LIFE BLOSSOM WELLNESS
Let Your Health Bloom

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DOWN SYNDROME: NATURAL APPROACHES TO IMPROVING MENTAL HEALTH

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Monthly Newsletter

MORE ARTICLES ON MENTAL HEALTH:

Mental Health Stats You Need to Know

The State of Mental Health in People with Down Syndrome

May is Mental Health Month and we couldn't be more excited! Mental Health, which includes emotional health and cognition (brain function), is something rarely discussed in the Down syndrome community.

While we all enjoy stories of people with Down syndrome doing amazing things on social media, there is a real need for a deeper understanding of how the 3rd copy of chromosome 21 really affects the mental health of people with Down syndrome. In honor of Mental Health Awareness month, here are some mental health facts about DS.

1.Most People With Down Syndrome Develop Symptoms of Alzheimer's disease by age 40

People with DS have 3 copies of a gene called amyloid precursor protein (APP). The APP gene helps to deposit amyloid-beta plaques in the brains of people with DS at a greater rate than typical individuals. Amyloid-beta plaque deposits cause brain damage and contribute to Alzheimer's disease development [1].

2. Depression Can Occur As Your Child Gets Older

Although there is a perception that people with Down syndrome are generally happy, there is growing research to suggest that the older people with Down syndrome get, the more they are prone to depression. Some studies suggest that up to 35% of people with intellectual disabilities suffer from depression and/or anxiety. Many issues contribute to this including the lack of friends and bullying [2]

3. High Self-Esteem and Self-Competence Linked to Better Mental Health

It's probably not surprising that research shows that people with Down syndrome have better mental health outcomes when they have higher self-esteem and self-competence.This comes from a supportive loving family environment that encourages growth, the setting of goals, the opportunity to practice to problem-solving, and the participation in recreation like the Special Olympics [3].

4. Down Syndrome Disintegration Disorder Linked to Autoimmunity

Down syndrome Disintegration Disorder, a regresssion that can occur in older children and adolescents with DS that includes: catatonia, depression, loss of independence in living skills (toileting, self-feeding, etc, and a decrease in cognition is linked to autoimmunity which occurs in a higher rate in people with DS than the typical population [4].

A whole-person approach to your child's mental health, can put them on the road to wellness for years to come!

Disability: What's the Link?

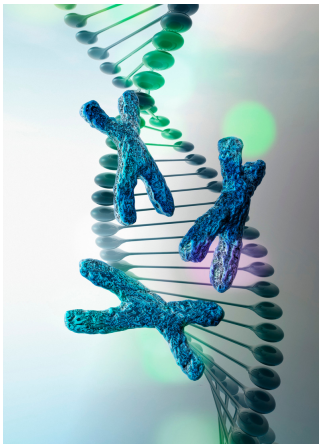
How does an extra chromosome cause intellectual disabilty?

It almost seems like a silly question to ask right? Everyone knows that Down syndrome means mild to moderate cognitive disability. This means a longer time to learn tasks, speak, walk, toilet train, etc.

But have you ever wondered why Down syndrome is linked to developmental disability?

The answer is extremely complex and involves an interplay of the effects of an extra chromosome, lifestyle, and environmental factors,

Did you know that there are genes involved in brain health that affect people with DS in a unique fashion? This article will briefly cover the top 3 genes that affect cognition in people with DS .



1. Amyloid Precursor Protein: APP Gene

The APP gene is one of the most studied genes when it comes to mental health and cognitive decline. That's because this gene is linked to the development of Alzheimer's disease in both typical individuals and people with and Down syndrome.

The APP gene causes an increase in amyloidß (beta) deposits in the brains of people with Alzheimer's disease. Amyloidß deposits in the brain lead to brain damage and dementia-like symptoms seen in Alzheimer's disease. Research has shown that this process happens at a greater rate for people with Down syndrome?

Why?

Because people with Down syndrome have 3 copies of the APP gene instead of 2. This means that nearly all people with Down syndrome will develop Alzheimer's disease at one point in their lives. And as a person with Down syndrome ages, his chance of developing Alzheimer's increases [5].

