

CASE REPORT

To encourage other practitioners to consider submitting a case report for the E - News, we have restructured the format in line with recommendations from July 2014 and have left in the key guides - should you be interested just e mail info@nutri-linkltd.co.uk We will send you the word doc.

Case reports are professional narratives that outline the diagnosis, treatment, and outcomes of the medical problems of one or more patients. Information from case reports can be shared for medical, scientific, or educational purposes. They provide a framework for early signals of effectiveness adverse events, and cost. Case reports and the systematically collected data from which they are written also provide feedback on clinical practice guidelines.

Case Report of a 39 year old man, M.J., with multiple symptoms including a markedly poor, amnesia-like cognitive function, feeling of always be on edge, excessive intestinal gas and persistent twitching calf musculature for whom a targeted Nutritional Therapy programme resulted in extraordinary improvements.

Abstract. Summarise the following information if relevant: (1) Rationale for this case report, (2) Presenting concerns (eg, chief complaints or symptoms, diagnoses), (3) Interventions (eg, diagnostic, preventive, prognostic, therapeutic exchange), (3) Outcomes, and (4) Main lesson(s) from this case report.

This case explores a nutritional focused approach to the resolution of the majority of a 39 year old man's health challenges, and spans 21 months from the first to the most recent meeting, and includes 7 appointments over that time. This is an ongoing case.

Cognitive Dysfunction

There are multiple possible pathways that can lead to impaired cognitive function, poor attention span, poor concentration, poor memory, but it is rare for a 39 year old man to experience such difficulties. This man's memory was so poor it was, he described as if he had amnesia.

With memory loss, there are typically classic co-morbidities including migraines, vascular risk profiles and other psychological comorbidities. However, none of these were present for M.J.

There are also recognised precipitating events for memory loss which include emotional stresses which were present throughout the past ten years in M.J.'s life, as well as physical efforts of a relatively intense nature which were not.

For M.J. the amnesia-like lack of memory was his typical state of being rather than an episode or series of episodes.

Of note: Inflammatory damage to the hippocampus could be an explanation for memory loss and amnesia.¹

¹ Argyropoulos GP, Loane C, Roca-Fernandez A, Lage-Martinez C, Gurau O, Irani SR, Butler CR. Network-wide abnormalities explain memory variability in hippocampal amnesia. *Elife*. 2019 Jul 8;8:e46156. [Full Paper](#)

Restless legs / twitching calf muscles

There are some nutritional associations with restless legs, which includes iron deficiency anaemia, a lack of vitamin B12 and folate. There could possibly be a link with anaemia and poor memory².

With regards to understanding the aetiology of his other signs and symptoms, it is not straightforward. The itchy shoulder blades and scalp, the fatigue, the poor cognitive function and the excess intestinal gas could all reflect a microbial imbalance or immune-mediated inflammation emanating from the gut and liver. There could also be a hidden burden of toxicity.

Key Words. *Provide 3 to 8 key words that will help potential readers search for and find this case report.*

Cognitive dysfunction, amnesia, poor memory, poor attention, intestinal gas, restless legs, twitching calves, itching skin, fatigue.

Introduction. *Briefly summarise the background and context of this case report.*

M.J. had suffered from a variety of signs and symptoms for some years. They were now having a major impact on his life, his ability to feel in control of things and to maintain relationships with colleagues, friends and family.

The twitching calf muscles had been persistent for over a decade, but only more recently had they become hot both to his sense and to the touch. Over the ten years, M.J. had also experienced an ever-increasing number of health complaints. He had a poor memory to the extent that he now wrote notes to himself every day in one form or another, be it on post-it notes, scraps of paper or emails to self, and sometimes biro scribbling on the inside of his non-dominant forearm. His ability to concentrate was poor and he believed he must have developed some form of attention deficit condition. Unlike others whom I have met whose memory begins to fail, he found that his memory was poor for everything, including the things he was most interested in; it was most disconcerting.

Over the prior ten years M.J. had increasingly felt more and more on edge but also spacey at the same time. He felt like he was trying to grasp at whiffs of smoke; he just could not get his brain into gear and focus. He had an increasingly persistent itch on both of his shoulder blades (scapula), and more recently he was experiencing an itchy scalp. He had also developed what he referred to as a trigger thumb also known as stenosing tenosynovitis, which hampered many activities. M.J. also suffered from regular light-headedness, which is potentially associated with his poor memory / amnesia, and his intestinal gas was now excessive every day.

Having suffered with the physical and psychological signs and symptoms for some years, they were now present every day, which had finally obliged M.J. to seek professional health advice.

² Wolffenbittel BHR, Wouters HJCM, Heiner-Fokkema MR, van der Klauw MM. The Many Faces of Cobalamin (Vitamin B12) Deficiency. Mayo Clin Proc Innov Qual Outcomes. 2019 May 27;3(2):200-214. [Full Paper](#)

However, it was due to their gradual onset and his struggle to simply survive each day, that it had taken him much longer to organise the help he so badly needed.

