

TSEBO



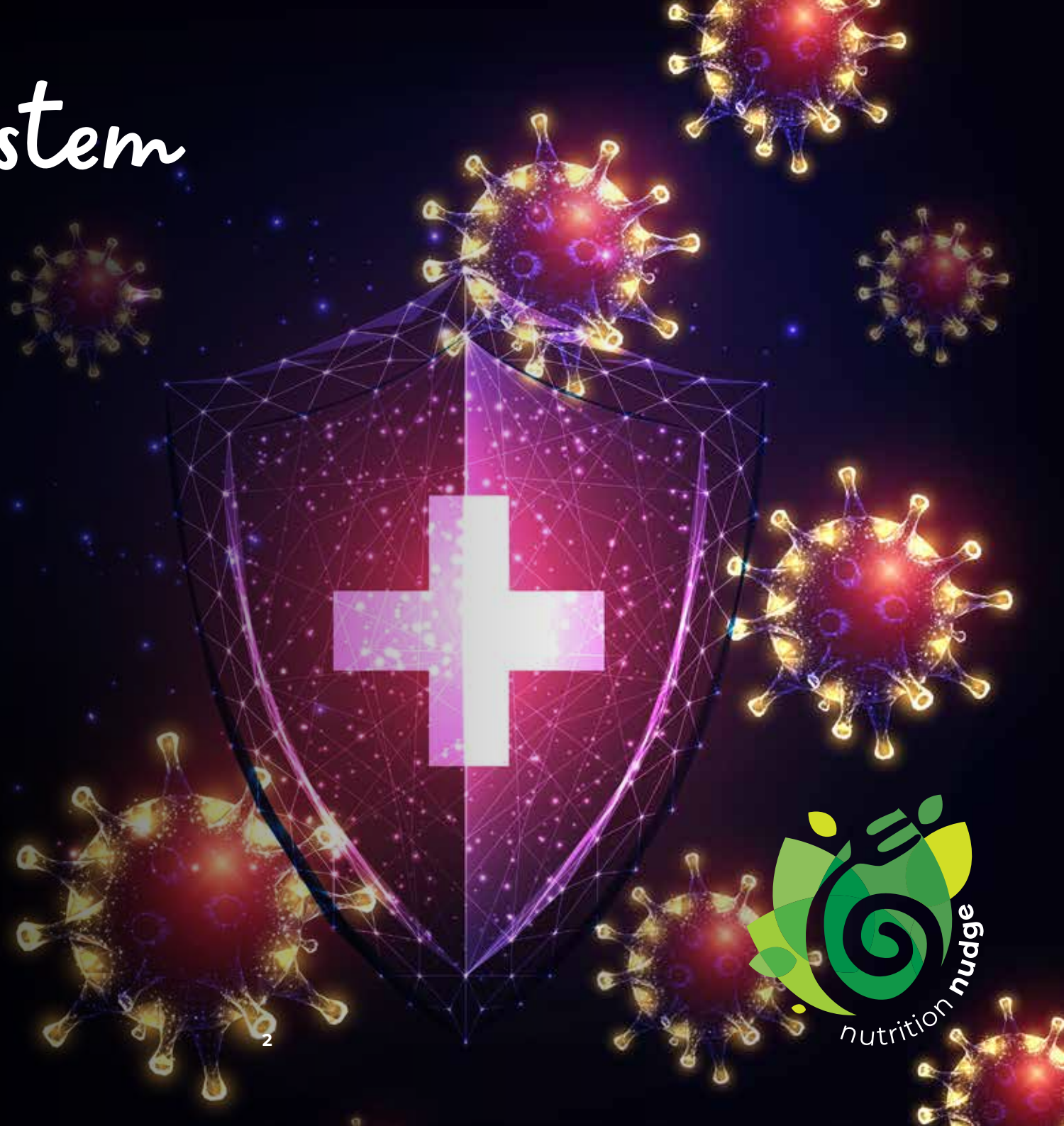
**Covid-19
and nutrition**
including immune-
supporting recipes

Yours in nutrition, Annelize Zeelie



Immune system

This network of tissues, cells, and organs first tries to keep out germs like bacteria, viruses, fungi, and parasites and then deals with these pathogens if they managed to enter cells. If it senses something in your body that could be bad for you, it triggers the release of special cells. These travel to where the trouble is, attack the intruder, and help to get rid of it.



