NUTRITION

BY ELLY

SUPPORT YOUR IMMUNE SYSTEM

A simple, educational guide to boost your immune system

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ABOUT

A simple, educational guide to boost your immune system

Hello! My name is Elly, and I am a clinical nutritionist. I have a bachelor degree in Nutrition Bioscience, and have training in clinical genetics. I work at a clinic called iDNA Health where I have now worked with just over 100 clients.

My number one passion, is preventative health and at iDNA Health I use my patients genetics, to screen their risk of disease and screen for food intolerances.

We are currently all undergoing hardships due to the Covid-19 pandemic and I couldn't help but want to do my part and help by creating this to provide you with some healthy tips to prevent poor immune health in such a crucial time.

In this ebook, you will find evidence-based information that is sourced from journal articles and scientific literature only. The information focuses mainly on the immune system, foods to include more of to support immunity, shopping hacks, tips to support gut health, and a few immune boosting recipes.

Please stay healthy and safe.

Enjoy!

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Program

THE IMMUNE SYSTEM

FOODS TO SUPPORT THE IMMINE SYSTEM

SUPPORT YOUR GUT

SHOPPING HACKS

STRESS

WHAT TO AVOID

RECIPES

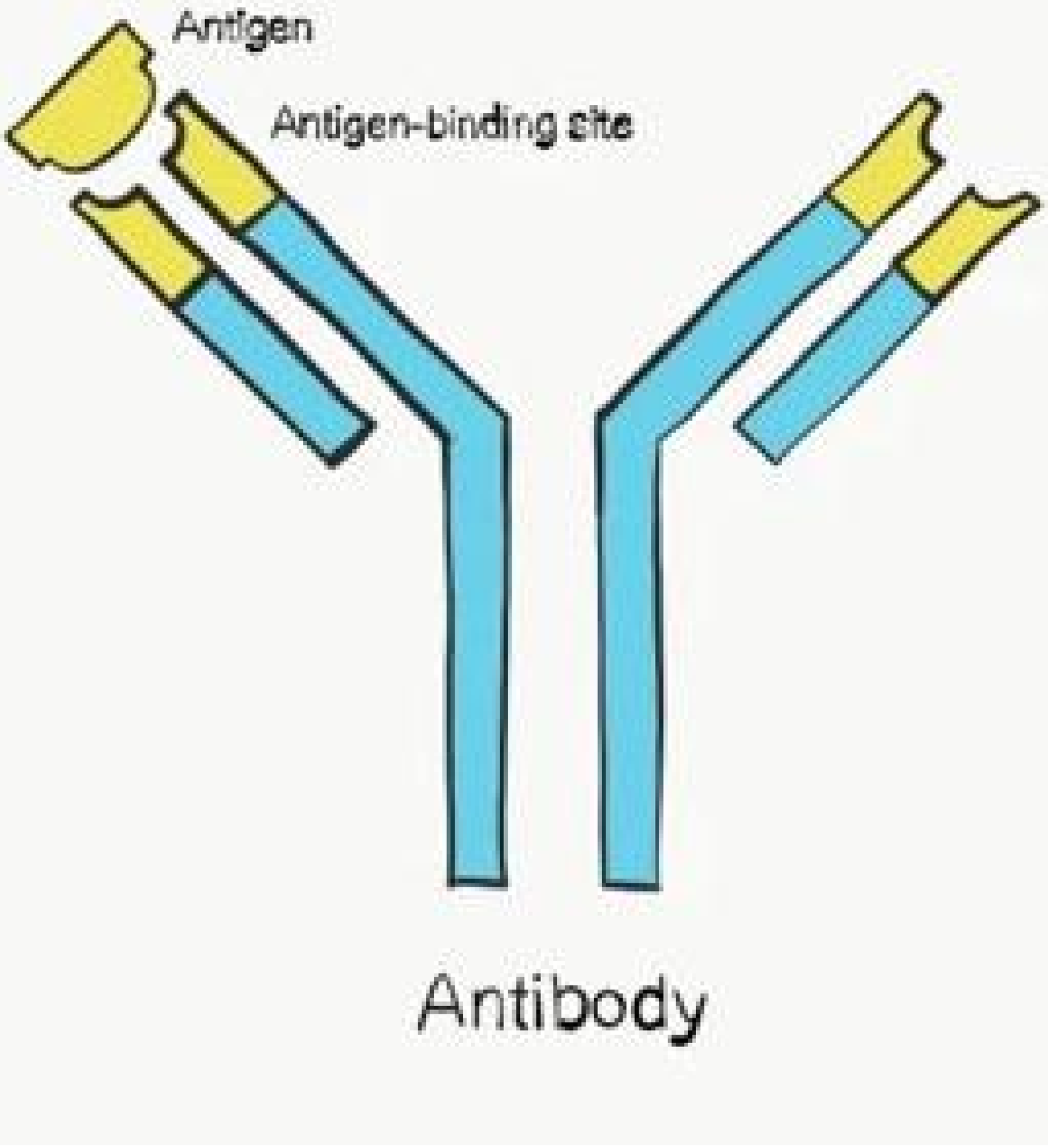
THE IMMUNE SYSTEM

Our immune system is a busy network of lymphoid tissue and organs, cells, humoral factors and cytokines. How easily we are able to resist and recover from disease relies largely on how well our immune system is functioning.

The immune system functions to protect us against the effects of the microbial pathogens that we are exposed to daily, as well as help us to react against foreign substances and cancer cells.

The immune system is able to communicate throughout the entire body. When invaders are detected, messages are sent out, warning that the body is being attacked, causing an inflammatory immune response. The invaders are known as antigens.

THE IMMUNE SYSTEM



Antibody

One of the main immune responses when it is under attack, is to produce proteins that help to fight off the antigens. These proteins are called antibodies.

In order for our immune systems to work correctly, the immune system must know which cells are good cells and which are bad. Antibodies are designed with specific binding sites that only bind with certain antigens (see picture above). They ignore "good" cells and only attack the bad ones.

The immune system also has important cells that perform specific functions. These cells are found in the blood stream and are called white blood cells, they are what help us heal.

THE IMMUNE SYSTEM

Other important cells in our immune system:

- B cells - B cells are also called B lymphocytes. These cells produce antibodies that bind to antigens and neutralize them. Each B cell makes one specific type of antibody. For example, there is a specific B cell that helps to fight off the flu.

