case reports
THE CARE GUIDELINES

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 email info@nutri-link.co.uk We will send you the word doc.

Case reports are profesional 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 55 year old lady's recovery from regular migraines, fatigue, hypoglycaemic dips, & poor sleep patterns with a targeted NT programme.

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 a number of health issues in a 55 year old lady, Mrs A.G. She complained of regular migraines, fatigue and marked slumps in energy, and a poor sleep pattern. This has been going on for years, and remained unabated as she moved through menopause, until she changed her diet and took a limited number of supplements and everything improved.

Migraine

Migraine is the most common neurological condition in the developed world. It is more prevalent than diabetes, epilepsy and asthma combined with eight million people in the UK suffering from migraine. In the USA it is estimated that 18% of the females and 6% of the males who experience migraines, whereas the percentages in the UK are 18% of females and 8% of males. Children also experience migraine attacks. Attacks can start at any age, but they usually start in children in their early to mid teens, which is when A.G.'s migraines started.

Severe migraine attacks are classified by the World Health Organisation as among the most disabling illnesses, comparable to dementia, quadriplegia and active psychosis. In 2003, it was estimated that there were in the UK, an estimated 190,000 migraine attacks every day. Depression is three times more common in people with migraine or severe headaches than in healthy individuals.

The severity of migraine is variable: 25% of migraineurs experience ≥4 severe attacks per month, 48% have 1–4 severe attacks, and 38% have ≤1 severe attack per month. The course of migraine also varies: they remit in 30% of subjects, persist in 45%, and transform into other types of headache in 25%.

Overall, migraine prevalence decreases after age 50 and in women after menopause, unless oestrogen replacement therapy is administered. Early age at onset, psychosocial stressors, and psychiatric comorbidity may be related to a less favourable outcome.

There are multiple different causes to migraines and therefore potentially many different means by which to treat them. This ranges from pain-killers which simply suppress the pain without addressing the underlying cause, which is useful if the underlying cause is not known. There are structural means by which to support a migraineur such as cranial osteopathy, osteopathy, and chiropractic treatment. Acupuncture, massage, reflexology and nutritional intervention have also been shown, at least anecdotally to help reduce migraine frequency and intensity.

Other means which have been used to help alleviate migraine include electromyelogram biofeedback, relaxation training, and thermal biofeedback combined with relaxation training, hypnosis, occlusal adjustment, occlusal appliances, and TENS machines.

There is even anecdotal evidence of an energised device (this aspect is patented) which is comprised of two sheets stuck together called an expanded polytetrafluoroethylene sheet (ePTFE) adhered to a neoprene sheet measuring 3 inches by 4 inches placed against the skin. It imparts an energy which helps reduce migraines, and has been shown anecdotally to be effective.

Fatigue
Fatigue is one of the most common symptoms experienced by adults in the UK. However, in addition to a general fatigued state, Mrs A.G. experienced distinct slumps of energy in the afternoon, usually after lunch, resembling a post-prandial hypoglylcaemia. She was not able to function at such times and needed to find somewhere to rest, lie down or take a nap.

She did not have diabetes nor did she technically ha hypoglycaemia according to blood tests. Nonetheless, her symptoms of light-headedness, need to sit down urgently, weakness and shakiness were distinctive and simply psychological.

Along with her migraines, the energy slumps effectively disappeared when she changed her diet and took certain supplements.

Sleep Pattern
Mrs A.G. suffered from a disrupted sleep pattern which meant she probably obtained about 5.5 to 6 hours sleep a night on average but she felt a lot better when she achieved 7 hours. She wakes up feeling slightly muzzy headed and somewhat unrefreshed. This had been going on for years and she does not want to use strong narcoleptic drugs which did help her to sleep longer but made her feel spacey and detached for most of the next day.

Mrs A.G.'s sleep improved at the same time that her energy levels improved and her migraines were resolved. It seems they were all connected.

Key Words. *Provide 3 to 8 key words that will help potential readers search for and find this case report.*
Migraines, fatigue, tiredness, insomnia, sleep disruption, hypoglycaemia, food sensitivity.

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

Mrs A.G. had suffered from migraines since she was a teenager, although they had varied in frequency and intensity over that time, and A.G. had not been able to pinpoint what the cause or causes were. They appeared to be connected with her female cycle and so it was long thought that an imbalance in oestrogen was a cause. However, they would appear at other times of the month apparently at random. She had visited many medical

doctors in the four decades that she had suffered from migraines but there had been no insights into what was going on. She had simply been prescribed various pain killers and migraine tablets which were not effective.

