Edition 148 September 2015

# CONSULTING ROOM

*Your Aesthetic Partner*

# FEATURE ARTICLE

## Intravenous Vitamin Infusions
## Fad or Fabulous?

CPD CERTIFIED
The CPD Certification Service
Collective Mark

# *Feature Article*

## Intravenous Vitamin Infusions – Fad or Fabulous?

From an early age we are all told how important the vitamins and minerals that are present in our food and drink are for making us '*grow big and strong*' and how we must '*eat our greens*' to keep us healthy. Not all of us have perfects diets - fussy eaters, busy lifestyles with little cooking from scratch and a tendency towards fats and sugars from processed foods mean that many of us are not getting the best combination of vitamins and minerals from diet alone, which can lead to deficiencies and related illnesses. Add to that hectic work and life schedules, burning the candle at both ends with little thought for getting enough sleep and many of us are fatigued and dehydrated to boot.

Some therefore turn to vitamin supplementation as part of their diet; now popping a few multi-vitamin pills with your breakfast is not a new thing, but a recent rise in the use of IV or intravenously delivered vitamin drips is causing quite a stir in the aesthetic community.

Celebrities have been pictured on social media touting this solution as the best pick-me up for those needing a boost of energy. Thus the treatment is now widely marketed using different terms including IV Hydration, Intravenous Micronutrient Therapy (IVMT) and Intravenous Nutritional Therapy (INVT).

Is this new? Is there any science behind it? Is it just a celebrity driven fad or in fact a great adjunct to other modern anti-ageing treatments for the skin and body? In this feature article I hope to find out.

## Background

In the 18th century when doctors discovered that eating citrus fruit (containing vitamin C) counteracted scurvy amongst sea-faring sailors the science of why was lacking. It wasn't until the late 1800s that a Russian surgeon proposed the theory that our foods contain nutrients that are essential for good body health.

As understanding grew throughout the 20th century, knowledge increased about which vitamins were present in which foods, and cured which ailments or promoted which cell proliferation within the body. The medical community began to both prescribe and make synthetic versions of common vitamins to improve the health of those afflicted by deficiencies and diseases. Today, most vitamins and minerals are widely available in oral tablet and liquid forms in high street chemists and supermarkets, as well as prescribed by general practitioners for conditions such as anaemia (iron supplementation) and rickets (vitamin D supplementation).

But what about sticking a needle in your arm, attached to a drip with a bag on a stand which delivers a controlled dose of vitamins and minerals directly into your body intravenously? Is this new? The simple answer is no.

In the 1960s, the use of IV delivered vitamin cocktails was proposed as a more effective method for delivering a dose of essential vitamins and minerals into the bloodstream than via oral options (food or pills) due to how our bodies digest, absorb and expel that which we ingest by mouth.

Their use has been touted over the years to 'cure' or mitigate the effects of everything from chronic fatigue, depression, fibromyalgia, respiratory and cardiac conditions, migraines and even cancer.

The most famous and earliest cocktail of vitamins and minerals delivered to patients in this way was that developed by Baltimore based American doctor, John Myers, in the 1960s, thus this became known as the Myers' Cocktail.

This was essentially a multi-vitamin pill for IV delivery. Although there is no documented, published original 'recipe', the theory is that Dr. Myers used a 10ml syringe and administered by slow IV push a combination of magnesium chloride (2% solution), calcium gluconate, thiamine, vitamin B6, vitamin B-12, calcium pantothenate, vitamin B complex, vitamin C, and dilute hydrochloric acid. The exact doses of individual components were unknown but one doctor, Dr. Alan Gaby, who took on many of Dr. Myers' patients after his death in 1984, treated over 1,500 patients, up to 2002, with his version of the Myers' Cocktail – the modified Myers' Cocktail. Many clinics still adopt this

concept and adapt it for their own use today, and most commercially available products bear some resemblance to this cocktail;.

Sadly for the late Dr. Myers his legacy is included in **Quackwatch's index of questionable treatments** as evidence to support it is largely anecdotal with few notable scientific publications.

Dr. Gaby himself wrote the most widely quoted clinical paper following his experiences in which he concluded a similarly unproven result:

"*The Myers' has been found by the author and hundreds of other practitioners to be a safe and effective treatment for a wide range of clinical conditions. In many instances this treatment is more effective and better tolerated than conventional medical therapies. Although* ***most of the evidence is anecdotal****, some published research has demonstrated the efficacy of the Myers' or some of its components. Widespread appropriate use of this treatment would likely reduce the overall cost of healthcare, while greatly improving the health of many individuals.* ***Additional research is urgently needed to confirm the effectiveness of this treatment and to determine optimal doses of the various nutrients.*** *Although double-blind trials would be difficult to perform because of the obvious sensations induced by IV nutrient infusions, trials comparing the Myers' with established therapies would be informative.* ***Practitioners using this treatment are encouraged to report their findings.***"

More recently, the media and celebrities have cottoned on to this treatment concept and companies happy to manufacture and compound bespoke cocktails have come out of nowhere to market the use of IV vitamin and nutrient drips (delivered in aesthetic, slimming and nutritional clinics). This time the promotion revolves around 'pick me-ups' to boost immune systems pre-, during and post- colds and flu, recovery and rehydration from busy and hectic work or party lives, including jetlag, or as an aid to sports performance, alongside anti-ageing claims for improved skin tone and a 'healthy look'.

Now this is where the cynical stuff comes in…If you are otherwise healthy and have a well-balanced and varied diet of proteins (meat, fish, eggs), fruit and vegetables, plus plenty of water, then it's quite likely that you are getting all the vitamins and minerals that your body needs, (with a bit of sunshine thrown in for some vitamin D). So would the act of regularly popping multi-vitamin pills or having bi-monthly IV infusions just have a placebo effect or a short-term 'lift' rather than any real medical benefit to your long-term health? Of course pregnant and menopausal women and others experiencing unbalance may benefit, but on the whole there are those who argue that vitamin and mineral supplementation is not required for the vast majority of the population, (if they look after themselves properly), and certainly not without proper blood profiling to look for any key deficiencies.

