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: 39 year old man with low cortisol who restored his health & cortisol level with Nutritional Therapy & Lifestyle Changes.

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.*

Adrenal hormone imbalances are discussed on a daily basis within a complementary medicine environment and between Nutritional Therapists and with their clients. Modern lifestyles, with multiple sources of stressors, takes its toll on the human body and on the stress response mechanisms, leading to maladaption and less than ideal health, and illness which Dr Selye referred to as "diseases of adaptation". Dr Hans Selye's book 'The Stress of Life' (1956, 1976, 1978) was the first to focus on the consequences of the body to adapt to the environment and his 'General Adaptation Syndrome' (GAS) with its three stages of alarm, resistance and exhaustion is a well understood explanation.

Dr Robert Sapolsky, an American neuroendocrinologist, professor of biology, neuroscience, and neurosurgery at Stanford University, researcher and author, has studied the human stress response extensively. He has written a number of books with the most relevant to the stress response being 'Why Zebra's Don't Get Ulcers' (1995).

More recently in 2001, James Wilson ND, DC, PhD wrote his book entitled 'Adrenal Fatigue – The 21st Century Stress Syndrome' with at least 100,000 copies sold back in 2007. Jim Wilson ultimately decided to write the book for the general public, believing that are literally millions of people suffering from what he calls the epidemic of 'adrenal fatigue', and that the condition needed appropriate recognition.

However, in terms of adrenal pathologies the frequency of Cushing's or Addison's Disease is rare within a daily clinical setting, and unlikely ever to present (without prior diagnosis) within a complementary & alternative medical setting. Medical students are not taught to identify or treat conditions in which the adrenal glands are functionally over- or under-producing cortisol and / or DHEA, but rather to be familiar with the pathology of Cushing's and Addison's. In this way, the impact of stress on the human body is a prime example of a continuum of conditions which fall outside a medical diagnostic criteria and yet are so common that they present to health practitioners every day.

In this way it is possible to say that adrenal insufficiency is a life-compromising condition that occurs secondary to impaired secretion of adrenal glucocorticoid and mineralocorticoid hormones, whilst adrenal fatigue or too low a level of cortisol compared to what is required to mount an appropriate response to stress is a quality-of-life compromising syndrome, that affects millions of people (according to James Wilson PhD).

Adrenal fatigue is not a medical diagnosis, but rather it is description of a state of being, a syndrome, of a failure to adapt to the stress of life. Through a series of questions about health, energy and sleep one can make an assessment of the condition, of adrenal fatigue, which is outlined in the detailed questionnaire formulated by Jim Wilson PhD and presented in his book.

This case explores a nutritional focused approach to the resolution of fatigue, low motivation, feeling of disconnectedness and confirmed low cortisol output in a 39 year old man, a father of two young girls. Over a number of months, by engaging in an improved diet, drinking more water, going to bed earlier, and taking specific supplements this man returned to a more vibrant state of health, energy and engagement with his family, and presented a healthier first impression to all who met him.

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

Adrenal fatigue, stress, tiredness, exhaustion, cortisol, DHEA, motivation, disconnectedness, adaptation, tolerance.

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

Mr. D.W.'s case represents what may be a typical case of 'Adrenal Fatigue', or what might otherwise be termed adrenal hormone imbalance.

Mr D.W. had never felt worse in his entire life. He looked grey and had dark rings under his eyes. As he sat in front of me, his posture resembled someone much older than his years.

He felt tired in different degrees during the day, including exhaustion & sometimes being too tired to move. D.W. found mornings were a complete struggle. Despite his two daughters (aged 6 and 8) being a source of delight, he found himself, unnervingly, much less interested in their lives, daytime and evening time activities than he believed he should. This appalled him and he felt quite depressed about it.

He had a good relationship with his wife but felt strangely detached from her, which had occurred more over the past couple of years than when his daughters were born. They did not have much relaxed time together, as occurs with most couples with young children. He only experienced a sense of being ok, when he could think clearly, at about 7.30 pm. He assumed that this was because it was after the girls' bedtimes. Other than that his life and affect was generally very flat.

