

THE
DNA
COMPANY

CASE STUDY

Genomic insights for a proactive health optimization strategy



Charles Kidd

Disclaimer: names have been changed for privacy reasons.

Any resemblance to actual persons is purely coincidental.

Case history

Subject: Charles Kidd (48 years old)

Background information

Charles is an investment banker who is interested in biohacking his genetics to have the best life possible. While Charles doesn't have any severe genetic issues, he wants a pre-emptive treatment plan that will allow him to be more surveillant, proactive, and prognostic should any health problems arise.

Potential genetic problems

1. Poor testosterone efficiency

Although Charles has no problem making enough testosterone, his body genetically struggles to bind testosterone to his androgen receptors. Basically, this means he isn't able to use testosterone as efficiently as one would hope. This likely makes it much more difficult for Charles to maintain striated muscles even while exercising regularly.

Fortunately, Charles has the slow version of the CYP19A1 gene, which is responsible for converting testosterone into estrogen. Because testosterone stays in his body for long enough, his hormones are not necessarily out of balance. He simply needs to find a way to enhance his body's ability to utilize testosterone rather than trying to increase his testosterone levels.

2. Low BDNF levels

The brain relies on an extremely important protein called brain-derived neurotrophic factor (BDNF) in order to maintain neuroplasticity. Charles has the suboptimal version of the BDNF gene, which results in low BDNF levels.

All of this makes it challenging for Charles to create new neurological pathways. He is likely to ruminate on past circumstances and have a hard time moving on from them. As an investment banker, he might get caught up in his thoughts and find it difficult to unwind after a long workday.

3. Suboptimal methylation system

The methylation genes determine the strength of the body's anti-inflammatory system. This affects everything from inflammation due to mosquito bites to recovery from viral infections and even headaches that stem from neurological inflammation.

Because Charles has suboptimal methylation genes, his body is ill-equipped to deal with inflammation. He might notice that it takes him longer to recover from a minor injury or infection than it takes others. Charles needs to be careful about not allowing toxins to enter his body so his blood vessels don't become too inflamed and lead to cardiovascular health concerns.

Treatment plan

Goals of treatment

Bearing in mind that Charles does not have any life-threatening genetic issues, this treatment plan is designed to optimize his health and give him the highest quality of life possible. All of the elements of treatment relate to minor lifestyle changes and supplementation; therefore, this treatment plan should be easy and convenient for Charles to implement.

Recommended treatment

1. Poor testosterone efficiency

Since Charles's body does not bind testosterone to his androgen receptors efficiently, he should take acetyl-L-carnitine to increase his ability to bind testosterone. This micronutrient will enhance his body's utilization of available testosterone. He can also take boron to release any testosterone that is bound and blocked by sex hormone binding globulin (SHBG). Boron is a necessary mineral that can be found in magnesium.

Aside from taking these supplements, Charles needs to monitor his vitamin D intake. His body needs to be getting enough vitamin D in order to make more androgen receptors. Charles should be mindful of vitamin D supplementation particularly during the winter months, considering he lives in Toronto. He can also focus on weight-bearing exercises in order to keep his body sensitized to testosterone and maintain muscle density.

2. Low BDNF levels

Charles's suboptimal BDNF gene can be improved by regularly taking an ice bath or entering a hot sauna. This is because the BDNF gene is stimulated by temperature shock. Even something as simple as a long hot shower every morning can increase Charles's BDNF levels.

He should also be getting plenty of exercise in order to raise his BDNF levels. Researchers are unsure whether this positive result is from the exercise itself or the change in temperature that results from the exercise, but either way, it is clear that exercise does increase BDNF.

3. Suboptimal methylation system

The key to boosting Charles's methylation system is a well-structured B vitamin regimen consisting of vitamins B12, B9, B6, and B2. He should build a diet rich in these B vitamins by eating plenty of organic eggs, organic spinach, sustainable fish, beer yeast, and nutritional yeast.

Because Charles will be taking B vitamin supplements along with his vitamin D supplements (not to mention acetyl-L-carnitine and magnesium), he will need to carefully space them out throughout the day. Taking all of these supplements together each day could result in vascular fullness, which feels like the early stages of a headache. It's best for him to take vitamin D each morning and take his B vitamins once every two or three days in the afternoon.

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