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 e mail info@nutri-linkltd.co. 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 an 81 year old man who recovered fast from severe brain fatigue days

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 brain fatigue in an elderly man, Mr D.S., aged 81. This retired father and grandfather had recently been experiencing days when he would be totally 'switched off', which resulted in virtually no conversation, no contribution in the house, no capacity for doing a single thing, no semblance of the intelligent man that he had been all of his adult life.

The day would start like it would go on. His eyes would be glazed, and his wife, herself in her late 70's, could recognise this instantly and in the short months that this had been happening, she had learned to identify it from the first moment she laid eyes on him. Everything would be on go-slow. He would have a challenge in cleaning his teeth, and in eating his meals and would become like a zombie, she described it.

The strange thing was that the state of 'no one at home' occurred throughout the whole day from the start of the day until the end of the day and on other days Mr D.S. was completely fine, and like his usual self. Certainly, he had been experiencing fatigue and some digestive issues over recent years and he had been taking prescription drugs for at least 2 years , but nothing accounted for his more recent decline into these 'no one at home' days. D.S. also displayed signs and symptoms associated with dementia including outbreaks of irritability, even aggression, agitation at the smallest thing, quite apart from not being able to function properly. This was an incredible burden for his wife.

Research has not focused on brain fog or brain fatigue in the same way that it has on formal diagnoses such as dementia or Alzheimer's. It is estimated by the Alzheimer's society that less than half of those suffering from dementia have a diagnosis. They identify that there are also huge disparities in diagnosis rates across the country, ranging from 32 per cent in Herefordshire to 75 per cent in Corby. Diagnosis rates on average in England are just 48 per cent, which despite being a two per cent increase from 2012, means there are still around 416,000 people in England who are living with dementia but who are not diagnosed. In 2015, it has been estimated that there are 850,000 people living with dementia in the UK.

It is estimated that in 2025 the figure will be 1,142,677, which is more than the entire population of Birmingham, the UK's second largest city, and in 2051 the figure will be 2,092,945, which is more than the entire population of Liverpool, Manchester and Birmingham together.

When D.S. met with his doctor, along with his wife, he was having a 'good' day and therefore could only describe what his wife had told him happened, since he had no real recollection of these days. The doctor said he should keep on taking his medications and could offer no further help. However, if D.S. has been assessed on one of his 'bad' days then it is likely that he would be a candidate for a diagnosis of dementia.

Diagnosis rates are from the government's QOF (Qualities and Outcomes Framework) data for 2013-14, which is the number of people registered with GPs as living with dementia. Dementia prevalence rates are from the 2014 Dementia UK report.

Dementia costs the UK £26.3 billion a year.

Typical medical treatment is very limited and includes medications such as Aricept (donepezil Hcl) which works by preventing the breakdown of a chemical called acetylcholine.

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

Brain fog, irritability, aggression, dementia, gluten, wheat, digestion.

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

Mr. D.S. is a retired civil servant who has been in good health for the vast majority of his life. Only over the past few years have some health matters come up, which included some digestive symptoms with excess gas, with both burping and flatulence, which had become a daily feature. This had been present for about 3 years but was not accompanied by other signs or symptoms. For about 6 months, D.S. had reported more fatigue, and had visited the doctor at that time who had prescribed metformin on the basis that there may be a blood glucose problem, namely an elevated blood glucose, along with a small aspirin for 'heart protection'.

About 2 months before we met, D.S. had been having an increasing number of days a week when he would have his 'zombie' or 'no one at home days' with no apparent warning and with no apparent pattern. The first day was a shock to his wife and it was passed off as a singular incidence, but then it occurred the next week and the week after and then occurred more and more often in the week. Their children could easily see the stark contrast of their father during his 'bad' days. The emergence of the cognitive decline had a big impact on his wife, who was left to manage and care for him all day which was quite unlike their typical days when he was normally self-sufficient in virtually all ways.

