

#### 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 <a href="mailto:info@nutri-linkltd.co">info@nutri-linkltd.co</a>. 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 57 year old woman who had been suffering from a worsening memory & cognitive function, insomnia, aching joints & menopausal symptoms that all resolve with NT.

**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 range of signs and symptoms in a 57 year old woman. The most alarming and important for Mrs S.N. was the noticeable, rapid decline in her memory and cognitive function. This had occurred over the previous 12 months. She also experienced increasing muscle and joint aches and pains, interrupted sleep patterns, and an emergence of what she took to be menopausal symptoms

Mrs S.N. was concerned that she might have early onset dementia or Alzheimer's. She had visited her GP whom she had never met before because she had been so well for so many years, but he had referred her to a neurologist for further investigation. She had yet to take the appointment. There was no family history of any neurological condition, and she held two degrees, one of which was realised in the past 5 years. She was known to be one of the brightest women within her and her husband's set of acquaintances.

According to the Alzheimer's Association there are 10 common signs of the development of the condition. These are 1) memory loss that disrupts daily life, 2) Challenges in planning or solving problems, 3) Difficulty completing familiar tasks at home, at work or at leisure, 4) Confusion with time or place, 5) Trouble understanding visual images and spatial relationships, 6) New problems with words in speaking or writing, 7) Misplacing things and losing the ability to retrace steps, 8) Decreased or poor judgement, 9) Withdrawal from work or social activities, 10) Changes in mood and personality.

On self-analysis, of these 10 most common signs, Mrs. S.N. displayed 1, 2, 3 and 6 and some of 8, she advised. She was seeking the help of a Nutritional Therapist because she knew that nutritional status could have a very real effect on mental and cognitive function. Whilst I could not confirm one way or the other whether early dementia was present, and in the knowledge that Mrs. S.N. was to visit a specialist neurologist in due course, it was agreed that we assume there was another cause of her cognitive decline. Later in this case report it emerges what the cause, or at the very least, the trigger(s) were. Mrs S.N. did not have dementia but had a food related cognitive issue which will be discussed below.



However, on the subject of dementia, in 2014, in the UK, The Alzheimer's Society estimated that there are 850,000 people with dementia, and of these 40,000 are of a younger age (i.e. younger than 65). There further estimate there will be 1 million people with dementia in the UK by 2025. One in six people aged > 80 have dementia. Two thirds of people with dementia are women. The proportion of people with dementia doubles for every five-year age group. The financial cost of dementia to the UK is £26 billion per annum (similar to diabetes). 60,000 deaths a year are directly attributable to dementia. Only 44% of people with dementia in England, Wales and Northern Ireland receive a diagnosis. This is most definitely a serious threat to well-being, the family, and society.

A thorough case history and family health history revealed a strong potential link with a nutrition connection to Mrs S.N.'s poor memory and her aches and pains, which were also partly injury related. There was a history of heart disease in the family, but this was based on the cause of death of her parents as opposed to ongoing suffering in their lifetime.

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

Poor memory, cognitive function, menopause, insomnia, Coeliac's Disease, gluten, blood glucose balance.

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

Mrs. S.N. had been robustly well all of her life. She was of normal height and weight and was physically fit, considerably more so than most of her contemporaries and friends. She rode horses regularly, went jogging, went to the gym and engaged in resistance exercise (her neck permitting) at least once a week, and walked at least 2 miles over the course of the typical day. She was bright and had completed one of her degrees 4 years previously, and was planning on her 3<sup>rd</sup> degree to be commenced at the next opportunity. She also ate a diet rich in whole, fresh vegetables and wholegrains and provided a good source of protein at two meals or more a day. She drank very little alcohol and had learned to avoid refined sugar. She enjoyed yogurt and cheese but consumed these sparingly. There was no family history of anything other than heart disease which was the medical cause of death for both her parents, who had been quite well until their last days, when both had passed away quite suddenly. Both had smoked heavily as young adults, but not for some years before they had children.

In this way, S.N. was not the most obvious lifestyle candidate for a dementia diagnosis.

She had fallen off horses from time to time in her adult life, and had needed a few visits to hospitals after a few of these accidents. She mainly had relied on good physios to restore her back to her functional state. However, her neck was prone to being stiff and achy unless she did stretching exercises every day.

A year ago, she told me that she had first noticed that her memory failed her, which was very uncharacteristic, and there had been a decline of memory ever since, combined with a reduced ability to concentrate and then to recall words and sometimes to drive as well as she could. Simultaneously, her sleep had become disrupted and some menopausal symptoms emerged, in spite of having no menses for 4 years. She had experienced a dry vagina for the first time which had a significant impact on her sex life, for which the chemist had recommended a lubricant gel which was palliative but not restorative.