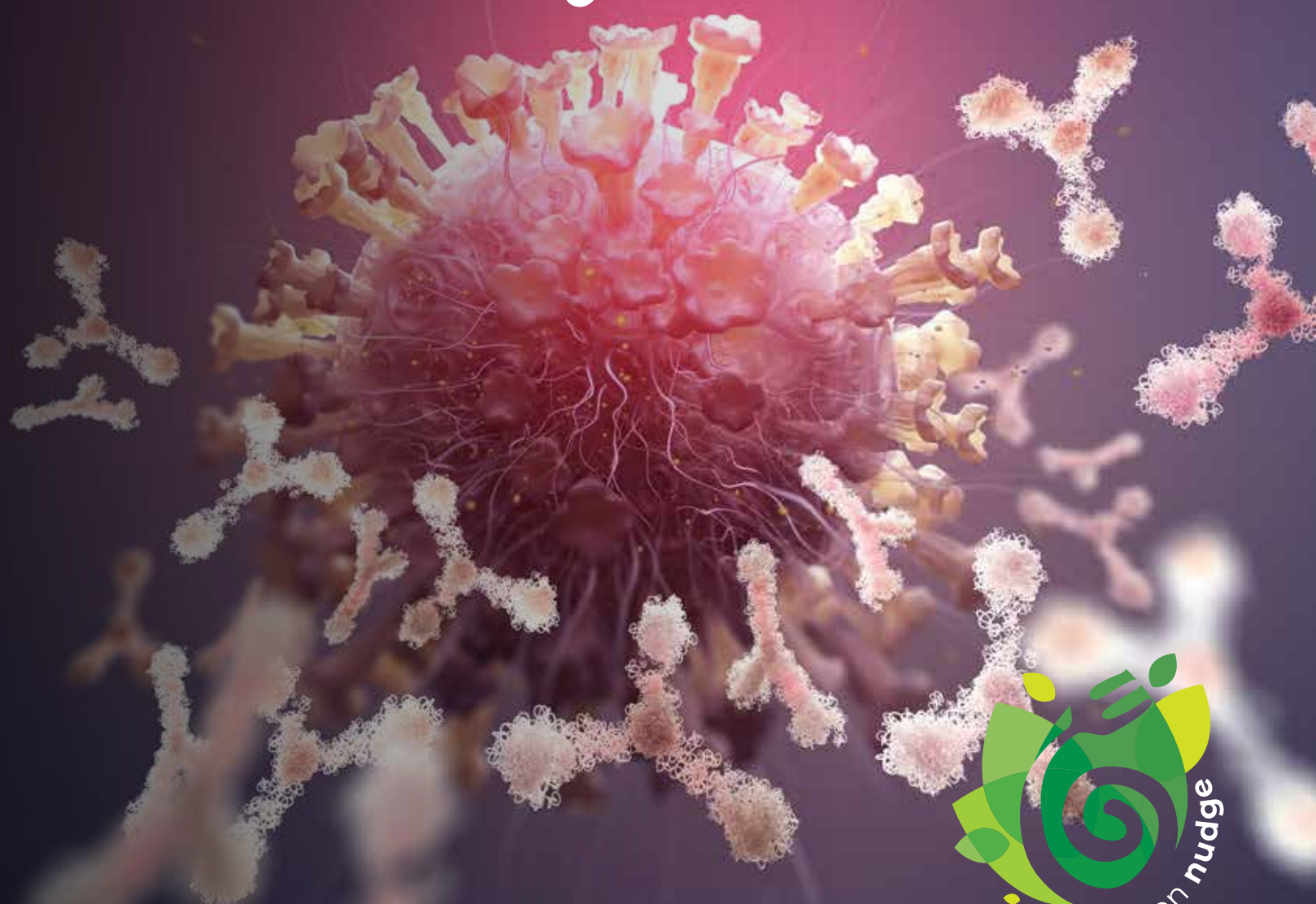
Antigens and memory cells

Antigens

These are markers that your immune system can recognize. Some, called human leukocyte antigens (HLA), tag your cells so your body can identify itself. Others could be part of a foreign cell or germ, or they may be a substance like food or pollen.