Presenting Concerns. *Describe the patient characteristics (eg, relevant demographics—age, gender, ethnicity, occupation) and their presenting concern(s) with relevant details of related past interventions.*

M.J. is half English and half Israeli. He weighs 75kg (12 stone 1 lb) and is 177cms (5' 8") tall. His blood pressure and pulse were normal.

He is one of four siblings, having three older sisters. He grew up in Tel Aviv and then attended university in England and then remained in the UK thereafter. His current work involves the import and export of goods to and from all continents, and this meant he travelled long-distance on average once a month and within Europe once a month. "Somehow", as he described it, over time he had become managing director of the company, but he admitted that he was simply unable to recall how this had happened. It was surreal to him. His PA was supremely good at her job and without her, he would be done for, he said. His own daily note-taking was mostly related to what he needed to ask his PA to do for him. He had an ever-increasing sense of being on edge, bordering on panic, especially when travelling overseas and this was due to his inability to hold any information in his head, and when he was further away from his PA. He needed his electronic devices in order to provide him with the information that he needed. He mused whether it was the lack of being encumbered with memories that he had been able to make decisions devoid of the potential emotions attached to those memories but rather solely based on performance.

There was nothing from the health history information provided in advance of the first appointment or within it that indicated any specific event or blow to the head had occurred prior to his cognitive decline. Stress, certainly, had been a factor, and it was now a vicious cycle because his everyday was one long series of stresses that he hid within himself as he struggled to function each day. He had long lived with the fear of being caught out but more recently he was more fearful as to what was happening to him, health-wise.

M.J. told me that the character with amnesia in the film Memento (in the year 2,000) played by the actor Guy Pearce bore a good resemblance to his own lack of ability to recall ... anything. Yet, he was able to make decisions based on the information in front of him which is what permitted him to continue to function.

Originally, the twitching calves had first started off in the night but now this was persistent 24/7. He had yet to seek any professional help for this irritating physical symptom. Within the past year, the calves had become hot to his feel, and then they became hot to the touch. He had not sought medical advice about this.

The skin on his back, around the shoulder blades, had become itchy and he found himself leaning into the back of his office chair to scratch his back, and sometimes on door frames too. This had been present for about a year, but as M.J. warned me, he honestly could not say with any certainty WHEN these things had occurred because he could not remember. What he told me was from notes that he had written to himself. His scalp had recently become itchy as well.

After each meal, and worsening as the day progressed, he had developed excessive gas which had become difficult to deal with, and added to his embarrassment and fears. He had limited his diet to avoid the foods that led to the most wind but he still experienced excess wind every day. When he got home the first thing he would do would be to go and sit on the loo and let the gas out.

Over the past few years, he had developed a trigger thumb which had hindered his ability to write as clearly as he used to, so he was grateful that he could use a keyboard for all work-related communication. It also impeded his ability to do certain types of exercise which involved gripping a barbell or cable grip. Again, he had not sought out medical help for this.

With time, and with the ever-present pressure of finding a way to recall and remember things for both work and in conversations with friends, he had become fatigued and in the past year in particular found himself mentally and physically tired all the time.

Clinical Findings. *Describe: (1) the medical, family, and psychosocial history including lifestyle and genetic information; (2) pertinent co-morbidities and relevant interventions (eg, self-care, other therapies); and (3) the physical examination (PE) focused on the pertinent findings including results from testing.*

M.J.'s parents are both still alive aged 75 (mother, English) and 82 (father, Israeli), even if they are not particularly well. His father had suffered from gout for many years and had late-onset type 2 diabetes from the age of 65, whilst his mother had been treated for depression for the past 5 years and had had many years of dental issues. His 3 older sisters all had digestive issues related to gluten or food sensitivities as far as M.J. knew; he did not keep in touch with them very often – they live in Israel as do his parents.

As far as M.J. was aware, none of the health challenges that he faced were inherited or similar to that of a family member. He had only developed these symptoms whilst living and working from within the UK. He had not had any health issues beyond ten years ago. He put most things down to stress but he had never taken the time to seek help from any health professional until now to be told otherwise. He did know that he put a lot of effort into functioning from day to day, and it took such a lot of effort to keep on top of things each day, that he barely had any time or space to contemplate anything else.

M.J. had no blood tests done or any other kind of investigation.

Timeline. *Create a timeline that includes specific dates and times (table, figure, or graphic).*

M.J. had been very well as a boy, growing up in Tel Aviv. He engaged in all the usual physical activities and sports although this was mainly at school; his 3 older sisters did not play with him as they were quite a bit older. He had no problems at school and had done quite well academically. He had never had a problem with his focus, concentration, attention and memory. He never had any physical signs or symptoms such as the twitching calves.

Aged 18 M.J. travelled to England to study Business at the University of London, where he obtained a degree after 3 years of study. He then worked for the next few years before he undertook a two year part time MBA (Masters in Business Administration). He moved within the same sector of industry which involved the import and export of goods. All of these jobs involved travel and he was able to visit his family in Israel a few times a year. To all intents and purposes M.J. was very well until about the age of 29, but leading up to this he admitted that he had worked very hard and had been under duress in every role he had had.