**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 S.N. is a white, Caucasian women with two young adult children, who lives in the Home Counties with her husband. She weighed 8 stone 5 lbs and was 5 foot 8 inches tall. She is fortunate to have no financial concerns and fully engages in an active life, riding 3 or 4 times a week, exercising every single day in one form or another, and also leads an active social life. She is a housewife, although she has worked for most of her adult life, except for 4 years when she had her two children.

Mrs. S.N. was most concerned with her mental functions, and her memory and concentration, and was worried that not only would she not be able to enrol onto her next degree but that it was affecting her everyday life. She also expressed concern about her worsening aches and pains, in particular those parts of her body that had been injured from historical falls, namely her neck, back and a shoulder.

Along with this decline in her body and mind, was the small torture of interrupted sleep which troubled her more and more so that now it affected her 5 nights out of 7. Her energy had diminished somewhat as a result. She also had the menopausal symptoms of 'warm' moments on and off in the day and sometimes in the night. It was not certain at all, however, that the raised body temperature had anything to do with her waking up in the early hours. Her vaginal dryness was a problem, and she did not understand why this would affect her now rather than when she had reached the menopause, which was technically 3 years prior, 1 year after her last menses. Oestrogen, a female hormone, helps keep vaginal tissue healthy by maintaining normal vaginal lubrication, tissue elasticity and acidity. She knew that friends had taken HRT and it had helped them, but she was hesitant. She also wondered if she needed HRT to help restore her brain functioning. She had planned to speak to the neurologist about this when she met him, although no date had been confirmed.

**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.

Mrs. S.N. had no history of anything other than accidents that resulted in musculo-skeletal trauma, tears, bruising and sprains. She had been happily married to the father of their children for over 30 years.

Her parents had lived to over 75 and 80, both having passed away recently. The technical cause of death for both her parents had been heart disease, both having had heart attacks.

Her older brother (59 yrs) and younger sister (54 yrs) were in good health and had no health concerns of which she was aware.

S.N. just had the mixture of accident-related injury aches and pains, combined with a recent onset of menopausal symptoms and insomnia and declining memory and ability to concentrate, something she had always prided herself on. There was no time period in the past when she had ever had the need to visit a doctor, nor to take any medications. She was opposed to taking drugs on principle. She ate cultured yogurt most days.

The only treatment that S.N. had required in the past and especially in the past year, was physio support and massage. She needed to stretch her neck, in a series of exercises in the morning, otherwise her neck would trouble her during the day.

In her twenties, S.N. had learned that sugar was a problem for her. As soon as she ate something sugary she could not control her appetite and she would find herself eating too much of the sugary food and then feel



rather awful afterwards. She had resolved to avoid all sugary foods as a result. She also avoided alcohol for similar reasons, and would only ever have a glass of wine, with a larger meal and never on an empty stomach.

S.N. had kept herself fit throughout the whole of her life, during and since school.

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

S.N. was born in 1958. S.N. has enjoyed good health as a child, and participated in all activities in school, and was as fit as any of her peers throughout this time.

She had maintained her sports interest at university and after graduating found herself riding more, every week, something she continued to the current day.

Aged 30 and 32 she had her two children, and at that time had taken 4 years away from work to dedicate to bringing them up. She had returned part time at first and then full time from the age of 36 to 49, when she stopped employed work.

Since she had stopped formal work she had never been busier. She rode more regularly every week, and also exercised in the gym and walked a lot. She also enrolled in an Open University degree before she finished with her day job. It took her 5 years to complete and she was awarded that degree when she was aged 52, some 31 years after her first degree.

She told me that if we had met at the age of 50 that she would have only had the injuries which niggled her from time to time, or from over activity. It was only in the past year that things had started to decline, for no reason she knew about. More than sometimes, she felt like she was walking around in a haze or stupor, with an inability to get a grasp on words nor on what it was she was supposed to be doing. This was hugely frustrating for her.

For the first time in her life that she could recall, she felt overwhelmed with life and the things to do, and the awareness that she simply could not remember what it was she was supposed to be doing from moment to moment.

Towards the end of the information gathering time within the appointment, we chatted about her diet, the food she liked, the history of her finding that simple sugar had a profound rapid additive nature to it, and how she did sometimes over-do some carbohydrate foods such as bread, oat biscuits or potatoes for example. This had clearly not affected her weight.