The doctor could not offer any specific treatment or diagnosis for what D.S. had, and had emphasised the need to continue with the medications. The doctor did not, however, ask any questions about the food he was eating, the more recent history of digestive symptoms, nor any other aspect of his life.

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.*

D.S. is a normal height (5 foot 10 inches – 177.8 cm), and lean looking elderly man (weighing 11 stone 5 lbs – 70.66 kg). He takes metformin based on the doctor's judgement that he needs it, from what I understood, as

opposed to a series of blood glucose tests over time, but D.S. does not, however, give the appearance of a person with insulin resistance and blood glucose imbalances. He is English, Caucasian, with English heritage. He worked in London in the civil service for over 30 years and has been retired for almost 20 years, and he now lives in the Home Counties.

D.S. told me that he barely had a single day off work when he worked and lived in London, and he had been in quite robust good health in his retirement years. He has rarely suffered with illness.

D.S. had not been prescribed medication for any ailment for any length of time in his life. Only the metformin and aspirin have been taken for some months now.

D.S. had been noticeably gassy in the previous 3 years, and burped regularly, particularly after eating.

In the previous 6 months, D.S. had experienced more fatigue for which there was no known reason, and all blood tests were normal, I was told.

Over the past 2 months had suffered from his 'switch off days'. (All the terms in inverted commas are those used by himself or his wife to describe what happens to him on these days.) It appears that his brain function completely changes and is diminished and he looks different facially, becomes more irritable, much more inclined to do nothing all day and just sit on the sofa, becomes clumsy and has poor coordination, and simply cannot communicate. The switch off days had started relatively recently, about 2 months ago, and had become progressively more frequent, so much so that D.S. could now have four switch off days a week.

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.*

D.S.'s parents lived until their early eighties, and had heart disease and type II diabetes at their time of death. He does not recall how long they had these conditions but both were of normal stature and weight. They had both smoked a lot in their younger years.

With D.S.'s clean bill of health in his lifetime, there is no evidence of obvious antecedents except for the marked increase fermentation in his GI tract which manifested as burping and farting, present for just over 3 years.

The onset of the 'switch off' days was not preceded by any event or series of events that his wife could recall, and by the time we met, both D.S. and his wife had racked their brains to identify something that could help to explain the onset of the 'switch off' days. The medications started 6 months ago, and 4 months before the onset of the switch off days were a possible associated factor.

There had been no treatment or attempt to change anything in D.S.'s life or medications or diet because it was unknown what was contributing to his brain dysfunction.

A careful case history revealed nothing specific in his lifetime, and no head injuries or even knocks in schoolboy rugby for example; D.S. played football. The dietary analysis did prove interesting, however, and is worth describing here. This is a typical day's food intake for D.S.

Breakfast: bacon, egg, tomatoes with 2 pieces of toast and a cup of tea.

&
Lunch: Chicken casserole with veggies accompanied by 3 slices of homemade bread and butter. Fruit for dessert, and sometimes stewed fruit & ice cream.
&
Dinner: mincemeat with mushrooms, tomato, onion, garlic, peppers with sweet potato mash and broccoli accompanied by 2 slices of bread.

Snacks during the day were an institution, although they were modest portions: 1-2 wheat biscuits.

When the total number of slices of bread were added up for the week, the number came to 35. In addition, D.S. would probably consume from 14 to 28 biscuits a week as well.

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

Born in 1934, D.S. was moved out of north London during WWII and lived in Herefordshire for a number of years. He had good health and every lad he could recall was fit and lean at that time. He completed his training in the civil service and worked in the Borough of Westminster for over 30 years, reaching a relatively senior role within his branch of the service.

He retired in 1996 at the age of 61, with a good pension. He had always kept himself fit by playing sport and taking hikes or walks.

He moved outside of the M25 after retirement from north London, and had been able to engage in a variety of activities from gardening, to OAP trips to visit cities of interest in the UK and all over Europe.

He was rarely ill and had kept his mind engaged with crosswords, healthy debates and social contact.

