblins weren’t lively enough?
- Alcohol of any kind.

I recommend drinking water with a high mineral content. Read the labels. Some examples from my local market:

- Eptinger: 475 mg Calcium / 107 mg Magnesium per liter.
- Gerolsteiner: 348 mg Calcium / 108 mg Magnesium per liter.
- Evian: 80 mg Calcium / 26 mg Magnesium per liter – weak.

At my office, the tap water is somewhat icky, so I drink bottled water. At home, I drink chilled tap water. If you ask your local water works nicely, they will tell you the average mineral content of their water.

## Vitamins, Minerals and your Bones

Once upon a time, Goblins could get all the nutrients they needed from their natural foods ...

... until Humanlings came along and industrialized agriculture.

Researchers say that the mineral content of many foods has declined precipitously over the last century due to soil depletion.

Your body needs a steady supply of minerals like calcium and magnesium, combined with adequate levels of vitamins D and K2 to grow strong bones and teeth. What you build in youth and early adulthood is important. Later in life, bone loss is more typical than growth.

Besides your nutrition, your physical activity also influences the strength of your bones. If you mechanically stress them through vigorous movement or weight training, your body will adapt by making them stronger.

In my opinion, the growth of your fingernails is a good indicator on whether you get the protein and minerals that you need. Nail biting may just be a nervous habit, but it could also be a sign that your body is desperately trying to get nutrients any way it can.

If you drink milk, calcium supply should not be a problem. A magnesium deficiency is more likely. Vegetarians and vegans need to pay more attention, as the phytic acid in many plant foods will hinder the absorption of minerals.

Pay particular attention to vitamin D. It is vital for the health of your bones and teeth. Your body can create it in your skin if you get enough direct sunlight. Most of us are holed up in our caves and covered up with clothes too much of the time. I'm afraid the blue light from screens doesn't cut it. If you have dark skin, it will take a **lot** of sun exposure for your body to make enough vitamin D. Consider supplementation mandatory.

When you are not covered up, worried Big'uns will often slather you with a chemical marinade (also known as sunscreen) before putting you out on the ~~grill~~ beach. This may stave off sunburn to a point, but will also hinder the natural production of vitamin D.

Please note that excessive doses of vitamin D can be toxic. Don't go overboard. If you are worried, take a blood test to check your vitamin D level, and use a vitamin D calculator to adjust your intake accordingly.

## Supplements

But surely you should be able to get everything you need out of a balanced diet ? I have a challenge for you ...

Use a nutrition tracker app like Cronometer and try to put together a daily diet that covers the recommended intake of all vitamins and minerals, without supplying too many calories. It can be done, but it isn't that easy (especially if you are veggie phobic).

Besides real, wholesome food, I would suggest:

- Natural vitamins from food are probably superior, but I take a daily multivitamin as insurance against deficiencies. If you don't like pills, you can get them in gummy bear disguise.
- Supplement vitamin D3 and K2 separately. The dosage in typical multivitamins is too conservative. I get them in oil form and take them with whole milk.
- Unless you eat lots of fatty fish, take good quality fish oil capsules (or yummy cod liver oil) for Omega 3 fats. Vegetarians can try algae oil.
- Add protein powder if you don't get enough from your regular food.
- If you train hard, creatine monohydrate could be useful.

Other supplements ? Save your silver, and leave the proudly priced, gaily packaged pills and powders to grown-up Humanlings.

## RTFL (read the friendly labels)

Humanling feed usually comes with a nutrition label on the package. If you know how to read them, you can avoid particularly evil foods, even if they are not marked with the skull and crossbones sign like they should.

As an example, let's look at the chocolate food group (here in Switzerland it almost counts as one) in more detail.

On the left, milk chocolate as favored by most Lil'uns. It consists of mostly sugar, and about 30% cocoa. Most of the cocoa is in the form of cocoa butter, in other words pure fat.

In the middle, we have "high octane" 80% dark chocolate. Most kids shy away from the intense, not so sweet taste. Let it be known that antioxidants and other goodness are in the dark cocoa mass. Come join me on the dark side !

Finally, the cocoa powder that I use to flavor my protein drinks. Who would have thought that this is a decent source of fiber and protein ?

100g Milk Chocolate	100g 80% Dark Chocolate	100g Cocoa powder
Energy 528 kcal	Energy 583 kcal	Energy 316 kcal
Fat 30 g (saturated) 18 g	Fat 46 g (saturated) 29 g	Fat 11 g (saturated) 7 g
Carbs 57 g (sugars) 56 g	Carbs 27 g (sugars) 20 g	Carbs 14 g (sugars) 0.3 g
Protein 7 g	Protein 9 g	Fiber 31 g
Sugar, cocoa butter, skim milk powder, cocoa mass, sweet whey powder, butter fat, hazelnuts, soy lecithin, natural flavoring.	Cocoa mass, sugar, cocoa butter, soy lecithin, vanilla extract.	Protein 25 g Cocoa powder.