In her late teens, she first experienced hypoglycaemic symptoms and developed the all-important habit of taking a nap or resting at some point after lunch. She knew that there was an association of these energy slumps with the incidence of migraines but it was not always a direct, or linear one. For example, she could have post prandial slumps for two weeks in a row and not trigger a migraine. At other times, she could have migraines without a particularly notable incidence of post-prandial slumps.

In her early twenties, she first experienced interrupted sleep, awakening at 3 am for an hour or so. When she had her two children in her mid-twenties, this became habitual as it can be for many mothers who are awoken by crying babies. She did not, interestingly, have more migraines when her sleep was worse, and she neither had more hypoglycaemic slumps on the days after more disrupted sleep.

Mrs A.G. had trained to be a solicitor before her children were born, but only really began her career after the youngest was aged five and at school. She managed her symptoms and migraines at work and was practised at effectively covering them up where possible. She is currently in her last year or so at work before retiring.

Mrs A.G. was hoping that the menopause would put a stop to the migraines, but nothing has changed. She therefore was seeking help to do something to help reduce the painful episodes which completely stopped life in its tracks and held her in considerable pain. This was the main reason for seeking my help, and the hypoglycaemic symptoms, fatigue and sleep issues were secondary.

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.*

Mrs A.G. lives south of London with her husband. Her adult children left home some years ago. She is Caucasian, 55 years of age, has been post menopausal for 2 years, is 5 foot 5 inches tall (165.10 cm), weighed 140 lbs (10 stone, 62.2 kg) which was a little heavier than was ideal, she acknowledged. She practiced as a solicitor in Guildford, Surrey.

A.G.'s reason for attending the appointment was to do something about her migraines. They had persisted since her teens, and beyond the menopause. She had about 3 to 5 a month and they took would remove her capacity to function for a day. They usually started in the morning and she could tell when they were developing, and knew that she would be unable to function properly as a result.

Aside from the major issue of her migraines, A.G. felt tired most of the time and did not sleep through the night, and she awoke feeling unrefreshed. However, these were minor issues relative to her afternoon energy slumps, which she referred to as hypoglycaemic dips even though she told me that the blood tests had shown that she was not, in fact, experiencing low blood glucose. Once a week, on average, she would be struck by a weakness which would force her to seek a chair or a couch on which to lie down. However, on the four other days she felt distinctly more tired than she had been before she ate lunch. She could not use her brain in any useful way during this time, and could not complete her work as she would have liked. As a result, her performance at work was not as good as she would have liked if only due to the reduced volume of output as a result of the afternoon interruptions. She was close to retirement and was committed to a last year, or possibly two, which would also influence her pension in a very positive way she told me, and she enjoyed the challenge of her work.

From a conventional medical perspective, she had not derived any benefit from any drug intervention for her migraines or the energy slumps or sleep issues. She had only felt worse on taking any medication and resisted taking any drugs for any reason as a result. For many years she had simply done her best to put up with her symptoms. However, over the years she had sought the help of a variety of complementary therapists including an acupuncturist, a cranial osteopath and a reflexologist. All had provided some measurable help. The reflexologist had identified a tension in her body that was at least partly related to her intestines, she believed. The cranial osteopath had also identified a distinct tension in her neck and when released, not only did A.G. feel better but she was less likely to have a migraine for a period of time. However, she needed to keep on seeing the practitioners to derive these benefits and it became impractical to maintain very regular visits. All of these therapies brought some relief to all of the symptoms but in particular for the migraines and less so with the energy slumps, but it turned out to be temporary in all cases. For this reason, and in the contemplation that she feared she would suffer for the rest of her life, some 40 years after she had first suffered with migraines, A.G. was looking to identify and address the underlying causes of her migraines.

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.*

A.G.'s parents had been in good health, with her father passing away aged 85 and her mother was still alive and well at 90 years of age. Her elder sister also suffered migraines so there was an evident family connection here, but hers were quite different. They occurred in response to the classic triggers of flashing lights and foods such as cheese and strawberries. In this way, they were very controllable for her sister. A.G. was not aware that she had a migraine triggered by such things herself.