"*Humans are designed to ingest the majority of essential nutrients orally, not intravenously. Of course there are medical scenarios where IV nutrition may be necessary to prevent malnutrition, however these patient's circumstances are entirely different to those of the average patient attending a medical aesthetic clinic.*

*Whilst there are anecdotal reports of the benefits of IV drips (quite possibly simply the result of increased hydration), there are no conclusive studies that I am aware of demonstrating improvements to the health of already healthy individuals.*

*I believe that in many cases where IV nutrient drips are administered through medical aesthetic clinics they are unnecessary and potentially even dangerous. Individuals may see this as a quick fix but would most likely do better to focus a little more on their daily diet and take good quality oral nutrient supplements based on their individual needs*"; says Nutritionist and Consulting Room Adviser, Kim Pearson.

So, why has the use of intravenous vitamin supplementation suddenly sky-rocketed in popularity? And more importantly, what do aesthetic professionals think of this new kid on the block?

## Industry Sentiment

With many advocates and detractors, the concept of intravenous vitamin drips as a credible treatment option within the aesthetic and cosmetic industry is certainly hot for debate right now. The Consulting Room ran a survey this summer to find out exactly what the industry thinks about this innovation. Responses were received predominantly from cosmetic doctors and aesthetic nurse independent prescribers as well as non-prescribing nurses. 58% of respondents were not offering vitamin drips and 42% were either offering the treatment themselves or working in a clinic which offered it. The most widely used brand by respondents was Intravita, followed by a Myers' Cocktail, REVIV and VitaminDrip®.

© Copyright - www.consultingroom.com

When asked what their opinion was of intravenous vitamin/mineral drips and those who offer them to the public, based on a series of pre-set positive and negative options, the largest response was that "*I see no real, sound clinical evidence behind them to support their use*", with more than half of respondents choosing that option.

Other highly shared opinions included:
"…*with limited regulation within the cosmetic sector, this is yet another area that could be exploited for profit by unskilled practitioners to the detriment of the public*",
"*I would be very wary about offering vitamin drips without really knowing if the patient was actually deficient in the first place*",
"…r*espectable aesthetic professionals should not be selling 'hangover cures' and 'tiredness boosters' to overworked party people*" and
*"It's not something I'm happy to offer*".

Despite 42% of respondents stating that they or the clinic where they worked offered IV vitamin infusions, only 30% of respondents agreed with the statement "*I'm a great advocate for IV drips, I think they work and I'm happy to offer them to my patients*".

Only 23% of those offering treatment also agreed that "*IV vitamin drips make a great adjunctive treatment to further enhance the overall treatment plan for my patients and improve their outcomes as a whole*" and 23% confirmed that "*I'm confident in offering this treatment to my patients now or in the future*".

Either people don't read surveys correctly or those offering the IV vitamin therapies are still deciding themselves just how good they are for their patients? I will leave you to decide on that one!

## Who Should be Treated?

If you believe what you read in the Daily Mail (ahem!) then this is the solution for those with hangovers, hectic travel schedules, jet-set lifestyles and a few bob to throw at the problem. Emanating from the USA, where the concept of IV 'bars', 'spas' and 'cafes' is apparently a growth market, it has now arrived on our shores. It has become popular with celebrities including singer Lily Allen who posted photographs on social media of herself having an IV infusion after admitting that the hectic travel schedule from her singing tour was catching up with her. Others including model Cara Delevingne have been quoted as seeking the treatment as a means of recovery from a cold.

Although it could be argued that sound, controlled study data is lacking on the efficacy of IV infusions (and the many recipes available), there is a broad range of anecdotal evidence both from practitioners and patients alike, that they have beneficial effects. According to popular press, most of us are dehydrated in our daily lives so the simple process of receiving an IV drip of saline would probably improve our sense of well-being – let alone a cocktail of extra boosters.

Speaking to one doctor who now offers IV vitamin therapies in his medical aesthetic clinic, he told me how the concept came to him through his own personal experiences and interests. A keen fitness advocate and gym visitor, he encountered a number of other gym members and personal trainers who were very interested in their athletic performance and health. He discovered that they were regularly taking upwards of three different oral supplements per day to try to achieve improved fitness and well-being. Many of the professionals advising on nutritional and fitness aspects within the gym were recommending supplements and latterly IV solutions to their personal training clients. He believes that this is a growing market as he was actively asked if he provides the treatment himself at his clinic. Those people that come from this demographic are fit and healthy and already aware of the benefits from vitamin and mineral supplementation, so turning them into patients for IV vitamin therapy, which provides direct absorption of ingredients regularly prescribed in a hospital setting, that should have more effect than those found on the shelves at Holland & Barrett and Sports Direct, seems a good move for all.

Whilst researching this article I was also contacted by a dental professional who has celiac disorder (gluten intolerance) and other immune deficiencies who claims that weekly IV infusions of a high dose vitamin C combined Myers' cocktail over the last two years, alongside vitamin B-12 injections has transformed her life and restored it. To her, this is not a fad nor a new craze.

There are certainly those patients who have a defined and traceable deficiency or who have a diagnosed condition who can benefit from targeted supplementation, either orally or intravenously but the fad or craze surely comes from offering this to all and sundry as a pick-me-up for over-worked, over-stressed party people and busy mums.

Celebrity hype and a media frenzy have surely made, what is in some cases a credible treatment, into no more than an energy drink in an expensive drip.

So, how are clinics assessing who is right for this treatment or is profit over patient care at the root of it all?

