



OT&P  
Healthcare  
領康醫療

# Nutrition and Lifestyle Strategies for Immune Support

APRIL 2022

# SPEAKERS

Selina Kuok  
Clinical Nutritionist



Aektha Wadhwani  
Integrative Nutrition  
Health Coach



---

# WEBINAR OUTLINE

## Introduction

What is immune resilience?

## Nutrition

The role of nutrition and how to support a healthy immune response

## Dietary Supplements

When are supplements needed?

## Lifestyle Tips to support a healthy immune response

## Summary and top tips to take away

---

# WHAT IS IMMUNE RESILIENCE

Being resilient means that when faced with a stressful or adverse condition you can adapt, recover and return to a balanced state



---

A balanced  
immune response



---

Not the same  
thing as immune  
boosting



---

Influenced by  
many lifestyle and  
environmental  
factors



---

Immune resilience  
is built over time



OT&P  
Healthcare

領康醫療

---

# WHAT FACTORS CAN AFFECT IMMUNITY



Age



Environmental Toxins



Excess Weight



Poor Diet



Chronic Mental Stress



Lack of Sleep and Rest



OT&P  
Healthcare

領康醫療



# HAS LOCKDOWN AFFECTED OUR IMMUNE SYSTEMS?



## Weaker immunity?

Social distancing and disinfection practices

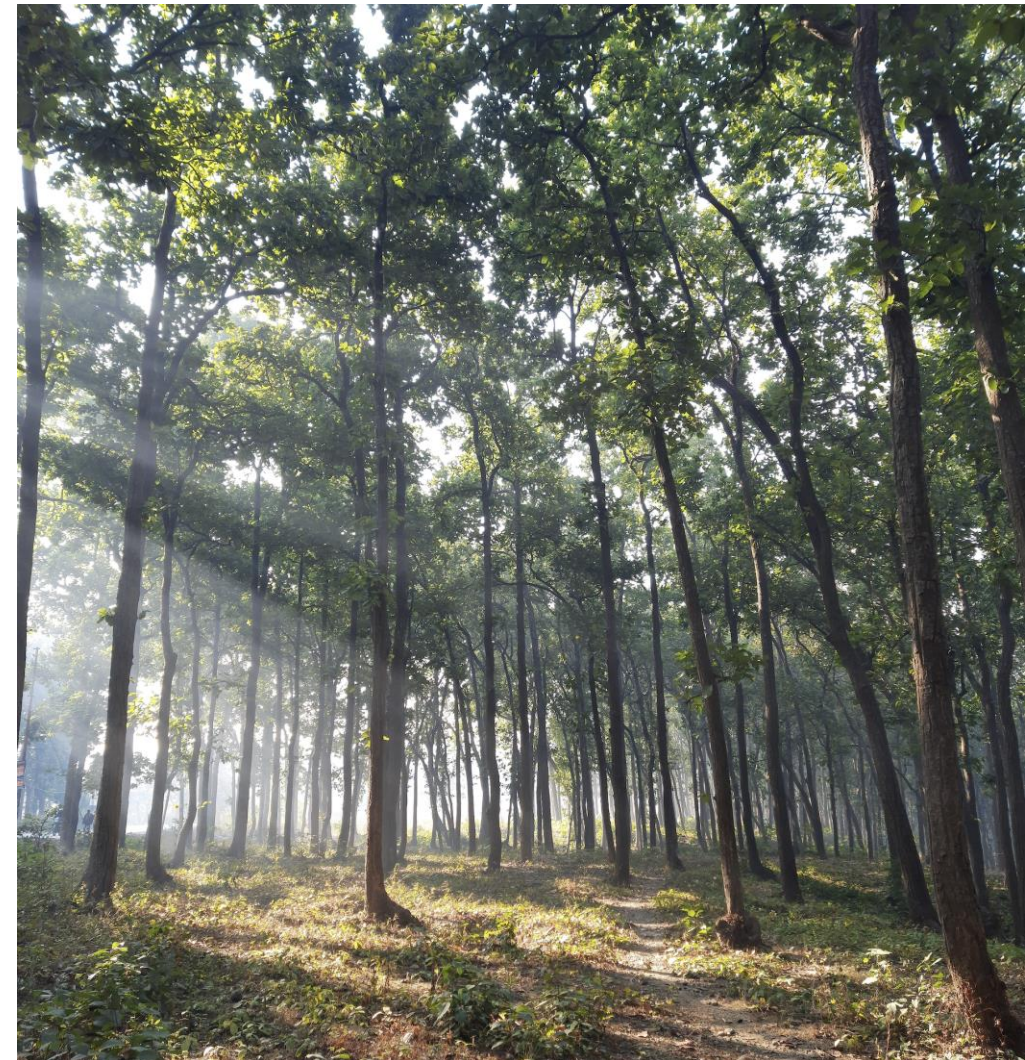


The evidence is not conclusive, but it is important to build immune resilience now that children will be going back to school and people back to offices, more of us resuming travel