A.G. had nothing wrong with her in any of her medical tests, with no abnormality showing up in any test. Her blood pressure was fine, she was not anaemic, there was no indication of any cardiovascular issue and an ECG conducted a decade ago had not shown any abnormality. She did not have atrial fibrillation. Her circulation was fine on a symptomatic level.

A.G. had been checked for diabetes many times due to her visits to her GP to advise about her post prandial energy slumps. Nutritional Therapists may be aware that reactive hypoglycaemia may have been more likely than diabetes given the presenting symptoms of shakiness, weakness, need to sit or lie down and need to sleep. However, what is interesting and has been documented for decades is that when this phenomenon has been analysed some interesting observations have been made. In one study involving 191 patients who engaged in a five-hour oral glucose tolerance test (OGTT) it was discovered that there were twice as many women as men who experienced the symptoms. However, the hypoglycaemic symptoms occurring during the test were not related to level of plasma glucose nadir or to rate of descent of glucose level. Furthermore, hypoglycaemia was not found when glucose levels were measured during occurrence of spontaneous symptoms in 86 patients. For this reason, the five-hour OGTT was deemed to be unreliable for the diagnosis of reactive hypoglycaemia, and most patients with symptoms suggestive of hypoglycaemia.[1] An explanation of the symptoms and its link with blood glucose levels or some other factor such as insulin sensitivity was not offered.

(Throughout this case report, I will refer to the symptoms that A.G. experiences after lunch as 'hypoglycaemic' symptoms even though technically they are not.)

[1] Johnson DD, Dorr KE, Swenson WM et al. Reactive Hypoglycemia. JAMA. 1980;243(11):1151-1155. View Abstract

No lab tests were recommended or conducted on the basis of the first appointment that I had with Mrs A.G. However, an exclusion diet and nutritional supplements were recommended which are explained and detailed below.

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

A.G. had been well as a child, engaging in all activities and sports and not missing a day of school except with childhood illnesses.

Only aged 14, did A.G. begin to have the symptoms that then persisted for over 40 years later. Her first migraine occurred in a very hot day in Summer when she had exams and was probably dehydrated and stressed. However, the migraines then began to appear regularly and in particular in the week prior to her menses. General fatigue became a bit of an issue but this was more marked in her early twenties.

At 18, A.G. remembers well what may have been her first hypoglycaemic slump one afternoon. She had needed to find a sofa and she lay down and slept for 90 minutes and awoke to discover she had missed a few lessons.

At 20, whilst at university, A.G. suffered from regular but not frequent migraines. She felt tension in her neck, and then had a clamp-like experience around her head. This was and remained very painful on each occasion.

A.G. had children at a relatively young age after getting married when she was 25. She gave birth to a boy and a girl when she was 26 and 28 respectively. During her pregnancies, her experience of general fatigue persisted but this was never a big issue compared with the post prandial slumps which she would experience almost daily. She kept a diary of her food intake and could not find a rhyme or reason as to why she had these symptoms after lunch compared to after dinner when the food intake or ingredients were the same. As a result of this analysis, she had ruled out that it was a specific food that could be contributing to her hypoglycaemic symptoms, or her migraines.

At 33 years of age, A.G. returned to her career and studied for the necessary exams to allow her to become a solicitor. She worked very hard and it was very stressful with two young children, a house to run, and then have her own job. The stress did contribute to more neck tension and this did increase the frequency of her migraines. The hypoglycaemic slumps seemed to persist no matter what, even when she was on holiday, whereas the migraines did seem to be less after a two to four week break in the summer.

In her thirties, A.G. had visited at various times a cranial osteopath and a reflexologist and an acupuncturist. All indicated that stress was involved in her symptoms, and the reflexologist always found a connection with her gut, although she remained mostly symptoms free of gut symptoms. She found it challenging to juggle the regular appointments with these practitioners (who were not all seen together or each week by any means), on top of everything else. Whilst they offered some relief, they did not make a difference beyond a week or so after having seen them. She confirmed to me that she had had very tense neck and upper back and shoulder muscles.

In her forties, A.G. had felt more sluggish and had gained some weight which she found hard to lose. The migraines persisted, the need to seek refuge after lunch also persisted and her sleep pattern had not corrected itself since before the children were born. She pushed on through, which is very much her character.

In her early fifties, just like her mother before her and her elder sister, she experienced peri-menopausal symptoms and less frequent menses. She estimated that at 52 or just when she was 53 that she had had her

last period. She had hoped that her migraines would lessen and resolve at this time but they remained unchanged, and this was a blow to her emotionally. Somehow, she had been hanging on to this hope more than she had realised.

