

# THE WELLNESS HUB

## NUTRITION

MENTAL WELLNESS EVERY DAY



# BRAIN-GUT CONNECTION

The brain is like any other organ and requires nourishment to thrive and replace cells. It is known that amino acids are taken directly from food and used to create cells and also maintain a healthy brain. Whilst it is known that certain foods boost mood, there is a growing body of evidence demonstrating a clear relationship between mental health and nutrition (1).

The research indicates a clear relationship between a healthy gut and the ability to manage feelings of anxiety, stress and sadness (2). It is also believed to play a role in the prevention of and management of a variety of conditions including depression, schizophrenia and Alzheimer's (3). In addition to this, there is a strong correlation between gastrointestinal symptoms and mental health.

This relationship is often called the brain-gut connection (or the brain-gut axis).

The 2 key elements of this connection are the vagus nerve and gut microbiome. Having the right balance of these microorganisms in the gut is essential to overall wellbeing and is often called the "second brain". The vagus nerve is a major nerve that travels from the brain to the gut. It branches into the major organs. The vagus nerve is also central to the parasympathetic 'rest and digest' nervous system. It influences breathing, digestive function and heart rate, all of which can have a huge impact on mental health. These will be covered separately to assist with understanding what changes can be implemented to support wellbeing.

The final section will focus on creating change with food habits. Please note this section is not about judging your food habits and nor should you consider extreme exclusion of foods. It is an opportunity to understand your relationship with food and, through reflection, create change should you wish to do so.

Please seek medical advice if you have pre-existing medical conditions.

# BRAIN-GUT CONNECTION

## ***Vagus nerve***

Research demonstrates that the healthier the vagus nerve (vagal tone), the better we can manage stress and activate the parasympathetic system (reduce cortisol levels and return to the resting state after dealing with it). It is purported the easier we can activate the parasympathetic system, the better we can respond to external factors (4). A healthy vagus nerve is extremely important for:

- the regeneration of new brain cells
- memory
- managing blood pressure
- fighting inflammatory diseases
- production of a variety of hormones

Furthermore, there is a correlation between a higher vagal tone and positive emotions, thus creating a loop of positive emotions and physical/mental wellbeing (5).

As with all suggestions in this series, change should be small and incremental to improve overall wellbeing and increase the likelihood of sustainability.

# BRAIN-GUT CONNECTION

## *How to improve your Vagus nerve*

There are various ways to do this and fortunately, most are small and can be easily incorporated into daily life (6).

- *Cold exposure.*

When we are exposed to the cold, our fight or flight response is switched off, and this stimulates the vagus nerve. Before you fill up the bath with water and ice, research has shown ending a hot shower with 30 seconds (or more) with cold water has the significant physical benefit of improving the immune system. This may take some practice, and you may wish to start by splashing the face with cold water for 10 seconds or so.

- *Activate the vocal chords*

Singing, humming, gurgling, chanting and laughter all create vibrations and stimulate the vagus nerve as they are connected. Specifically, chanting OM creates vibration around the ears and throat and throughout the body.

- *Deep and rhythmic breathing*

Focusing on your breathing not only activates your vagus nerve but is also shown to reduce anxiety. Aim to take 6 breaths per minute, breathing deeply so that your stomach expands. Exhalation should also be a slow process to benefit from the relaxation (there is a short video available on the hub).

- *Yoga or Tai Chi*

Both these promote slow movement aligned with controlled breathing. Both of these are beneficial to vagal tone.

- *Probiotics*

Known to decrease stress hormones and increase GABA (a neurochemical that has a calming effect). They are also helpful in the maintenance of good gut microbiomes.

# BRAIN-GUT CONNECTION

## ***Gut Microbiome***

The vagus nerve branches into the gut, and this area holds trillions of microorganisms. They play a vital role in our physical and mental well-being. This includes;

- supporting the immune system
- producing serotonin (the feel-good neurochemical)
- managing inflammation
- weight management (7)

In 2017, a study was conducted whereby participants with severe to moderate depression were allocated either counselling or a gut-balancing diet for a duration of 12 weeks. At the end of the study, those who were placed on the monitored eating plan reported a 32% improvement of the symptoms. This was significant as they were no longer deemed clinically depressed compared to those who had counselling who only reported an 8% improvement (8).

Furthermore, a meta-analysis found that feelings of anxiety can be alleviated by regulating the gut microbiomes (9). Foods that are known to boost and maintain a balanced microbiome are outlined below.

# BRAIN-GUT CONNECTION

## *How to improve your Gut microbiome*

- *Probiotics*

These are naturally produced in the gut and prevent inflammation. They can be found in yoghurt and other fermented foods such as kefir, kimchi, sauerkraut and miso. However, there are different types of probiotics and when heated they can destroy good bacteria.

- *Prebiotic*

These help probiotics to be effective, to multiply and tolerant to changes such as pH balance and temperature. Found in bananas, onions, garlic asparagus, whole grains and Jerusalem artichokes, mushrooms and tea. They are prominently derived from plants and legumes.

- *Consume less sugar/sweeteners*

Research indicates that excessive sugar and sweeteners affect glucose levels which in turn affect the balance with the gut. Specifically, they can increase the presence of other bacteria that are linked to diabetes and heart disease.