In most cases, as the individuals being seen in a medical aesthetic clinic are otherwise healthy, and have not sought help or a diagnosis for symptoms which could be related to a vitamin or nutrient deficiency, all that is being performed is a thorough medical history and lifestyle screening, alongside vital sign checks (bloody pressure, pulse, temperature, BMI etc.). Rarely is there a requirement or a desire for a full blood work up to be done on a patient, something which courts controversy amongst detractors who see this as an essential benchmark for the primary starting point with prescribing the best (or avoiding the worst) treatment therapy for the individual.

# Primary Supplements

## Vitamin C

Vitamin C is considered an essential nutrient for the human body, which it must obtain from an outside (dietary) source as it cannot synthesis it internally. Vitamin C is found in many fruit and vegetables including citrus fruits, tomatoes, melons, peppers, potatoes, pineapples, brasicas and summer berries, plus many other sources. It is a water soluble vitamin which is ingested, used as required, and any excess is secreted out of the body through urine.

A continuous supply is needed to maintain good health, otherwise long term deficiency, as we know from historical evidence, can lead to scurvy – bleeding gums, tooth loss, pus filled wounds, spots and eventually death. As the body cannot store vitamin C, it is very rare to have an overdose and subsequent side effects; however it is known that taking in amounts greater than 2,000 mg/day can lead to an upset stomach and diarrhoea.

The body uses vitamin C to maintain normal growth and development through collagen synthesis and the formation of a number of different tissues and structures within, as well as when healing and repairing damage to tissues. It is also an antioxidant and plays an active part in preventing oxidative stress from free radicals.

Anecdotally vitamin C is touted as useful against the common cold, however clinical research notes that increased vitamin C consumption does not reduce the risk of catching a cold, nor does it appear to be helpful to take extra once a cold is caught, but there is some limited evidence that those who regularly take vitamin C supplements may reduce the longevity and symptoms experienced from any cold that they catch.

Some high-dose vitamin C intravenous therapies have been widely marketed as an additional treatment option for cancer patients by alternative health professionals. This is proposed due to vitamin C's known cytotoxicity towards cancer cells which are said to reduce the rapidity and spread of the cells whilst other targeted cancer treatments such as chemotherapy and radiation are being commenced. This concept has been studied since the 1970s and results have shown that it may slow growth and spread in prostate, pancreatic, liver, colon and some other cancers. Despite this the U.S. FDA has not approved the use of high dose vitamin C in the treatment of cancer patients.

## Vitamin B-12

Vitamin B-12, which also goes by the name Cobalamin, is another water soluble vitamin which the human body is incapable of synthesising internally. Its primary role is in metabolism, and plays a key role in the formation of blood and the normal functioning of the brain and nervous system. Vitamin B-12 is found naturally in animal derived foods, such as meat/poultry, fish, shellfish, eggs, milk and other dairy products, (it is not present in plant based products), as well in those foods which have been fortified with vitamin B-12, such as breakfast cereals and breads. The best source of vitamin B-12 is in animal liver, particularly beef.

According to A hunt et al who published in the BMJ in 2014, a deficiency in vitamin B-12 is relatively common, estimated to affect 6% of those under 60 years of age and 20% of those over that age. This increases to about 80% in parts of Africa and Asia.

Symptoms of deficiency, which causes a condition called megaloblastic anaemia, include tiredness, weakness, irritability, depression, confusion, balance problems, loss of appetite, constipation and weight loss, as well as other neurological changes. At its worst, it can call psychosis.

© Copyright - www.consultingroom.com

Deficiency is usually related to a decreased intake, as is common with vegetarian and vegan diets, a reduction in the ability to absorb the vitamin due to age, as well as increased bodily requirements that are not being met adequately, such as during pregnancy and breast feeding. More commonly it is due to poor absorption of the vitamin through the stomach due to a condition called pernicious anaemia. Normally hydrochloric acid in the stomach separates the vitamin B-12 from the ingested protein source and combines it with a protein that it makes called the intrinsic factor so that it can be absorbed by the body through the intestines; not everyone is able to manufacture the intrinsic factor, thus a deficiency manifests. Similarly those who may have a decrease in their body's ability to absorb nutrients following weight loss surgery, celiac or Crohn's disease will also have their vitamin B-12 absorption compromised.

Alcohol consumption, even as moderate levels of regularity, as well as having an effect on the hydration of the body, can also impact on the absorption of vitamin B-12 due to the damaging effect that it has on stomach cells.

Vitamin B-12 is often marketed as great supplement to increase energy and endurance for athletic performance, and is often found as a fortifying ingredient in energy drinks, however, unless an individual is clinically deficient in the vitamin, there is no evidence to suggest that this has an effect.

Delivery of high doses of vitamin B-12 is known to cause side effects such as a florid, red, pustular rash. This was anecdotally reported by Consulting Room Advisor Dr. David Eccleston who encountered a patient who presented in his clinic thinking she had developed acne but a thorough medical history uncovered recent, weekly vitamin B-12 injections. This phenomenon was also reported in a 2006 clinical paper by W Uhl et al who looked at the safety of hydroxocobalamin in healthy volunteers in a randomised, placebo-controlled study.

## Glutathione

Glutathione is a tri-peptide that is an important antioxidant that helps to prevent damage to cells from free radicals. It is also actively involved in iron metabolism and the synthesis and repair of DNA, proteins and other biochemical reactions. Unlike other nutrients, the human body is able to synthesis glutathione from the amino acids L-cysteine, L-glutamic acid and glycine. It can do this within all the cells in the body but research has shown that the glutathione synthesis which takes place in the liver is the most essential.

Low levels of glutathione are seen in those people with cancer, HIV/AIDS and other traumas or sepsis, as well as in athletes who are over training and pushing their bodies to the extreme.