M.J. ate well, by which he meant he ate whole, unprocessed food, just as he had been brought up with - except when he was travelling when he found it hard to do so. He ate a variety of protein sources and consumed fish or lean animal meats twice a day. He ate a variety of vegetables and bought organic where he could. He had been eating a variety of grains including wheat and oats and pastas as well as corn, quinoa and buckwheat. He did not drink much alcohol at all. He had never smoked.

At 29 years of age, a decade before the first appointment, M.J. developed intermittent night-time-only muscle twitching in his calves. It was not painful, just an irritation. He could not understand why and had never sought any advice about it.

At about 31 years of age, with the twitching calves becoming more consistent, the itching on his back and specifically around his shoulder blades started. At first it was present now and then and it too had become a feature of his life. When we met, it was continuous to one degree or another and certainly did not help his ability to concentrate his mind.

For some two years, his calves had become hot to the feel, from within, and then hot to touch as if they were inflamed. The skin did not look red or bruised or swollen in any way but the skin covering his calf muscles was warmer than the rest of legs or body. This was not persistent, but at night he needed to uncover his lower legs due to the heat.

A year before we met, when M.J. was 38 years old, he estimated this was the time when the excessive intestinal gas had become noticeable. He caveated that all of these details were due to his having written them down in the past because he could not remember them otherwise. Like the other health conditions he endured, this too had become progressively worse. He managed to identify rather obvious contributors to the wind and he now avoided all beans and pulses. However, he still had excess wind, especially after the third meal of the day.

Another thing that manifested about a year before we met was the trigger thumb. It had appeared one day, as far as he could recall, and pretty much remained as it was for the past year. Again, he could not be sure how much worse it had become because he had not made notes about it.

Within the past year, M.J. had also experienced light-headedness which required him to sit down and remain still. This happened about once a week and could be triggered by climbing the stairs or even bending over and getting up quickly. It tended to happen later in the day and not earlier.

His scalp had become itchy in the past twelve months and this was irritating especially at night. He found that he sometimes awoke to find himself scratching his head which he also described as becoming hotter during the night.

All in all, M.J. presented quite a syndrome of signs and symptoms which is summarised by his initial health goals:

- To have a working memory, to be able to focus easily, to be free of spaciness.
- To be free of twitching calves.
- To have a good level of energy.
- To have a normal temperature in my calves and head.
- To be free of feeling on edge, to feeling like I am close to panic.
- To be free of itchy shoulder blades and scalp.
- To be free of excess gas.
- To be able to eat a wide variety of foods without any problems.
- To be free of the trigger thumb.
- To be free of light-headedness.
- To ensure I can be healthy today and for tomorrow.

M.J. is possibly the my first client under 75 years of age who has, to all intents and purposes, acute and chronic amnesia. He repeated things a number of times in the appointment, referring to his notes. He admitted that his “memories were a blur” and that his memory was “shot to hell”. As but one example, he even forgot the names of family members.

Diagnostic Focus and Assessment. *Provide an assessment of the (1) diagnostic methods (eg, PE, laboratory testing, imaging, questionnaires, referral); (2) diagnostic challenges (eg, financial, patient availability, cultural); (3) diagnostic reasoning including other diagnoses considered, and (4) prognostic characteristics (eg, staging) where applicable.*

In an analysis of the questionnaires that M.J. had completed in advance of the first appointment, the sections with the highest scores (i.e. symptoms associated with an aspect of health) were these, with the highest score first: large intestine, adrenals, nervous system, liver / gallbladder, sugar handling, small intestine.

In order to obtain some insight as to what was occurring within M.J. I recommended he conduct an Organic Acid Test (OAT)(Great Plains Lab) which was conducted in July 2021. There was nothing wildly out of range except for Hippuric but there were a number of imbalances, as follows:

Elevated markers of yeast / fungal growth: 5-Hydroxymethyl-2-furolic (indicator of aspergillus) 41 (<18), 3-Oxoglutaric 0.15 (<0.11), Furan-2-5-dicarboxylic (indicator of aspergillus) 25 (<13).

Very elevated Hippuric 707 (<241), reflecting GI bacterial activity.

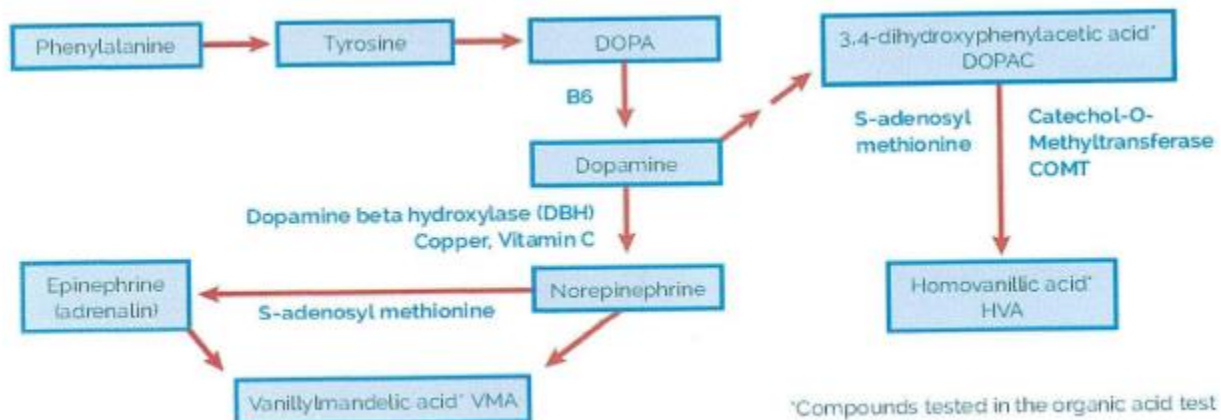
Elevated HVA : VMA ratio (homovanillic acid reflecting dopamine, and vanillylmandelic acid reflecting noradrenaline / adrenaline) 3.0 (0.32–1.4). Elevated dihydroxyphenylacetic (DOPAC)(indicating high excretion of dopamine) 4.0 (0.27-1.9).

