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 a 65 year old man with a fatty liver that resolved with targeted Nutritional Therapy

**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 65 year old man's fatty liver which was reversed using nutritional therapy, with dietary changes and specific supplements.

Research shows that Non-Alcoholic Steato-Hepatitis (NASH or NAFLD - fatty liver disease) is an increasingly common cause of chronic liver disease worldwide and is becoming a major public health problem. NAFLD has been recognised as a hepatic manifestation of metabolic syndrome linked with insulin resistance. Growing evidence supports that NAFLD is associated with systemic diseases such as cardiovascular disease (CVD), chronic kidney disease (CKD), type 2 diabetes, obesity, and metabolic syndrome.

The majority of deaths in patients with NAFLD come from cardiovascular disease. These findings are strongly attributed to nonalcoholic steatohepatitis (NASH) rather than simple steatosis. NAFLD should be considered not only a liver specific disease but also an early mediator of systemic disease.

- Bang KB, Cho YK. Comorbidities and Metabolic Derangement of NAFLD. J Lifestyle Med. 2015 Mar;5(1):7-13. doi: 10.15280/jlm.2015.5.1.7. Epub 2015 Mar 30. http://tinyurl.com/qda3haa

Its prevalence has increased to more than 30% of adults in developed countries and its incidence is still rising. The majority of patients with NAFLD have simple steatosis but in up to one third of patients, NAFLD progresses to its more severe form nonalcoholic steatohepatitis (NASH). NASH is characterised by liver inflammation and injury thereby determining the risk to develop liver fibrosis and cancer. NAFLD is considered the hepatic manifestation of the metabolic syndrome. However, the liver is not a passive target of this condition but also affects the pathogenesis of the metabolic syndrome and its complications.

- Dietrich P, Hellerbrand C. Non-alcoholic fatty liver disease, obesity and the metabolic syndrome. Best Pract Res Clin Gastroenterol. 2014 Aug;28(4):637-53. doi: 10.1016/j.bpg.2014.07.008. Epub 2014 Jul 11. http://tinyurl.com/oajlugy

NAFLD it appears should be acknowledged as a major, worldwide public health concern.

- Boppidi H, Daram SR. Nonalcoholic fatty liver disease: hepatic manifestation of obesity and the metabolic syndrome. Postgrad Med. 2008 Jul 31;120(2):E01-7. doi: 10.3810/pgm.2008.07.1800. http://tinyurl.com/og8lacu

There is no medical treatment for the condition, “although every therapeutic regimen should include a gradual and supervised weight reduction, a balanced diet and exercise, as well as correction of precipitant factors”.

- Tagle Arrospide M. [Non-alcoholic fatty liver]. [Article in Spanish]. Rev Gastroenterol Peru. 2003 Jan-Mar;23(1):49-57. http://tinyurl.com/opvrf6p

A low glycaemic index diet has been shown to be more effective than a low fat diet in lowering BMI. Family based behavioural intervention may also enhance success with diet. Several pharmacological and natural agents have been used including ursodeoxycholic acid, vitamin E, betaine, n-acetyl cysteine, and insulin-sensitising agents like metformin, rosiglitazone, and pioglitazone.

- Nanda K. Non-alcoholic steatohepatitis in children. Pediatr Transplant. 2004 Dec;8(6):613-8. http://tinyurl.com/oegzm7k

Patient education is important as their insight and commitment is pivotal, and lifestyle modification is the first line of treatment.

- Onyekwere CA, Ogbera AO, Samaila AA, Balogun BO, Abdulkareem FB. Nonalcoholic fatty liver disease: Synopsis of current developments. Niger J Clin Pract. 2015 Nov-Dec;18(6):703-12. doi: 10.4103/1119-3077.163288. http://tinyurl.com/qdjzhtv

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

Fatty liver, NASH & NAFLD, weight, metabolic syndrome, glycaemic index,

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

Mr G.H. presented with a fatty liver, diagnosed by ultrasound, a lack of energy and excess body fat. He also reported a reduced tolerance to stress, even though he enjoyed his work.

He had decided to finally do something about his health having been pressured by his wife and children, after years of being overweight and a more recent liver scan had confirmed that he had a fatty liver.