D.W.'s work had been very demanding and although he had a position of some responsibility his immediate boss for the last two years was not easy to get on with, was not at all sympathetic, and made what he felt were unrealistic demands on himself and his team of staff. He spent too long at work and rarely felt any excitement or pleasure for it as he had in the past.

Financially, he earned well and this covered the cost of living, bringing up the children and one holiday a year with a little to spare, so there were no particular money worries. D.W. did feel that his efforts and sacrifices were not sufficiently rewarded, however.

D.W. used to go the gym regularly and play soccer with a local team, and this all changed when his daughters were born. Now he just about managed to make it to the gym or go for a run once a week. He found all forms of exercise much more challenging now, and he had gained about 2 stone in the past 8 years. He also found it more difficult to lose any weight, than he had in the past.

D.W. very much wanted to regain his spark, enthusiasm, get up and go especially in the mornings, and to look better, and lose some weight.

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.W. is a 39 year old Caucasian man, born and brought up in London and now living and working in London. The main presenting concerns were a lack of energy, a lack of ability to get going, a lack of feeling connected to his life. He felt removed from his work and his family and described this as feeling disconnected. D.W. had gained two stone in weight from his previous fighting fit weight and his skin had a pale grey pallor.

He had not undertaken any specific lifestyle or dietary or medical interventions for his condition prior to visiting me, although he had seen his GP. According to blood tests, no abnormality was detected. The tests included haematology and a complete blood count of which he did not have a copy. This ruled out anaemia. He had been referred to a psychiatrist for depression, and had been recommended anti-depressant drugs. D.W. was strongly against taking this type of medication. However, some months on from that appointment D.W. was now considering resorting to the drugs he'd sworn never to take, because he needed to do something to alleviate his poor mood. He wondered whether he was feeling this way because he was, in fact, depressed. This is one of a number of examples in which D.W. lacked the confidence to make decisions and think as rationally as he had previously.

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.W. had been well during his lifetime, with no illness of note, and had enjoyed a variety of sports both at school, university & at club level. His immediate family were all quite well, although both his mother and father were now overweight, in their 70's. D.W. believed that his father was taking blood pressure medication. D.W.'s brother and sister were also well with no specific ailments or dispositions. There had been a distinct lack of conversations about health issues in his life with his family because there had been little or no need to have that conversation.

Whilst I did not conduct a full physical examination, it was evident that D.W. was carrying excess abdominal fat that his posture was poor with slouching of his back and shoulders, and he had dark rings under his eyes and had a pale grey pallor in his face.

It appeared as if the stress of life for D.W. had worn him down and resulted in a failure to adapt successfully, leaving him in an exhausted state.

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

Eight years ago, the first of D.W.'s daughters was born. However, D.W. was still able to maintain his fitness & sports interests as well as apply himself at work.

Two years later, his second daughter was born, and he reduced his outside activities whilst his work schedule increased. He was still able to maintain his fitness even though he attended the gym less often and played less football than previously.

Three years later, D.W. was still fit, lean and well, and played sport once a week. He was motivated at work, and still woke up feeling refreshed.

Four years ago, D.W. had more responsibility at work but was still keeping up with as much fitness as any of his contemporaries, although he recognised that he was sleeping less on average and not awakening so refreshed, so that it was more of an effort to get up in the morning.

Three years ago, when looking back, D.W. recognised that he was involved in less physical activity than before, and his diet was suffering a bit too. He was grabbing food that was most readily available and this often meant the most refined and sugary food.

Two years ago, something important happened. He was carrying his sleeping younger daughter from the car after a journey. He tripped over something unsighted on their short driveway before entering the house one Friday night. Quite naturally, his immediate reaction was to shield his daughter from the fall and so he twisted instinctively and took the brunt of the fall on his hip, right arm and shoulder. His daughter was completely unhurt, but the fall on the narrow stone border between the pathway and the lawn was very painful, and a shock to his body and system. After the weekend and a day off work, he visited the Dr. and then had scans but nothing had been broken. He was colourfully bruised, however, and this lasted for weeks. D.W. told me that since that time, he had not felt quite the same, and had never really recovered any sense of well being or fitness. His right shoulder and hip still hurt on occasion like a memory of the fall, long after the bruising had gone.