## Magnesium Sulphate

Magnesium sulphate is commonly used as a pharmaceutical preparation of magnesium and is more readily known in common parlance as Epsom Salts. It is often used as a laxative, but can simply be a source of magnesium in lower doses. Magnesium sulphate given intravenously or as an intramuscular injection is used to treat eclampsia with evidence supporting its vasodilatory capabilities.

The supplementation of magnesium sulphate can be used to treat hypomagnesemia which can occur in the body without a magnesium deficiency being a more permanent systemic problem. This is because hypomagnesemia can occur on an ad-hoc basis due to an inadequate intake of magnesium from one's diet due to chronic diarrhoea, malabsorption problems (as seen with weight loss patients), excess alcohol consumption and chronic stress, as well as in those taking medications which have a diuretic effect. Insufficient levels of selenium, vitamin B6 and vitamin D from sun exposure can also have an effect on the body's levels of magnesium.

A deficiency in magnesium causes symptoms including weakness, muscle cramps, tremors or shakes due to the impact in the nervous system as well as heart rhythm abnormalities.

## Calcium Gluconate

Calcium gluconate is a mineral supplement which according to the World Health Organisation is one of the most important medications needed in any basic healthcare facility. Given as an intravenous solution it is the most widely used form of calcium for treating hypocalcaemia or low serum calcium levels in the blood. Such low levels are most commonly caused by a vitamin D deficiency.

Calcium gluconate is also used to counteract any overdose of magnesium sulfate, as an antidote to sulfate toxicity, which can cause respiratory depression and a loss of deep tendon reflexes.

The speed of delivery of calcium gluconate is important as rapid delivery intravenously can cause hypercalcaemia which could cause decreased blood pressure, vasodilation and bradycardia.

## Product Brands

The various supplements discussed above, in IV ready ampoules, are in themselves prescription only and can only be sourced from a pharmacy by a prescribing physician. The product brands available formulate these into a usable/deliverable drip and clinics wishing to offer them are often paying for the licence to use the brand, the marketing support and a preferential rate on the sourcing of the components.

All of the IV micro-nutrient vitamin drips on the market aim to achieve 100% absorption of their nutritive cocktail, directly into the bloodstream during an IV push of between 30 and 60 minutes, while the patient sits or lies on a couch in the clinical setting. The aim is that the patient will feel rehydrated and have a restoration of optimum vitamin levels and improved energy in the few hours post-treatment. Most of the brands also offer single, intramuscular injection or 'booster' product options for delivery of key nutrients.

### Intravita

In 2014, well known cosmetic doctors, Dr. Samantha Gammell (Past-President of the British College of Aesthetic Medicine) and Dr. Jacques Otto, as well as his son and aesthetic product distributor, Vernon Otto founded IntraVita Ltd. With several years of experience in the study and practice of intravenous nutritional therapy, both Dr Gammell and Dr Otto now teach and train medical practitioners (doctors, dentists, NIPs and nurses) and natropaths/homeopaths (following proof of a three year degree and a pre-requisite phlebotomy course) in its use.

Becoming an Intravita providing clinic involves a one off fee of £995 + VAT for training and accreditation. Training is provided in the form of a seminar day which looks at the understanding of the vitamins, minerals and amino acids used in the IV nutritional therapies, their safety and potential complications, treatment protocols, patient screening and consent, equipment needs and practical skills, followed by a practical session experiencing the treatment. All attendees are provided with a training manual, as well as documentation templates for medical histories, consent, vital sign checks etc. Product supply, insurance and follow-up support are all offered by Intravita. The company notes that by the end of 2015 they will have 75 UK clinics trained and accredited for their brand. In the New Year Intravita will be launching the first Heavy Metal Toxicology Course including chelation therapy with EDTA and ALA which will be available to those practitioners who have already completed Intravita's Fundamentals and Clinical Applications of IVNT.

The company manufacture their own IV products using a laboratory in Germany so that they can ensure that they provide the highest quality and safe supplements without preservatives. The UK's MHRA has recently classified the Intravita products as supplements providing that no medical claim is made about them. The range starts from £25 + VAT for a Myers's style product (RRP £150) up to £65 + VAT for their diet and detox product (RRP £200 - £250). They recommend providing a package of 6 drips for an RRP of £1,000, based on one per week for four weeks, followed by one every two weeks or one a month after that. Maintained sessions once per month can then be advised.

***IV Ultimate Classic Drip*** is the vitamin cocktail that started it all. It claims to have just the right mix of intravenous vitamins and minerals plus the added bonus of high dose glutathione for overall wellness. Patients report having increased energy, better sleep and increased endurance. The drip also includes vitamin C, vitamin B-12

© Copyright - www.consultingroom.com

(hydroxycobalamin), vitamin B5 (dexpanthenol), vitamin B6 (pyridoxine), B complex, magnesium sulphate, calcium gluconate and selenium.

***IV Anti-Ageing Drip*** is formulated with high dose IV glutathione and a mix of nutrients to fight ageing, restore collagen and even the skin tone. The drip also includes vitamin C, vitamin B-12, vitamin B5, vitamin B6, B complex, magnesium sulphate, calcium gluconate, selenium, zinc, arginine, carnitine, cysteine, glutamine, glycine and proline.

***IV Athlete/Sport Drip*** is designed for those who lead a sporty and active lifestyle. Containing high concentrations of all the energy boosting B vitamins and amino acids such as taurine, glutamine and carnitine this drip can provide sustainable energy lifts, for those in training, that avoid the short lift and sudden 'crash' experienced with the use of energy drinks. The drip also includes vitamin C, magnesium sulphate, calcium gluconate and arginine.

***IV Diet & Detox Drip*** is aimed at replenishing fluids, vitamins, minerals and amino acids to reduce the body's toxic load and help it to function for efficiently in terms of providing energy and burning off fat. The drip includes vitamin C, vitamin B-12, vitamin B5, vitamin B6, B complex, magnesium sulphate, calcium gluconate, selenium, zinc, glutathione, arginine, carnitine, glutamine, methionine, ornithine, phenylalanine and taurine.

