# Active Detox Support Advice

## Moving forward to Active Detox Support:

In many of our patients we see evidence of low-level chronic toxicity forming part of the root-causes of many of the chronic health issues they are dealing with. In the occasional patient, we see active or acute toxicity (due to high level exposures), but for the majority, low-grade, chronic toxicity is seen. In truth, everyone living in the modern world has some degree of toxic burden. Whether or not this is affecting you clinically will depend upon two things:

- Overall toxin exposure / load
- Capacity to effectively detox / eliminate toxins from your system

Any significant mismatch of exposure and detox capacity can lead to increased retention of toxins - which can then affect the underlying metabolism, energy production and chemical processing in the body.

For example:

- A dentist with multiple amalgams and a lifetime of unsafe exposure to mercury amalgam may have a reasonable detox capacity but develop illness due to the intensity and duration of the exposure.
- Alternatively, a person with very poor detox capacity, may experience symptoms of severe toxicity with the normal level of background toxin exposure (caused by our industrialised society).

Unfortunately, before amalgam fillings are placed or before someone decides to enter the dental profession, their unique susceptibility to toxicity is unknown and therefore the capacity for harm to them (from exposures which would not obviously cause harm others), cannot be estimated.

Due to lack of research (and perhaps fear of criticism or legal action against our dental system), still too little is being done to protect the unfortunate 'genetic outliers' from the effects of avoidable toxins. Despite masses of research into their known harms, the detrimental effects of multiple toxins continues to go unrecognised in western medicine. This is not a subject which is taught or understood by doctors and unusual / unexplained medical symptoms due to toxicity are often labelled as being 'functional' (doctor-speak for psychological illness with no 'real' basis).

## What are the side effects of Toxicity?

The effects of toxicity cause diverse side effects but in particular, we see an association with issues such as:

**Autoimmune disease:** Some forms of toxicity seem to be associated with increased intestinal permeability and immune dysfunction. There are many reasons why this may occur. However, there is a growing body of anecdotal evidence showing that detoxification may have the possibility of allowing immune normalisation and reversal of autoimmunity in some cases.

**Chronic Fatigue:** This is an area where we see the biggest potential for improvements (even with very low level detox protocols). The Mitochondria (which make energy in the body), are particular susceptible to certain toxins, but can equally recover well if the source of toxicity can be identified and alleviated.

**Bacterial and Yeast Dysbiosis:** Lead exposure in particular (a much bigger issue for the over 65's and post-menopausal women), can cause immune suppression in the digestive tract which is particularly associated with persistent yeast overgrowth. Toxic patients may experience persistent or recurrent bacterial overgrowth in the upper GI tract (known as Small Intestinal Bacterial Overgrowth /SIBO), which only starts to settle once toxin levels fall.

**Brain fog and poor cognition:** Many heavy metals are associated with increased risk of dementia and Alzheimer's disease (including copper, lead, mercury and aluminium). This is more of a problem in patients carrying the APO E4 gene variant – which seems to be associated with poor detox capacity. In addition, exposure to mycotoxins (from mould spores), have also been identified as a trigger for cognitive decline in Scandinavian countries where the use of sauna is more common.

**Multiple Chemical sensitivity:** Sensitivity to Histamine, Sulphur and Salicylates may be due to inherited chemical processing weakness in some individuals. However, many of our patients have clusters of chemical sensitivities (often resulting in very restricted diets), and become ill with exposure to many smells or volatile chemicals. For these patients, detox from heavy metals or removal of environmental mycotoxins is often the best way to improve chemical processing and sensitivity.

Given our patient population, it's unlikely that you made it to be our patient without having at least one of the above problems. In fact, the reason you are reading this document is because your Functional Medicine doctor thinks that a trial of detox therapy is likely to be beneficial.

Although this approach to health improvement is not a staple of western medicine, our experience of watching many patients improve using simple and safe techniques to unburden their toxic load make this one of the keystones of our treatment in the clinic. Since opening the clinic in 2016, one of the greatest joys of working in Functional Medicine has been watching so many patients with a range of illnesses vastly improve their health and wellbeing with simple and safe detox support. This is why, despite this topic being considered highly unorthodox, we continue to promote the science of active detox to our patients at Functional Nexus.

Over the years, our opinion of what might constitute best-practice has evolved as we continue to learn and listen carefully. These are our latest recommendations – but we will continue to learn and grow, and no doubt things will change with time – so be sure to check in with us on at least an annual basis to see what's new.