Memory cells

You may become ill the first time your body comes across a new antigen and is learning how to make antibodies. But afterwards, you'll have leftover B and T cells called 'memory cells' that can recognise that particular germ and respond quickly.



What protects us?

Phagocytes

They are part of your innate immunity, and they work by eating invaders. Neutrophils, the most common type of white blood cell, are among the first responders called to a trouble spot. They digest bad cells and can trap bacteria and stop it from spreading. Macrophages grow from white blood cells called monocytes, but they work in tissues, not your blood. Eosinophils mainly attach to parasites that are too big to ingest and kill them.

Natural killer cells

Another part of your innate immunity is this type of white blood cell. They recognise and latch onto abnormal cells like cancer, then damage and kill them. They are key players when you first get infected by a pathogen, such as a virus.



Innate vs. acquired immunity

When you're born, before your body comes across any unfamiliar antigens, it can defend itself from infection.

This innate immunity comes from those barrier body parts as well as some specialised cells. Over time, your immune system 'learns' other ways to protect you.

Acquired immunity comes from antibodies you get from your mother in the womb, or that your body produce in response to antigens that aren't yours, like from a cold virus or a vaccine.

When it goes wrong

An autoimmune response happens when your body mistakes your tissues or organs for invaders and attacks healthy cells. That can cause serious illnesses like rheumatoid arthritis (RA), Crohn's disease, Type 1 diabetes, and lupus.

A 'boost' in this process would not be a good thing. This is because your immune system would be overactive, and an overactive immune system can lead to autoimmune disorders. We therefore want to ensure a normal functioning immune system supported by the right nutrients by adding the right foods to your shopping basket.

An adequate intake of zinc, iron, and vitamins A, B₁₂, B₆, C, and E is essential for the maintenance of immune function.



Food for your immune system

Vitamin C-rich foods

The daily recommended dietary allowance for Vitamin C is 90 mg per day for men and 75 mg per day for women. Nature has cleverly gifted us with colourful citrus fruits during Winter that are bursting with infection-fighting vitamin C. With oranges, minneolas, grapefruit, naartjies, kiwi and guava you really are spoilt for choice! As your body does not produce this vitamin naturally, it is very important to fuel up with vitamin C rich foods every day to keep your body's arsenal on high alert.

Garlic

This super food not only offers great flavour to your favourite pastas and stews, it also offers tremendous health benefits because of its potent immune supporting properties. In fact, one of garlic's chemical components, allicin has been proven to help deactivate viruses, bacteria and fungi.

The pumpkin family

Pumpkins and butternuts are brimming with immune supporting beta-carotene (a form of vitamin A that is responsible for their bright colours), the antioxidant lycopene and minerals such as magnesium, potassium and iron. They're also high in fibre and low in kilojoules. Pumpkin and butternut are very versatile; offering full-bodied flavour no matter how it is prepared – roasted, toasted, pureed or mashed, served with a main meal or as a comforting soup.

Leafy greens

They're packed with vitamins, minerals and fiber but low in calories. Eating a diet rich in leafy greens can offer numerous health benefits including reduced risk of obesity, heart disease, high blood pressure and mental decline.



Food for your immune system

Yoghurt

Eating yoghurt regularly will help to enhance and promote healthy immune function. It's a fantastic source of probiotic cultures – the same digestion-enhancing bacteria that occur naturally in your gastrointestinal tract. When you eat yoghurt the 'good bacteria' help to fight off the 'bad bacteria' and thus help to prevent infections. They also optimise the absorption of nutrients. Choose yoghurt with 'live and active cultures and bacteria' on the label and opt for natural yoghurt instead of the sweetened variety, rather add fruit for flavour.