In 2012, aged 57, he began to suffer from excessive wind. This progressed as time passed so that now it was predictable that after each meal he would burp and then shortly after that begin to pass wind for some time afterwards. This had not affected any other aspect of health, and his children and grandchildren seemed to think that this was quite funny and normal for an old man. No changes or intervention had been made to try to address the excess gas.

In January 2014, D.S. had noticed that he felt a lot more tired. At first he put this down to the winter time, but when it persisted, he had visited his doctor and blood tests were conducted which were, apparently, all normal. Nonetheless, he had been prescribed metformin and aspirin which he had dutifully taken. The medication had not made any difference to his health.

Then, in May he had his first episode where he became like a different person, like a man with no brain function, without facial expression. The episodes are in fact whole days and are all or nothing. If D.S. wakes and is his usual self, then he is his usual self all day long. If he wakes up and is on go slow, brain-not-connected mode then this lasts all day long. The frequency became more and more which prompted the visit for nutritional therapy intervention, in July 2015.

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*.

I considered a number of different tests for D.S. which included an antibody based test for assessing gut permeability, an antibody based test to assess his blood brain barrier, a food intolerance and reactivity test. I also considered as a second tranche of tests his testosterone & adrenal hormones and the thyroid hormones. I also wondered if a methylation test or homocysteine test would be of value with a focus on vitamin B12 or folic acid, and it also crossed my mind to consider a stool test, an organic acid test and a multi nutrient test.

In raising these possible tests with D.S. he was reminded that he had been taking a vitamin B12 supplement for a few months, in fact, since about February. He had also been taking a fish oil with EPA & DHA. They had not made any different to the way he had been feeling, energy-wise. He had been taking B12 and the fish oil before the onset of the switch off days.

D.S. did not have a lot of money to spend on tests when we discussed this, and whilst I may have anticipated that each of these tests would have provided me with useful information about D.S. and possibly helped to have explained what was going on within him for his brain to change like it did (I would have selected the fewest tests in the first instance), I decided that a clinical trial was in order.

I had been made aware by a number of researchers in the field that ataxia and brain disorders could be triggered or caused by certain food, and by gluten in particular. D.S. ate a considerable amount of gluten, and therefore, I decided to focus on the avoidance of gluten combined with improvement of digestion and inhibition of bacteria as a priority.

In addition, the most common food in my own clinical experience to provoke burping is wheat bread. This added to the confidence to make this decision.

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).*

After we discussed the possible range of tests that could be useful in identifying what was ‘wrong’ with D.S. and that might explain why he had his switch off days, it was agreed that an experiment would be the best course of action. More in hindsight than at the time, I believe that the expense of the tests, or rather the avoidance of the expense, was a motivating factor for D.S. to stick to the recommendations in the trial he was about to undertake.

A 100% gluten free diet was what I recommended. I also recommended that D.S. only eat cooked and not raw vegetables due to the wind that was generated by the raw veg he ate, his wife had shared this with us during the consultation. I recommended that he add cold-pressed olive oil to the food he ate. I also provided a list of alternatives to the bread that he used to eat so much of. We managed to find enough for D.S. to feel happier about taking the experiment on. This included rice, potato, sweet potato, quinoa, and buckwheat noodles. I decided not to replace his wheat bread with ‘free from’ gluten free bread because there can be cross-reactions or other reactions to the ingredients in these breads.

I drew out an ideal best plate of food for each of his meals and used supportive printed ‘best plates’ as well.

In addition to the significant dietary change of going gluten free, I also added a number of digestive related supplements only. I deliberately chose digestive supplement as opposed to those which may have supported

blood glucose balance, energy levels, adrenal support, and so on, in order to limit the variables in this first four week trial.

First Supplement Programme	
HydroZyme™ (BRC)	1 tab with each meal
Full Spectrum Digest (ARG)	1 caps with each meal
Caprin (BRC)	1 caps with each meal

The caprylic acid was recommended for its broad spectrum inhibition of both bacteria and yeast which can lead to fermentation, wind and gas.