- T cells - T cells are also called T lymphocytes. These cells help to get rid of good cells that have already been infected.

- Helper T cells - Helper T cells tell B cells to start making antibodies or instruct killer T cells to attack.

- Killer T cells - Killer T cells destroy cells that have been infected by the invader.

- Memory cells - Memory cells remember antigens that have already attacked the body. They help the body to fight off any new attacks by a specific antigen.

THE IMMUNE SYSTEM

PLEASE CONSULT YOUR GP ON HOW ELSE TO SUPPORT YOUR IMMUNE SYSTEM IF YOU ARE DIAGNOSED WITH ANY OF THE BELOW.

IS YOUR IMMUNE SYSTEM COMPROMISED? IT COULD BE COMPROMISED IF YOU HAVE:

- An autoimmune disease: In cases of immune system over activity, the body attacks and damages its own tissues (autoimmune diseases). Autoimmune diseases decrease the body's ability to fight invaders, causing vulnerability to infections. By ensuring you are eating non-inflammatory foods, you can support your immune system during risk of infection. You could genetically screen for gluten, lactose or casein food intolerances as these could be making your inflammatory response more aggressive. You could also screen your blood vitamin D levels under the guidance of your health practitioner, to see if supplementation may be necessary to strengthen your immune system.

- Removal of the spleen: The spleen is the body's largest filter of blood and is an oval shaped lymphatic tissue and it contains a quarter of the body's lymphocytes. It functions to filtrate blood, perform phagocytosis, recycles iron, and captures and destroys pathogens. If the spleen is removed, it is likely that some immunity will be compromised.

- A current virus, fungal infection or bacterial infection: The immune system will be fighting a current infection so immunity will not be optimal. Aim to include the foods within this ebook to boost the immune system and make an appointment with you GP.

- Cancer: Your white blood cells will not be as abundant and will lead to a weaker immune system. Please see your GP for guidance in supporting your immune system.

- Inflammatory bowel disease (IBD): IBD makes the immune system attack the lining of the intestines, This causes episodes of diarrhoea, rectal bleeding, urgent bowel movements, abdominal pain, fever, and weight loss. Due to the aggressive inflammatory response in your gut, your immunity will be weaker when exposed to invaders. Your gut microbiome will likely be compromised, which usually assists the immune system with fighting off invaders.

- Taking immune suppressors.

FOODS TO SUPPORT THE IMMUNE SYSTEM

VITAMIN B'S

Vitamin B deficiencies have been associated with humoral antibody formation. Those presenting with suboptimal immunity, under stress, taking the oral contraceptive pill, or drinking excess alcohol, may be at risk of vitamin B deficiency, and benefit from taking a vitamin B complex under the guidance of your GP or health practitioner.

