

## Autonomous practice/Hacking

What you need to share:

- **a working title**

How does the government control our health?

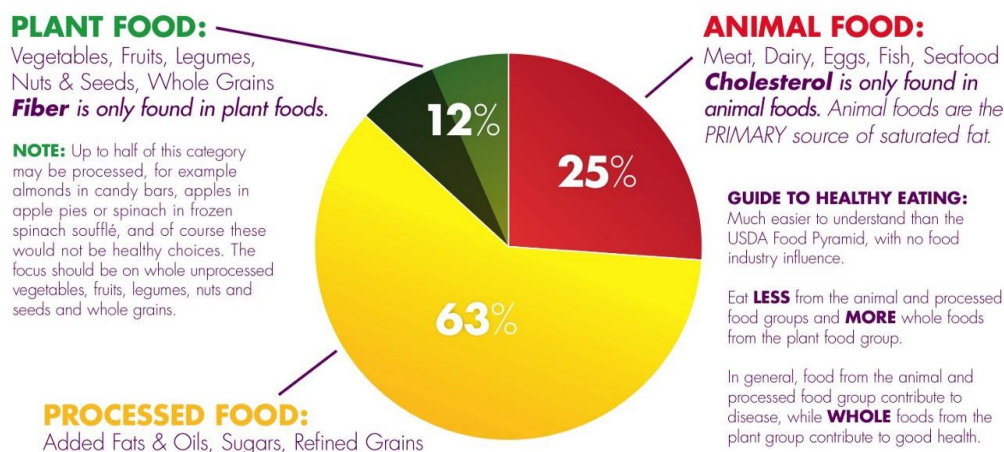
- **answers to the WHAT HOW WHY questions:**

What is government doing to influence our health?

Providing food industries with the options to make the food more tasty/unhealthy, by adding more salt, sugar, MSG, edible chemicals, oil, etc. That can influence people's health if the fast foods are consumed on a regular basis, that also benefits the government because people will end up looking to spend more money on health care.

- 1) <https://www.youtube.com/watch?v=LXWQ-hFuLU>
- 2) <https://www.youtube.com/watch?v=wPIHuXYI8v0>
- 3) <https://www.youtube.com/watch?v=uEJwbGBrXfk>

## U.S. FOOD CONSUMPTION AS A % OF CALORIES



Source: USDA Economic Research Service, 2009; [www.ers.usda.gov/publications/EIB333](http://www.ers.usda.gov/publications/EIB333); [www.ers.usda.gov/Data/FoodConsumption/FoodGuideIndex.htm#calories](http://www.ers.usda.gov/Data/FoodConsumption/FoodGuideIndex.htm#calories)  
New York Coalition for Healthy School Food \* [www.healthyschoolfood.org](http://www.healthyschoolfood.org)  
Special thanks to Joel Fuhrman, MD, author of *Disease Proof Your Child: Feeding Kids Right* \* Graphics by MichelleBanda.com  
© 2009, New York Coalition for Healthy School Food

How are they achieving that goal?

By advertising more fast-food options everywhere! Social media, street signs, newspapers, mail, bus stops, etc. They are practically leading people into an infinite cycle of crisis.

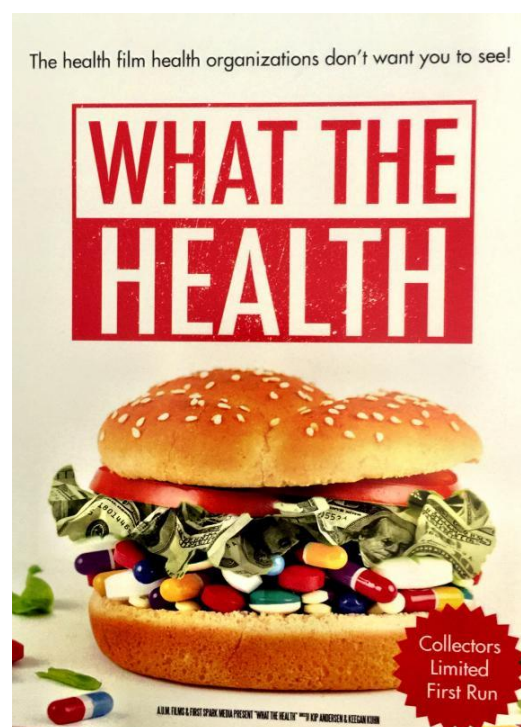
Also, by manipulate the product and making it look more pleasing to the eyes of the viewer, the food industries manage to make even more profit by practically lying to the buyers. By playing with the image of a product the food industries are manipulating the content of a package, make your expectations higher than what the actual product is worth. Marketing is the key to make more money and the food industries manage to find ways to make the food look more appealing and drawn to the consumer.