We met six weeks later and D.S. reported how he had got on with the home trial which included a food exclusion and the taking of three new supplements.

D.S. had succeeded in avoiding gluten completely, which was largely due to his wife's efforts. They did not eat out very often at all so this had not been an issue as it is with almost everyone who attempts a GF diet. He had chewed his food well, which had been my very first recommendation after the GF diet advice. He had only eaten cooked vegetables, as instructed. He had taken the three supplements every day.

He had eaten similar volumes of food compared to before, but told me that he had been really hungry in the first week and felt like he was not properly full after his meals. He did not, however, over eat as a result of this. He had really missed his bread.

D.S. had also drunk more water during the day, and also taken a walk twice daily, as I had recommended.

When it came to asking about how he had been health-wise, D.S. smiled at me and gently held his hand up to indicate he was getting to that, and it would be fine if we waited another few moments. His wife was with him as before and they sat next to each other in front of me in my clinic room. She was smiling too.

D.S. had not experienced a single switch off day since the day they first met me. "It was miraculous", she exclaimed. D.S. did not cut her off when she interrupted his explanation. Not one single moment or day of brain numbness, switch off, brain disconnect. Not one. It was truly remarkable.

D.S. told me he felt that he had more energy and was more upbeat than he had been all year, and come to think of it, for more than a year.

His burping and wind was markedly less, although did reappear from time to time but he could not figure out why. The reduction in wind had occurred within days to some extent, and then further reduced over time. D.S. was laughing, and I witnessed a sparkle of humour that had been lacking before. It was as if he fully appreciated the inconvenience to others, especially his wife, of the wind and was very pleased that it was virtually gone but was somehow cheekily pleased with himself that he managed to create such fun noises and smells.

D.S. did tell me that he felt that he had his own mind and brain back now, which he recognised had not been the case when we first met, and he said that he had some insight into what it must be like to creep into dementia or other progressive neurological degeneration.

D.S. did ask me to explain why avoiding gluten had affected his brain so much, and I did my best to explain making reference to the researchers that have dedicated their time and efforts to exploring and explaining this, in particular Hadjivassiliou & Fasano.

In this instance, the patient did not ask me if they should carry on with the diet but they did ask me about the supplements. I recommended that the Caprin be reduced but to carry on with the other ones (enzymes and HCl acid).

D.S. continues with a GF diet and the two supplements and is currently enjoying a higher quality and appreciation of life thanks to the improvements in his cognitive well-being and digestive health, thereby positively impacting his wife of over 45 years in a similar way.

Only as we stood up at the end of the second appointment, did D.S.'s wife asked me why this effect of gluten should affect D.S. now, at the age of 81. Could it be due to the medications he had been taking? I replied that it was probably not possible to know for certain, but any NSAID medication such as an aspirin, even a small one, encourages permeability of the gut and could then lead to an increased risk of reactivity in the body or brain.

Supplement Information

HydroZyme™ (BRC)
Provides a low dose HCl acid (150 mg per tab) with low dose pancreatic enzymes and pepsin.

Full Spectrum Digest (ARG)
This newly available supplement provides full spectrum, vegan, clinical strength digestive enzymes with the ability to degrade casein, whey, soy, gluten and gliadin. These enzymes assist with digestion of carbohydrates, fats and protein. Specifically, this product provides: Glutalytic® (endo & exopeptidase) 189 mg, Protease 75,000 HUT, Aspergillopepsin 500 SAPU, Protease DPP IV 125 DPP IV, Amylase 15,000 DU 125 mg, Lactase 4500 ALU 60 mg, Lipase 2500 FIP 11 mg, Alpha-Galactosidase 150 GalU 6 mg.

Caprin (BRC)
Caprylic acid is a natural anti-fungal and anti-bacterial agent. 3 caps provide 1,200 mg of calcium & magnesium caprylate.