G.H. dutifully made the changes to his diet, took a limited number of specific supplements and then had a repeat ultrasound on his liver and then again over time. By the third scan the fatty liver was not detectable and he was pronounced to be free of fatty liver after 10 months.

**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.*

When we first met Mr G.H. told me that he had recently been diagnosed with having a fatty liver, diagnosed by the ultrascanographer as his local hospital. He had also suffered with fatigue for many years and for longer than

that had been carrying too much weight. In recent times, G.H. also reported a reduced ability to tolerate stress, even though he was his own boss. He ran a small accountancy firm with about 20 staff.

G.H. is a Caucasian British man who lives with his wife in south west London. He has two adult children who live elsewhere in London. He weighed 14 stone 12 lbs and is 6 foot tall (183 cm, 92.4 kg). He could not remember the last time in his adult life that he had been below 13 ½ stone, which he considered to be a much more reasonable weight for himself.

G.H. had long recognised that his diet and lack of exercise were not healthy for him, but he had not taken action to make changes. His wife and children had long pestered him to do something about it, even if it was to walk around the block every day, but he had resisted their pleas with the excuse that he did not have the time and was too busy at work; he provided well for his whole family on a financial level.

It was the hearing of the words “fatty liver” that had changed his motivation. He could see the fat on his body and belly every day but somehow the notion of his having a liver that was infiltrated with fat was enough to instigate a visit to the nutritionist. He had asked his wife whom he should go and see and she had given him the number and he duly made an appointment.

**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.*

G.H. had been told by his family and doctor that he was overweight and that he would be better off if he lost some. His blood pressure had always been fine so he had not felt a need to do so and he did not want to. He had been working many hours a week in his role as accountant and then had established his own business some 15 years ago, to which he dedicated much of most weeks’ available hours.

G.H. had not suffered any particular complaints, health-wise, so there were no red flags alerting him to a need for change to his sedentary lifestyle and standard English diet (SED). He ate better at home than at work, since his wife was very into healthy eating and was also aware of the value of a lower carb diet. It seems that G.H. rebelled and ensured that he had doorstop thick sandwiches every lunchtime, along with biscuits during the day which were ‘to keep his energy up’, he informed the world.

G.H. almost always felt tired in the afternoon and struggled to get through without some kind of a nap. He still worked, and planned to do so until he was 70, but it was challenging for him to be productive and be as effective a member of his team due to his lack of stamina.

It was evident that G.H. needed to lose at least two stone to reach a ‘normal’ weight for his height.

A month or so prior to our first appointment, G.H. had suffered some pains in his liver area and had visited the doctor right away. The doctor referred G.H. for an ultrasound because he suspected gallstones. This was the sole incidence of such an episode. Although a full liver profile test would have been very helpful, G.H. did not want to have any blood tests, but rather to see the evidence on the next scan on his liver. The driving force for him, evidently, was the fatty liver itself and not markers of it.

G.H. had been disappointed to hear that he could not reverse the fatty liver and that the only thing he could do to prevent a worsening situation was to stop drinking alcohol. His typical intake was only 2 glasses of wine a

week, however. We discussed this and I advised that we would see from the results of his NT programme as to whether his NASH could be reduced, and offered no guarantee.

He was aware that NASH could lead to fibrosis and cirrhosis of the liver.

I did recommend a full blood count and liver profile test but he declined, he simply wanted to see the evidence in a repeat scan.

G.H. had never smoked, although before the smoking ban had spent years in a smoky office environment, something that is hard to imagine now. His exercise habits involved walking to and from work but this was not very far, possibly less than 1.5 miles per day. At the weekend he may or may not go for a walk which could be as much as 4 miles in total.

He has one younger brother of 62 who is very fat, and his mother had had a heart attack and his father a stroke, and both had been overweight all their adult lives. G.H.'s blood pressure was 130 / 80.

For his weight rather than anything else, the doctor had recommended metformin two years previously. After taking it for 6 weeks, there was no difference to his weight and nor his blood glucose levels which were 5.5 to 6.3 on average when taken (fasting),which is a little high, but G.H. told me that his doctor had not seemed overly concerned about it. G.H. had stopped the metformin after 6 weeks, and he felt it had given him a mild stomach upset.