<https://www.youtube.com/watch?v=3gEOP8Th478>



Why are they making people sick?

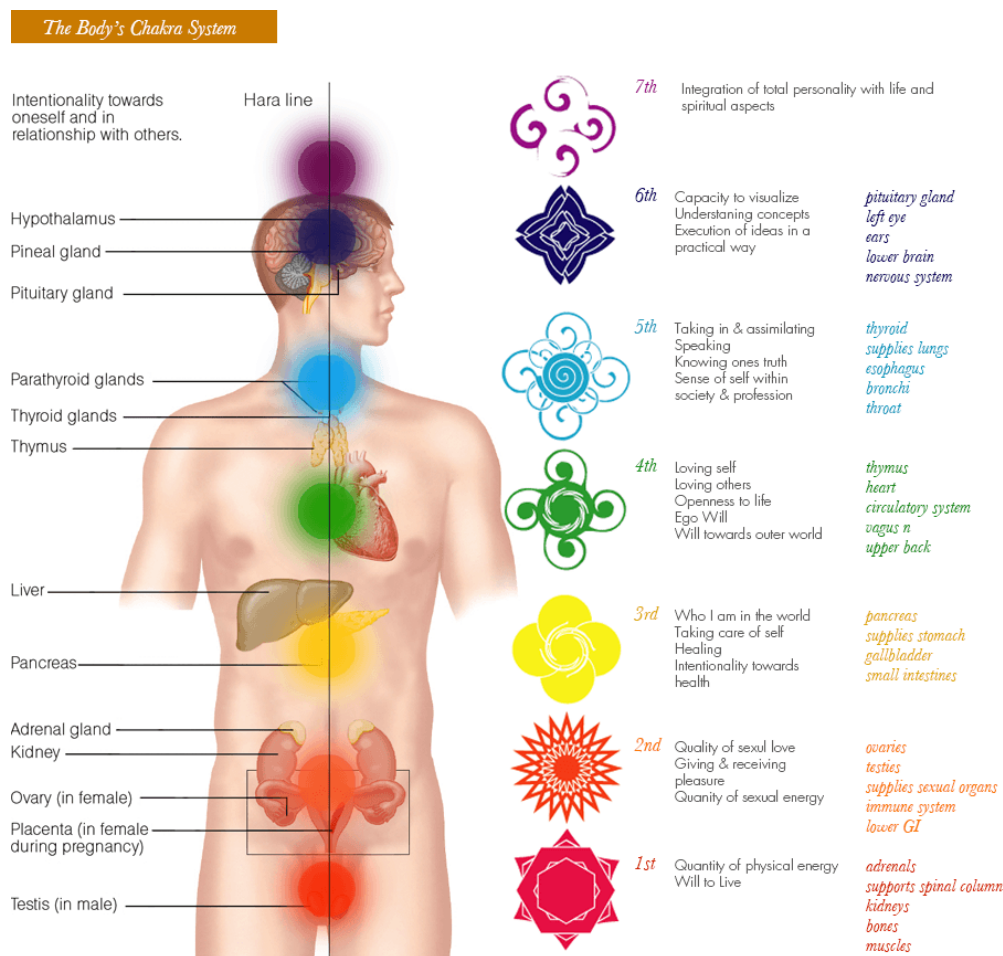
Of course, for the most obvious reasons. Addicting food makes people purchase more, which means more money for the economy of a country. More addicting food being consumed, means easier access to influence a person's health, that most of the times leads to long term conditions, sickness, cancer, etc. More money equals better economy. Also, all the chemicals that are added to the food in order for it to be tastier and last longer are extremely bad for frequent consumption.



