



# NUTRITION AND MENTAL WELLNESS: A CLOSER LOOK AT SEROTONIN

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If someone were to ask you what the leading cause of disability is, would you be able to answer? Did you consider depression? If not, I am sure that you would be surprised to find that depression is currently the leading cause of disability worldwide and contributes significantly to the overall global burden of disease<sup>1</sup>. More and more research indicates that our diet affects our mental health. In fact, it has been found that the risk of depression increases by about 80% when comparing teens consuming a “Western diet” (low-quality diet) to those consuming a whole-foods diet (high-quality diet). Thus, improving our diet can prove to be a powerful intervention when it comes to mental health<sup>2</sup>.

## WAYS THAT DIET IMPACTS MENTAL HEALTH

1. **It is vital for brain development** – The food that we eat gets broken down and becomes the foundation for protein-building blocks, enzymes, brain tissue and neurotransmitters. Neurotransmitters are responsible for transferring information and signals between the brain and the body<sup>2</sup>.
2. **The brain gets put into “grow mode”** – Nutrients such as omega-3 and zinc promote the production of a brain protein that helps to increase connection between brain cells<sup>2</sup>.
3. **It supports the healthy bacteria in your gut** – There is increasing evidence linking gut bacteria to mental health. It is thus important to consume foods that promote the growth of healthy bacteria.

For more information about the role of nutrients and mental health, please see the article “Foods that boost happiness and fight depression”.

## SEROTONIN AND MENTAL HEALTH

Serotonin is a chemical that sends signals between nerve cells and is known as a neurotransmitter. Surprisingly, most serotonin is found in the gut<sup>3</sup>. It is also found in blood platelets and throughout the central nervous system. Serotonin helps with sleeping, eating and digesting. It is also a natural mood stabilizer and helps reduce depression and regulate anxiety. It is made from an amino acid known as tryptophan, which cannot be manufactured by the body and needs to be consumed in the diet. Low levels of tryptophan may thus lead to low levels of serotonin<sup>3</sup>. Therefore, many people have resorted to consuming diets that contain high amounts of tryptophan and carbohydrates. The reasoning behind this is that tryptophan will get converted to serotonin, while carbohydrates make tryptophan more available<sup>4</sup>.



### Role of carbohydrates in serotonin production

Consuming carbohydrate-containing foods leads to the release of insulin into the bloodstream. Insulin promotes the absorption of most amino acids by the cells, but leaves out tryptophan. Tryptophan thus has more of a chance to enter the brain and convert to serotonin<sup>5</sup>. It is better to choose complex sources of carbohydrates as these provide a more gradual and constant release of carbohydrates into the bloodstream and thus a more gradual release of insulin. These carbohydrate sources also have other beneficial effects for health, besides mental health. Simple carbohydrates may boost serotonin quickly, but this is short-lived and causes spikes in blood sugar and insulin which has detrimental effects on health<sup>4</sup>.

### Role of tryptophan in serotonin production

As serotonin is made from tryptophan, it is important to include foods that are high in this amino acid. These foods include: turkey, beef, duck, fish and eggs. It is key to keep in mind that consuming tryptophan without the “right” carbohydrates will not have a significant effect. Some say that sources of tryptophan should be consumed before carbohydrates<sup>4</sup>.

### Other foods involved in increasing serotonin levels

Though tryptophan and carbohydrates may play a large role in the production and release of serotonin, there are a few other foods which have also been shown to help increase serotonin levels<sup>4</sup>:

- Dark chocolate – aim for around 80%
- Green tea
- Nuts & seeds
- Turmeric

## SIDE NOTES

**Blood vs brain serotonin:** Though blood levels of serotonin tends to increase after eating a high carbohydrate meal, these blood levels do not always translate well to brain levels. Furthermore, high levels of serotonin in the blood may have detrimental effects to one's health<sup>4</sup>.

**Insulin spikes:** Simple carbohydrates, or those with a high glycaemic index, cause a rapid spike and drop in insulin. This may worsen symptoms associated with depression, like mental fatigue and poor mood<sup>4</sup>.

**Problems associated with high-carb diets:** Diets that are high in carbohydrates can lead to inflammation which may be harmful to mental health. It is thus important to consume carbohydrates in moderation and to focus on complex carbohydrates<sup>4</sup>.



**We are individuals:** It is important to keep in mind that each person will respond differently to various dietary interventions as a means to increase serotonin<sup>4</sup>.

**High serotonin levels:** If you already have high levels of serotonin, using dietary interventions to increase it further may be problematic. Furthermore, there may be many causes for depression or anxiety, where low levels of serotonin is only one of these causes<sup>4</sup>.

**Diet and mental health:** Though diet can form *part* of a treatment plan, it should not *replace* medication and other treatments<sup>2</sup>.

## CONCLUSION

We may be affected by depression or anxiety, or know of someone who is. Knowing how diet can play a powerful role in mental health can be used along with medication in a treatment regimen. If your aim is to increase serotonin levels by eating certain foods, then the following take-home tips may be useful: don't neglect protein, eat complex carbohydrates, limit simple carbs and avoid the "junk" (alcohol, sodas and excessive amounts of caffeine)<sup>4</sup>.

### WHERE DOES FUTURELIFE® FIT IN?

Many FUTURELIFE® products are high in protein and contain all essential amino acids, including **tryptophan**. Most of the products, such as FUTURELIFE® Smart food™, are high in fibre and contain complex carbohydrates. In addition to these nutrients, FUTURELIFE® products contain omega-3, zinc, iron, vitamin C and other nutrients that play an important role in mental health. Why not consider incorporating FUTURELIFE® into your diet by having it as a porridge, a shake or smoothie during the day? Making a smoothie with FUTURELIFE® allows you to add various fruits which also contain nutrients important for mental health. Have a look at our website for recipes: [www.futurelife.co.za/recipes](http://www.futurelife.co.za/recipes)

## REFERENCES

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