I re-presented her health back to her and drew a mind map with all of the pertinent information shown on the single page. I asked if there was any other information that she wishes to share with me, and S.N. pondered it and said "no, there was nothing else". I made a note that we were 36 minutes into the 60 minute consultation. I had read through the detailed questionnaires that S.N. had completed in advance of the appointment.

We had already established S.N.'s goals at the very beginning of the consultation which were:

- 1. To improve my memory
- 2. To be free of brain fog & regain my mental clarity
- 3. To be free of pain
- 4. To feel stronger and younger



- 5. To sleep well through the night
- 6. To be free of menopausal symptoms

**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.

There were a number of different possibilities that I considered, as candidates either for investigation or for a focused intervention. These includes food intolerance / sensitivity testing, hormonal testing for her adrenals and thyroid because these can lead to exaggerated menopausal symptoms, stool testing for dysbiosis that may have been asymptomatic in terms of her GI health, the presence of a viral burden that could be promoting inflammation within her body and exacerbating her aches and pains as well as leading to disturbed sleep and her declining cognitive function.

However, whilst discussing the possible reasons for these things, and introducing her to the notion that gluten can lead to a myriad of symptoms including symptoms connected to the brain, S.N. declared that her mother had been a Coeliac. I noted the time was the 46<sup>th</sup> minute of the consultation. She had not written this down on the questionnaire, and had not reported it when I had checked verbally about the health conditions suffered by her parents.

In the same way that I was introduced to this important piece of information, so I introduce this into the case history in the 46<sup>th</sup> minute, as it were.

This family connection with Coeliac's Disease changed the focal point for me at once, since I had suspected gluten during the investigative process. However, S.N. did not always eat much gluten, and did not eat wheat regularly at all. However, on a return to her food diary, I noted that in fact S.N. did consume oats almost every day in some form or another, and ate rye toast every other day.

S.N. had thought that she had written down Coeliac's on the questionnaire, but she had not.

I discussed how it was possible to measure gluten sensitivity and analyse her body's reaction to a range of proteins / peptides in her blood which could confirm this reactivity. However, she waved aside the immediate notion of conducting a test, when I told her that if she did test positive then she would need to avoid all gluten grains completely. She volunteered to commence a 100% gluten free diet right away.

**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).

Based on the case history evidence and S.N.'s willingness to implement a categorical avoidance of all gluten, and all grains, and to read the book Grain Brain by Dr David Perlmutter that I recommended, no lab tests were recommended.

S.N. was not aware about the potential strong connection with Coeliac's from parent to child and realised that she had never been told or taught that this could be a link. She had been well all of her life, after all, and not had a problem. She did not know that gluten sensitivity or Coeliac's could manifest later in life.



She was very determined to comply 100% and also wanted to have the best support in terms of supplements because she was very motivated. I recommended the following to be taken alongside her grain free diet for a 5 week duration.

The reasoning for the supplements is as follows. The well-researched lactobacillus strain human strain probiotic was intended to support her gut lining, alongside a vitamin D supplement accompanied by the 3 other fat-soluble vitamins which support mucosal immunity and intestinal integrity. The collagen powder was designed to support her joints, but it also supports the gut lining. Due to the liver and brain potentially being affected by the inflammatory cascade from gluten, I recommended tocotrienols, in addition to the small amount in the Vitamin D3 Complete. Vitamin B1 has been shown to support the blood brain barrier, and the Stamina Caps provide this, and have often supported the energy and cognitive function of those clients to whom I have recommended it. The combination of plant extracts contained within the Estro-Prime Plus have clinically been effective to reduce vaginal dryness and hot flushes.

First Supplement Programme	
Lactobacillus GG (Culturelle – ARG)	1 caps with breakfast
Arthred Collagen Powder (ARG)	1 scoop before breakfast & dinner
Tocomin SupraBio Tocotrienols (ARG)	1 with breakfast & dinner
Vitamin D3 Complete (ARG)	1 with breakfast & dinner
Stamina Caps (BRC)	2 with breakfast & lunch & 2 at 5 pm
Estro-Prime Plus (ARG)	2 with breakfast & 2 with dinner

We met 5 weeks later, and S.N. told me what had happened since she left the clinic room. After 3 days she had crashed, and need to cancel appointments, her riding and an evening event she had been due to attend. By this time, she was reading Dr Perlmutter's Grain Brain and understood that it was likely to be a reaction from the exclusion of all gluten. She told me that if this was what happened when she avoided it, then it could very well have been contributing to her diminished brain functioning.