If your practitioner advises you should supplement with a vitamin B complex, it is important to know, they are most useful when every single B vitamin is activated.

MEAT

LENTILS

LEAFY GREENS

ALMONDS (WITH SKIN)

EGGS

AVOCADO

MILK

FATTY FISH

CHICKEN

FOODS TO SUPPORT THE IMMUNE SYSTEM

VITAMIN D

Vitamin D is a potent immune modulator with countless studies highlighting this role. There is considerable evidence to support its prescription in a number of autoimmune conditions, cancer or HIV as is evident the improvements in patient outcomes.

In humans, vitamin D is obtained by two distinct pathways:
1. Vitamin D synthesis in the skin
2. Dietary intake.

SUNLIGHT

FORTIFIED CEREALS

BEEF LIVER

EGG YOLK

FATTY FISH

MILK OR
FORTIFIED ALMOND MILK

FOODS TO SUPPORT THE IMMUNE SYSTEM

VITAMIN C

Decreased vitamin C leads to decrease immune function as well as increased risk of microbial infection. Vitamin C is rapidly expended during infection or stress. High amounts of vitamin C is found in the leucocytes, the white blood cells that are involved in defending the immune system.

BLACKCURRANTS

ORANGES

LEMON

MIXED BERRIES

KIWI FRUIT

TOMATO

BROCCOLI AND CAULIFLOWER

SPROUTS

CAPSICUMS

FOODS TO SUPPORT THE IMMUNE SYSTEM

VITAMIN A

Vitamin A performs an important role in immunity through its modulating effects. Deficiency is associated with a number of immunological alterations including reduced function of neutrophils, macrophages and killer cells (all important when there is an invader in our body).

COD-LIVER OIL

FORTIFIED CEREALS

EGGS

ORANGE AND YELLOW VEGGIES

BROCCOLI

FORTIFIED MILK

FOODS TO SUPPORT THE IMMUNE SYSTEM

ZINC

Zinc is highly important for immunity and influences both innate and acquired immunity. Zinc functions as a co-factor in the body for many immune-dependent responses.

RED MEAT

FORTIFIED CEREALS

NUTS

OYSTERS

BAKED BEANS
(REDUCED SALT)

CHICKPEAS

FOODS TO SUPPORT THE IMMUNE SYSTEM

SELENIUM

Selenium is an essential trace element found in high amounts in the immune tissues such as the spleen and lymphatics. Selenium functions as part of the selenoprotein enzymes to regulate both innate and acquired immunity and insufficient selenium will compromise both of these. Deficiency in selenium is associated with loss of immune competence.

BRAZIL NUTS

YELLOWFIN TUNA

CHICKEN

FOODS TO SUPPORT THE IMMUNE SYSTEM

TURMERIC

Turmeric, a spice that has long been recognised for its medicinal properties, has received interest from both the medical/scientific world as it is the major source of the polyphenol, curcumin.

It aids in the management of oxidative and inflammatory conditions, metabolic syndrome, arthritis, anxiety, and hyperlipidemia (meaning, the blood has too many fats such as cholesterol and triglycerides). It may also help in the management of exercise-induced inflammation and muscle soreness, thus enhancing recovery and performance in active people.

Antioxidant and anti-inflammatory properties are the two primary mechanisms that explain the majority of the effects of turmeric. Turmeric has been shown to improve systemic markers of oxidative stress, which is a great help to the immune system.

FOODS TO SUPPORT THE IMMUNE SYSTEM

GARLIC

The health benefits of garlic have been proclaimed for centuries. Garlic helps support the immune system due something it contains, called allicin.

Studies have shown, that garlic appears to enhance the functioning of the immune system by stimulating certain cell types, such as macrophages, lymphocytes, natural killer (NK) cells, dendritic cells, and eosinophils, by mechanisms including modulation of cytokine secretion, immunoglobulin production, phagocytosis, and macrophage activation.

FOODS TO SUPPORT THE IMMUNE SYSTEM

GREEN TEA

Green Tea is rich in an anti-oxidants called Polyphenols. Polyphenols are efficient infection fighters. They protect the body against potential viruses, infections and sickness.

SUPPORT YOUR GUT

Keeping a delicate balance in the immune system by eliminating invading pathogens, while still maintaining self-tolerance to avoid autoimmunity, is critical for the body's health.