High within the range Pyroglutamine (reflecting glutathione status) 22 (5.7-25).

Elevated 2-Hydroxyhippuric (indicating GI bacteria) 1.6 (<0.86).

There is a connection with low levels of B12 and folate and restless legs, but neither was indicated in the OAT, and therefore the theory that the twitching calves were due to a deficiency of one or both of these B vitamins remained unsubstantiated.

The most common reason for an elevated ratio of HVA: HMA is a decreased conversion of dopamine to noradrenaline M.J.'s levels of dopamine excretion as reflected by the elevated DOPAC were elevated both of which could reflect the presence of Clostridia but none of the four markers for this bacterium were elevated. Nonetheless, the combination of the elevated HVA : HMA ratio with the elevated DOPAC reflected that dopamine levels may well be too low which would help one to understand his inability to focus and remember things.



With the complexity of M.J.'s chronic state of being, it was not likely that any single functional test, no matter how comprehensive, was going to reveal all of the imbalances within him. Nonetheless, the OAT did provide confirmatory and useful information when married to his case history. With the indications of the yeast and fungal markers there is a possibility that mycotoxins were playing a role in M.J.'s symptoms and amnesia.

Therapeutic Focus and Assessment. Describe: (1) the type(s) of intervention (eg, preventive, pharmacologic, surgical, lifestyle, self-care) and (2) the administration and intensity of the intervention (eg, dosage, strength, duration, frequency).

M.J.'s diet appeared to be very sound, nutritionally speaking with very little processed foods and it provided a good source of protein with two meals a day. However, he was eating grains every

day, root vegetables and fruit all of which contributed to the excess gas. Given the potential for grain to be a source of mould and given the indicators for aspergillus, I recommended that M.J. reduce the amount and frequency of these sources of mould and increased fermentation. I recommended that M.J. follow a gluten-free diet. I also recommended he consume more healthy fats in the form of olive and coconut oil both of which possess some anti-fungal activity.

In my opinion, based on the excess intestinal gas, and the out-of-range markers described above in the OAT. there was a need to support M.J.'s gut bacteria. In addition, with the itching shoulder blades and scalp, to me this reflected a possible association with his bile production and flow. Bile is an important regulator of gut bacteria, and also a means of eliminating toxins from within the body.

Whilst biliary issues can readily lead to brain fog, and although there was no indicator of excess ammonia in the OAT (orotic acid), I was suspicious that there may have been a low-grade viral infection that was contributing to his remarkably poor memory, something I have seen in other clients even if they have been 20 years or more older than M.J.

Whilst he evidently needed adrenal support, the initial programme was designed to support bile flow and simultaneously support hepatic clearance, to promote healthy commensal bacteria and reduce GI-related inflammation, to support his gut lining, and to help control any viral load.

Even though M.J.'s gut symptoms had started some years after the very first sign that something was wrong (i.e. the twitching calves), and in the absence of a firm understanding of what was causing the calf twitching, I decided to focus on known issues and focus on his gut and liver.

When the results of the OAT came back, I was able to prepare this targeted nutritional supplement programme together.

The sodium form of butyrate was chosen due to M.J.'s disposition to feel light-headed, rather than the calcium and magnesium form which may not have helped maintain his blood pressure in the same way. I recommended probiotics (Securil & Bio-Bifido BacT & Fuco-Immune) and a combination of natural anti-virals (Humic Monolaurin Complex) and Taurine to support bile production and flow and also antioxidant, and the liver-supportive choline and inositol. The dosing for these supplements is shown below.

July 2021

Supplement Name (& Brand)	Dose
Sodium Butyrate (BB) (most important & abundant SCFA, for liver, bile, & colonic support)	2 with lunch, 1 with dinner
Securil (AR) (probiotic and prebiotic that supports propionic acid which helps with bowels) (store in cool place)	1 with lunch & 2 with dinner

Bio-Bifido BacT Powder (BR) (only bifidus strains for the large intestine) (store in cool place)	¾ tspn in a little water before lunch & dinner
Fuco-Immune (AR) (probiotic LP-137 & marine plant immune support)	1 with lunch & dinner
Humic Monolaurin Complex (AR) (3 natural anti-viral remedies: humic acid, olive leaf extract, lauric acid)	2 with lunch and 2 with dinner
Taurine (AR) amino acid vital for bile production and flow & for detox)	1 mid morning and 1 late afternoon, ideally away from food
Choline & Inositol (NutriGold) (liver-specific nutrients that support fat metabolism, energy and bile)	2 with breakfast & 2 with dinner

We agreed to review the programme in 5 to 6 weeks after the first appointment, and the first follow up was on 7th September. M.J. was in the United Arab Emirates at that time, so we conducted the appointment via zoom.