## 1:1 and Group support for Detox:

Patients wishing to use these techniques should work closely with our Functional Medicine team of doctors and are eligible to join our online Patient Support group for Detox of both mould and heavy metals. Dr Rosie and Dr Sarah are our clinical leads for detox and work closely with Health Coach Karen to support patients requiring detox support. If your current doctor is another member of the team, you may be invited to have an appointment with one of our detox specialists to ensure we are offering you the correct information and support.

Our detox support group is usually held on a monthly basis online and is open to patients who have already tried or who are wishing to try and learn more about the options for metals and mould detox. If you have not already asked to be invited to these group meetings then please do ask the admin team.

If you are not well enough to attend yourself, you are welcome to send an advocate on your behalf. There are many patients with Chronic Fatigue Syndrome and chemical sensitivities in this group and it's a welcoming and supportive environment to ask questions and get practical support from our expert patients and Health coach Karen.

## Medical Toxin Avoidance Advice:

The information in this document is aimed at supporting patients who have graduated to requiring a component of active detox support alongside our nutritional and conservative management advice. Please note that these techniques cannot be used in place of toxin avoidance, but are an optional add-on which we consider for patients who have high toxin burdens, Multiple Chemical Sensitivities or poor detox capacity.

Patients will only be referred to our Active Detox Pathway if we have discovered evidence of high toxin burden and it's essential that we help them to avoid further unwarranted toxin exposures. In particular, toxins which may be encountered in medical settings (and which may cause no symptoms for the vast majority of the population), may cause significant harm to our patients with poor detox capacity. This means we advise strict avoidance of the following:

### Gadolinium Contrast:

Never have an injection of Gadolinium contrast with an MRI scan - this is a heavy metal which can build up in the brain and causes specific problems for this with detox pathway weakness. The fact that the medical community are not particularly worried about visible gadolinium deposits in the brain following contrast scans merely demonstrates their lack of experience working with patients with metals toxicity and detox problems: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6158336 / In general, the use of a higher resolution / more powerful scanner will obviate the need to use gadolinium – but please discuss with your doctor if other healthcare professionals insist on the use of a contrast agent.

### Halide Anaesthesia:

If you are having a General Anaesthetic for elective surgery and are suffering from chronic toxicity, try to avoid halide containing gas anaesthetics and instead ask for IV anaesthetic Propofol (which is eliminated by the kidney rather than the liver and is much better tolerated by toxic patients).

### Avoid Fluoroquinolones:

Unless there are no other realistic options, avoid the use of fluoridated antibiotics called fluoroquinolones (Ciprofloxacin, Ofloxacin, Levofloxacin etc.), these drugs are much more likely to cause dramatic side effects in patients with issues detoxing.

## General Toxin Avoidance:

You can read at our Toxin avoidance handout for information on how to lower your daily toxin exposure in our foundational Leaflet below.

Foundations of Health for Detox

## Starting a New Detox Plan:

There are several principals which I would like to stress to all patients interested in reducing their toxic burden:

1) **Ideally, you should try to heal your gut and find the diet which best suits your body BEFORE commencing any formal detox:**

Efforts should be made to try to heal the gut to prevent re-absorption of metals from the intestines, before detox commences. We usually advise most patients to try the Autoimmune Paleo elimination protocol or at least recommend a Gluten, Dairy and soy-free diet. However, we acknowledge that for some patients, gut healing only really occurs after detox is started as in some cases toxicity can play a big role in the disruption of the gut function.

2) **Find out whether your body likes to detox in a high or low sulphur environment:**

Sulphur / thiol avoidance is needed by a minority of patients with chronic toxicity. If you have this problem, it may be recognised when you present to the clinic (often with fatigue, brain-fog, headaches and MCS). Or, it may be realised when you return to the clinic feeling worse than ever after trying a diet high in broccoli, green veg, onions and garlic.

For other patients, sulphur sensitivity is more subtle, and therefore a trial of 4-7 days of sulphur avoidance and 1-2 day sulphur 'challenge' is recommended for all prior to a trial of formal detox (as the detox agents themselves are very high in sulphur). For sensitive patients, formal detox with ALA may only be tolerated while eating a low sulphur diet.