Oily fish

Enhance your mood by adding oily fish to your diet. Fish like tuna, sardines, salmon and mackerel are omega-3 powerhouses and act as immune supporters by increasing the activity of phagocytes; the white blood cells that eat up bacteria. Fish is also an important source of B-vitamins, especially the stress fighters B₆ and B₁₂, which help with the production of serotonin, the 'happy' brain chemical.

Bananas

The humble banana is a feel-good food that can act as a mood-booster and mild sedative, as it contains the amino acid tryptophan that helps the body produce serotonin, the 'feel-good' hormone, and melatonin, the 'sleep' hormone.



Food for your immune system

Nuts

Brazil nuts, macadamia nuts and walnuts are rich sources of the mineral selenium, which is thought to help prevent depression and be vital for good mental health. Add some nuts to your breakfast cereal or enjoy as a snack during the day.

Oats

There is nothing more soothing than a steaming bowl of oats in the morning. Oats and oat bran are rich in fibre, which help to keep you full for longer and sustain your energy levels. Oats are also rich in antioxidants and B vitamins that help reduce stress and support immunity. Enjoy oats for breakfast or add them to your muffin and bread recipes.

Ginger

Ginger is a lovely warming spice perfect for winter dishes like soups and stews. It literally warms your body by helping to improve circulation, while also stimulating the protective functions of the immune system and easing congestion in the respiratory tract. Add ginger to your favourite foods or try a soothing ginger tea.

Tea

Warm yourself from the inside with a nice cup of tea. Whether you like black, green or Rooibos, all are sure to lift your mood, while its powerful antioxidant properties will give your immune system a great enhancement.



Take home message

- Eat 2 cups of fruits daily (guava, apple, banana, strawberry, cantaloupe melon, grapefruit, pineapple, papaya, orange, blackcurrant); equaling 4 servings.
- Eat 2½ cups of fresh vegetables (green bell peppers, spinach, butternut, carrots, cauliflower, mushrooms, garlic, ginger, kale, coriander, broccoli, green chili pepper); equaling 5 servings, and legumes such as beans and lentils.
- Eat whole grains and nuts, 180 grams of grains (unprocessed maize, oats, wheat, millet, brown rice or roots such as sweet potato, potato, taro or cassava).
- Red meat can be eaten once or twice per week, and poultry 2-3 times per week. Use foods from animal sources (e.g., fish, fish, eggs, and milk) and plant sources (lentils, soya and beans).
- For snacks, choose fresh fruits and raw vegetables rather than foods that are high in sugar, salt or fat. Do not overcook vegetables as it leads to the loss of important nutrients such as vitamins and minerals.
- When using dried or canned fruits and vegetables, choose varieties without added sugar or salt.
- Make sure the food is prepared and served at acceptable temperatures ($\geq 72^{\circ}\text{C}$ for 2 minutes).
- Limit your salt intake to 5 grams a day.
- Consume unsaturated fats (found in avocado, fish, nuts, soy, olive oil, canola, corn oil, and sunflower) rather than saturated fats (found in butter, fatty meat, coconut and palm oils, cheese, ghee, and cream).
- Drink 8-10 glasses of good quality water every day. It helps to transport nutrients in the blood, gets rid of waste, and regulates the body temperature.
- Avoid all beverages that are fizzy and carbonated, concentrated juices, and all drinks that contain sugar.
- Maintain a healthy lifestyle of exercise, meditation, and regular sleep. Adequate sleep will help to support immune functioning.
- Eat at home to avoid contact with other people and try to reduce the chance of being exposed to COVID-19.



Food safety and Covid-19

Researchers have found that there is no source of Covid-19 virus contamination via food packaging or food. However, good food practices are always recommended by following them to minimise the risk of contamination:

- Wash vegetables and fruits before eating.
- Wash, rinse, and disinfect objects and surfaces every time before and after use.
- Keep cooked and raw foods separate, as it would prevent the harmful microbes from raw foods spreading to cooked foods.
- Use different chopping boards and utensils for cooked and raw foods to prevent cross-contamination.
- Do not display or sell unwrapped food from the self-service counter.
- Frequently disinfect surfaces that are frequently used by customers or workers such as doorhandles, counters, and trays.