The gut microbiota that resides in the gastrointestinal tract provides essential health benefits to its host, particularly by regulating immune homeostasis (regularity). It has also recently become obvious, that alterations of these gut microbial communities can cause immune dysregulation, leading to increased risk of autoimmune disorders.

HOW TO SUPPORT GUT HEALTH:

EAT THE RAINBOW

30G OF FIBRE PER DAY

EAT PREBIOTIC FOODS

EAT FERMENTED FOODS

KEFIR
(CAN GET DAIRY FREE)

AVOID ANTIBIOTICS UNLESS NECESSARY

30G OF FIBRE EXAMPLE

Breakfast: Cereal and fruit

1 Cup Freedom foods Buckwheat and Quinoa Cereal flakes

1 Cup Milk

1 Banana

Lunch: Macro Bowl

1 Cups leafy greens
1 Tomato
1/2 Cup brown rice
1/2 Cup lentils
1 Tin of tuna
Lemon and olive oil dressing

Dinner: Chicken Stir Fry

1/2 cup rice noodles
80g Chicken Breast
1 Cup mixed vegetables
Teriyaki sauce

YOU CAN TRACK YOUR INTAKE WITH AN APP: EASY DIET DIARY

SHOPPING HACKS

LOOK OUT FOR THESE- ALL OF THESE PRODUCTS ARE FULL OF FIBRE AND PROMOTE A HEALTHY IMMUNE SYSTEM AND LOTS OF COLOURS TO PRODUCE AN INFLUX OF BENEFICIAL GUT BACTERIA FOR A HAPPY GUT MICROBIOME. AIM FOR 30 DIFFERENT PLANT SOURCES OF FOOD PER WEEK.

WHAT YOU NEED TO KNOW ABOUT STRESS & THE IMMUNE SYSTEM

A focus of many scientific studies, has been to understand the link between stress and the inflammatory response of the immune system. There is acute inflammation and chronic inflammation.

Acute inflammation, is a adaptive response to a physical injury or infection, such as if you cut yourself, your immune system will react to heal the wound.

However, chronic inflammation is caused when inflammatory response lingers due to untreated infection or injury, leaving your body in a constant state of alert, which can also be triggered due to your environment such as irritants, chemicals, pollutants, food intolerance, and is secondary to long-term stress. Chronic inflammation has been linked with numerous diseases, including infectious illness, cardiovascular disease, certain cancers and autoimmune diseases.

The central nervous system, endocrine system, and immune system are complex systems that all work together. Stressful life events and the negative emotions they cause, can dysregulate the immune response by disturbing the sensitive communications among these systems. This can cause negative impacts on inflammatory processes, wound healing, and responses to infectious agents and other immune challenges.

STRESS AND INFECTIOUS DISEASE

It is also worth noting, that although there currently isn’t any well known studies based on the corona virus risk and stress, there has been a long association between psychological stress and susceptibility to the influenza, or the common cold. It is said that stress suppresses the host resistance to infection and increases rates of infection.

Research has also shown, that mindfulness-based approaches, and relaxation techniques should be provided at an early stage of stress to support the immune system.

SUMMARY OF STRESS & THE IMMUNE SYSTEM

- Acute inflammation: is a adaptive response to a physical injury or infection.

- Chronic inflammation: is caused when inflammatory response lingers due to untreated infection or injury, leaving your body in a constant state of alert.

- The central nervous system, endocrine system, and immune system are complex systems that all work together that can become disrupted due to stressful life events and the negative emotions they cause,

- Stress can cause negative impacts on inflammatory processes, wound healing, and responses to infectious agents and other immune challenges.

- Studies have shown, that stress suppresses the host resistance to infection and increases rates of infection.

- Research has also shown, that mindfulness-based approaches, and relaxation techniques are helpful.

PLEASE SEE THE NEXT PAGE FOR WHAT YOU CAN DO TO RELEVE STRESS.

STRESS RELIEF FOR ISOLATION

COASTAL WALK

HOME WORKOUT

BAKING/COOKING

LISTEN TO MUSIC/PODCASTS

SPEND TIME IN YOUR BACKYARD IN NATURE
OR TRY MEDITATION

READING

WHAT TO AVOID

BELOW ARE EXAMPLES OF WHAT TO AVOID. EACH OF THESE EXAMPLES EXERCISED OVER A PERIOD OF TIME, WILL WEAKEN YOUR IMMUNE SYSTEM.