The first thing that M.J. reported was that his memory had improved dramatically since taking the supplements. His twitching calves remained unchanged, however. He had found the dietary restrictions hard to abide by and resorted to potatoes as a source of carbohydrate. He had consumed no alcohol, not that he drank much anyway. His trigger thumb was the same as it had been. The intestinal gas was a lot less than before. The light-headedness had reduced gradually and then disappeared.

On the basis of this feedback, I made some minor changes to the supplements, as shown below.

September 2021

Supplement Name (& Brand)	Dose
Sodium Butyrate (BB) (most important & abundant SCFA, for liver, bile, & colonic support)	2 with lunch, 1 with dinner on Mon / Weds / Fri
Securil (AR) (probiotic and prebiotic that supports propionic acid which helps with bowels) (store in cool place)	Finish and stop
Bio-Bifido-BacT Powder (BR) (only bifidus strains for the large intestine) (store in cool place)	¾ tspn in a little water before lunch & dinner
Fuco-Immune (AR) (probiotic & plant immune support)	Finish and stop

Humic Monolaurin Complex (AR) (3 natural anti-viral remedies: humic acid, olive leaf extract, lauric acid)	2 with lunch and 2 with dinner
Taurine (AR) amino acid vital for bile production and flow & for detox)	1 mid morning and 1 late afternoon, ideally away from food on Mon / Weds / Fri
Choline & Inositol (NutriGold) (liver-specific nutrients that support fat metabolism, energy and bile)	2 with breakfast & 2 with dinner

We agreed to review in another 6 weeks, but he then found himself moving to Johannesburg, South Africa to head up the office there. This was a major stress on him, but as his memory was working so much better than it had been, this move felt more manageable.

At the end of November 2021, we had our third appointment via zoom. His memory had continued to improve and was working much better than when we first met. His concentration had also definitely improved. His overall cognitive function was much better, and he told me that there was no way he could have undertaken the move to South Africa and managed that office without such improvements.

The lower leg twitching was still quite extreme and now extended to his thighs. He put this down to the high stress in the new environment, and he still felt on edge, even though his brain was working much better. He had developed cravings. The gas was intermittent and definitely related to the foods eaten whereas before he had wind no matter what he ate. He was less in control of what he wanted to eat due to the new location. We identified together that lactose and fructose appeared to be culprits for excess gas.

He told me that the supplement of Choline & Inositol led to nausea which alerted me to a possible biliary issue. This then led me to consider the need to support his thyroid hormones because they regulate bile flow. As a result, I included iodine in his next supplement programme along with a formula to help convert T4 to T3 (Meda Stim). Also included was a digestive enzyme (Full Spectrum Digest) and a garlic supplement (Garlic Plus) to inhibit bacteria and yeast and some natural sulphur to help with detoxification (MSM Caps).

It was interesting to note the marked improvement in M.J.'s cognitive function compared to the lack of improvement elsewhere. We agreed to review in a few months.

He managed to organise the delivery of the supplements from friends or colleagues who were travelling from the UK. He did have access to some supplements, including the Solgar brand.

November 2021

Supplement Name (& Brand)	Dose
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Meda Stim (BR) (formula that supports the conversion of T4 to T3) (3 months)	2 with breakfast & 2 with lunch
Liquid Iodine (BR) (odourless, almost tasteless liquid) (iodine is essential for thyroid hormone production) (5 months)	4 drops neat or in a little water at breakfast time
MSM Caps (AR) (natural sulphur with molybdenum for sulphation detox support) (3 months)	1 with lunch & 1 with dinner
Full Spectrum Digest (AR) (very effective digestive enzyme) (5 months)	1 with lunch & 1 with dinner
Garlic Plus (BR) (natural anti-bacterial, to inhibit the bacteria that ferment and cause gas) (3 months)	1 with lunch & 1 with dinner
Sodium Butyrate (BB)	TO FINISH – 2 with lunch, 1 with dinner on Mon / Weds / Fri
Bio-Bifido-BacT Powder (BR) (only bifidus strains for the large intestine) (store in cool place)	TO FINISH - ¾ tspn in a little water before lunch & dinner
Taurine (AR) amino acid vital for bile production and flow & for detox)	TO FINISH - 1 mid morning and 1 late afternoon, ideally away from food on Mon / Weds /Fri
Choline & Inositol (NutriGold)	STOP
Humic Monolaurin Complex (AR)	STOP

It was not until the end of March 2022 that we met again, via zoom, for the fourth appointment. M.J. told me that the business was going very well and this was thanks to his cognitive abilities being considerably better than they had been. We both acknowledged that what had happened in this regard was out of the ordinary and he was so grateful to have his brain back! He now found that his memory was better than average, compared to his colleagues.