Energy – this tells you how many calories / energy this food gives you.

Carbohydrates – often split out in sugars (beware) and fiber (good).

Protein – bring it on.

Fat – depends on what kind it is. Read the ingredient list ...

The ingredient list shows the different contents in order of percentage. They often hide the ugly truth by including different kinds of sugar as separate items. E numbers refer to assorted wondrous food additives. Some are harmless, others not so much.

Take a close look at the labels the next time you forage for grub. Some ingredients that make me put the box back on the shelf:

- partially hydrogenated or hardened fat, such as shortening
- too much sugar (sugar, dextrose, corn syrup and so on)
- preservatives - if it won't rot, can you digest it ?
- artificial food coloring
- carageen (considered by some to be inflammatory)
- mono sodium glutamate / MSG

There, I emptied the basket for you. You're welcome !

## Power Food Secrets

Some nutrition tips by a lazy and frugal cook:

- **Shocking news:** Vegetables are indeed fit for consumption by Goblins of all ages. No cooking skills required. For a nice “V Bomb”, cut up some zucchini, leek, broccoli, *non-toxic* ‘shrooms, red onions and bell peppers. Add some garlic to fend off pesky vampires or Humanlings. Feel free to substitute, everyone is entitled to hating *some* veggies. Use a bamboo steamer (available at Asian food stores or online) over a pot of boiling water. Goes down easy with a little sour cream, hummus, guacamole, whipped cream cheese or nut butter. Use some spice salt if you want to save calories.
- Instead of sugar bomb “fruit” yoghurt, add a teaspoon or two of high fruit / low sugar jam to plain yoghurt.
- Get raw milk if you have access to it. In some places it is illegal, known as “moo-shine”. I regularly bike to a farm store with a milk vending machine. As this is “living food”, there is a small risk of bacterial contamination. I am still alive and kicking despite not heating it to 70°C like you are supposed to. Just think of what mothers feed their babies with – *raw* breast milk – the horror !
- Cottage cheese is a good and inexpensive high protein snack.
- Liver (beef, chicken, lamb) is cheap, packed with nutrients, and tasty if not overcooked. I eat it about once a week.
- Commercial salad dressing is made with the cheapest possible ingredients. I make it fresh – 3 teaspoons of extra virgin olive oil, about 1 teaspoon of balsamic or apple cider vinegar, garlic powder, freeze dried herbs, chili flakes and salt.
- I don’t eat out for lunch. That would be an expensive habit here, and I prefer to control what I put into my body. I cook some turkey or ground beef in the morning, and warm it up in the microwave. Season with some salt or whole grain mustard. Add some salad and feta cheese for a high protein, low carb lunch.
- Lest you think I’m some sort of Goblin monk – on many days I eat 50g of dark chocolate (80% cocoa, so this is just 10g of sugar), and I also have a little stash of chocolate ice cream in my freezer. A *little* bit of sugar should not kill me.

## Food Empowerment

I sense a little bit of unrest in the audience.

### **Do you actually eat like that ? Sounds kind of boring...**

Yes, really. I can't be bothered to spend a lot of time in the kitchen to prepare my daily fuel ration.

By eating a consistent diet, I don't have to count calories. To lose weight, I reduce or eliminate a few things. To gain weight, I add more yummy and nutritious stuff.

You are welcome to add more variety, spice foods up a bit more etc.

### **I want pizza !**

You can eat it, just not all the time.

Don't fall into the "all or nothing" trap. Look at what you are eating, and consider healthier alternatives. You don't need perfection, just reasonable consistency.

### **I starve if I don't eat carbs !**

You didn't eat anything all night, so your body should be ready to burn fat. Try a breakfast rich in protein and fats, but low in carbs, for example scrambled eggs with some meat or fish. You may be pleasantly surprised by how long your energy will last.

If you stuff yourself with carbs all the time, your body will rarely see a reason to burn fat.

### **I don't like eating breakfast !**

No problem. Try not to get on the carb roller coaster with snacks, and make sure you get enough protein over the course of the day.

### **We only have junk food at home !**

Your Big'uns don't like to throw out perfectly good food all the time. If all you ask for and eat is junk food, then they will buy perfectly bad food for you.

*Ask, and ye shall receive ...*

... wholesome food, that is. Just make sure to actually eat some of it, otherwise you will soon be back to square one.

**I don't want to eat dead animals !**

Then don't. If you eat a vegetarian diet with some dairy and eggs, you will get a good supply of nutrients and protein.