***IV Energy Boost Drip*** is designed as a healthy pick-me-up. It contains higher doses of all the B Vitamins, higher doses of magnesium, an essential component in helping the body to create energy for cells and the amino acid taurine. The drip also includes vitamin C, calcium gluconate, alanine, carnitine, glutamine, glycine and phenylalanine.

***IV Immunity Drip*** is formulated to replenish vitamin, mineral and amino acid levels for those feeling prone to sickness and tiredness. It also includes high doses of vitamin C, zinc and anti-oxidants, such as glutathione, arginine and cysteine. The drip also includes vitamin B-12, vitamin B5, vitamin B6, B complex, magnesium sulphate, calcium gluconate, selenium, carnitine, glutamine and ornithine.

***IV Stress & Anxiety Drip*** combines Intravita's Ultimate Classic Drip with high dose of IV glutamine, carnitine and ornithine to aid balance in stressful situations, improve concentration and aid restorative sleep. The drip also includes vitamin C, vitamin B-12, vitamin B5, vitamin B6, B complex, magnesium sulphate, calcium gluconate, selenium, zinc, glutathione, cysteine, methionine and taurine.

***IV B12 Drip*** is a single booster shot of vitamin B-12. ***IV Antioxidant Drip*** is a single booster shot of glutathione.

## REVIV

REVIV was established in 2010 and promotes itself as the market leader in IV nutritional therapies. To date they can demonstrate 31,200 treatments performed worldwide, emanating from both globally based flagship clinic locations in the USA, UK and South Africa, which just offer REVIV treatments, and so called *REVIV Express* partner clinics. There are currently 13 approved REVIV Express locations in the UK, with a further 53 pending training and approval, according to their UK President, Sarah Lomas. She notes that there has been a 40% growth in treatment turnover in the last 12 months alone for REVIV.

REVIV believe that their global branding is key, hence they often promote their brand through A-lister celebrities, but maintain that having a sound medical base is also paramount. To that end they have a dedicated R&D team, including a Chief Pharmaceutical Officer as well as operations staff who collaborate on lab testing and in-field treatment provision. They have held talks with the MHRA, CQC, GMC and NMC as they sought to invest and launch into the UK marketplace. Sarah is even considering putting together a guiding body for IV therapies to maintain best practice, education and support for this growing sector and those offering the treatment, which is currently not supported in a regulatory capacity.

The REVIV brand offers both IV hydration and instant booster shots as part of their portfolio. The intravenous treatments are priced to the patient at up to £199 per session (an 80% profit margin for clinics), with the booster injections costing around £39 RRP.

Becoming an Express REVIV clinic means entering into a licensing agreement with REVIV at a cost of £495 per month; this means a break-even point of three treatments per month. This fee includes training, certification and insurance to get started, followed by PR, marketing and operational support (including patient screening and consent documentation), as well as input into R&D meetings. REVIV has a pharmaceutical partner who brand and package all the products in the range and then send them out to clinics when ordered. Training is key and this is a pre-requisite to approval of the licensing agreement. This looks at the understanding of the ingredients in the drips, plus basic and advanced cannulation techniques, as well as medical screening and treatment protocols. REVIV

note that due to economies of scale the use of their pharmacy for the constituent ingredients in each infusion preparation is more competitively priced than seeking them from another third party wholesale pharmacy.

The REVIV range uses a variety of primary components which can then be utilised to formulate their proprietary IV infusions. Core ingredients in their range include glutathione and a vitamin B-complex 100 which is a solution that contains thiamine hydrochloride (100mg), riboflavin 5' phosphate sodium (2mg), pyridoxine hydrochloride (2mg), dexpanthenol (2mg) and niacinamide (100mg) per millilitre of solution. Also, magnesium sulphate which is in a 100ml, 5% dextrose solution and is available in 1 or 2% concentrations, the nonsteroidal anti-inflammatory drug (NSAID) Ketorolac (Toradol) for pain relief and Pepcid (Famotidine) which is a histamine H2−receptor antagonist.

REVIV is the only range on the market which incorporates an anti-emetic in the form of Ondansetron (Zofran) as a prevention against nausea and vomiting (included in the Ultraviv and Royal Flush) and a steroid in the form of Dexamethasone Sodium Phosphate (Decadron). This is both controversial from a dose and frequency of delivery perspective, with most practitioners not wishing to offer the IV solutions that contain these ingredients to patients more than once every 2 to 3 months, and from a regulatory stand-point with the Care Quality Commission currently looking at whether the use of an anti-emetic means that it falls under their scope of regulation.

***Hydromax*** is aimed at replenishing the hydration of the body post athletic activity with fluids fortified with electrolytes and antioxidants, as well as flushing out lactic acid and other toxins.

***Ultraviv*** is aimed at refreshing the body following fatigue due to sleep deprivation, work stress or overindulgence and partying.

***MegaBoost*** is REVIV's signature vitamin infusion, filled with electrolytes, minerals and antioxidants to restore hydration, boost the immune system and deliver an energy boost.

***VitaGlow*** is targeted as an anti-ageing IV infusion to rejuvenate the skin with high doses of the antioxidant glutathione.

***Royal Flush*** is the Rolls Royce of the REVIV offering, their premium IV infusion which combines the recovery benefits of the Ultraviv with cleansing and detoxifying strengths of the Megaboost; aimed at those 'living life to the extreme'.