Personalisation is key: For many patients, broccoli and sulphur foods avoidance would be a mistake (and sulphur may well be deficient in some patients due to the heavy metals burden). For some we even supplement NAC (the natural pre-cursor amino acid for glutathione production), in order to speed up internal detox. For others, taking NAC would cause severe headache, brain fog and anxiety. The important thing is to find out how your body works and to personalise the plan for you. Our low sulphur trial information is below:

Low Sulphur trial Information

Low Sulphur Meal Plan

For patients who are not sulphur sensitive, we usually advocate a high sulphur meal plan:

Detox Food Plan (high Sulphur)

3) **ALA use (for mould or metals detox support), should never be attempted while there is still any significant source of heavy metal exposure in the body.**

This includes and amount of dental amalgam /'silver coloured fillings (even tiny 'specks' of amalgam buried under old crowns or new white fillings), some old tattoos (which may contain mercury in the ink) or anyone still exposed to a water source with lead in it (this would cause raised lead levels on the Elemental Analysis blood test.

**Amalgam removal:** If you have (or have had), dental amalgam in your teeth (or are unsure), we recommend that you see a SMART certified dentist for advice on checking for specks and safe removal before thinking about any formal detox. Please see our Dental Amalgam Removal Guide if this is an issue.

**Checking for Lead:** If your blood levels showed high lead, you need to start filtering all your drinking and cooking water at home with a Berkey filter until you are sure that the lead is from past (and not current), exposure: https://berkey-waterfilters.co.uk

You can get your tap-water tested here for a range of toxins: https://www.ivario-hometest.co.uk/#s1

Or here for lead only: https://www.watersafetestkits.co.uk/product/watersafe-water-lead-test-kit-ws-207-single/

If you have amalgams in situ (or if removal is simply not possible for you), then more conservative measures such as binder use (Toxaprevent Clay or charcoal), may be recommended and in some patients a trial of low dose OSR might be worthwhile and can be discussed with your FM doctor.

4) **To detox safely you must take supplements to protect your cells from the harmful effects of toxin movement and be prepared to check mineral levels on a regular basis:**

Mineral support (usually selenium, zinc and magnesium) is helpful both to replace deficiencies often created by heavy metal toxicity, and to protect cellular processing which may rely upon these minerals to work properly. When using any formal detox agent, the mineral replacement helps to prevent deficiencies which may commonly occur due to accelerated losses of minerals with other toxins. However, we think it is important that levels are checked frequently to ensure that there is not only adequate replacement but also that levels do not become toxic.

Manganese, copper and selenium in particular, all have toxic potential (and are heavy metals as well as useful minerals). We will only supplement copper if a need is indicated on testing and often find that selenium replacement is not required in some patients with toxicity.

Your doctor will make recommendations in your treatment plan. However, on the whole minerals should be checked prior to detox, within 3-4 months of commencing formal detox and then every 6 months.

## Conservative Detox Support Options

There are lots of protocols and miracle cures online and in the health food stores, but very few we would recommend. This is because using any method to speed up elimination of toxins from the body necessitates pulling toxins into the bloodstream from storage, and from there they must be rapidly de-activated and eliminated – or they have the potential to cause further cellular damage elsewhere in the body (this is known as ‘re-distribution). In particular, weak chelating agents such as chlorella and spirulina (widely popularised in green smoothies and health drinks), can cause catastrophic side effects in very toxic patients and should not be used.

Everyone is different and different life-stages require different approaches. For example, elderly patients who are unable to get to the dentist but may wish to have supportive therapy, or women of child-bearing age (in whom formal detox should be avoided unless pregnancy can be completely avoided), may not be suitable candidates for any therapy which ‘chelates’ (or moves metals actively into the bloodstream for excretion).

Where conservative detox options are needed, there are several ways to gently up-regulate the natural processes already possessed by the body to remove toxins and improve chemical processing including:

- Binders (see below)
- Sauna therapy
- Lymphatic drainage techniques

You can read more about sauna options and Lymphatic drainage in our Foundations of Health for Detox and there is more information below.

For more active detox support, our clinic uses Alpha Lipoic Acid (see below).

## Supplements to Consider to Support Detox Plans

### Improving Gut Health / Avoiding Constipation

Working with your Functional Medicine team to reduce gut inflammation, identify food sensitivities and heal leaky gut can help to reduce absorption of toxins (alongside binders). It's also important to reduce / eliminate constipation and we may advise simple laxatives, vitamin C or Magnesium (non-absorbable forms), to help with this (alongside dietary fibre and good hydration). For Example:

Metabolics Magnesium Hydroxide

Specialist Supplements Oxy-Klenz

Biocare Vitamin C powder

### Supporting Liver Health:

We often recommend Milk thistle to help support detoxification

Cytoplan Milk Thistle

Pure Encapsulations Milk Thistle

Check with your Nutritional therapist or doctor before adding this in if you are on any prescription medication.