**- what is your work? what are you making? what is the subject? what is the form?**

My goal with this project is to manage to find a way to hack that system, by providing the consumers of a new solution to their problems. Our bodies are amazing tools and somehow, they can provide us with signs that we are lacking vitamins or sleep for example. I want to create an app that can help people listen to their body when its sick instead of wasting hundreds of euros to provide themselves medical attention or drugs. This way, hopefully they will be able to adapt a healthier lifestyle that will not only give them more energy, but also make their quality of life even better.

I am planning to analyse the organ system of the human body and make a mini mapping of the body that will connect each pain/organ with a specific treatment. So practically I will do intense research on the human body and map out the areas that I find most likely to be treated with a change of diet.



**- how did you make it? how are you making it? how will you make it? (experiments and prototypes you have been working on / are planning to work on)**

How many times have you googled signs of a sickness? And how many of those searches gave you the option to either go to the doctor, or ask for drugs to cure it? My idea to create this app will not only provide you with natural solutions to overcome sicknesses, but also will give you motivation for a healthier lifestyle.

<https://www.youtube.com/watch?v=Nnf1qB-Jb9Y>



### - why did you make? /why are you making it?

I know that for any type of sickness there is a natural way to get past it. For example, eat more fruits with many vitamins, or make plenty of smoothies, or detox juices, etc. I want to help people see that medicine is not always the best solution. Only when it's really necessary.

For this reason, I want to create a health care app that can keep in track your meals, your calorie input, vitamin input, how to boost your system etc.

- 1) <https://www.bbcgoodfood.com/howto/guide/are-smoothies-good-you>
- 2) <https://www.healthline.com/nutrition/healthiest-juice#3.-Beet>
- 3) <https://www.nebraskamed.com/primary-care/how-superfoods-work-plus-a-list-of-best-superfoods>



### - how does your work connect to hacking?

My work will directly attack the food industries and the government. This app will be a solution for people to be able to save money on their care. Taking care of your health will help to improve your quality of life. Not only because you will notice changes in your attitude and everyday routine, but also because it will give you motivation to keep taking care of yourself. By providing this app to the community, a big number of income will be cut off from the government because they won't be able to provide as much health care as before. Food companies will most probably think again their position in the market, and most of all, will provide their customers with healthier options.

Your research and making should be intertwined:

- form a research question for this year
- share the research you have already done (include artistic references and other references that have inspired you)

- 1) <https://naldc.nal.usda.gov/download/CAT89912433/pdf>
- 2) <https://health.clevelandclinic.org/why-are-certain-foods-so-addictive/#:~:text=But%20processed%20food%20companies%20can,Chocolate.>
- 3) <https://www.medicalnewstoday.com/articles/324847>
- 4) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5020160/>

## How is plastic affecting animals?

Plastic has already entered the food chain. Animals carry microplastics in their bodies. When they are themselves eaten, those microplastics are also ingested. This process is called 'trophic transfer' of microplastics. Since one animal eats another, microplastics can move through the food chain. The main question is what happens to the toxins and chemicals that are associated with these plastics.

When plastic ends up in the environment, it tends to bind with environmental pollutants. With plastic that moves through the food chain, the attached toxins can also move and accumulate in animal fat and tissue through a process called bio-accumulation. In addition, chemicals are often added to plastic during the production process, to give them some desired properties. These chemicals can in turn leak from the plastic, even when that plastic is inside the body of an animal.

Plastic is by no means the only way that toxins, such as PCBs and dioxins, end up in the food chain. The role of plastic in bioaccumulation of toxins is quite small compared to exposure via the animals' normal food. Animals that excrete swallowed plastic may actually cleanse their bodies because toxins present in the body have attached themselves to the plastic.

The number of individual animals affected by plastic would be very difficult to estimate but would run into the billions. Attempts have been made to determine the number of species affected. In 2015, Dutch researchers found that the number of marine species that swallow or get caught in plastic had doubled since 1997: from 267 to 557. This number is now above 2000, with the caveat that only a very limited number of animal species have been investigated. It is even more difficult to determine whether plastic threatens the survival of a certain species, let alone the influence of plastic on the food chain.