The REVIV range also includes additional Booster Shots or single injections of key ingredients. These include the vitamin ***B-12*** booster (Cyanocobalamin USP 1000 mcg/ml) to increase natural energy levels, boost the immune system and regulate sleep, mood and appetite cycles, the ***Slimboost*** to maximise energy and fitness via vitamins, amino acids and antioxidants to enhance metabolism and promote natural weight loss, and ***Vitaboost*** (Glutathione), the total body booster, to improve wellness, reduce the effects of stress and free radicals and aid anti-ageing.

## Vitamindrip

Vitamindrip® was founded in 2011 by Frank Stillo who, inspired by the work of Dr. Myers, developed this product range using an assembled team of leading medical doctors, naturopathic doctors, biochemists, nutritionists and exercise physiologists. Hailing from Canada it was launched there in March 2011 and is now also available in the USA, Mexico and Europe through Express Clinics, Boutique Clinics and Flagship Clinics. It was initially launched into the UK market at the CCR Expo in 2014. The company provides training and clinic support, including treatment protocols, equipment needs and supply, infection control plans, patient care techniques and staff development.

vitamindrip®

© Copyright - www.consultingroom.com

Vitamindrip use a profiling system as an aid to identifying a person's specific nutrient requirements. These are encrypted sets of numbers which are run through an online proprietary software program (Vitamindrip® Smartware™) that reflect a person's current state of health, as evaluated following a series of medical, health and lifestyle questions; this is then used to produce a profile and prescribe a treatment. Additionally they offer the option for micronutrient testing whereby a full nutritional status of the patient at a cellular level can be established before treatment. The test looks at vitamins, minerals, amino acids, fatty acids, metabolites, antioxidants and carbohydrate metabolism.

The Vitamindrip products are delivered in a 0.9% saline solution.

***Vitamindrip® Original*** is aimed at providing replenishing fluids, vitamins and minerals before, during and after all life draining activities. The drip includes vitamin C (ascorbic acid 500mg/ml), vitamin B-12 (methylcobalamin 1000mcg/ml), B complex (B1 & B3 100mg/ml, B2, B5 & B6 2mg/ml), vitamin B5 (dexapanthenol 250mg/ml), vitamin B6 (pyridoxine 100mg/ml), calcium and magnesium.

***Vitamindrip® Athletic Performance*** is aimed at providing replenishing fluids, vitamins, minerals and amino acids before, during and after all extreme activities. The drips includes vitamin C, vitamin B-12, B complex, vitamin B5, vitamin B6, calcium, magnesium, L-taurine, L-arginine, L-glutamine and zinc.

***Vitamindrip® Hydration*** is aimed at restoring hydration. The drip includes vitamin C, vitamin B-12, B complex, calcium and magnesium.

***Vitamindrip® Rejuvenation*** is aimed at restoring youthful radiance. The drip includes vitamin C, vitamin B-12, B complex, vitamin B5, vitamin B6, calcium, magnesium, L-proline, L-lysine, L-glutathione, zinc and selenium.

***Vitamindrip® Diet and Detox*** is designed to burn stubborn body fat and detoxify the body to rid it of unhealthy toxins and boost energy. The drip includes vitamin C, vitamin B-12, B complex, vitamin B5, vitamin B6, calcium, magnesium, L-carnitine, L-glutamine, L-glutathione, zinc and selenium.

***Vitamindrip® Immune Support*** is aimed at combatting cold and flu symptoms. The drip vitamin C, vitamin B-12, B complex, vitamin B5, vitamin B6, calcium, magnesium, L-glutathione, zinc, selenium, copper, manganese and D-alpha lipoic acid.

***Vitamindrip® Libido Enhancer*** relaxes blood vessels and increases blood flow. The drip includes vitamin C, vitamin B-12, B complex, vitamin B5, vitamin B6, calcium, magnesium, L-glutamine, L-taurine, L-arginine, L-carnitine and zinc.

***Vitamindrip® Aches and Pains*** targets inflammation and increases circulation. It is claimed to be effective in relieving aches and pains associated with muscles, rheumatic, back, headaches, teeth and menstrual cramps. The drip includes vitamin C, vitamin B-12, B complex, vitamin B5, vitamin B6, calcium, magnesium, L-glutamine, L-taurine, L-proline, L-lysine, chromium, manganese, selenium, zinc, glucosamine and MSM 15%.

***Vitamindrip® Brain Health*** aims to improve brain performance. The drip includes vitamin C, vitamin B-12, B complex, vitamin B5, vitamin B6, calcium, magnesium, L-glutathione, L-taurine, selenium, glycerolphosocholine, zinc and N-acetyl-cysteine.

***Vitamindrip® Mood Support*** aims to boost the body's natural serotonin levels and help promote calmness following stress, anxiety or exhaustion. The drip includes vitamin C, vitamin B-12, B complex, vitamin B5, vitamin B6, calcium, magnesium, chromium, selenium, glycerolphosocholine and zinc.

A range of intramuscular delivered booster injections is also available.

***Vitamindrip® Pure Energy*** is designed to keep you energized for days, for those working, exercising, or studying for long hours, or as a regulator for sleep, mood and appetite. It contains vitamins B-12, B1 and B6 plus caffeine and adenosine monophosphate (AMP).

***Vitamindrip® Diet and Detox*** is designed to provide vitamins and active ingredients to boost metabolism and energy, detoxify vital organs, eliminate excess body fat and reduce hunger cravings. It contains vitamins B-12, B1, B2, B3, B5 and B6 plus methylfolate, L-methionine, innositol, choline chloride, D-biotin and chromium.

***Vitamindrip® Glutathione*** is designed to prevent damage to important cellular components in the body by protecting against free radicals, reducing oxidative stress, boosting the immune system, detoxifying and reducing cellular inflammation. It contains L-glutathione.

# Considerations

## IV Solution

The solution or diluent used for any IV infusion fluid is an important factor. In the case of delivering IV nutritional therapies this choice is usually between a 0.9% sodium chloride (saline solution) or a 5% dextrose solution, an isotonic carbohydrate (sugar solution) that contains glucose in sterile water, depending on the 'ingredients' being used and the desired effect from the therapy in terms of hydration and energy boost.