One evening she had consumed much more wine than usual, 4 large glasses, and felt quite drunk and this had triggered a migraine which started in the night. From this she learned that white wine could be a trigger for her migraines, when she consumed more than a few glasses which she never normally did. Since that evening, she perceived a subtle impact of drinking white wine which had not been there before.

Since she was very keen to give her last year or two years at work the best that she could, and that her earnings in the last years would also be reflected in her pension it made a material difference to her to do so, she really did not want to be so affected by the regular migraines nor the post lunch slump.

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*.

A.G. showed me the latest set of blood tests which showed analytes of blood biochemistry and haematology and all markers were within the normal range. The TSH level was 3.2 mIU/L in a range of 0.27 – 4.2. This is higher than ideal, with a level of about 1.0 being more ideal (according to a number of FxMed specialists), but the T4 (thyroxine) levels had not been measured so this could not confirm an abnormal result one way or the other. When I checked the symptoms associated with hypothyroidism on A.G.'s questionnaire many were present, albeit it a functional level and they were not anything to complain about compared to the migraine and the hypoglycaemic symptoms. Her hair had been thinning, she was losing the outer part of her eyebrows, she was more prone to constipation, she had dry skin on her heels, she was gaining weight whilst maintaining the same food intake and activity levels, and her sleep had long been disrupted. It is not certain that all of these symptoms are specifically related to her thyroid hormone activity, but there is an association. This could be something which now contributed to her general fatigue, but it was not clear if her thyroid hormone activity contributed in any way to the hypoglycaemic symptoms or migraines.

In terms of the hypoglycaemic symptoms I wondered about her adrenal hormone output, and whether there may have been a lack of sufficient cortisol, a major glucocorticoid in the body. With her interrupted sleep and history of significant stresses including the migraine pains, there was logic for her adrenals being under par. However, she did not fit the pattern of a more classic adrenal scenario in that her energy in the morning was better than after lunch, and other symptoms in the adrenal section of the questionnaire were not ticked. Nonetheless, I considered a salivary cortisol test for A.G. as well as the complete thyroid profile.

A dietary analysis of 5 days of typical food intake revealed a health-conscious style of eating. Whole food rather than processed food predominated. She did not drink coffee, and she did drink 2 cups of white tea (tea with milk) a day, and she drank about 2 litres of water a day. She ate wheat or gluten in the form of sourdough bread or wholemeal muffins or wholemeal toast every day. She used butter and not margarine. She ate fresh veggies with every evening meal, but not always at lunch, when she may eat a chicken or tuna sandwich or a cottage cheese salad. She had more recently chosen low fat versions of foods in the hope that this may help her lose body fat. She ate a yogurt once or twice a day. She snacked on some fruit and nuts and seeds, and was generally aware of the nourishment provided by the food she ate and cooked at home. Due to her working hours, she did choose very healthy pre-prepared meals from a frozen food outlet called 'Cook'. She took a

variety of supplements but they did not seem to make a difference. This included a multi vit & min, a natural sleep remedy, and a green chlorella powder in the morning time.

She did drink wine on a Friday and Saturday evening every week, but smaller volumes since the experience of triggering a migraine with the four large glasses. This made me wonder about whether sulphites could be a factor and that A.G. may have a need for sulphation support, which typically takes the form of molybdenum which is required for the enzymes sulphite and xanthine oxidase which convert sulphites to sulphates and involved in the conversion of tissue purines to uric acid respectively. In my clinical experience, a typical healthy diet does not provide sufficient molybdenum for people who have a higher need for it, and supplementation improves tolerance of sulphites used in food preservatives.

I carefully assessed the frequency of possible food triggers, focusing on gluten grains and dairy products, and even eggs and soy products and yeast and nightshade family foods too, and not forgetting strawberries. In my experience of seeing other patients with migraines, if a food is involved in any way, it has been either gluten or strawberries or a nightshade food or eggs. It has rarely been dairy products or another food.

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).*

It was not clear what would be the most effective route for A.G. With all of her case history data in mind, and having spent 45 minutes with her in conversation as well, I made a decision to make a variety of different interventions, but this was still limited. I chose to have A.G. avoid all gluten, dairy and eggs and alcohol because she ate or drank these very often or at least weekly, and sometimes more than once a day. I recommended supplements to her to help reduce tension in the form of magnesium malate, to support sulphation in the form of molybdenum, and to support her thyroid hormone function due to her higher than ideal TSH levels combined with the variety of symptoms which indicated a need for thyroid support.