G.H. therefore had a health profile which included a number of markers of the metabolic syndrome but not conclusively so; his BMI was over 30, his BP was only marginally high at 130/80, his glucose was higher than an ideal normal, and his cholesterol was also marginally high when last tested two years previously.

Perhaps the sum of these marginal imbalances had a focal point in his liver.

His diet was not ideal. He only ate breakfast at the weekend which consisted of porridge, but with a considerable amount of honey. It is recognised that missing breakfast increases the risk of diabetes. He drank 2-3 coffees a day but less at the weekend. His lunch typically consisted of a thick white bread, cheese and tomato sandwich and a doughnut or muffin although his dinner was often a mixture of vegetables with a lean protein food (chicken or fish). He only drank about 2 glasses of water a day. Then he told me about the biscuits. He ate 6 to 10 biscuits a day, preferring Digestive Biscuits mostly. He found that these kept his energy up. There was always a supply of Digestive Biscuits in the office kitchen.

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

G.H. was born in 1950, 6 years after the end of WWII. As a nation, there was still rationing at that time and he was brought up in a degree of austerity along with his immediate generation.

At school, in the 1960's G.H. had been slim, and it was only when he left school at 18, and he was more in total command of what he ate that he began to gain weight. He also stopped all forms of exercise that had been part of the school curriculum and he went to university and studied hard.

Aged, 21 years old in 1971 he graduated and then went on to study accountancy. Over this 3 year period he must have gained over a stone and a half of weight. However, it had never really bothered him.

Over the years of working for a larger accountancy firm and getting married and having children, G.H. remained pretty constant with his lifestyle, which was essentially a sedentary one, with intermittent stress especially in April when the year-end accounts were due.

For life insurance purposes he had company medicals and had always managed to pass them even though he was relatively out of shape and in no way 'healthy'.

His doctor, whom he had known for a long time identified a slight rise in blood glucose on the annual tests but his blood pressure had always been ok or borderline ok.

In 2013, when G.H. was 63, the doctor had prescribed metformin but this was not taken for more than 6 weeks and did not have an impact on G.H.'s weight.

In 2015, the painful episode which centred around the right quadrant of G.H.'s torso and spread to the back of his shoulders was really the first instance that he had needed to visit the doctor with a reason.

In his 66$^{th}$ year, aged 65 G.H. received the diagnosis that proved to be a turning point for him in his health.

**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 major diagnostic tool had been the ultrasound assessment of his liver. No other tests were conducted in spite of being recommended.

The aim was to reduce G.H.'s fatty liver by improving glucose tolerance, weight loss and the use of a limited number of key supplements that may offer some metabolic support and provided important anti-inflammatory actions.

G.H. was very willing to take my directions on board which consisted of a radical change in diet when he was at work, and the introduction of a small protein-based breakfast. The change at work was to markedly reduce his intake of refined carbs and to increase his vegetable intake. There were also recommendations for physical activity.

G.H. then organised a repeat ultrasound scan after 4 months on this programme and then continued with it again and had another scan about 6 months after that.

**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).*

G.H. had told me he would do what I advised him to do. So, he duly stopped all biscuit consumption and only had a non-gluten carb with his lunch which now contained at least 2 fresh veg. He ate a breakfast at home of a boiled egg and an apple, or a small bowl of porridge with cinnamon with a scoop of whey protein powder added to the almond or soy milk used to cook the GF oats.

His evening meal was a very sound one anyway, so no changes were required here, and he stopped all alcohol completely.

More water was also on the list for G.H. and it was recommended that he gradually increase his water intake to 2 litres per day whilst slowly reducing his coffees to nothing. A 2 litre bottle of water was the much needed prop to support this change of habit, so that G.H. could readily see how much he had consumed.

In terms of physical exercise, G.H. climbed the stairs at his office up and down for 2 full minutes before lunch, and then took at least a 5 minute walk after lunch come rain or shine. He also took a long way round to work meaning he increased his walking commute to close to 3 miles. This meant leaving the house earlier and getting back slightly later than he might otherwise have done.