## Osmolarity

Osmolarity or osmotic concentration refers to the concentration of a solution expressed as the total number of solute particles per litre. This is an important consideration in the delivery of IV nutritional drips as it determines the concentration of the supplementary ingredients in the final infusion drip or injection syringe. Many of the pre-formulated products take care of this but if you are drawing up bespoke formulations for patients or choose to buy your constituent ingredients from other pharmacy sources which come in varying concentrations, then training and understanding of this is key to avoid serious overdose and adverse reactions during delivery of the fluids. For this reason it  is mostly advised to maintain your product supply through one brand or another.

## IV Drip rates

Calculating IV drip rates or the flow of delivery of an IV infusion requires both understanding of the vitamins and minerals being delivered, how they are taken on by the body and the effects from delivery in certain quantities, as well as some mathematical skills. To do this a practitioner must be aware of the total volume of the drip (in millilitres), the planned infusion time and thus the intended flow rate, how many millilitres per hour to deliver the components at a safe speed and in safe doses. From this a rate at which the fluid drips from the bag, through the IV line and intravenously into the individual can be set. If delivery is too quick, some of the vitamins and minerals may be delivered at too high a dose and cause an adverse reaction in the patient.

## Intravenous Cannulation

Intravenous or IV cannulation, the act of correctly placing a cannula inside a vein to provide venous access for the sampling of blood or the administration of IV medicines is a skill which must be mastered to deliver intravenous nutritional therapies.

As well as locating a suitable vein, and practices which can be employed if this proves difficult initially, the techniques for sterilisation, needle entry and ultimate catheterisation must be clearly understood and learnt (if not already known) by all medical practitioners intending to deliver such therapies safely.

Veins have a three-layered wall composed of an internal endothelium surrounded by a thin layer of muscle fibres that is surrounded by a layer of connective tissue. Venous valves encourage unidirectional flow of blood and prevent pooling of blood in the dependent portions of the extremities; they also can impede the passage of a catheter through and into a vein. Various complications can occur both during and after IV cannulation so it is paramount to understand the anatomy and potential problems including pain, difficulty introducing the cannula, arterial puncture, thromobophlebitis, infection and necrosis.

# What about the risks?

We all know how unregulated the UK aesthetic marketplace is, and frankly even if it was more heavily policed, the speed with which new products enter our marketplace would mean that it would still take years for regulators to catch up in both understanding and creating regulatory standards. The surge in the promotion and use of IV vitamin drips has been phenomenal, cynics see those medical colleagues who embrace it as simply running quickly to the bank with fistfuls of pound notes in their hands whilst the unsuspecting public jumps on the latest celebrity craze; making hay whilst the sun shines! Others genuinely believe the treatment to have merit and wish to provide it as part of a broad, combined treatment package for their clients, much like offering collagen supplementation drinks or nutraceuticals. The jury is still out on just who is right or wrong!

© Copyright - www.consultingroom.com

More importantly, the question of who, where and how the IV vitamin treatments are delivered is more pressing. This is something that we also asked our survey respondents, with over 40% raising the issue that one of their biggest concerns was that with limited regulation within the cosmetic sector, this is yet another area that could be exploited for profit by unskilled practitioners to the detriment of the public. Almost all thought that the prescribing and delivery of vitamin drips was the domain of doctors (90% agreed), surgeons (59% agreed) or Nurse NIPs (50% agreed). Thankfully no respondents thought this should be in the scope of Beauty Therapists or other allied healthcare professionals – even though homeopaths are being trained in this area (with some prerequisites). Many respondents did feel it appropriate for a doctor or independent nurse prescriber to prescribe and then devolve delivery down to an assisting nurse.

However some were still not keen and raised the question of whether all NIPs (and nurses) working in aesthetics have enough knowledge to prescribe (or deliver) in this new arena. The crux of this argument lies with the whole nursing experience of the individual nurse in question; if they have been involved in past hospital work which includes IV cannulation and have additional background in prescribing then a breadth of knowledge and experience can be clearly demonstrated and there would be no concerns. Sadly, and this is no doubt unique to the aesthetic sector, it is posed that those who have undertaken a prescribing course aimed at solely aesthetic nurses in order to obtain their NIP status, but do not have previous appropriate working experience, could find their core understanding is limited as the qualification is targeted at and formed around prescribing for botulinum toxins and not for intravenous medicines. The same is said to be true for non-prescribing nurses who may come from say a mental health background; such nurses are in some cases being required to attend a phlebotomy course before attending and certifying with an IV nutritional therapy company. No doubt there will be some of you cursing out loud as you read this, but this concern is certainly worth discussion.

Concerns raised, both about the practitioners delivering and the treatment itself included non-medical personnel administering treatment without any medical knowledge or training due to loop holes in current legislation, a lack of robust scientific evidence behind the treatment, possible side effects and adverse reactions from treatment such as anaphylaxis and infection, the use of non-clinical environments for treatment delivery which lack infection control and adequate resuscitation facilities or trained staff, the risk of toxic doses or abuse which could cause cardiac abnormalities, a lack of blood testing before prescribing the treatment, the possibly of products with questionable origins or unsafe compositions entering the supply chain as seen with other sectors, and the chance of little benefit for the patient who may feel that they have wasted their money and thus repeat business does not occur.

# Conclusion

The temptation to jump on a celebrity-driven band wagon is high with the current marketplace for intravenous vitamin and nutritional therapies, I'd even go as far as to say it's the new tooth-whitening.

We've all seen the reality TV stars and z-list celebrities flaunting their pearly-whites on TV and in *Heat* magazine only for the high street tooth whitening industry to explode into life, despite adequate legislation now in place to regulate this as the practice of dentistry, it still goes on in salons up and down the country. Driven by the media, the general public give little thought to what is going onto their teeth and by who or how it is being administered.