SMOKING

EXCESS ALCOHOL

MORE THAN 1 CUP OF CAFFEINE PER DAY
(CAN DEPELTE VIT D)

STRESS

Avoid Eating Diagnosed Food Intolerances

IMMUNE BOOSTING RECIPES

Immune Boosting Minestrone Soup

Serves roughly 6 people

Ingredients:

- 1 Tbs Extra virgin olive oil
- 1 Red onion
- 3 Cloves of garlic
- A large sprinkle of chilli (or desired amount)
- A sprinkle of sea salt
- A sprinkle of black pepper
- 1 Handful of fresh basil
- 1 Tbs dried oregano
- 2 Tbs Nutritional yeast
- 2 Vegetable stock cubes with 6 cups of water
- 400g Tinned tomato
- 400g Tinned beans of choice
- 2 carrots (washed and unpeeled)
- 1/2 a medium zucchini
- 1 Tomato
- 2 or 3 Extra large field mushrooms (3 if not very big)
- 3 Cups of kale (or silverbeet)
- 2 Boiled potatoes
- Optional: 1/2 cup cooked brown rice per person or pasta of choice

Method:

- Heat oil in a pot
- Add onion and garlic and cook for 1 min
- Add chilli, salt, pepper, basil & oregano
- Add the 2 chopped carrots
- Add tinned tomatoes and chopped tomato
- Add nutritional yeast followed by the vegetable stock cubes and 6 cups of boiling water
- Add the chopped zucchini, mushrooms & kale
- Simmer for 10 mins. In the meantime, boil 2 potatoes and cook until half cooked
- Add the half cooked potatoes and tinned beans. Cook for 5 minutes.
- Optional: add in some boiled rice or pasta.

Anti-inflammatory Turmeric Dressing

Ingredients:

- 4 Tbs extra-virgin Olive oil
- Juice and zest of 2 lemons
- 1/4 Avocado
- 1 Garlic clove, minced
- 1 Tbs fresh turmeric or 1tsp ground turmeric
- 1 tsp Honey
- Pinch of salt to taste

Method:

- Blend all ingredients in a blender. Add more avocado for thicker consistency.

Anti-inflammatory Hummus

Ingredients:

- 400g tinned chickpeas, rinsed and drained
- 1 Tbs tahini
- Juice of 1 lemon
- 1 Clove minced garlic
- 1 tsp ground turmeric
- 4 Tbs olive oil
- Sprinkle of cumin

Method:

- Blend all ingredients in a food processor.

Sauerkraut

Ingredients:

- 8 cups red or green cabbage (finely grated or chopped)
- 1 1/2 – 2 tsp sea salt (plus more to taste)
- 1 small beetroot (finely shredded)
- 3 whole carrots (finely shredded)
- 3 Tbsp fresh ginger (shredded / grated)
- 3 Tbsp fresh turmeric (shredded / grated)
- 4 cloves garlic (finely minced)

Method:

- Sterilise any equipment you will be using for fermentation, especially the jars
- Add finely grated cabbage to a large mixing bowl and top with 1.5 teaspoons sea salt. Wash hands thoroughly and massage cabbage for ten minutes. The cabbage should start softening, shrinking in size, and releasing water (see photo). Continue massaging until this happens.
- Add shredded beet, carrot, ginger, turmeric, and garlic and massage once more with clean hands for 4-5 minutes.
- Put the sauerkraut mixture into your sterilized jars and press down firmly to pack.
- The ideal temperature for fermentation is above 18 C. so try to keep your environment on the warmer side to encourage proper fermentation which will take 10 days.
- During this fermentation process, open your jars once per day to release air
- Keep in the fridge after fermentation up to 3 months.

Creamy Cauliflower & Artichoke soup
Serves 4

Ingredients:

- 2 Tbs olive oil
- 1 Onion
- 3 Garlic cloves
- 1/2 tsp ground ginger
- 1 Large head of cauliflower
- 150g jerusalem artichoke, scrubbed, peeled and sliced
- 400ml tin coconut milk
- 600ml Vegetable stock
- 2 tsp tamari sauce
- Pinch of black pepper
- coriander to top (optional)

Method:

- In a large saucepan, on medium heat, fry onion, garlic and turmeric in the oil for 5mins.
- Add chopped cauliflower and artichoke- stir well.
- Pour coconut milk, tamari and stock.
- Bring to boil
- Once boiling, turn heat to low.
- Process the soup with barmix or processor.
- Enjoy

Happy Gut Flaxseed Bread

Ingredients:

- 80g Almond meal
- 200g Flaxseeds
- 50g Chia seeds
- 50G Pumpkin seeds
- 4 Eggs
- 200g fresh spinach
- 1 tsp bicarb soda
- 2 Tbs lemon juice
- 50ml water
- 1tsp sea salt
- 50g coconut oil or butter

Method:

- Preheat oven to 170
- Line loaf tin with coconut oil or butter.
- Place all ingredients in food processor- blend until a smooth dough.
- Press it into the tin and bake for 45mins until cooked through.
- Leave it to cool in the tin. (it is quite dense)
- Slice once cooled
- Store in zip-lock bags in freezer and toast when needed.