However, his twitching legs were driving him crazy and this made it hard to focus. He also reported a shortness of breath even though he had become fitter by engaging in regular training since arriving in Jo'burg. His gas was worse after his evening meal, but as before, it was hard to associate the gas with any particular foods. He began to have an itchy anus. He had noticed discomfort below his sternum sometimes after taking the supplements.

He had had a colonic irrigation treatment which had reduced his twitching legs for a few days afterwards but then the twitching resumed as usual. This was the first time, however, that anything had made a difference to this condition.

M.J. expressed concern that he was sliding backwards in some ways, even if his cognition was very good.

As a consequence of learning this information from M.J. I introduced the anti-microbial olive leaf (Prolive) and a hydrochloric acid supplement to support digestion, as well as act as an anti-microbial. I also introduced a binding agent, modified citrus pectin, designed to help to reduce the burden of toxins in his bile and his gut. The improvements experienced after the colonics prompted a consideration that a reduction of toxins from within the colon would be worthwhile, especially as mould toxins may be playing a role in the neurological symptom of the twitching legs.

March 2022

Supplement Name (& Brand)	Dose
Meda Stim (BR) (formula that supports the conversion of T4 to T3)	1 with breakfast & 1 with lunch
Liquid Iodine (BR) (odourless, almost tasteless liquid) (iodine is essential for thyroid hormone production)	2 drops neat or in a little water at breakfast time
Garlic Plus (BR) (natural anti-bacterial to inhibit bacterial fermentation)	1 with dinner
Prolive (AR) (natural anti-viral)	1 with breakfast & 1 with lunch
Modified Citrus Pectin (AR)(MCP) (natural binding agent)	2 with lunch & 2 with dinner
HCl Plus (BR)	1 in the middle of each meal. After 7 days increase to 2 with each meal
Full Spectrum Digest (AR)	Not for now
Sodium Butyrate (BB)	Not for now
Bio-Bifido-BacT Powder (BR)	Not for now
Taurine (AR)	Not for now

We met again over 3 months later in early July 2022, nearly a year on from the first appointment, with M.J. still in Jo'burg. M.J. was quick to share that he was under intense, "dramatic" stress with his job, and that was WITH a highly functioning memory and switched on cognition. However, he told me that he bounced back from the dips in his mood and his energy was very good, at which he marveled because this was not the case when he first headed to Africa.

What M.J. now shared with me is quite remarkable. His memory had developed to such a degree that he was now able to remember other people's names very well, something he had never been able to do before. Furthermore, he could recall the small details of the monthly board meetings and the specific activities of his colleagues to such a degree that they would ask M.J. for the information and now "everyone" turned to him! He no longer needed to rely on his PA for the multitude of things that he used to. He described this as "sensational".

The twitching legs were slowly improving, and now M.J. could associate a worsening of the twitching with poor food choices. His intestinal gas was less overall, but still an issue. The itchiness on his back and scalp were much less, so much so that we had forgotten to discuss this in the previous appointment.

The emphasis of the supplements changed somewhat, to focus more on antioxidants to support his liver detoxification pathways as well as to reduce systemic inflammation. A sustained release lipoic acid was included (ALA Release) along with a glutathione-supportive NAC formula (Thiodox), and natural sulphur (MSM Caps), and an emulsified extract of turmeric was included (CurcumRx). The liver supportive phosphatidyl choline was included too. This programme included four liver-focused supplements: ALA Release, MSM Caps, Phosphatidyl Choline and Thiodox.

July 2022

Supplement Name (& Brand)	Dose
ALA Release (AR) (potent antioxidant, liver & brain support)	1 with each meal
CurcumRx (BR) (fully emulsified extract of turmeric – potent anti-inflammatory)	1 with each meal
Meda Stim (BR) (formula that supports the conversion of T4 to T3)	2 with breakfast & 2 with lunch
Phosphatidyl Choline (AR)	2 with lunch & 2 with dinner
MSM Caps (AR) (natural sulphur for detox support)	1 with lunch & 1 with dinner
HCl Plus (BR)	1 in the middle of breakfast, 2 with lunch & 2 with dinner
Thiodox (AR) (liver support, antioxidant)	1 with breakfast & 1 with lunch

Our sixth appointment was at the end of October 2022. M.J. met me on screen with a wide smile and described the crazy state of his memory which was now of “mythical proportions” he told me. His reputation for remembering “everything” was now well-known in his company and as a result, the respect he earned was high. He had been prompted to watch the film “Limitless” starring Bradley Cooper and M.J. described that what he had experienced was not far off! That’s two films in which the characters were very much like M.J.: “Memento” (amnesiac) and “Limitless” (super brain power). His energy and mood were both very good.

M.J. declared that it felt like he had woken from a two-decades-long-slumber and he honestly did not know how he got here. It was a strongly emotional conversation, and M.J. expressed to me that he did not know who he was and what he wanted, and yet he felt an inner excitement that he had not felt for 20 years.

