

Week 3:

Increase Nutrient Density



Aim: Seek out more nutrient dense options in your diet by eating nose to tail animal proteins

The Gist: Look for opportunities to increase organ meats, meat off the bone, bone broth, or seafood for a more complete selection of nutrients

What to expect? Reduced inflammation, reduced pain, better recovery, increased energy and better all-round health

Offaly Good for You!

Despite impressive food and medical technology, nutrient deficiency is common in the industrialized world. As humans have moved away from an ancestral eating pattern, towards a processed diet high in process factory farmed meat, refined carbohydrates, sugar and industrial nut and seed oils, our health has suffered.

'More than half of Americans are deficient in zinc, calcium, magnesium, vitamin A, vitamin B6, and vitamin E, according to a 1997 survey. Approximately one-third are also deficient in riboflavin, thiamine, folate, vitamin C, and iron. In many cases, these aren't mild nutrient deficiencies; up to 50 percent of Americans consume less than half of the recommended daily allowance (RDA) for several micronutrients.' – Chris Kresser

Bear in mind that the recommended dietary allowance is based on the amount of a specific nutrient to **avoid** disease or deficiency rather than optimal dietary intake, which is likely significantly higher. Our bodies have evolved to assimilate the majority of our nutrients from food where possible, which is why seeking out nutrient dense foods is important for optimal health. Nutrient dense foods have benefit over supplements in helping us avoid overconsuming certain nutrients which have high toxicity threshold. For example our bodies are better able to regulate high vitamin D intake from food, but taking a vitamin D supplement, is more likely to cause vitamin D toxicity.




Organ meats, meats off the bone, cold water fish and shellfish, are in the highest category of nutrient density, which is why they should return to being a vital staple in the diet.

Organ Meats

While you might not be keen on eating animal offal like brain, liver or kidney, eating such foods is a fast track route to better health. Offal or organ meats are the most nutrient dense foods on earth, and were a prized staple in ancestral diets.

Pound for pound there is no comparison, and for ultimate health these foods need to return to our diets. In traditional cultures organ meats were highly sought after and our ancestors let nothing go to waste, eating the entire animal nose to tail, and often reusing bones for cooking broths and stews. Organ meats are rich in folate, B12, B6, and choline, and the skin cartilage and bones of animals, is are rich in glycine.

Organ meat is the most concentrated source of just about every nutrient, including important vitamins, minerals, healthy fats and essential amino acids. As you can see from the chart organ meats (liver in this example) significantly outrank fruit and vegetables by many orders of magnitude for any key nutrients. Organ meats are rich in many of the nutrients that are deficient in the modern population like vitamins A, B's, Vitamin C and D

ORGAN MEATS VERSUS FRUITS AND VEGETABLES			
100 gram portion			
vitamin A	7*	10.602	261*
vitamin B1	0.02	0.2	0.063
vitamin B2	0.02	4.1	0.13
vitamin B6	0.07	0.91	0.2
folate	4	217	108
vitamin C	8	23	64.9
niacin	0.1	10.7	0.553
pantothenic acid	0.08	4.57	0.616
magnesium	6	20	21

'One serving of beef liver (about 3.5 ounces) typically contains more B12, niacin (B3), vitamin D, retinol (vitamin A), zinc, iron, potassium, phosphorus, and EPA and DHA than the same amount of blueberries or kale, which are two of the most nutrient dense plant foods.' – Chris Kresser 14/4

Arguments for Organ Meat

- Superior nutrient density than muscle meat and plants
- Bioavailable source of nutrients and cofactors in a package your body is naturally programmed to digest and assimilate (as opposed to supplements)
- It's more sustainable and good for the environment to use the whole animal
- Affordable - you only need to eat a small amount; these parts are often not highly sought after and cheaper than muscle meat. Grass fed, organic organ meat liver is often cheaper than muscle meat.

Seafood & Shellfish

Seafood and shellfish are wonderful sources of key nutrients like iron, copper, selenium, zinc and magnesium, and a great source of long-chain omega-3 fats, EPA and DHA which are beneficial for heart, brain and overall health. While seafood or shellfish is an acquired taste, eating just one serving a week is enough to make a marked impact on overall nutrient intake. For example a single 200-calorie serving of oysters would more than meet zinc needs for the entire week.

DHA is the most important omega-3 fatty acid found exclusively in seafood. DHA is a powerful anti-inflammatory and essential for good heart and brain health. Both DHA and EPA have been shown to decrease heart disease risk by decreasing inflammation, increasing membrane fluidity, and positively changing gene expression. Focus on eating fish with high levels of EPA and DHA such as salmon, mackerel, herring, sardines, anchovies, and bass, as well as shellfish like oysters, clams, and mussels.

A common misconception is that we can meet DHA needs from plant sources. Plant oils contain precursors to DHA like alpha-linolenic acid (ALA), but the conversion of ALA to DHA is extremely poor in humans. Less than .0% of ALA is converted to DHA in healthy people, and that conversion is even worse in people who are chronically ill or those with nutrient deficiencies because the conversion of ALA to DHA depends on zinc, iron, and B6.