During the winter after this fall, D.W. suffered from two colds which were quite uncharacteristic. He had until then suffered a cold approximately every 6 months.

His diet had not improved either over the past few years, and D.W. could quite easily consume 4 coffees a day (with 1 tspn sugar). He ate fruit or snack bars during the day when he felt hungry and tired, which was much more often than historically, but otherwise he ate standard fare for his meals. Breakfast consisted of fruit 'n' Fibre, lunch was most often a chicken or cheese or beef sandwich (one of the good ones, he told me) and dinner included spaghetti bolognaise once a week, steak and chips, fish with new potatoes and peas, pasta with a fish or tomato sauce or lasagne. He rarely drank alcohol since it made him feel even more tired. He craved crisps or chocolate most days. Importantly, he drank only two glasses of water a day, and he told me he simply did not feel thirsty.

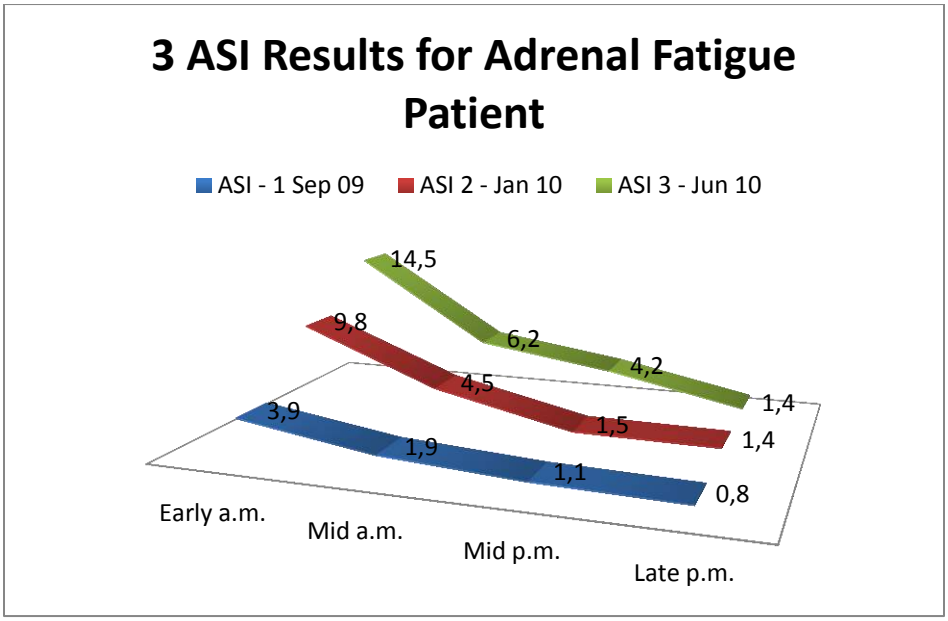
Diagnostic Focus and Assessment. *Provide an assessment of the (1) diagnostic methods (eg, PE, laboratory testing, imaging, questionnaires, referral); (2) diagnostic challenges (eg, financial, patient availability, cultural); (3) diagnostic reasoning including other diagnoses considered, and (4) prognostic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

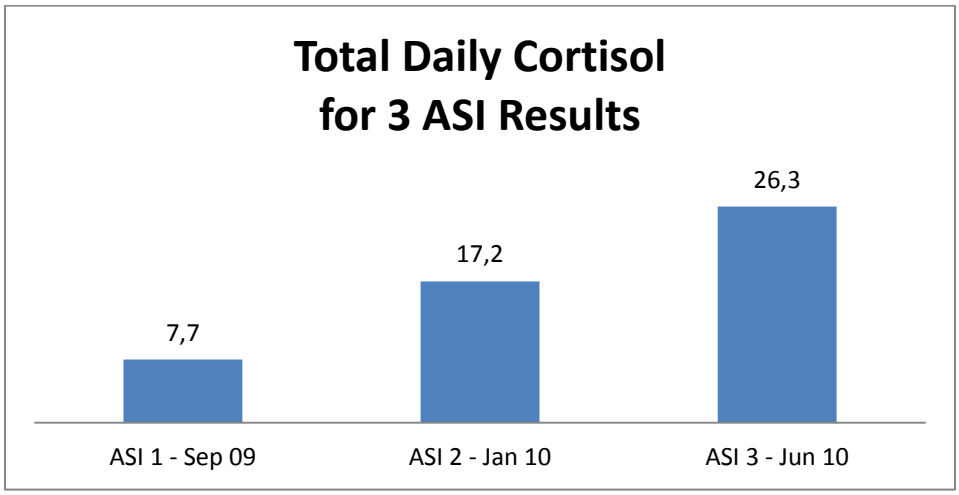
The Adrenal Stress Index (ASI) test was recommended by me and then repeated twice over the course of the next 8 months or so. The results are shown below. His cortisol was low for the four samples during the day, and