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 strength of the case report lies in the detailed case history alongside knowledge of relevant health information that allowed the connection to be made that it was something this man was eating that was leading to his brain ataxia (not a word used for D.S. before this case report write up). This was not even a consideration to D.S. and nor his wife, nor their children and not his Doctor, who had known D.S. socially rather than professionally for many years.

The clinical experiment served a purpose in rapid order, and negated the need for unnecessary expense in the form of lab tests. (If there had not been any progress then almost certainly some form of testing would have been recommended.)

In this way, much time and money was saved whilst not only getting confirmation of the reason behind D.S.'s brain dysfunction but also achieving as swift a resolution as one could hope for. It is not intended to return to gluten for a trial observation as to what would happen. It is also not the intention, whilst D.S. remains in good health to prove or disprove that he has coeliac disease (CD) or non-coeliac gluten sensitivity (NCGS).

The literature relevant to this case report

There is mounting research evidence that offers insight into how gluten can contribute to brain fog, or brain ataxia and other extra-intestinal manifestations. The term gluten-related disorders (GRD) refers to a spectrum of diverse clinical manifestations triggered by the ingestion of gluten in genetically susceptible individuals. They include both intestinal and extra-intestinal manifestations.

In fact, gluten ataxia (GA) is one of the most common neurological manifestations of GRD. It was originally defined as otherwise idiopathic sporadic ataxia in the presence of circulating antigliadin antibodies of IgA and/or IgG type. Newer more specific serological markers have been identified but are not as yet readily available.

Gluten Ataxia has a prevalence of 15% amongst all ataxias and 40% of all idiopathic sporadic ataxias. It usually presents with gait and lower limb ataxia. It is of insidious onset with a mean age at onset of 53 years, which is almost 30 years younger than with D.S. in this case. Up to 40% of patients have evidence of enteropathy on duodenal biopsy. Gastrointestinal symptoms are seldom prominent and are not a reliable indicator for the presence of enteropathy. Furthermore, the presence of enteropathy does not influence the response to a gluten-free diet. Most patients will stabilise or improve with strict adherence to gluten-free diet depending on the duration of the ataxia prior to the treatment. Up to 60% of patients with GA have evidence of cerebellar atrophy on MR imaging, but all patients have spectroscopic abnormalities primarily affecting the vermis.

Recent evidence suggests that patients with newly diagnosed coeliac disease presenting to the gastroenterologists have abnormal MR spectroscopy at presentation associated with clinical evidence of subtle cerebellar dysfunction.

The rationale for your conclusions

I was well aware through reading the research and attending seminars on the subject over a number of years of gluten related disorders that D.S.'s brain dysfunction or ataxia could be due to gluten. When I listened to the case history of D.S. and observed just how much gluten he consumed it crossed my mind at once that there could be a connection. When I learned of his digestive symptoms he had I was alerted to a connection.

Having said that, I am also aware of the lack of direct connection with GI symptoms and gluten ataxia, so in this instance the connection was made all the more clear by the presence of burping, which alerted me to a reaction to wheat, and or associated dysbiosis and promoted more consideration along these lines.

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

The main findings are that when someone consumes a significant amount of gluten and then has a brain disorder of one kind or another, then it might be gluten ataxia. The take-away message is that what we eat has a massive impact on every aspect of health and could even lead to an 80 year old who has eaten wheat and gluten all of his life to suddenly manifest in a gluten related disorder.

Dr. David Perlmutter's Grain Brain book may be a good starting point for patients and practitioners alike who are not familiar with this connection.

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.

D.S. says that he has not felt as well as this for many years, and is committed to remaining gluten free for the rest of his life, he tells me.

His wife, on the other hand thanked me profusely for not only giving her husband back to her, but her own life – since it had become a full time caring job when D.S. was 'switched off'.

"All because of the gluten", she repeated, shaking her head. It was she who made the homemade bread and had done for years. To her it (that gluten could cause brain dysfunction) was a totally new concept and one that completely overwhelmed her comprehension and if she had not seen it with her own eyes she just would not have believed it, no matter who had told her.

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. D.S. are not his 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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