- *Unnecessary antibiotic use*

Helpful when directed by a medical practitioner, but research shows prolonged use can destroy critical bacteria which remains reduced even 6 months later.

- *A plant-based diet*

Vegetables are naturally richer in fibres that are prebiotic and reduce gut inflammation.

- *Limit cleaning products*

A study found that there was an increase in the presence of a microorganism associated with type 2 diabetes in homes that were cleaned twice a week using cleaning products.



# WORKSHEET-FOOD HABITS

**INSTRUCTIONS:** Identify one food habit you would like to change and follow the process below. You can apply this to as many food habits as you wish. It is not advocated to give up pleasurable foods unless for health reasons. Life is for living!

**What** food habit would you like to change (i.e. like to eat less/ more of)?

**When** do you eat this particular food? Think about the environment (i.e. work) and possibly who, with or when would you like to consume it?

What **emotions** do you feel or would like to feel immediately after consuming it? What do you feel an hour later?

What **thoughts** do you have before, during and immediately after consuming it (i.e. it's been a tough day, I deserve a reward)?

Identify when you have felt like this but chosen not to consume it or consumed it if you are increasing intake.



# WORKSHEET-FOOD HABITS

A habit is more likely to be formed if there is a personal relevant goal attached to the habit. The goal cannot be vague. Once a small habit has been embedded, incrementally adding other small habits can help you work towards attaining a bigger goal.

What goal would you like to achieve by changing your eating habits (i.e. run without getting out of breath/ ride a bike for a longer duration/ having more energy)?

What small step would create the chain reaction? What could be your next steps towards your goal? Remember incremental change is more likely to result in achieving and sustaining the goal. Identify as many small steps as possible.





# FOOD AND WELLNESS

Below is a table of essential vitamins and nutrients and the consequences if there is a deficiency. This information is for preventative purposes and/ or to complement any current treatment only. It is not to replace medical advice, and if your symptoms persist, seek medical advice.

NUTRIENT	DEFIENCY	SOURCE
Vitamin B1	Poor concentration and attention	Wholegrains Vegetables
Vitamin B3	Depression	Wholegrains Vegetables
Vitamin B5	Poor memory Stress	Wholegrains Vegetables
Vitamin B6	Irritability Poor memory Stress Depression	Wholegrains Bananas
Vitamin B12	Confusion Poor memory Psychosis	Meat Fish Dairy products Eggs
Vitamin C	Depression	Vegetables Fresh fruit
Folic acid	Anxiety Depression Psychosis	Green leafy vegetables
Magnesium	Irritability Insomnia Depression	Green vegetables Nuts Seeds
Selenium	Irritability Depression	Wheat germ Brewer's yeast Liver Fish Garlic Sunflower seeds Brazil nuts Wholegrains
Zinc	Confusion Blank mind Depression Loss of appetite Lack of motivation	Oysters Nuts Seeds Fish



# TIPS FOR CREATING HABITS

## Like-minded

People who support you and your goals. Finding a tribe/s can create accountability and a sense of belonging and be inspirational.

## Incremental

Take small steps. Initially, it may feel odd, but once the neural pathway exists it will become easier. When this is normal, move onto the next change you wish to make.

## Be kind

To yourself because everyone is allowed an 'off' day. Start afresh when you are ready. Remember you will never be where you started because of everything learned in between.

## Time

On average, it takes between 60 and 120 days to implement change. The simpler the change the easier it is to embed, increasing confidence and motivation.

## Change narratives

There may be times when changing a habit feels exceptionally hard. It is easy to rely on old narratives to justify lapses. Challenge your thoughts!. They are only thoughts, not facts!

## External cues

Recognise the cues that may trigger unhelpful behaviours, like a chain reaction. Notice and change the cue, change the behaviour.

## Goal

Have a personal and relevant goal that you are working towards. It must not be vague but should give value and meaning to the change you are making; e.g. go bike riding on holiday or be able to play with your children.

# NUTRITION

## References

- 1) <https://www.mindcharity.co.uk/wellbeing-article/food-and-mood/>
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- 3) <https://www.mindcharity.co.uk/wp-content/uploads/2016/03/Feeding-Minds.pdf>
- 4) <https://www.optimallivingdynamics.com/blog/how-to-stimulate-your-vagus-nerve-for-better-mental-health-brain-vns-ways-treatment-activate-natural-foods-depression-anxiety-stress-heart-rate-variability-yoga-massage-vagal-tone-dysfunction>
- 5) <https://mindd.org/vagus-nerve-stimulation-many-benefits/>
- 6) <https://www.neomedinstitute.com/blog/15-ways-to-stimulate-your-vagus-nerve-to-improve-gut-health>
- 7) <https://atlasbiomed.com/blog/16-easy-hacks-to-enhance-your-gut-health-every-day-in-2020/>
- 8) <https://bmcmmedicine.biomedcentral.com/articles/10.1186/s12916-017-0791-y>
- 9) <https://www.bmj.com/company/newsroom/anxiety-might-be-alleviated-by-regulating-gut-bacteria/>