## Focus on

Good **sleep**, **stress reduction**, exposure to the outdoors, and **healthy diets**



OT&P  
Healthcare

領康醫療

---

# NUTRITION AND THE IMMUNE SYSTEM



OT&P  
Healthcare

領康醫療

---

# GOOD NUTRITION

PROVIDES THE **BUILDING  
BLOCKS** FOR A HEALTHY  
IMMUNE SYSTEM

## BALANCED IMMUNE RESPONSE

Requires supportive micronutrients

## GUT HEALTH

Influences immunity → good nutrition is required for a healthy gut microbiome

## CHOOSE FOOD OVER SUPPLEMENTS

**You cannot out-supplement an unhealthy diet and lifestyle**



OT&P  
Healthcare

領康醫療



---

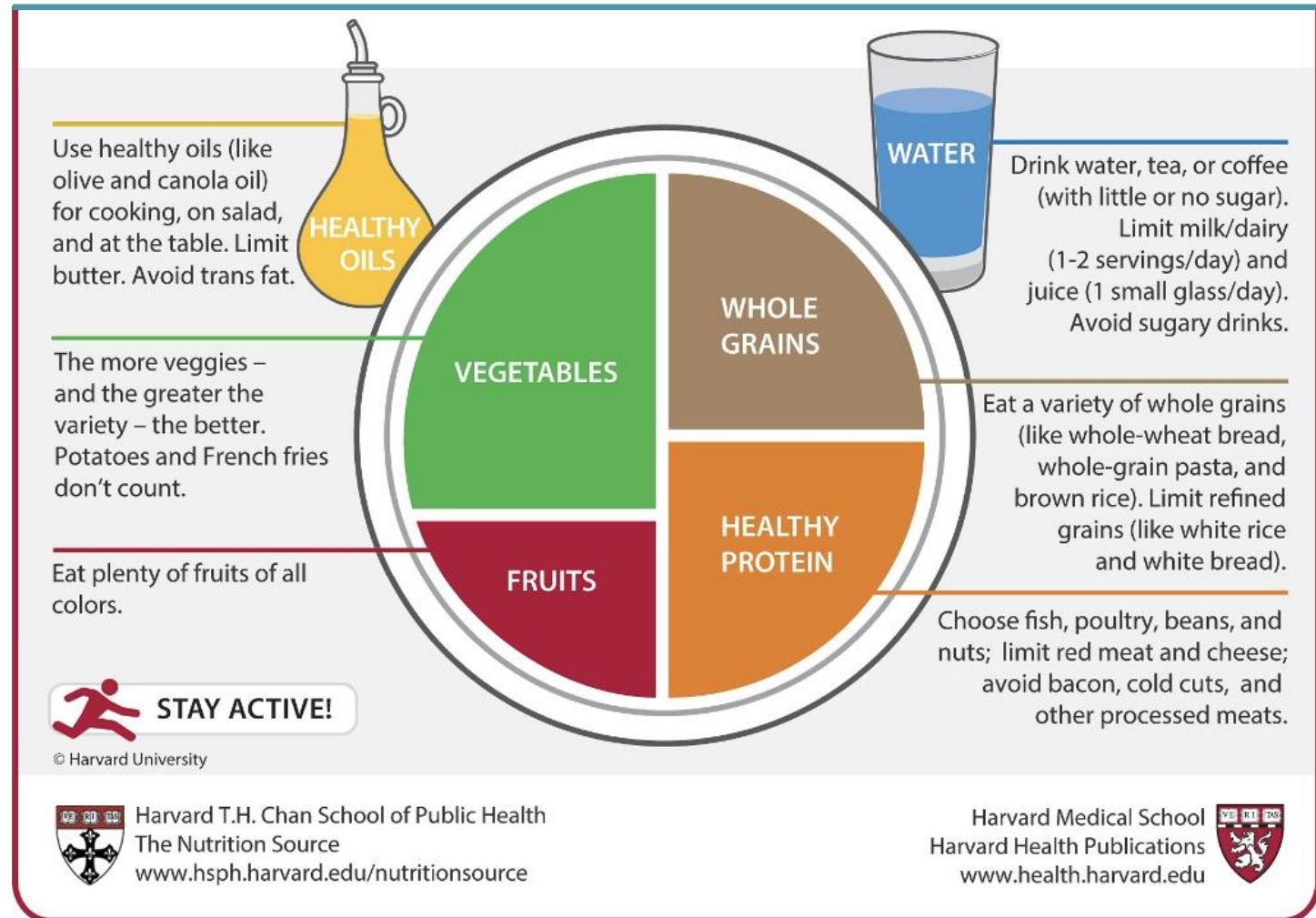
# THE ANTI INFLAMMATORY DIET

## Whole foods diet rich in plant-based foods

- **Phytonutrients** from vegetables and fruits:  
*Eating the Rainbow*
- **Healthy carbohydrates**: whole grains and starchy vegetables
- High quality **lean proteins**
- **Healthy fats**
- High in **fibre** to support gut health
- **Prebiotic** and **probiotic** foods



# HEALTHY EATING PLATE



# EATING THE RAINBOW



## PHYTONUTRIENTS

- Found in plant-based foods
- Beneficial for health and immune support

## RECOMMEND

- **9 servings daily, 1 of each colour**

### 1 SERVING =

- ½ cup cooked vegetables
- 1 cup raw greens
- 1 medium sized piece of fruit



OT&P  
Healthcare

領康醫療

# EATING THE RAINBOW

Color	Sources	Nutrients	Function
Red	apples, red cabbage, red onion, red peppers, strawberries, tomatoes, cherries, watermelon	flavonoids, lycopene, vitamin C, folate	heart health, memory
Orange/ Yellow	cantaloupe, carrots, butternut squash, lemons, mango, oranges, papaya, peaches, pineapples, pumpkin, sweet potatoes, yellow peppers	beta-carotene, vitamin A, vitamin C	healthy eyes, heart health, immune function