He also took these supplements for four months.

| First Supplement Programme – March 2015 | |
|---|---|
| **Tocomin SupraBio Tocotrienols 100 mg (ARG)** | 1 with each meal |
| **Beta-TCP (BRC)** | 2 with lunch & 2 with dinner |
| **NAC Enhanced Antiox Formula (ARG)** | 1 with each meal |
| **Phosphatidylcholine (BRC)** | 2 with lunch & dinner |

G.H. followed the NT programme for 4 months and then underwent a repeat ultrasound scan and then continued to follow a similar programme (see below) thereafter and has been continuing to do so for more than 11 months at the time of writing.

We met for a follow up after 6 weeks, to review progress, having had a brief telephone call after 3 weeks. We then met after his second scan results were back some four and a half months after the first consultation.

I learned his wife was a constant support for him as he made the changes.

G.H. had stuck to his physical activity schedule and this had motived others in the office too so most often after lunch he was accompanied by at least one colleague which made it more sociable.

G.H. lost some weight (4 lbs) and increased his afternoon energy within the first 21 days which was a very effective motivator for him to continue with the programme. He also reported that as his energy improved and so did his perception of stress at work.

On meeting him again after some months, which is the way he wanted it, he looked noticeably different. His face was ‘healthy looking’ and he had lost weight. The first thing he told me upon sitting down, however, was that his liver was “definitely less fatty than it had been before”. Apparently, the ultrascanographer, who was the same one as before on request, told him she had never seen such a thing happen before and she was very confident that there was a marked difference between the two tests, and asked him what he had been doing. She was very interested and said that she would tell patients in the future.

We did not have percentages or specific numbered lab markers but we did have this evidence to go on and it also coincided with the loss of over 16 lbs of weight over the four months and self-reported more energy all day. All those who knew G.H. regularly told him how much better he was looking. I asked G.H. to ask for a copy of the images of his liver, which he said he would do.

G.H. firmly decided to continue with the programme so that he could continue to derive the benefits he was experiencing. He was aiming for 12st 12 lbs because that was the weight he had been at half his lifetime ago, and he also wanted to further reduce the fatty liver and be free of that diagnosis. He was not a man who expressed emotions particularly overtly, but he was very happy to have made such good progress, and he asked me in more detail about exactly what had happened within his body. He paid more attention the second time compared with a similar explanation of what was hoped for when we first met. He wondered why his doctor had not explained this to him, since it was relatively simple, and I suggested he ask him directly.

G.H. then followed a slightly revised programme (only minor changes to help reduce the supplements are lunchtime).

| Second Supplement Programme – July 2015 | |
|---|---|
| **Tocomin SupraBio Tocotrienols 100 mg (ARG)** | 1 with breakfast & 2 with dinner |
| **Beta-TCP (BRC)** | 2 with breakfast & 2 with dinner |
| **NAC Enhanced Antiox Formula (ARG)** | 1 with breakfast & 1 with dinner |
| **Phosphatidylcholine (BRC)** | 2 with breakfast & dinner |

We had no contact for months, as G.H. kept on walking up the stairs and kept on with the change in diet and kept on with the supplements.

After a further time of almost 6 months, making almost 10 months in total, G.H. organised another scan. It seems when he put his mind to something he almost always got it done, and had managed to persuade his doctor to arrange these follow up tests for him.

The ultrascanographer confirmed that she could no longer identify any fatty liver, and therefore it had reversed, the first time she had ever encountered such a thing.

G.H. weighed 12st 10lb, when he had the third ultrasound conducted. His blood pressure had reduced to 124 / 78 but he had not had his fasting blood glucose assessed.

I reduced the dose of the supplements, but he wanted to carry on anyway, to support the changes that had been made.

| Third Supplement Programme – January 2015 | |
|---|---|
| **Tocomin SupraBio Tocotrienols 100 mg (ARG)** | 1 with breakfast & 1 with dinner |
| **Beta-TCP (BRC)** | 1 with dinner |
| **NAC Enhanced Antiox Formula (ARG)** | 1 with breakfast & 1 with dinner |
| **Phosphatidylcholine (BRC)** | 1 with dinner |

G.H. is an unlikely hero for the cause, and he is not into health in any particular way, but he decided that a fatty liver was not what he wanted and he diligently applied himself to the task and achieved a loss of fat from within and on the outside too.