Chia Pot
Serves 1

Ingredients:

- 2 tbs chia seeds
- 125ml dairy-free milk of your choice
- 1/2 tsp vanilla essence
- 1/2 tsp cinnamon
- 1 Tbs frozen berries or a banana

Method:

- Add all ingredients together in a jar.
- Mix all together thoroughly.
- Place in the fridge ideally overnight, but for at least 1 hour.
- Serve with more fruit, coconut flakes, protein powder, on top of oats etc.

Healthy Gut Smoothie
Serves 1

Ingredients:

- 30g Plant based protein powder
- 1 Banana
- 1 Tbs cocoa powder
- 1 Cup mixed berries
- 1 Tbs Hemp seeds
- 1 Tbs Chia seeds
- 1 Handful of leafy greens (kale/spinach)
- 1 Cup of ice
- 1.5 Cup milk of choice

Method:

- Place everything into a blender and blend until smooth.

Immune Kick Juice
Serves 1

Ingredients:

- 2 Cups of kale
- Fresh grated ginger (to your liking, I recommend about 1/2 tsp)
- Fresh juice of 1 lemon
- 1 Orange
- 3-4 strawberries
- 1 Celery stalk
- 1 Handful of ice
- Dash of water

Method:

- Place everything into a blender and blend until smooth.

Orange Teriyaki Salmon/trout
Serves 1

Ingredients:

- 1 Salmon/trout fillet
- 2 Cloves garlic (chopped or minced)
- 1 Tbs Tamari sauce
- 1/2 Orange juice
- 2 Slices of oranges
- 1 Teaspoon of honey

Method:

- Place everything except from the fish fillet into a bowl.
- Whisk marinade together.
- Place the fish into the marinade and let it soak for about 30mins.
- Line a oven dish with baking paper and place the salmon in the dish and pour the marinade on top.
- Bake for 15-20mins or until the fish is cooked to your liking.
- Serve with some vitamin C rich veggies like steamed cauliflower, broccoli, sweet potato or a leafy green salad with chickpeas and sprouts.

Side dish: Honey Baked Carrots

Ingredients:

- 1 Bunch of baby carrots, washed and dried
- 1 tbs olive oil
- 1/2 tsp turmeric
- 1 Tbs honey
- 1 Pinch of salt

Method:

- Preheat the oven to 180 degrees.
- Line a oven tray with baking paper
- Cut the tops off the carrots, and place the carrots in the tray.
- Drizzle oil, honey, turmeric and salt
- Mix around so that the carrots are covered.
- Bake for about 20 mins or until crispy golden.

Vitamin B, C, A & Zinc Rich Salad
Serves 1

Ingredients:

- 1 Cup leafy greens of choice
- 1 Handful of sprouts
- 1/2 Cup chickpeas
- 1 Tomato
- 1/4 Yellow capsicum

Method:

- Chop all ingredients and place into a bowl.
- Dress with anti-inflammatory turmeric dressing.

Vitamin B-Rich Salad Dressing
Serves 1

Ingredients:

- 1 Tsp olive oil
- 1/2 tsp dijon mustard
- 1/2 Avocado
- Fresh juice from 1 lemon

Method:

- Whisk all ingredients together and serve with vitamin-rich salad.

Juice and Smoothie Boosters

- Chia seeds: High in fibre and antioxidants.
- Cacao: High in magnesium
- Flaxseed oil: High in Omega-3 and essential fatty acids.
- Leafy greens: High in vitamin and minerals that support a healthy immune system.
- Lemons: High in vitamin C
- Oranges: High in vitamin C
- Matcha: Anti-oxidant properties
- Maca powder: Helps with mood, libido and boosts energy.
- Mint: Helps relieve bloating and gut discomfort.
- Cinnamon: Aids in digestion and stimulates blood circulation.
- Ginger: Anti-inflammatory properties
- Turmeric: Anti-inflammatory properties
- Kefir : Rich in probiotics to promote growth of good gut bacteria.

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THANK YOU!

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STAY WELL!

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