As a kid, I was a bit ahead of my time and ate a vegetarian diet for environmental reasons. I would have grown better on a more nutrient rich diet. I hope you will do your nutritional homework better than I did.

**I eat plant based !**

Who will eat all the grass we can't digest ? What about grassland that is not suitable for plant crops ? Who will fertilize the soil with their generous droppings ?

If you eat a vegan diet, you *really* need to do your homework. Use a nutrition tracker to see what micronutrients you take in. In the end, what matters is what your body *absorbs*. Typical issues:

- You will need to supplement Vitamin B12, which is mostly found in animal foods.
- Vitamin D is mostly found in animal sourced food. You will need to supplement unless you are out in the sun a lot.
- Vitamin K2 – eat some natto. It tastes even worse than it looks.
- Calcium – it is difficult to get enough from plants. Keep in mind that phytic acid and oxalates contained in many plant foods will hinder the absorption of minerals. Special cooking techniques like soaking or fermentation should be used to reduce their impact. Otherwise, your bones and teeth could suffer.
- Iron - the absorption of iron from plant sources is much worse than from animal sources / heme iron, further diminished by phytic acid.
- Omega 3 essential fats. You can get a good amount of ALA (alpha linoleic acid) from flax seeds, but the conversion to the forms that count for brain development (EPA and DHA) is not good. Consider algae oil.
- Protein – plant-based foods just aren't very protein dense, which means that you will have to eat a lot to get enough protein. You need to combine different protein sources to get a balanced supply of all essential amino acids.

Are you still determined to stick to a vegan diet ? I admire your conviction, and hope that your body won't have to pay a price for it.

**We don't have silver for healthy food !**

Compare the price of plain oatmeal (about \$0.70 per lb in expensive Switzerland) to the much higher price of sugary breakfast cereal packed in a colorful cardboard box. Healthy staples don't have to be expensive, and simple homemade food will be less expensive than eating out.

I rarely buy proudly priced brand name "foods" with ominously long ingredient lists, expensive advertising, and a suspiciously long shelf life.

Bulk whey protein powder (in 1 kg or 2 lb bags) is less expensive per gram of protein than meat.

**My Big'uns don't cook !**

Then head to the kitchen and get busy. You don't have to make an elaborate production of it.

**School lunches are evil !**

Take control - you decide what you eat. Bring your own food.

**Cooking takes too much time, let's go get "Instagrub" !**

Please add up the time:

- Go to the fast-food place.
- Wait in line, get your order taken.
- Wait for the food.
- Go back home.
- Eat, then throw away a mindboggling amount of packaging.
- Spend more time at work to earn the silver needed to feed and groom the noble family steed, buy Instagrub, and pay the medic when Instagrub wasn't that healthy after all.

**How do you save time ?**

(Slow food aficionados, please close your eyes)

Overlap cooking and eating.

- I empty the dishwasher while preparing my lunch in the morning.
- My rice cooker can cook while I lift.
- Get the water boiling while I prep the veggie bomb.
- Eat a salad while the steamer and the skillet are working.
- Eat ~~dead animal~~ protein.
- Eat veggies when they are ready.
- If you get bored while cooking, you could always knock out some pushups or pull-ups while the food cooks.

Some people cook ahead for a week. I am a bit sensitive to histamine, so I prefer to cook fresh each day.

-  Cookbooks for your Big'uns:
- “Nourishing Traditions” by Sally Fallon for ancestral slow food.
  - “It takes Guts” by Ashleigh VanHouten about cooking with organ meats.

## Body Image

You have probably seen plenty of images of impossibly fit, strong and muscular men and women. Let them inspire you, but *please* don't compare yourself to them.

- They have been training and eating consistently for years on end. Tristyn Lee says that he had no cheat meals for 4 years. I believe him.
- They picked the right parents and are “genetically gifted”.
- They eat a very restrictive diet to get “shredded”.
- They don't look like this all the time. The photos were taken with optimal lighting when they looked their best.
- Some of the photos are filtered or edited.
- They may also be taking magic potions of dubious legality.

Instead, compare yourself to what you looked like a year or two ago. Are you getting stronger? Can you perform better? Then you are on the right track.

## Magic Potions

Steroids or similar? Don't even think about them, at least until you are well past puberty, and have trained seriously for 10 years or so.

 **Don't flood your body with extra hormones that will quickly disrupt your hormonal balance, sometimes permanently.**

Despite my age and modest genetics, I can still get natural gains with hard training and good nutrition. If I can do it, you can. Resist the quick fix.

## Puberty

*Youth is wasted on the young.*

Consider it your own, personal, free supercharge cycle - do not waste this once-in-a-lifetime opportunity.

**Eat, train and rest right to build a strong foundation for the rest of your life.**