If you are worried about mercury levels in seafood, it's not necessary. Although mercury levels in fish are potentially harmful to our health, the high levels of selenium in seafood are protective against mercury levels. Selenium has a protective effect due to it's high binding affinity with Mercury, and when bound together they create a new substance which isn't easily absorbed in humans. [You can read more here.](#)

Bioavailability

Animal protein is more bioavailable than plant protein, so it makes sense that we should eat a healthy variety of animal products. While certain foods may have a high nutrient profile, the bioavailability of our food refers, to how available those nutrients are to us through digestion. We don't absorb every single nutrient from the food we eat, particularly if we are stressed or suffering poor health.

For example we need about 8-12 mg of dietary iron daily, only about 85-90% of that is absorbed. The absorption rate of iron is dependent on the source and what else is consumed with it. Heme iron is only found in animal products, and is much better absorbed than non-heme iron, which comes from plant sources. Iron absorption is **decreased** by substances such as tea, coffee, eggs, oxalates, polyphenols. Phytate, zinc and medication, whereas vitamin C, beta-carotene, stomach acid and HCL supplements) sugar and alcohol can **increase** the amount of iron absorbed from our diet!

Nutrient Density and Bioavailability of Foods – Chris Kresser

HIGH	MEDIUM	LOW
Organ meat	Whole grains*	Refined grains (i.e.bread, pasta, crackers, etc.)
Meat, wild game and poultry	Legumes*	Sugar
Fish and shellfish	Plant fats and oils**	Industrial seed oils
Eggs	Animal fats and oils**	Processed food and snacks
Fruits	Dairy products	Sugar-sweetened beverages
Vegetables		Artificial ingredients
Nuts and seeds*		Alcohol
Herbs and spices		Natural sweeteners

* Whole grains, legumes, and nuts and seeds contain substances called "nutrient inhibitors" that impair the absorption of some of the nutrients they contain.

** Plant and animal fats are relatively low in nutrients, but they play other crucial roles, including helping us to absorb the nutrients in other foods.

Methionine & Glycine

The modern diet is high in muscle meat and eggs, which can cause a dominant intake of amino acid methionine. Excess methionine intake can cause neurological symptoms, elevated homocysteine which increases inflammation and our need for vitamins folate, choline and B6, and B12. An elevated intake of methionine in the absence of adequate glycine had been associated with increased disease risk, oxidative stress and reduced longevity.

Glycine helps balance out high intake of methionine from muscle meats, and assist in improving sleep quality, joint and fascial health, reduced inflammation, and improved mood and cognitive function. Glycine is abundant in gelatinous cuts of meat, meat eaten off the bone, and rich bone broths. You can read more on just how important and miraculous [bone broth can be for your overall health here](#).



Just Do it!

Humans have evolved to eat meat, and we perform best when we do, it's how we evolved to grow big strong brains! If you want to read more about the ethics of eating sustainable animal produce, and how it compares to a vegan or vegetarian diet, check out the work of [Liarre Keith, and her book 'The Vegetarian Myth: Food, Justice and Sustainability'](#). Liarre is a former vegan, and her work may surprise you in regards to the negative environmental impacts of choosing a vegan diet.

As a former vegetarian for years in my teens, incorporating much of the above information has been challenging but essential in regaining my health. If you are suffering less than optimal health, you need to consider making the above foods a staple in your diet. I took the above picture awhile back to appreciate just how much my diet had changed when I was eating oysters and broth for a huge nutrient boosted meal.



Quality matters for both your health, and the environment. Always do your best to support sustainable and ethical farming produce, because [food quality matters](#).

Easiest ways to increase these important nutrients

- Cook up some gelatinous bone broth, and have a small cup each day for this week [check out our recipe here](#). Try beef bones, chicken bones and for the most gelatinous broth, use chicken feet.
- Just one servings of Oysters or clams a week will significantly boost nutrient density
- Roast a chicken, or some drumsticks or wings, and eat the meat off the bone
- Have a lamb roast and again, eat the parts close off the bone.
- Add some cold water fatty fish like salmon, mackerel, sardines, anchovies, to meals
- Grab some organic liver, or salmon Pâté by 'Offaly Good Foods' from us as a nutritious snack with carrot or celery sticks
- Whip up some beef or chicken liver, brains or tongue with onions
- Add some [grass fed collagen powder](#) to meals to increase glycine intake. It's tasteless and mixes extremely well. We use this in drinks, soups, porridge, coffee etc.
- If you truly can't handle the idea of liver, you can buy [desiccated dried liver capsules](#) here



Tips & Tricks

- Check out Fegari's seafood in Hampton St, Hampton for the very best in wild caught seafood and shellfish
- Try Offaly good liver, or Salmon Pâté, locally and sustainably made and available across Melbourne or through us for \$15 a jar.
- If you don't want to make your own bone broth, check out the Broth Sisters
- Hagens Organics (multiple locations & delivers) makes organic drumsticks and chicken wings seasoned in organic, gluten and dairy free flavouring.
- [Check out this page for some great ideas and recipes for more offal](#)