Immune supporting recipes

Herb and Citrus Oven Roasted Chicken

Ingredients

10-12	Chicken (bone-in thighs and legs, pat dry)
¼ cup	Oil
4 cloves	Garlic (minced)
2 Tbsp	Sugar
2	Lemons (whole, one juiced and one sliced)
2	Oranges (whole, one juiced and one sliced)
1 Tbsp	Origanum
½ tsp	Paprika
1 tsp	Onion powder
¼ tsp	Red-pepper flakes (crushed)
TT	Salt and freshly ground pepper
1	Onion (medium, any kind, thinly sliced)
1 tsp	Thyme (dried or freshly chopped)
1 Tbsp	Rosemary (dried or freshly chopped)
TT	Chopped fresh herbs rosemary, thyme, parsley (optional for garnish)

Method

1. Preheat oven to 200°C.
2. In a small bowl whisk together oil, garlic, sugar, lemon juice, orange juice, origanum, paprika, onion powder, red pepper flakes, and salt and pepper.
3. Place chicken in a rimmed baking dish. Place parts skin side up and spread them out evenly in the baking dish. Pour olive oil mixture all over chicken, turning pieces to coat all sides. (If you marinated the chicken in this mixture, still add it all in).
4. Arrange slices of lemon, orange and onion under and around the chicken. Sprinkle generously with thyme, rosemary, salt and pepper.
5. Bake uncovered for about 1 hour, or until chicken is cooked and juices run clear. Remove parts to a serving platter and garnish with additional chopped fresh herbs, if desired.



Immune supporting recipes

Spicy Garlic Chickpeas

Ingredients

2 cans	Chickpeas (rinsed)
4 cloves	Garlic (crushed)
½ tsp	Red-pepper flakes (crushed)
¾ cup	Olive oil
TT	Salt and freshly ground black pepper

Method

1. Cook chickpeas with garlic and red pepper flakes in oil in a large skillet over medium-high heat until garlic is golden browned, and chickpeas begin to blister, 6-8 minutes.
2. Season with salt and pepper.



Immune supporting recipes

Butternut Macaroni Cheese

Ingredients

500 g Pasta (macaroni, penne, or shells)
8 cups Butternut squash (peeled, seeded and cubed)
1 L Low-fat milk
1 tsp Thyme leaves (dried)

2 Tbsp Chicken stock powder (Ina Paarman)
¼ tsp Salt (plus for cooking the pasta and squash)
¼ tsp Black pepper (freshly ground black pepper)
4 cups Cheddar cheese (grated)

Method

1. Cook the pasta until al dente, according to package instructions. Drain the water and set the pasta aside.
2. While the pasta cooks, make the sauce. Fill a medium pot halfway with water and add the chicken stock. Set on the stove over high heat. Add the butternut squash and bring to a boil. Cook until tender, 5-6 minutes. Drain the water and set the cooked butternut aside.
3. Reduce heat to medium and return the pot to the stove. Add the milk and thyme. Cook, stirring frequently with a whisk, until thickened slightly, 3-4 minutes. Add back the butternut squash.
4. Remove from the heat and either (carefully!) use an immersion blender to completely puree the sauce or pour into a blender to puree. Return to the pot.
5. Add the cheese, stirring until melted. Taste the sauce and add additional salt and pepper if desired.
6. Add the pasta to the sauce and stir gently until all the pasta is coated.
7. Serve immediately.



Immune supporting recipes

Greek Cucumber Salad

Ingredients

1/3 cup	Red onion (thinly sliced)	1 Tbsp	Lemon juice (freshly squeezed)
1/4 cup	Olive oil (extra-virgin)	1 clove	Garlic (pressed)
1½ tsp	Red wine vinegar	¼ cup	Dill (freshly chopped)
1½ tsp	Oregano (dried)	1 tsp	Salt (plus more to taste)
2-3	English cucumbers (thinly sliced)	TT	Black pepper (freshly ground)
1 cup	Plain yogurt (Greek, full fat)		

Method

1. In a small bowl, combine the red onion, olive oil, vinegar, and oregano. Let the onions marinate at room temperature while preparing the rest of the salad.
2. Place the sliced cucumbers into a large salad bowl.
3. Combine the Greek yogurt, lemon juice, garlic, dill, salt, and black pepper.
4. Add to the cucumbers, along with the marinated onions, including the liquid from the onions. Toss everything together well. Taste for salt and pepper.
5. Enjoy immediately or refrigerate for up to 30 minutes before serving.