his DHEA was low normal in the first result, a little higher in the 2nd and normal in the 3rd result, reflecting fatigued rather than 'exhausted' adrenals.

D.W. followed the programme for 8 months and continues to do so. The supplement programme was changed only 3 times in the 8 months, and he is now able to take some responsibility for knowing what to take and when.

Sample time	ASI Test No 1 (Sept 09)	ASI Test No 2 (Jan 10)	ASI Test No 3 (Jun 10)
Early a.m.	3.9 (12-21)	9.8	14.5
Mid a.m. / noon	1.9 (5-9)	4.5	6.2
Mid p.m.	1.1 (3-7)	1.5	4.2
Late p.m.	0.8 (1-3)	1.4	1.4
Daily Total	7.70 (21-40)	17.20	26.30





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).*

Firstly, after listening to the case history in detail, I discussed the possibility with D.W. that he could have 'Adrenal Fatigue' and that his adrenals' ability to produce sufficient cortisol and DHEA may be compromised. I explained how many of his symptoms and history appeared to point in that direction. This explanation in itself was a very evident relief to D.W. who had begun to question his own mental well-being. He left the appointment with a notable spring in his step compared to when he arrived.

Secondly, the saliva test for cortisol and DHEA, referred to as an adrenal stress index or ASI test, was recommended, and dietary recommendations to support his energy and adrenal glands were made.

When the results came back and revealed the very low cortisol levels, this confirmed the dietary approach that had already been implemented by then and the nature of the condition. D.W. was very relieved and pleased that the lab test confirmed that something was 'wrong' with him. The idea that he was a depressed patient was more depressing to D.W. than being a patient with adrenal fatigue. In my experience, I have found this attitude to be universally common. Getting confirmation of what is imbalanced or 'wrong' can be such an important step in the process, and increases compliance to the required nutritional and lifestyle changes.

The overall strategy was to support D.W.'s adrenals and energy to restore his health to what it had been like a decade before, specifically using Nutritional Therapy but also offering him insight into what was really going on inside of him. In hindsight, it appears he very much needed a supportive programme for many months to both achieve and maintain the benefits, and this is important to emphasise to clients.

The dietary recommendations consisted of improving every aspect of his diet. Breakfast became a much healthier porridge or eggs on toast, lunch saw him take in to work some salmon or chicken with brown rice and he would buy a hot veg soup to accompany that, and dinner moved towards less stodgy pasta dishes to lighter meals such as white grilled fish with veggies or chicken casserole and a small number of new potatoes with broccoli, for example. The coffee was gradually reduced to 1 in the morning over the next 4 weeks, and it was emphasised to D.W. that he MUST aim to drink 7 – 8 glasses of water a day. The chocolate and crisps were reserved for emergencies only and it transpired that there were no 'emergencies' in the first month. The reasons behind each change were explained to D.W. Simple explanations also greatly help with compliance.

He was also instructed to go to bed at 10.30 pm each night, rather than some time after that which sometimes drifted on and on in front of the TV.

No exercise other than walking was recommended in the initial stages.

Supplements were advised on the return of the salivary cortisol and DHEA results, and are shown below.