First Supplement Programme	
Magnesium Malate Forte (ARG)	2 with each meal
Mo-Zyme (BRC) (molybdenum)	1 with each meal for 4 weeks, then 1 with breakfast & dinner
GTA Forte II (BRC)	1 with breakfast & lunch

We agreed to meet a month later, which we did, 5 weeks later.

Mrs A.G. had abided strictly by the recommendations. She had avoided all gluten, and dairy products and eggs and not had any wine for the month. She had taken the supplements as directed. She told me that she had felt quite odd, and a bit weird in the first week, but this disappeared after 7 days or so. A.G. had never followed anything like this before, although she had taken more supplements than this before.

This sense of unreality may have been withdrawal from a food or foods she had avoided.

A.G. reported that her general level of energy had improved. She told me that her neck tension and her general state of stress was definitely less. Her migraines were noticeably less, which she put down to a placebo effect so she remained skeptical about this until an event over 3 weeks into the month long programme before coming back for a follow up. She had suffered just 1 full migraine and 1 minor one since we had met. The

degree of hypoglycaemic slump after lunch was also noticeably less. She was still playing devil's advocate and thought it was probably all in her mind, as some kind of placebo response.

She had been out with her husband at a work event to celebrate a colleague's retirement. She had been presented with a dessert which consisted of ice cream, meringue and crème fraiche. She decided in that moment to eat it, and so as not to appear rude or out of place. She went to bed a few hours later only to be awoken in the night with the start of a migraine, which did not normally happen. The migraine became full blown and she could not get up in the morning time and was thankful that it was a Saturday although she had to cancel all her plans that day. Her neck became very tense and tight and the migraine was one of the worst she had had. It seems that the re-introduction of one or more of the foods (i.e. dairy products and or eggs, with sugar) had triggered a more profound migraine than usual. This convinced A.G. to keep clear of these foods until we met 5 weeks after the first appointment.

After almost 2 further weeks, A.G. found that her overall energy was improving all the time, and her post prandial slumps were significantly less. Her migraines were much less frequent already and although she did have the start of a migraine from time to time over these 2 weeks, they did not manifest into anything worse than just that, the start of a migraine. She estimated she had had 1.5 migraines with 2 'starts' compared to what might have been 5 in a normal month. Her sleep was also better and less interrupted than before, and she woke up feeling more refreshed than before.

She was stunned at the effect that the nutritional changes had made. She was experiencing bouts of incredulous relief and at the same time disbelief. She could hardly believe that foods were involved in her migraines. She did not really understand what the supplements might be doing.

I did my best to explain what I felt had happened; that there was a combination of factors involved in all likelihood. We had removed triggers for the migraine and these triggers (dairy, eggs) may also have a negative role to play in less than ideal energy and the post prandial slumps. She had never removed dairy products and eggs before. What I could not explain so readily is why the slumps tended to occur after lunch more than after dinner when the same food had been eaten. It could have been related to her thyroid hormone not functioning as ideally as it should have been, and the thyroid support supplement may have been integral in supporting her energy levels and preventing the reactive hypoglycaemic symptoms, especially in the absence of dairy products. We know that her blood glucose itself was not too low due to historical testing, but there could have been an effect of blood glucose use by her central nervous system after eating lunch especially if it contained dairy products or eggs or both. Inflammatory responses to the foods could have interfered with efficient brain functioning, interrupting neurotransmitter function. Therefore, there could be a combination of less than ideal energy within A.G.'s body and inflammatory signaling resulting in the need for sleep after lunch. When the food triggers were excluded and the energy levels improved, the previous common, almost daily, experience of post prandial energy slump disappeared.

There may well have been a role for magnesium in her recovery, because magnesium may be helpful to reduce muscle tension and improve energy levels. Magnesium has also been shown to have benefits in migraine.[2]

It was straightforward for us to agree to abide by the very same food exclusions for another time period to consolidate the progress that A.G. had experienced. We discussed the gluten issue and agreed that due to

[2] D'Onofrio F, Raimo S, Spitaleri D, Casucci G, Bussone G. Usefulness of nutraceuticals in migraine prophylaxis. Neurol Sci. 2017 May;38(Suppl 1):117-120. View Abstract

cross-reactivity potential with gluten proteins and casein to continue to omit this food group along with the dairy and eggs, and the wine. I recommended the same supplements.