Swedish scientists have shown that nanoplastics can enter the brains of fish through the food chain and lead to abnormal behaviour. Nanoplastics in algae are eaten by water fleas, which in turn are food for fish. This is how plastic particles move through the food chain. In contrast to the fish that were not fed nanoplastics, the fish that did eat them showed abnormal behaviour: slower eating and hyperactive behaviour. It was a laboratory study, but the accumulation of plastic in living organs can also take place in nature, especially if the animals live for a long time. Fish that swim slower are easy prey. In this way, plastic can disrupt the natural balance.



## Foods that Contain Microplastics

### 1. Fruit and vegetables

Researchers at the University of Catania, Italy, discovered tiny plastic particles in fruit and vegetables like carrots, lettuce, apples, and pears.

Apples had one of the highest microplastic counts in fruit, with an average of 195,500 plastic particles per gram, while pears averaged around 189,500 plastic particles per gram. Broccoli and carrots were shown to be the most contaminated vegetables, averaging more than 100,000 plastic particles per gram.

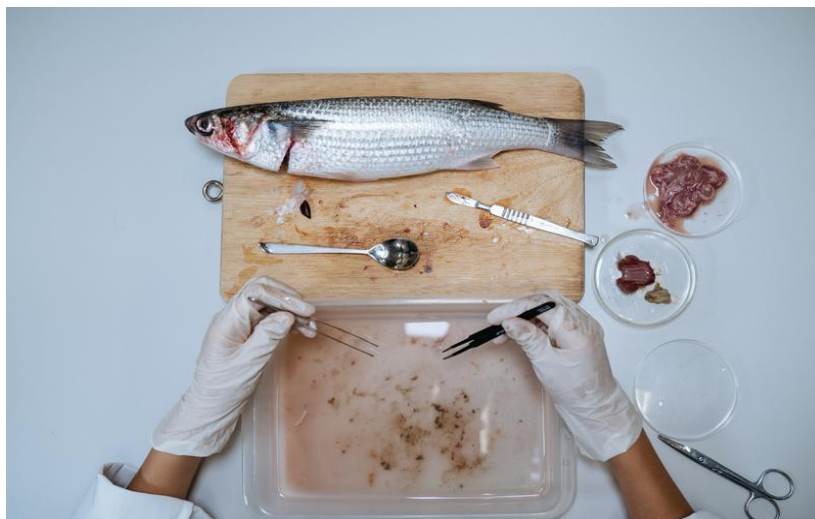
### 2. Salt

Hong Kong's Consumer Council has found microplastics in 20% of the tested salt product samples in April of 2020. One hundred and fourteen to 17,200 milligrams of microplastic were found per kilogram of salt tested. Some tested samples even show that microplastics come from the disposable Polypropylene (PP) packaging.

Over 90% of the 39 sampled salt brands sourced from 21 countries were found to contain microplastics according to a 2018 study co-designed by Incheon National University, South Korea, and Greenpeace East Asia. Salt containing microplastics is still available in supermarkets, grocery stores, or online shops. Based on international research, it is possible that humans may be consuming around 20,000 microplastic particles a year with an average of ten grams of daily salt intake.

### 3. Flathead Grey Mullet

Microplastic fragments were discovered in 60 percent of wild flathead grey mullets examined by The Education University of Hong Kong in 2018, with an average of 4.3 plastic fragments per wild mullet. One even ingested 80 pieces. More plastic fragments were found in saltwater fish and grey mullets bought from different fish markets.



#### 4. Tea

Microplastics aren't just found in the food we eat, but also in the beverages we drink. Tea, for example, contains microplastic. This is because teabags are heat-sealed using polypropylene plastic, to stop tea bags from breaking. Other brands use plastic mesh tea temples in place of paper-based tea bags. The good news is that some brands have started to phase out the use of plastic in their teabags. Check out my post on plastic-free teabags for an updated list for 2021.