Green	asparagus, bok choy, broccoli, cabbage, collards, cucumbers, grapes, green beans, green peppers, honeydew, kale, peas, spinach	chlorophyll, vitamin K, carotenoids, isothiocyanates, omega-3 fatty acids	healthy bones, teeth and eyes
Blue/ Purple	dark beans, eggplant, beets, blueberries, blackberries, figs	anthocyanin	memory and healthy aging
White	ginger, jicama, onions, mushrooms	flavonoids	heart health and good cholesterol levels





# SUGAR, AND PROCESSED FOODS AND BEVERAGES



## Blood Sugar

Cause spikes in blood sugar and insulin, and promotes inflammation



## Nutritional Value

Foods high in sugar have low nutritional value



## Gut Health

Results in poor gut health and imbalanced microbiome



## Poor Immune Response

Affects the innate immune response (initial response to pathogens)



Within 30 mins of eating simple/refined sugars the ability of white blood cells to attack invaders decreases by 50% and this effect lasts for 5 hours



OT&P  
Healthcare

領康醫療



# SUGAR

## FINDING HIDDEN SUGAR IN THE FOODS YOU EAT

### OBVIOUS SOURCES

Sweets, pastries, cakes, cookies, table sugar

### OTHER COMMON SOURCES

- Simple carbohydrates: bread, pasta, rice, cereal, store-bought muesli, granola
- High consumption of fruit
- Fruit juices, sports and energy drinks, sodas
- Condiments: ketchup, salad dressing, sauces
- Flavoured yoghurt, cereal/protein bars

---

# HOW TO REDUCE SUGAR



## REMOVE

Reduce or eliminate obvious sources



## ADD IN

Eat more whole unprocessed foods high in protein, healthy fats and fibre



## READ

Check food labels to see ingredients and sugar content



OT&P  
Healthcare

領康醫療

---

# FUSSY EATERS / RESTRICTED DIETS

How to add more nutrient-dense foods to the diet

- Family meals: encourage children to eat the same food as adults
- “Hidden” vegetables
- Smoothie packed with fruit and vegetables