We met a further 5 weeks later. A.G. told me that she was much improved and migraine free now and sleeping better. She had not experienced such a time in decades. No more hypoglycaemic slumps either. She was telling all of her friends. A.G. had experienced a breakthrough in her health and was able to work well and feel a confidence that she had not experienced before. She had always had the doubts about her ability to function, to have the energy for any task or job. She had also lost some weight without reducing her calories and felt more fit even though she had not engaged in a new exercise programme.

I reduced her supplement programme and recommended her to follow this revised schedule for a further 3 months, and that if she had any recurrence in her symptoms then she should contact me.

Second Supplement Programme	
Magnesium Malate Forte (ARG)	2 with each meal
GTA Forte II (BRC)	1 with breakfast
Mo-Zyme (BRC) (molybdenum)	1 with a glass of wine (if consumed)

A.G. managed to achieve her health goals by omitting trigger foods, supporting her magnesium status, supporting her thyroid hormone levels and supporting her sulphation pathway. In my professional opinion, the trigger foods played the most significant role in migraine resolution but the thyroid and magnesium support were essential for overall energy levels and contribution to the end of her hypoglycaemic slumps.

It is not known, however, which foods are playing the most significant role, but it is known that the nutritional changes resulted in a significant improvement in A.G.'s health.

Supplement Information

Magnesium Malate Forte (ARG)
A useful source of magnesium (124 mg) with 50 mg of malic acid, which has been shown clinically to help reduce FM symptoms, and provides a substrate for mitochondrial ATP.

Mo-Zyme (BRC)
Provides 50 mcg of molybdenum in each tablet.

GTA Forte II (BRC) - (thyroid glandular with accessory nutrients).
This is a thyroid glandular derived from porcine sources, combined with accessory nutrients of zinc, selenium & copper. It has been designed by Dr David Brownstein, an authority on nutritional support for the thyroid and its hormones.

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
The careful study of A.G.'s case history which included blood test evidence and combined with my clinical experience with the conditions which faced A.G. really helped to provide the key information on which to base the decision on the course of action. Ultimately, the nutritional therapy intervention involved the exclusion of 4 food and drink items (gluten, dairy, eggs, wine) and the inclusion of 3 supplements (magnesium, thyroid glandular and molybdenum). The ability to identify these things was based on the case history taking, the conversation with the patient and empirical evidence of other patients with migraines and reactive hypoglycaemic like symptoms.

The literature relevant to this case report
There is some evidence to support the use of magnesium in migraines, and there is some literature which focuses on food triggers for migraines. However, in this case, it was not the classic food triggers such as chocolate, strawberries or gluten that were involved in a major way, but rather dairy products and possibly eggs.

The rationale for your conclusions
The reasons for making the decisions that were made were based on the evidence in front of me, as well as what had not yet been tried, and was supported at least in part by the observations of the reflexologist that there was a gut connection, even in the absence of GI symptoms. In addition, experience with other migraineurs and individuals with blood glucose and energy issues helped to influence the decision to support her thyroid hormone.

The main findings of this case report: What are the take-away messages?
It is vital to review as much health history information as possible, and to identify what has helped in the past and what has not. This then needs to be considered in the light of all that you know about the conditions that are presented. It may also be useful for readers to know that I create the hypothesis that there is a definite reason for the symptoms that appear and that the intention is to find it, as opposed to the symptoms being present for no particular reason. This might sound very straightforward but to verbalise it or declare it when with the patient has been very useful, mainly because the patient believes this to be true and often they are told nothing is wrong with them and it calls into question their intelligence and sanity.

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.

A.G. has been stunned by the resolution of her major health issues: her migraines, her hypoglycaemic slumps and her poor energy and interrupted sleep. A.G. will forever know just how important her food choices are.

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

The patient is not aware her case history is being used, and all identifiable data has been removed. A.G. are not her real initials.

Case Report Submission Requirements for Authors

1. Competing interests. *Are there any competing interests?*

None Known

2. Ethics Approval. *Did an ethics committee or Institutional Review Board give approval? If yes, please provide if requested.*

This case was not presented to an ethics committee.

3. De-Identification. *Has all patient related data been de-identified?*

All patient data has been re-identified

4. Author. *Name of Author and practice*

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