The same could be said to be true with IV vitamin drips, the science and efficacy evidence is poor - a bottle of water, some meat and two veg, plenty of sleep and a decent lifestyle could probably achieve the same thing, yet if the latest in-vogue actress, singer or model is seen to be having IV nutrient infusions, then the public will rush to do the same and get it wherever they can – 'science schmience'.

Thankfully the prescriptive nature of the component medicines utilised in the IV infusions and the medical technicalities of delivery may prevent this from falling into rogue, non-medical hands, as is now common-place with cosmetic injectables and tooth whitening, but with no active statutory regulation and a global online marketplace for medical drugs and generic ingredients, I really wouldn't like to say that it could never get into the wrong hands and become a back-street industry.

It is quoted that nutrient deficiencies are common in the population, which research from the 2010 Dietary Guidelines Advisory Committee's report citing that 90% of Americans are nutrient deficient due to their poor diets, with 11 nutrient gaps identified, including calcium, vitamin D, fibre, potassium, vitamins A, B-6 and B-12, zinc, folate, magnesium and iron.

We are facing an obesity epidemic in the UK too due to increased reliance on fast foods and ready meals which carry poor nutritional composition. Many UK workers work longer hours, in more stressful environments than those in the rest of Europe, with both men and women having to juggle a home and social life, children, the daily commute, their job and get at least 7 hours sleep within the 24 hours that it takes us to orbit the sun. But it's not all doom and gloom, the growth in gym memberships and the numbers of people now regularly participating in half

marathons, mud-runners and triathlons means that there is a growing segment of the population who take their health and their athletic performance seriously and are looking to gain improvements and that extra edge.

It is no wonder then that the marketplace for the sporty performer or the run-down, over-worked and stressed to find some kind of solution to simply keep going is in fact growing, with or without the celebrity endorsement.

For medical professional it comes down to a couple of things – does this make sound business sense and will I a) be doing my patients no harm and b) be offering them a credible treatment with beneficial results for the money spent? This you need to answer for yourself, but I hope this article has given you something to think about.

---

## References:


A closer look at vitamin injections - **www.sciencebasedmedicine.org/a-closer-look-at-vitamin-injections**

Intravenous Nutrient Therapy: the "Myers' Cocktail", Alan R. Gaby, MD

Wikipedia
**https://en.wikipedia.org/wiki/Myers%27_cocktail**
**https://en.wikipedia.org/wiki/Glutathione**
**https://en.wikipedia.org/wiki/Magnesium_sulfate**
**https://en.wikipedia.org/wiki/Calcium_gluconate**

Medline Plus – Vitamin C - **www.nlm.nih.gov/medlineplus/ency/article/002404.htm**

National Cancer Institute - **www.cancer.gov/about-cancer/treatment/cam/patient/vitamin-c-pdq**

Vitamin B12 deficiency. Hunt A, Harrington D2, Robinson S. BMJ. 2014 Sep 4;349:g5226.

National Institutes of Health - Office of Dietary Supplements - **https://ods.od.nih.gov/factsheets/VitaminB12-Consumer/**

Alcohol's Effects on B-12 Absorption - **www.livestrong.com/article/125621-alcohols-effects-b12-absorption/**

Florid Rash Caused by Vitamin B12 Injections Administered by Nurse in Beauty Salon?
**www.consultingroom.com/blog/333/florid-rash-caused-by-vitamin-b12-injections-administered-by-nurse-in-beauty-salon**?

Safety of hydroxocobalamin in healthy volunteers in a randomized, placebo-controlled study.
Uhl W, Nolting A, Golor G, Rost KL, Kovar A. Clin Toxicol (Phila). 2006;44 Suppl 1:17-28

Intravenous Fluid Selection - **http://catalogue.pearsoned.co.uk/samplechapter/0131186116.pdf**

Intraveneous Cannulation - **http://emedicine.medscape.com/article/1998177-overview**

Nine Out of 10 Americans Fall Short of Key Nutrients They Need, New Study Concludes
**www.prnewswire.com/news-releases/nine-out-of-10-americans-fall-short-of-key-nutrients-they-need-new-study-concludes-113273399.html**

Vitamin Drip - **www.vitamindrip.com**

REVIV - **http://revivme.com/**

Intravita - **www.intravita.uk**


---

**Lorna Jackson**

Lorna has been Editor of The Consulting Room™, the UK's largest aesthetic information website, for over a decade, since 2003. She has become an industry commentator on a number of different areas related to the aesthetic industry, collating and evaluating statistics, plus researching, investigating and writing feature articles, blogs, newsletters and reports for The Consulting Room™ and various consumer and trade publications, including *Cosmetic News, Journal of Aesthetic Nursing, Body Language*, *PMFA News*, *Aesthetic Medicine* and *Aesthetic Dentistry Today.* Lorna has also been asked to present at various industry events, including Smart Ideas, BACN and Merz Aesthetics Business Workshops, the FACE Conference and the Clinical, Cosmetic & Reconstructive Expo.

Lorna was recently awarded *Journalist of the Year* at the MyFaceMyBody Awards 2014.


---

© Copyright - www.consultingroom.com

CPD CERTIFIED

The CPD Certification Service

*The content of the following has been certified by the CPD Certification Service as conforming to continuing professional development principles.*

# Intravenous Vitamin Infusions - Fad or Fabulous?

## Literature

CONSULTINGROOM.COM

*Date:* February 2016

*Certificate No:* A001546

The CPD Certification Service, The Coach House, Ealing Green, London W5 5ER. Tel: 020 8840 4383 Fax: 020 8579 3991
E-mail: info@cpduk.co.uk Web: www.cpduk.co.uk