OT&P  
Healthcare

領康醫療





---

# HYDRATION IS KEY

- Water

**Goal: ½ body weight (lb) in oz per day**

- Avoid sugary drinks
- Swap fruit juices for whole fruit or smoothies



---

# VITAMIN D SOURCES

## Food

- Sunlight
- Cod liver oil
- Sardines, salmon, fatty fish
- Eggs
- Mushrooms
- Dairy (if tolerated, good source, not when sick)



Supplement 1,000 IU daily



## ZINC-RICH FOODS

- Grass fed beef and lamb
- Organic poultry, organic liver
- Eggs
- Shellfish (rich source, especially oysters)
- Pumpkin and sesame seeds
- Beans, lentils,
- Quinoa
- Spinach





---

## SELENIUM-RICH FOODS

- Brazil Nuts (maximum 2-3 in one day)
- Pork, lamb, beef
- Oysters, clams, shrimp
- Wild salmon, halibut, cod, tuna, sardines





---

# QUERCETIN-RICH FOODS

- Raw onions
- Red apples with skin (organic)
- Red grapes
- Kale, spinach, watercress, broccoli
- Tomato
- Asparagus
- Green and black tea
- Berries



---

# VITAMIN C-RICH FOODS

- Papaya, citrus fruit, berries, pineapple, cantaloup, mango, guava
- Bell peppers
- Broccoli, Brussels sprouts
- Asparagus
- Spinach, watercress
- Tomatoes



---

# VITAMIN A-RICH FOODS

- Apricot, cantaloup, mango
- Carrots, sweet potato,
- Butternut squash, pumpkin
- Red/yellow bell pepper
- Kale, spinach, broccoli
- Eggs, grass fed butter



---

# FOOD SOURCES OF GLUTATHIONE AND NAC

## Glutathione

- Cruciferous vegetables
- Kale, broccoli, cauliflower, cabbage,
- Brussels sprouts, asparagus, spinach
- Pak choy, kailan, swiss chard, arugula, mustard greens, watercress,
- Mushrooms, garlic, onion

## NAC

- Garlic, onion, leek, shallot, chives,
- Lean meats, fish, lentils, eggs, sunflower seeds
- Glutamine-rich bone broth





---

# DIETARY SUPPLEMENTS



---

# WHEN ARE THEY NEEDED



## Food

Best to get nutrients from food



## When Supplementation may be needed:

- Vitamin D
- Picky eaters
- Restricted diets
- Times of stress (physical and mental)
- When sick
- When exposed to high risk situations: travel, crowded places, sick family member



---

# NUTRITIONAL DEFICIENCIES



## Most Common

- Iron and vitamin D



## Others commonly found

- Calcium, fibre, folate, iron, magnesium, potassium, Vitamin E, vitamin B12



## Higher risk of deficiency

- Children
- Young women
- Older adults
- Vegetarian and vegan diets
- Pregnancy, lactation



# IMMUNE SUPPORT SUPPLEMENTS



## Multivitamin containing the nutrients below

- Vitamin C can be added

## If not Taking a Multivitamin

- Vitamin D 1000 IU per day (higher dose if deficient)
- Vitamin C 500-1000 mg 1-2 times per day
- Zinc 15mg per day
- Selenium 200 mcg per day

## Others

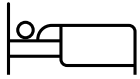
- Quercetin 500 mg 1-2 times per day
- Iron (if deficient)
- Probiotic
- Echinacea, elderberry





---

# IMMUNE RESILIENCE WITH SIMPLE LIFESTYLE CHANGES



## Sleep

"Sleep is the most effective thing you can do to reset your brain and body health" Matthew Walker, Professor of Neuroscience and Psychology and Author of Why We Sleep



## Stress

"It is astounding how much the immune system is strengthened by reducing daily mental stress levels with either visualization or meditation." Dr Bernie Siegel, Retired Paediatric Surgeon & Author



## Exercise

"Whether you are sedentary, recreationally active, or a high-level athlete, each and every single dose of physical activity has a profound and immediate impact on your immunity." Dr Jenna Macciochi, Lecturer in Immunology



# SLEEP

## STAGES OF SLEEP

### STAGE 1

#### Falling Asleep

- Heartbeat and breathing slow down
- Muscles begin to relax

### STAGE 2

#### Light Sleep

- Heartbeat and breathing slow down further
- No eye movement
- Body temperature drops

### STAGE 3

#### Deep Sleep

- Deepest sleep state
- Body is fully relaxed
- Tissue repair and growth, cell regeneration
- Immune system strengthens

### STAGE 4

#### REM Sleep

- Dream stage
- Rapid eye movements
- Breathing and heart rate increases
- Limb muscles are temporarily paralysed
- Emotional convalescence



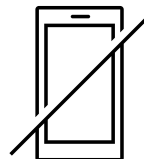
---

# HOW TO IMPROVE YOUR SLEEP HYGIENE



## Regularity

- Establish a regular bedtime and waking time.