The gas and itching, however, waxed and waned, depending on the food he ate, but he found it hard to identify specific patterns in spite of his ‘computer-like brain’. If he ate sulphur-free dried fruit there would be no wind, but if it was sulphured then he would have wind.

The twitching calves were definitely less and now it was a dull ache, and therefore much improved compared to previous years. Nonetheless, there was still some way to go.

He had developed a habit of drinking coffee and had gradually reached the level of 3 cups by lunch-time; it was high quality ground coffee. It was recommended that M.J. limit this to 1 cup in the morning due to the potential for the caffeine being a promoter of the excitability within his body. Furthermore, caffeine can upregulate Cytochrome P450 Phase I liver enzymes and place more burden on the Phase II pathways. Potentially, any spillover from the Phase I reactions could exacerbate neurological symptoms.

The focus was still on inhibiting inflammation and I swapped the turmeric extract for a combination formula including curcumin but with 10 other natural anti-inflammatory agents (KappArest).

The programme remained largely the same but now included a therapeutic dose of vitamin B1 and magnesium malate for his nervous system to help him deal with the intensity of the stress, and an Evening Primrose Oil for his skin.

October 2022

Supplement Name (& Brand)	Dose
ALA Release (AR) (potent antioxidant, liver & brain support)	1 with each meal
KappArest (BR) (anti-inflammatory formula)	1 with each meal
Meda Stim (BR) (formula that supports the conversion of T4 to T3)	1 with breakfast & 1 with lunch
MSM Caps (AR) (natural sulphur for detox support)	1 with lunch & 1 with dinner
HCl Plus (BR) (digestive support)	1 with each meal
Thiamin 50 (BR) (vitamin B1 for the nervous system)	2 with each meal
Magnesium Malate Forte (AR) (for resolving twitches and spasms)	2 with dinner
Evening Primrose Oil (EPO) (AR) (71260) (for addressing dry skin)	1 with breakfast & dinner
Thiodox (AR)	Stop

Phosphatidyl Choline (AR)	Stop
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Our most recent appointment, the seventh, was in March 2023, over 4 months since the previous. In terms of memory and energy and mood, things were all good – at least on the surface they were. The twitching legs were the least troublesome for many years, and the gas was minimal. He felt that the HCl acid supplement was helping with digestion.

However, for the previous 3 weeks, something had changed. M.J. had become more hyper vigilant and had felt a buzzing sensation in his body, like an internal vibration, and he wondered if it was connected to the food he'd eaten. His diet had not been so healthy as it had been and perhaps the increase in refined sugar had contributed, or perhaps the odd whiskey too? He had only reduced his coffee to 2 cups and not the 1 as recommended. He had developed pins and needles in the back of his head. He had become more sensitive to noises: voices, music, vehicles.

In terms of physical fitness, M.J. was now training five times a week: swimming, cycling, running, doing bodyweight resistance exercises. His sleep was good, and his bowels were very regular. With the varied of signs and symptoms that M.J. had experienced in the previous 11 years, there may well have been a toxic burden that was contributing to the disparate manifestations. Due to M.J. being abroad it had not been possible to conduct further tests for environmental toxins nor mycotoxins nor heavy metals.

The nervous system irritation, the internal buzzing, led me to consider the need for methylation support³. Methylation is important one of the biotransformation pathways for addressing mycotoxins⁴. In previous programmes, the supplements have supported glutathione and sulphation pathways, and now the focus was more on methylation with the use of a multi-nutrient methylation supplement (Homocysteine Plus and additional folate, QuatreActiv Folate). Thyroid hormone metabolism support was still provided as was the vitamin B1.

March 2023

Supplement Name (& Brand)	Dose
Meda Stim (BR) (formula that supports the conversion of T4 to T3 – thyroid hormones)	1 with breakfast & 1 with lunch
Homocysteine Plus (AR) (methylation support formula)	1 with each meal
QuatreActiv Folate (AR) (500mcg of active folate for methylation)	1 with breakfast & 1 with dinner
Thiamin 50 (BR) (vitamin B1 for the nervous system)	1 with each meal

³ Methylation Deficiency: The Missing Component to Neurological and Immunological Recovery Kendal Stewart, MD – [View Paper](#)

⁴ Li P, Su R, Yin R, Lai D, Wang M, Liu Y, Zhou L. Detoxification of Mycotoxins through Biotransformation. Toxins (Basel). 2020 Feb 14;12(2):121. [Full Paper](#)

Betaine HCl 300mg (Solgar)	1 with dinner
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Summary - 21 months on

Here is a reminder of M.J.'s health goals (in blue) and inserted is the outcome after 21 months of following nutritional intervention.

To have a working memory, to be able to focus easily, to be free of spaciness.

Incredible transformation in M.J.'s memory and cognitive function in spite of moving continents and the demands of the job.

To be free of twitching calves.

Very gradual change, but definite improvements after many months.

To have a good level of energy.

Swift improvement that was sustained for the most part of this period of time, again in spite of needing to adapt to a different country.

To have a normal temperature in my calves and head.

The heat did reduce over time and then resolved after over a year.