Supplement Programme One (Sept 2009)	Dose
Adrenal Rebuilder (Dr W)	2 with breakfast, 2 with lunch, 1 at 5 pm
Licorice Solid Extract (ARG)	¾ tspn first thing, & ¾ tspn at 11 am
BioGlycozyme Forte (BRC)	2 mid morning, 2 mid afternoon
KappArest (BRC)	2 with each meal
L-Tyrosine (ARG)	2 mid a.m.

D.W. revisited me every 4 to 6 weeks over the months, or we spoke on the phone, and he continues to take nutritional supplements that have helped to turn his life around. We changed his programme each time the saliva results returned, although with other clients there often needs to be minor changes more often than this.

As is so often the case, it is so helpful if there are positive changes within the first few weeks for the patient. This is exactly what happened to D.W. Remember that he had complaints about these aspects of his health: energy, weight, mood, attitude to work, a strange disconnection from his family, hip and shoulder pains (intermittent), and I noted the grey pallor of his skin. D.W. began to change his diet the day the met with me in early September 2009. Two weeks later, he started the supplement programme, and he told me he had felt "lighter" in many ways, from the diet alone, which made him feel more positive. However, within the first week of the supplements he found that his mental and physical energy were noticeably better. This meant that he was better able to cope at work, he was more motivated to make steps in engaging with his daughters at home and he was more motivated to go out for a power walk.

His weight did not change, nor did his pallor, nor did his feeling lousy first thing, but his physical pains did not flare up at all in the first month.

In November and December and the early part of January, D.W. continued with the programme quite religiously which reflected his desire to be free of the poor state he had been in. His energy took a crash from time to time for no apparent reason, but he stuck with the programme with a few exceptions. Over the first few months, his energy was the most significant thing to change along with his mood; 8 weeks into the supplements, D.W. recorded that he was about 60% improved and stable at that level, which was so heartening for him. His energy was about 35-50% better than it had been, and the troughs he experienced were less deep. The pallor did change and it was this that elicited positive comments from those around him. The pains did not reappear and have not since.

His weight was slow to change, and the burden of stress was pretty much the same.

He told me that he was able to be in the present time with his daughters more than before and felt more connected and bonded with his wife, but this has been a gradual process.

These were the slightly altered supplements recommended to D.W. after the 2nd ASI results came back.

Supplement Programme Two (Jan 2010)	Dose
Adrenal Rebuilder (Dr W)	2 with breakfast, 1 with lunch, 1 at 5 pm
Licorice Solid Extract (ARG)	½ tspn first thing, & ½ tspn at 11 am
BioGlycozyme Forte (BRC)	2 mid morning, 2 mid afternoon
Stamina Caps (BRC)	2 with breakfast & 2 with lunch
L-Tyrosine (ARG)	2 mid a.m.

The second ASI results showed a rise of cortisol from 7.7 to 17.2 which may well have been supported by the licorice, adrenal glandular and other supplements, and reflects a very good increase. Whilst the intention would be for D.W. not to need the supplements, it is so important to maintain this support to help ensure better long term outcomes. It is a false economy to have patients with such low cortisol come off the supplements as soon

as they are feeling better. I have made this mistake before and it can be very demoralising for the patient, and then more challenging to develop the same rapport with the patient afterwards.

These changes were made to the programme. Finish the anti-inflammatory KappArest (BRC), reduce the dose of licorice (his BP had been normal whilst taking it), vary the dose of the adrenal glandular and introduce Stamina Caps (BRC) which contains useful doses of Vit B1 & B5, with L-Carnitine, Octacosanol, CoQ10, Oorganik-15 (which provide methyl donors and are involved in use of cellular oxygen and energy production). Keep on with the Tyrosine and BioGlycozyme Forte (BRC) as before.

Some resistance exercise was introduced to help D.W. increase his lean muscle mass, without exhausting his adrenals with cardio exercise such as running or cross-training. His abdominal fat started to shift at the end of January 2010. He felt that the Stamina Caps (BRC) really helped his ability to lift the weights. His ability to tolerate exercise with no undue fatigue or muscle soreness afterwards helps to confirm that there was almost certainly not an issue with chronic fatigue syndrome. There are links with CFS and adrenal fatigue, as well as hypothyroidism.