## Lighting & Screens

- Dim lights in the apartment
- Screen free, 1 hour before bed
- Blue light blockers



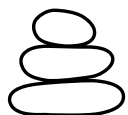
## Evening Routine

- Do the same relaxing things before bed each night.
- Signals to the body to prepare for sleep.



## Caffeine & Alcohol

- Create a caffeine cut off time, ideally no later than 2pm
- Limit alcohol before bed



## Meditate

- Lowers heart rate.
- Lowers levels of cortisol in the body



## Time Your Exercise

- Avoid high intensity workouts close to bedtime
- It increases cortisol and core body temperature



OT&P  
Healthcare

領康醫療



---

# STRESS

## HOW IT AFFECTS THE IMMUNE SYSTEM

### IMMUNE DEFENCES

- Chronic stress shifts resources to favour the fight or flight response, leaving your immune defences weakened, therefore increasing your risk of catching illnesses.

### RECOVERY TIME

- During times of chronic stress, the immune system lacks resources to fight off infection, slowing down your recovery time.

### ACTIVATE THE PARASYMPATHETIC NERVOUS SYSTEM

- Stress manifests itself mentally and physically, taking its toll on the body.
- Activating the parasympathetic nervous system to bring the body back to balance.



# HOW TO DECREASE STRESS

---



## TIME MANAGEMENT

- Map out your week
- Keep a to do list
- Schedule time to address each action item on the list



## MINDSET

- Reframe the situation.
- Practice gratitude
- Enjoy the little things



## RELAXATION TECHNIQUES

- Breath work
- Meditation
- Yoga



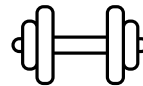
## SOCIAL NETWORK

- Connect with others daily If possible
- Build a strong support system



## LAUGH

- Crowd out stress with laughter
- Lowers cortisol



## EXERCISE

- Make exercise a priority



OT&P  
Healthcare

領康醫療

---

# EXERCISE

## WHY IT'S IMPORTANT?



### HEIGHTENED IMMUNE SURVEILLANCE

- Exercise stimulates an immune process, increasing the circulation of immune cells.

### REDUCES STRESS & IMPROVES SLEEP

- Exercise offers a protective benefit against stress.
- Regular physical activity can contribute to better sleep quantity and quality.

### TOO MUCH IS A PROBLEM

- Prolonged high intensity training can suppress your immune system.

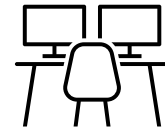
# HOW TO INCREASE MOVEMENT

---



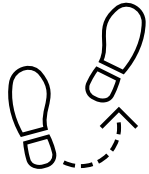
## 30 – 45 MINUTES A DAY

- Moderate exercise
- Mix aerobic with strength training
- Avoid overexertion when feeling run-down



## STANDING DESK

- Encourages more movement
- Better for posture



## NEAT MOVEMENT

- Just stand more
- Walking meetings
- Take the stairs



## 10,000 STEPS A DAY

- Count your steps daily
- Aim for 10,000
- Motivates movement



OT&P  
Healthcare

領康醫療

---

# FIVE TAKEAWAY TIPS



---

## Nutrition

Add more **colourful vegetables** and fruit to your diet



---

## Supplement

Supplement with **Vitamin D** for general health and immune support



---

## Sleep

Create an **evening routine** to help you relax and unwind



---

## Stress

Activate your **parasympathetic nervous system**



---

## Exercise

Make sure to clock up **10,000 steps** a day





OT&P  
Healthcare  
領康醫療

# Thank You!

Selina Kuok  
[Selina.Kuok@otandp.com](mailto:Selina.Kuok@otandp.com)

Aektha Wadhwani  
[Aektha.Wadhwani@otandp.com](mailto:Aektha.Wadhwani@otandp.com)