**Supplement Information**

**Beta-TCP (BRC)**

This is a formula containing beet concentrate, pancreatic lipase, taurine and vitamin C. It is designed for promoting bile flow.

**NAC Enhanced Antioxidant Formula (ARG)**

Enhanced antioxidant formula containing amino acids, nucleic acid, and lipoic acid that acts as a powerful antioxidant and supports glutathione production. Developed by Martin Pall, Ph.D. and Allergy Research Group®.

Each tablet contains:
N-Acetyl-L-Cysteine 200 mg
Trimethylglycine 300 mg
Ribonucleic Acid 120 mg
Alpha-Lipoic Acid 100 mg

Support for hepatic glutathione should be protective for a fatty liver: http://tinyurl.com/77yob8u .

The lipoic acid may also confer benefits to G.H.'s glucose tolerance and reduce the risk of endothelial dysfunction: http://tinyurl.com/6wqlcj4 .

**Phosphatidylcholine (BRC)**

Phosphatidylcholine (PC) is a member of the class of "essential phospholipids". PC is required for the proper metabolism of fats, and acts as a fat emulsifier. Low levels of PC have been associated with aging, cognitive decline, impaired blood flow and circulation, decreased libido, elevated cholesterol, impaired fat metabolism, neurological disorders, migraine headaches, inflammation of the large intestine, and with decreases in liver, kidney, pancreatic, and cardiac function.

**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.

**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 strengths lie in the simple logic of what was needed to be changed and in the willingness of the subject, G.H., to make those changes. Furthermore, the strength of the case are fortified by the extremely positive outcome.

A limitation is the lack of corroborative blood analyses evidence; it would have been ideal to have a parallel improvement in cholesterol, triglycerides, markers of inflammation and copies of the ultrasound scans too. Having said that, G.H.'s blood pressure and weight both dropped, quite apart from his energy improving and his family feeling much happier about his overall health.

**The literature relevant to this case report**
There is considerable evidence in the literature showing the associations and biochemical causes of fatty liver, which therefore prompt the antithesis in order to correct it. There is also some evidence of a human study in which certain tocotrienols helped to reduce or reverse fatty liver over the duration of a year.

**The rationale for your conclusions**
Fatty liver has been shown to be a consequence of insulin resistance, and can be one of the manifestations of the metabolic syndrome. Therefore, an approach which involves increased physical activity and improved glycaemic control, thereby lowering insulin levels, and then combined with concentrated nutrients in supplement form, one of which has been shown to reduce fatty liver (tocotrienols) appears to be a straightforward one.

**The main findings of this case report: What are the take-away messages?**
The true prevalence of NASH remains elusive, largely because of the lack of a definitive laboratory test and hence dependence on different definitions of these entities. The strongest association for steatosis is with obesity, although interestingly, elevated liver tests were found in 22% of otherwise normal, healthy controls. It is acknowledged that NASH may be clinically silent and indolent in progression, and therefore the number of affected patients is likely under-recognised.

It is certainly of interest that a 4 month programme of reduced carbs with improved glucose tolerance (as far as can be determined since there was no repeat glucose test conducted) antioxidant & bile support combined with increased physical activity can have notable results on a repeat ultrasound reflecting a reduction of NASH. When followed for a further 5 ½ months this particular man succeeded in reversing the fatty liver completely, and lost more body fat.

Weight loss in itself may also contribute to a reduction in fatty liver. It is also with regret that we do not have blood markers for comparison as well to support the other markers, and we do not have the images to place side by side.

Given the likely increased incidence of NASH in the UK due to obesity alone, it is heartening that as a point of principle, a relatively straightforward NT programme can prove to be so effective.

**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.

G.H. is a very matter of fact individual. He was told that there was nothing that could be done about the fatty liver, and he was then informed by myself that it may be possible to do something about it, and he then went about following a plan which targeted just that.

G.H. told me that he was "quite satisfied" with the progress made and he was "pleased" that he had reversed his fatty liver and lost the weight.

It seems that a more ebullient expression of delight would certainly have been forthcoming from his wife.

**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. G.H. 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*

Antony Haynes practices in London W1.