After 5 days of no gluten, she discovered that her bright brain with 'active mode switch' returned. She was delighted. Over the next week, the rediscovered mental clarity ebbed and flowed but after the 12<sup>th</sup> day of being gluten free and grain free she had felt entirely back to the way she had been for the vast majority of her life. She had become a firm advocate of the Grain Brain book as a result.

Her aches and pains had reduced somewhat but nothing like the complete change in brain functioning. Her sleep was still disrupted but less so, and she felt more energetic. Her vaginal dryness had improved after a few weeks and she required less of the gel lubricant. She had not experienced any 'warm' moments (i.e. hot flushes). I put this down to the Estro-Prime Plus (ARG).

She did not have another crash after that first week's experience.

S.N. asked me to explain to her what had happened and what all of the supplements were for, which I dutifully did, to the best of my ability. I explained how gluten can lead to brain hypoperfusion, that is altered and reduced blood flow and that the 100% avoidance may have removed a / the cause of such hypoperfusion thus explaining the sudden and complete return of her brain functioning: her memory, concentration, word recall.

• Addolorato G et al. Regional cerebral hypoperfusion in patients with celiac disease. Am J Med. 2004 Mar 1;116(5):312-7. View Abstract



- Leggio L et al. Gluten-related cerebral hypoperfusion and neurologic disorders in coeliac patients. Aliment Pharmacol Ther. 2004 Oct 1;20(7):821-2; author reply 822. View Article
- Usai P et al. Frontal cortical perfusion abnormalities related to gluten intake and associated autoimmune disease in adult coeliac disease: 99mTc-ECD brain SPECT study. Dig Liver Dis. 2004 Aug;36(8):513-8. View Abstract

It would have not been likely that a reduction in antibodies to any aspect of gluten could have resulted in such a marked and rapid change in cognitive functioning.

We understood the continued need to avoid gluten rigorously, and S.N. still wanted to avoid grains as well lest she be afflicted somehow and then regret it. She had eaten a very sound, nutritious diet in the meantime, and wanted to persist with this approach. The carbs of choice were root vegetables and the seeds of buckwheat and quinoa.

I recommended a reduced supplement programme to her, but still with support for the aspects of her physiology as before.

Second Supplement Programme	
Lactobacillus P, R, S, (ARG)	2 caps with breakfast
Arthred Collagen Powder (ARG)	1 scoop before breakfast & dinner
Tocomin SupraBio Tocotrienols (ARG)	1 with dinner
Vitamin D3 Complete (ARG)	1 with dinner
Stamina Caps (BRC)	2 with breakfast & lunch & 2 at 5 pm
Estro-Prime Plus (ARG)	2 with breakfast & 2 with dinner

We met 9 weeks after the second appointment. S.N. told me that her fears about early onset dementia were over, and she had felt as sharp as a button and had successfully enrolled in her next degree course. Her sleep had improved, her menopausal symptoms and vaginal dryness were over 70% improved and her aches and pains were less and less as the weeks passed. She was certain that this had to do with gluten avoidance (although she continued to avoid other grains such as rice and corn), and the consequent reduction in systemic inflammation. She had been riding as much, she had visited the gym just as regularly as she ever had, and she was as physically active in all other ways as she had been. In this way, she was definitely achieving the goals that she had declared when we had first met.

I recommended a further reduced programme for S.N. for the next period of time, finishing the probiotic and the tocotrienols supplements.

Third Supplement Programme	
Arthred Collagen Powder (ARG)	1 scoop before breakfast & dinner
Vitamin D3 Complete (ARG)	1 with dinner
Stamina Caps (BRC)	2 with breakfast & lunch & 2 at 5 pm
Estro-Prime Plus (ARG)	2 with breakfast & 2 with dinner

We met after 10 weeks for our fourth appointment, which was also the shortest appointment we had had thus far. S.N. had written some notes in advance so that she could concisely report on her health. In short, here is a copy of the health goals followed by her comments.

1. To improve my memory - yes



- 2. To be free of brain fog & regain my mental clarity all gone
- 3. To be free of pain 80% gone
- 4. To feel stronger and younger yes
- 5. To sleep well through the night yes
- 6. To be free of menopausal symptoms yes

I made further reductions to the supplements for S.N.

Fourth Supplement Programme	
Arthred Collagen Powder (ARG)	1 scoop before dinner
Vitamin D3 Complete (ARG)	1 with dinner on Monday, Wednesday & Friday
Stamina Caps (BRC)	2 with breakfast & lunch
Estro-Prime Plus (ARG)	2 with breakfast & 2 with dinner on Monday,
	Wednesday & Friday

We had a telephone conversation a month after our last face to face meeting, very shortly before the preparation of this Case Report. S.N. reported that all of the health benefits were still very much with her.