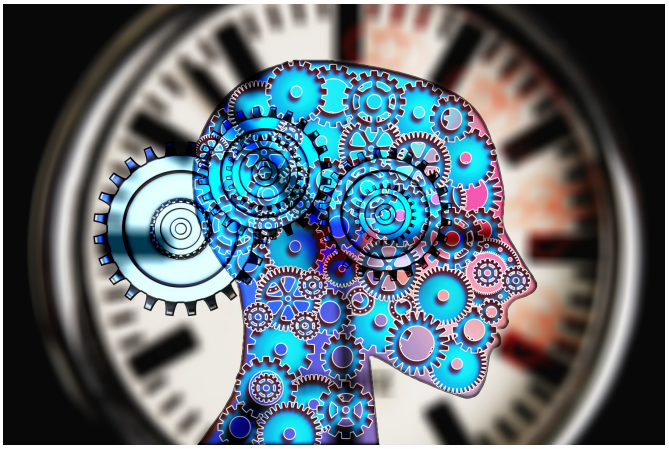
2. RCAN-1

RCAN-1 or regulator of calcineurin 1 is a gene that is located on chromosome 21. Just like APP, it is overexpressed (translated and made into proteins at an excessive rate) in individuals with Down syndrome. That is because they also have 3 copies of this gene instead of 2.

RCAN-1 creates a protein that interacts with calcineurin. Calcineurin is a protein that helps with brain and nervous system development and something called neuroplasticity [6].

Neuroplasticity is the ability of the brain to form new connections between its nerve cells in response to injury or learning something new. In essence, neuroplasticity means that the brain is flexible and able to retain what is learned.

The RCAN-1 gene can complicate this process in individuals with Down syndrome. In fact, too much activity of this gene is thought to lead to Alzheimer's disease giving a sort of 1-2 punch and increasing the risk of Alzheimer's in people with DS.



Intellectual Disability continued from Page 2

3. DYRK-1A

DYRK-1A, also called dual-specificity tyrosine phosphorylation regulated kinase 1A, is a gene that provides instructions to the body to make a protein that is important to the development of the nervous system, which includes the brain [7].

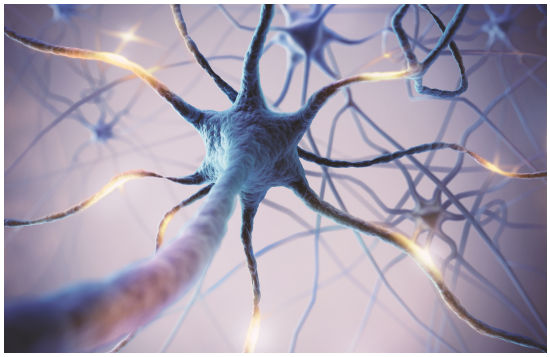
In brain cells, the DYRK-1A helps to form special parts of the neuron (brain cell) called dendritic spines. Dendritic spines are spiky protrusions that come from the brain cell.

They help brain cells to communicate with one another by transmitting electrical signals to the rest of the brain cell body. If you think of a brain cell like an electrical plug, the dendritic spines would be like the prongs that plug into the outlet.

As you probably guessed by now, the DYRK-1A gene is overexpressed in Down syndrome since people with DS have 3 copies of this gene instead of the typical 2.

An increase in DYRK-1A activity leads to a decrease in the growth of new brain cells and an increased risk of developing Alzheimer's disease in people with DS.

Therefore, too much of this gene has multiple negative effects on individuals with DS. While it may seem that there is nothing that can be done, fortunately, naturopathic medicine can help to mitigate the effects of these genes. Look for our newest online course: Health DS Kids: Brainiac, A Natural Approach to Helping Your Child with Down Syndrome Excel Intellectually coming out May 14 2021!



Do you want a more personalized approach to your child's health? Visit us at www.lifeblossomwellness.com/book-online to make an appointment today!

References

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Brain-Boosting Smoothie Recipe

May is Mental Health month! So what better way to improve your mental health than with this delicious nutritious brain-boosting smoothie! Even your picky child with Down syndrome can't say no to this sweet treat! They might even ask for seconds!

While this smoothie is delicious and packed with nutrients, always speak with your licensed health care professional before starting any dietary changes.

3/4 cup of full fat coconut milk

1 8oz unsweetened container coconut milk yogurt

1 teaspoon of chia seeds

1 cup fresh blueberries

1/2 teaspoon of vanilla extract

1-2 teaspoons honey (to taste)

Enjoy!

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