D.W.'s energy had continued to improve but he still had dips mid to late afternoon, and he still was not as refreshed as he felt he could be upon waking. He said that it was 60%+ better, and his mood was much, much better with an 80%+ improvement. He was beginning to forget what it had been like to feel so low, but from time to time during a dip he felt blue again and this motivated him to stick with the programme, of what was essentially very healthy eating and specific supplements, and a dedicated bedtime. He still felt pretty tired in the morning even though the cortisol has improved nicely. His role as an involved father was also much better and he was relieved to know that he was not a cold, detached father that he had believed a few months before.

In March, D.W. observed that he had only had a few days of feeling like he had a cold in the winter time, compared to the more recent full blown colds for a week at a time. This was another sign that he was able to mount a stronger response to all kinds of stresses including immune defence.

It is true that there were no real obstacles to D.W. in putting the new nutrition into practice and this was a real advantage. For other patients, there can be life events that can get in the way of making the best changes. Except, of course, that work remained pretty much the same as before, and this was something D.W. was going to need to constantly manage. At least now he was making a plan about what to do whereas before he had felt helpless.

D.W.'s revised his goals to focus more on his body fat and this did gradually come off so that by May 2010 he had lost 12 lbs from his start weight, and he had regained some strength.

One weekend when D.W. went out two nights in a row, and got to bed late he felt tired for the whole of the next week, and craved more coffee and chocolate. He needed to discuss this on the telephone because he felt that he was not "cured" and that he would need to be on this programme forever, and why could he not go out and handle it!? This sort of event also often happens and can lead to despondency. It reflects that when someone has 'Adrenal Fatigue' that has taken years to manifest, it can also take some time to more completely recover. It is recommended to remind patients of this in as positive a way as is possible. This confirmed to me that he still needed supplemental support, which he continued. He took his 3rd ASI test in June 2010.

The 3rd ASI also showed good improvements with his cortisol levels, rising to a total of 26.3 and was a good reflection for all of the improvements experienced by D.W. Mostly, the improvements in D.W.'s health have been significant. His energy, mood, outlook, family life, weight and body shape, pallor and the pains he had are

all much improved. However, when he steps off the healthy recommendations for more than a day then he does feel worse for wear. For this reason, he continues with the supplement programme, which is scheduled for gradual reduction, and we will be reviewing how he fares on the lower doses.

Overall, we had email contact every 2-3 weeks, and had 5 telephone follow up calls and met face to face 5 times in total.

This list is the 3rd programme for D.W. after the 3rd ASI results came back.

Supplement Programme Two (Jan 2010)	Dose
Adrenal Rebuilder (Dr W)	1 with breakfast, 1 with lunch for one month, then reduce to 1 with breakfast only
Licorice Solid Extract (ARG)	½ tspn first thing on alternate days for one month, then reduce to once every 3 days for one month, then stop.
BioGlycozyme Forte (BRC)	1 mid morning, 1 mid afternoon
Stamina Caps (BRC)	1 with breakfast & 1 with lunch, 1 caps 30 mins before exercise (if taken)
Zen (ARG)	1 as needed (ideally on an empty stomach)

Supplement Information

Adrenal Rebuilder® – is Dr Wilson's glandular formula for those with adrenal fatigue. It contains high quality adrenal (cortex), hypothalamus, pituitary and gonad concentrates in the proportions that provide the greatest support for those experiencing stress and adrenal fatigue.

Licorice Solid Extract (ARG) – tastes like licorice syrup but is licorice extract in vegetable glycerine with no sugar. Licorice supports healthy cortisol by inhibiting the enzyme that catabolises it – 11B-hydroxy steroid dehydrogenase (11B-HSD). Since it can raise BP, I advised that D.W. needed to measure his BP on a weekly basis at work (where there was a medical room with a sphygnonometer).

BioGlycozyme Forte (BRC) is a multi vit & min with active B vitamins and glandulars (adrenal, pituitary, hypothalamus, pancreas, liver, brain, intestine) to support low cortisol and low blood sugar levels. Often, when the cortisol is very low, this may be best recommended mid morning and mid afternoon as opposed to with meals and in this way provides more regular intermittent supplement support for the low adrenal hormone output. It can also reduce hunger and inappropriate snacking more effectively when taken this way.