To be free of feeling on edge, to feeling like I am close to panic.

This improved very rapidly due to the improved cognitive function, although the edginess returned in the most recent weeks of this 21 month period.

To be free of itchy shoulder blades and scalp.

This reduced and then resolved after about a year

To be free of excess gas.

This came and went and has remained an intermittent problem, but helped with the digestive aids and correct choice of food.

To be able to eat a wide variety of foods without any problems.

The digestive aids have helped this but there is still a need to minimise or avoid gluten and dairy and refined sugar.

To be free of the trigger thumb.

This resolved in time.

To be free of light-headedness.

This resolved in time.

To ensure I can be healthy today and for tomorrow.

The initial improvement in cognitive function that was then sustained gave M.J. the encouragement and confidence that he could be 'healthy'. However, there is a way to go yet even though his memory is now the stuff of legend.

There is still a way to go for M.J. to be free of symptoms and it has been intriguing for both of us that he has had such an incredible turnaround in his cognitive functioning and energy and mood that has not been matched by improvements in the other things: the twitching legs, the intestinal gas, and more recently by the inner sense of buzzing. Other symptoms diminished over time: the itching, the trigger thumb, the light-headedness, the hot calves and head.

With an assessment of mycotoxins and environmental toxins, it may be possible to confirm the theory that has emerged that his health and nervous system has been adversely affected by toxins. When he is next in the UK it has been recommended that he undertake such tests.

As a final summary comment, it would appear that the nutritional programmes over these 21 months have removed obstacles that permitted M.J.'s brain and body to work as they should, and as identified, there is still some way to go.

Discussion. *Please describe (1) the strengths and limitations of this case report including case management, (2) the literature relevant to this case report (the scientific and clinical context), (3) the rationale for your conclusions (eg, potential causal links and generalizability), and (4) the main findings of this case report: What are the take-away messages?*

Strengths and limitations of this case report including case management

Specifically, there were geographic limitations in engaging in any further tests beyond the original organic acid test, because M.J. was in South Africa. The two tests in particular are the environmental toxicity test which assesses 18 of the most prevalent toxins, and a mycotoxin test. The finding of the marker for *Aspergillus* in the OAT (the 5-Hydroxymethyl-2-furolic) is suggestive of the presence of mycotoxins which are very resilient.

Another test to consider would be a comprehensive stool analysis to identify whether there were any treatable imbalances within his microbiota.

The early success for M.J. with regard to his memory helps to confirm that the focus on his gut and liver was warranted, as opposed to focusing on his dopamine, for example.

The literature relevant to this case report

There is an ever-growing body of published papers linking neurological symptoms to toxins on various kinds, including mycotoxins. Equally, it has been published that the biotransformation of toxins occurs through a number of different pathways including: hydroxylation, oxidation, hydrogenation, de-epoxidation, methylation, glycosylation and glucuronidation, esterification, hydrolysis, sulfation, demethylation, and deamination.

The rationale for your conclusions

When a case with a complex array of signs and symptoms is presented, toxins and hidden infections come to mind automatically. This was supported at least somewhat by the organic acid test results which revealed the presence of *Aspergillus*. This does not inform us directly about

mycotoxins, it only suggests it. There were also numerous indicators that the liver was under challenge: the itchy skin, the poor memory, the heat in the calves, the fatigue.

The main findings of this case report: What are the take-away messages?

Without a doubt, it could not have been anticipated that there would have been such a rapid resolution of M.J.'s amnesia-like memory and nor the progressive improvements until it seemed that he had developed a super-power. As he said to me on more than one occasion, he had gone from zero to hero. In terms of mechanisms, it is as if there was a superficial layer of inflammation or toxins, or both, that was successfully addressed in the first nutritional programme and this then allowed his brain to operate as it should. The deeper layers remained and whilst some may have been cleared, others still remain.

It is not known what the outcome would have been if the initial focus had been on supporting dopamine and noradrenaline, as was indicated by both M.J.'s symptom profile and the organic acid test. However, it occurs to me that we would not have witnessed the dramatic improvements had not the focus been on the gut and the liver.

Over time, there was a need to address M.J.'s microbiota and digestive function in order to achieve sustainable benefits in this organ system. Ultimately the supplement programmes have all been targeted at his gut and liver and consequently his nervous system.

The extra ordinary success in one department combined with gradual improvements in others and even slower resolution in yet others conveys a picture of complex multi-system interaction which is consistent with a toxicity burden. It appears as a syndrome rather than an easily definable pathology that can be readily diagnosed.

Patient Perspective. The patient should share his or her experience or perspective of the care in a narrative that accompanies the case report whenever appropriate.

Informed Consent. *Did the patient give the author of this case report informed consent? Provide if requested.*

The patient is not aware his case history is being used, and all identifiable data has been removed. M.J. are not his real initials.

Case Report Submission Requirements for Authors

1. Competing interests. None Known

2. Ethics Approval. This case was not presented to an ethics committee.

3. De-Identification. All patient data has been re-identified.

4. Author. Antony Haynes is a registered Nutritional Therapist, trading under the name: The Nutrition Clinic Limited