#### 5. Rice

Fancy a side of plastic with your curry? A 2021 study found that microplastic is found in packaged rice. Regardless of whether the rice was packaged in paper or plastic, the type of packaging made no difference. And worryingly, pre-cooked rice (such as sachets of microwavable rice) contains four times as much plastic. The takeaway here is to try to avoid instant rice, and instead cook your own.

The researchers tried a number of methods to see if they could reduce the concentration of microplastic in rice. They found that shaking the rice in its packaging made no difference in the concentration of plastics. However, they did hit top tip gold. Washing your rice before cooking reduces plastic contamination by 20 to 40%.

#### 6. Fish & Shellfish

Unsurprisingly, samples of fish and shellfish contain microplastic. Zoologists believe that this has come from fish ingesting microplastics found in water or on the seafloor, or by ingesting prey that have previously ingested microplastics themselves. Commercially farmed fish are also likely to be fed fishmeal that inadvertently contains microplastic.

Not all seafood is equal though. Since microplastics usually start out in an animal's gut, seafood which includes the animal's stomach, like mussels, oysters, shrimp, prawns, and other filter-feeding sea life, may be more likely to contain higher levels of microplastic.

#### 7. Honey

I think the most worrying find on my microplastic and food research mission was finding out that honey contains microplastic.

Bees are the most infinitely complex and fascinating creatures. The bodies and legs of bees are covered in thousands of tiny hairs. When bees are in flight, these tiny hairs become positively charged. This is partly because of the friction of the air against the bee. When a positively charged bee lands on a flower, it attracts the negatively charged pollen grains. These grains then naturally stick to the bees' hair.

It's a whole world of wonder. And you're probably wondering where the microplastic comes into play? Well, it's not just pollen that the tiny hairs on bees collect and hold. These positively charged hairs also attract other matter. Traditionally this would have been bits of plant matter or dust, but it seems that bees are now also attracting airborne plastic. This plastic gets taken back to the hive, and consequently ends up in honey.

Where or who you buy your honey from seems to have little impact on the concentration of microplastic in each jar. One team of Danish scientists studied bees from hives located in different settings. Some hives were located in a city, and other hives were located in suburban and rural areas. It was anticipated that the bees located in urban areas would present the highest counts of microplastics. This is because urban areas contain the highest densities of microplastics. And indeed, the city bees did have the highest counts of microplastics. However, the surprising find was that the counts of microplastics on suburban and rural bees were not much lower. This highlights the role of wind in dispersing microplastics.





<https://www.npr.org/sections/thesalt/2016/03/25/468622469/artisanal-plastic-japans-fake-food-is-a-real-art>



Tim Noble and Sue Webster

PLASTICIZERS, chemicals added to plastics to make them softer, sturdier, and more flexible, are creeping into fast food, according to a new analysis.

A new study out Tuesday reports that far too often, small amounts of industrial chemicals called phthalates (pronounced THA-lates), which are used to make plastics soft, have been found in samples of food from popular outlets including McDonald's, Pizza Hut and Chipotle.

Hamburgers, fries, chicken nuggets, chicken burritos, and cheese pizza were all found to have some plasticizers.

These franchises were selected for their ubiquity across the United and because they offered samples across the categories of burgers, pizza, and Tex-Mex. The lab tested for 11 kinds of plasticizers using gas chromatography mass spectrometry.

They searched for two ortho-phthalates linked to reproductive health problems and found one of them in 81 percent of foods sampled and the other in 70 percent. They found DEHT in 86 percent of the food items where they looked but the pizza and burritos were not sampled for that chemical.

The concentration of plasticizers was less in pizza, and the fries managed to escape DEHT contamination.

The study found harmful chemicals in a majority of samples collected. Phthalates are linked to health problems, including disruption to the endocrine system, and fertility and reproductive problems, as well as increased risk for learning, attention and behavioral disorders in children.

#### NEW STUDIES: MICROPLASTICS FOUND IN FRUIT AND VEG

Microplastics are contaminating the fruit and vegetables we eat, according to two separate scientific studies published this week.

According to the first peer-reviewed study by University of Catania scientist Margherita Ferrante, apples are the most contaminated fruit while carrots are the vegetables most affected. Published this week in the journal Environmental Research, the report calls for an urgent review of the effects of microplastics on human health.