Immune supporting recipes

Pilchard Burgers with Chakalaka

Burgers

400 g	Lucky Star Pilchards in Tomato Sauce
410 g	Chickpeas (drained and rinsed)
3 slices	Wholewheat bread (crumbed)
1	Egg
45 ml	Chutney
10 ml	Mixed herbs (dried)
TT	Seasoned flour (for dusting)

Chakalaka

TT	Vegetable oil (for frying)
1	Onion (small, finely chopped)
1	Chili (deseeded and finely chopped)
15 ml	White wine vinegar
5 ml	Sugar
2	Tomatoes (finely chopped)
1	Carrot (peeled and grated)
4-6	Burger buns
20 ml	Tangy mayonnaise
TT	Baby spinach leaves
2	Gherkins (thinly sliced lengthways)

Method

1. Drain the pilchards and reserve the sauce.
2. Mash the chickpeas and pilchards together.
3. Add the finely chopped bread, egg, chutney and herbs.
4. Divide the mixture into 4-6 balls and shape into patties.
5. Dust with flour and place in the fridge to firm up while the chakalaka is being made.
6. Heat a small amount of oil in a saucepan, add the onion and chili and cook over medium heat until softened and golden.
7. Add the vinegar and sugar, stirring well to avoid burning.
8. Add the tomatoes, reserved pilchard sauce and grated carrot. Turn the heat down and allow to simmer for 10-15 minutes until softened and thickened. Remove from heat.
9. Heat a little oil in a shallow frying pan. Reduce the heat and add the burger patties to the pan. Turn them after 3-4 minutes and allow to cook evenly before removing from the pan.
10. Cut open the burger buns and spread the bottom half with mayonnaise. Layer each bun with spinach leaves, gherkin slices, a burger patty and a heaped spoonful of chakalaka. Balance the remaining bun half on top and serve.



Immune supporting recipes

Basic Overnight Oats

Ingredients

1	Clean glass jar with lid
½ cup	Rollled oats (about half the jar)
2 tsp	Chia seeds (optional, but awesome)
1 cup	Milk (or soy or almond milk)
2 Tbsp	Nuts and/or seeds
1 tsp	Cinnamon and/or other spices
1-2 tsp	Sweetener (your favourite, optional)
TT	Fruit slices (optional)
TT	Berries (all sorts, fresh or frozen)

Method

1. Throw everything in a jar, screw the lid on, shake, and store in the fridge.
2. Next morning add a dash of milk and sweetener and enjoy.

Immune supporting recipes

Lemongrass-Rooibos Poached Chicken Salad

Ingredients

750 ml	Water
4	Rooibos tea bags
8	Peppercorns
Pinch	Salt
4	Chicken breasts
120 g	Rocket (fresh)
1	Avocado (peeled and sliced)
½	Red onion (small, sliced)
TT	Pomegranate seeds

Dressing

3 Tbsp	Chakalaka spicy relish
3 Tbsp	Mayonnaise
3 Tbsp	Yogurt (plain, Greek)
Pinch	Salt

Method

1. Pour 750ml hot water into a saucepan and pop in the tea bags, peppercorns and salt, stir to infuse, and bring to the boil.
2. Turn down to a simmer and add the chicken breasts (they should be completely immersed in the water, if not, add a little more water.)
3. Cover with a lid and simmer for 12 minutes or until just cooked through. Remove from the poaching water and allow to cool on a plate.
4. To make the dressing, simply stir all the ingredients together until they are well mixed.
5. Once cooled, slice the chicken breasts into even slivers.
6. To make the salad, layer the rocket, avocado and red onion in a serving dish and top with the chicken. Spoon over the dressing and sprinkle pomegranate seeds on top.





For recipe related
queries please contact
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