KappArest (BRC) contains 9 herb & plant extracts that have all been shown to moderate inappropriate NF-kB activation. Any inflammation can be a burden on the adrenals, and since his fall D.W. had intermittent pains. Cortisol is a potent anti-inflammatory hormone and D.W. may well have needed some support in this area which is why this was recommended.

L-Tyrosine (ARG) is an amino acid supplement that supports noradrenaline and dopamine levels, of which it is the precursor. In my clinical experience, it helps to lift affect and improve get up and go and mental concentration more than anything physical. Best taken earlier in the day.

Stamina Caps™ (BRC) is a specifically formulated B-complex to support physical stamina and mitochondrial energy conversion. The combination of nutrients contained in the formula includes Thiamin, Pantothenic Acid, L-Carnitine, Octacasanol, Coenzyme Q10 and OOrganik-15™ (a natural methyl-donor).

200 mg of Zen (ARG) contains a significant quantity of both gamma-aminobutyric acid (GABA) and theanine (glutamic acid gamma-ethylamide), an amino acid derivative found naturally in green tea (Camellia sinensis). These dietary ingredients that may support stabilisation of mood and a feeling of alert relaxation.

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

This is a typical example of how Nutritional Therapy works in someone with low cortisol states, also referred to as 'Adrenal Fatigue'. Although the majority of clients seen in clinical practice are female, which brings another dimension in terms of hormonal considerations, this case serves as an example of how it is very possible to make significant changes with NT to someone with 'adrenal fatigue' who has low energy, poor overall health and outlook.

The literature relevant to this case report

As has been referred to at the start of this case report, there are some key books on the subject including Dr Hans Selye's book The Stress of Life (1956, 1976, 1978), Dr Robert Sapolsky's 'Why Zebra's Don't Get Ulcers' (1995), and Dr James Wilson's Adrenal Fatigue – 21st Century Stress Syndrome (2001).

There is a paucity of medical research or peer review articles that focus on the syndrome of less than ideal cortisol / DHEA production in the face of a given stressor.

The majority of the material that is relevant to this case report has been acquired by attending lectures and seminars given by medical doctors, professors, naturopaths, nutritional therapists with experience in the specific subject matter.

Dr James Wilson's decades of work studying and treating Adrenal Fatigue were invaluable in my ability and knowledge to make what turned out to be very effective recommendations in this patient. Simply understanding the nature of the condition and being aware of Adrenal Fatigue helped significantly in D.W. following my advice and recommendations.

The rationale for your conclusions

D.W. appeared to have many symptoms, and some signs, associated with low cortisol, and this matched the syndrome of adrenal fatigue. The saliva test for cortisol and DHEA supported the consideration that this may be the case and the improvements based on the implementation of the recommendations specifically designed to support D.W.'s adrenal output supported the assessment. The improved ASI test results in tandem with the health improvements experienced by D.W. provided further confirmation of the aptness of the approach recommended.

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

The fact that the adrenal hormones can fail to produce enough hormonal output and lead to a wide range of symptoms dominated by fatigue, loss of motivation and get up and go, and unrefreshing sleep is not appreciated by conventional medicine. Patents are often told that there is nothing wrong with them, when there are distinct biochemical, non-pathological but functional imbalances within their body causing the symptoms described. The burden of multiple stressors on the human body is resulting in a proportion of the population suffering from a diminished state of vitality that reduces quality of life.

It is possible to identify the level of cortisol, and DHEA, within individuals with a profile that fits the adrenal fatigue syndrome and then it is possible to make dietary and lifestyle and supplemental recommendations to help the individual return to a state of vitality. D.W.'s improvements are a testament to this.

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.W. confirmed that the nutritional (& lifestyle) programme had "saved my life" and been "absolutely startling". From knowing nothing about the adrenals, D.W. is a complete convert to appreciating their role in his health, and has a much clearer idea about the different roles of NT and medicine in his and his family's lives, and society as a whole.

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

The patient / client is not aware his case history is being used, and all identifiable data has been removed. D.W. 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 / client data has been re-identified

4. Author. *Name of Author and practice*

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