The reduction in aches and pains, and the improved sleep pattern, may well be attributable to the reduction of antibodies to gluten, and could also be due to a consistently lower level of insulin than before which is a consequence of reduced grain intake.

S.N. was and is more than interested in exploring the subject more, and wanted some direction from me beyond the book (Grain Brain), even though she was now fully engaged in her new degree course. She is a firm advocate of healthy eating and of avoiding gluten and grains (even though we have no direct knowledge or proof that the non-gluten grain avoidance has had any impact on her health).

#### **Supplement Information**

#### **Arthred Powder (ARG)**

A patented, pre-digested collagen powder that has been proven to reduce articular joint arthritic pains and reduce the need for pain medications. In addition, it has also been useful to heal the gut lining and support skin health.

# EstroPrime Plus™ (ARG)

The EstroPrime Plus™ (ARG) provides a grape seed proanthocyanidin which has been trialled in menopausal women, it provides succinic acid which has shown benefits for menopausal symptoms, it provides a mix called EstroG-100® (*Phlomis umbrosa, Cynanchum wilfordii, Angelica gigas* Nakai) which has been the subject of the RCT in menopausal women and it also provides a registered Female hops cone extract which possesses phytooestrogenic effects.

#### Lactobacillus GG Culturelle (ARG)

The world's most researched probiotic providing 30 billion live lactobacillus rhamnosus GG cells (even though the packet says 10 billion – which is the minimum present at expiry date).

<u>Lactobacillus Plantarum, Rhamnosus, Salivarius (ARG)</u> provides particularly hardy strains of lactobacilli that help to maintain a healthy intestinal microbiome balance. They support the structure and functional integrity of



the epithelial lining in numerous ways & may enhance immune response and support resistance. They can also produce vitamins, enzymes, and organic acids that support normal intestinal pH and bacterial diversity.

#### **Stamina Caps (BRC)**

This formula provides thiamin, pantothenic acid, L-Carnitine, octacosanol, coenzyme Q10 & OOrganik-15™, which may serve to aid in energy production and to increase stamina. In my clinical experience this formula has made a positive contribution to energy and supports nervous system functioning.

### **Tocomin SupraBio Tocotrienols (ARG)**

This product offers enhanced absorption of the 4 tocotrienols, which offer antioxidant support. They have been shown to have benefits in a number of different conditions from helping to prevent stroke to reducing a fatty liver, to lowering cholesterol and more. Do view this article (one of a number on the subject of tocotrienols) on our website: Tocotrienols and their Benefits.

#### Vitamin D3 Complete (ARG)

Provides the four fat soluble vitamins of A, D, E, & K in a balance that could be disturbed if taking a higher dose of just one of these nutrients over time. The product is preservative free and chemical free and comes in fish gelatine caps. These nutrients are vital for a balanced immune response especially in the mucosal immune system, and are often required in those individuals with auto-immune conditions.

**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 duration of the first appointment, combined with the voicing of concern about gluten led to the revelation that this lady's mother had has Coeliac Disease. If we had been together for 45 minutes, it may have led to the recommendation of a series of lab tests which would have cost time and increased expense before engaging in the essential exclusion of gluten.

It highlights that not all vital and relevant information is necessarily written down on the questionnaires.

## The literature relevant to this case report

The research referred to about gluten affecting perfusion of the brain was published in 2004. However, this offered an explanation of the speedy improved cognitive function, which is not explained by antibody reduction which does not occur so fast, rather than serving as a means by which to identify the most appropriate course of action. This was derived from clinical experience, along with the strong indicator of a mother with Coeliac's.

### The rationale for your conclusions

The rationale became evident in the 46<sup>th</sup> minute of the first consultation when the new information came to light about S.N.'s mother having had Coeliac's Disease, and my understanding that gluten can affect cognitive function.

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

Detailed case history taking with verbal questioning of written material is vital. Glaring omissions are possible. Familiarity with mechanisms that underpin cognitive function combined with verbal investigation proved



essential in this case. It may well have transpired that gluten was a culprit in the cognitive decline, and ultimately the outcome could have been the same, but this would have occurred at least weeks' later.

**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.

S.N. declared the following, in so many words or in these words a number of times since she has experienced her improvements. "I have recovered my brain clarity and functioning, dispelled my fears about my future health, and re-engaged in all aspects of my life". She had become one of the strongest advocates for eating a grain-free diet, and certainly a gluten-free diet even at the risk of appearing over-bearing and evangelical on the subject.

**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. S.N. 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

Antony Haynes is a Registered Nutritional Therapist and practices in London W1.