### Supporting Glutathione Production

Glutathione (the major anti-oxidant and support for detox of many toxins including moulds and metals), is made from the amino acids Glutamine, Glycine and Cysteine. We measure these amino acids in the Metabolomics test and will often supplement them.

In addition, the creation of glutathione requires selenium and measuring and optimising levels needs to be individualised (too much can also be toxic).

Pure Encapsulations NAC + Glycine Powder

Nutri Advanced MegaMag Calmeze (contains glutamine, glycine, taurine)

Cytoplan NAC 500mg

Biocare N-Acetyl Cysteine 500mg

Lamberts NAC 300mg

### Supporting bile production and flow:

Taurine and Choline are also essential components of Bile – which is needed for effective detox processing from the liver. Supplementation of taurine as an amino acid or Magnesium Taurate can be used alongside phosphatidylcholine or sunflower lecithin to support bile flow. Herbal bitters can also help to stimulate sluggish bile flow.

Seeking Health Optimal PC 800mg (phosphatidylcholine)

Thorne Phosphatidylcholine 420mg (from soy)

Nutrigold sunflower lecithin powder 200g

Nature's Answer Bitters and Ginger (alcohol free) 60ml

In more unwell patients, synthetic bile salts known as TUDCA or encapsulated Ox bile supplementation may also be of benefit:

Jarrow Bile Acid Factors

Allergy Research Gallbladder Salts

Nutricology Ox Bile 500mg

Seeking Health Ox Bile 125mg

BodyBio TUDCA

## Gut Binder Options

Binders are substances which 'stick' to the various toxins we are trying to remove from the body after they have been ingested or after they have been actively excreted from the body into the bile. Using a binder helps to prevent both initial absorption of some chemicals and also reduces re-circulation of others. However, true binders do not cross the gut lining into the bloodstream. This makes them safe, but they are not effective for clearing intracellular toxins.

Different binders have affinities for various chemicals and have a variety of uses.

**Toxaprevent Clay**

A medical grade Clinoptolite binding agent), binds ammonia, histamine, heavy metals, and some mycotoxins. This can be started at any time – even with amalgams in situ.

*Interactions:* Toxaprevent needs to be stopped while taking ALA as it may bind to it and stop it working. Care should also be taken to take it at least 1 hour away from magnesium and any medications as it may also bind them and make them unavailable. One of the other disadvantages for clays is that despite an excellent safety record, they can cause constipation in some patients (even when taken with lots of water as recommended). Alternative **Zeolite clay**

**Activated Charcoal**

Adsorbs to many toxins including heavy metals, mycotoxins and bacterial endotoxins. With regular use may also reduce nutrient absorption so targeted use is required.

**Chris Shade's Ultra binder Blends** (from Quicksilver):

Broad spectrum and effective (although expensive):

High Thiol Version (Zeolite, bentonite clay, activated charcoal, chitosan, IMD Intestinal Cleanse)

Low Thiol Version (Activated Charcoal, High Density, Chitosan, Zeolite, PectaSol-C modified citrus pectin, Silica extract, BiAloe Aloe Vera Leaf, Sodium Bentonite Clay)

**GI Detox:**

A mixture of charcoal, Clinoptolite clay, Aloe Vera Gel, apple pectin, silica and Humic powder. Can bind to microbial byproducts, metals, moulds and mycotoxins.

**Cholestyramine:**

Prescription only bile binder often used in mould toxicity available as either:

Questran Light (unfortunately contains a number of excipients unlikely to be tolerated by sensitive patients including Aspartame (E951), Citric acid anhydrous, Colloidal anhydrous silica, Orange juice flavour, Propylene glycol alginate, Xanthan gum). On the plus side costs around £25 for 50x4g sachets.

Or

Compounded via DUTCH compounding pharmacy Apotheek de Saadler www.apotheek-desaedeleer.be. Contains no fillers and offer a 200g pot. (75 euro/pot) with Shipping at 29.5 euro.

Suggested dosing: Start slowly at 1 gram 2 x/day and increase if tolerated – to 1 gram 3x/day (max 1g 4 x/day). Take in 200ml of water or juice – for an adult (> 55kg), either 1 hour before or 2 hours after food or other medications. Constipation may occur with higher doses.

**Choosing Binders for Mycotoxins:**

| Mycotoxin | Cholestyramine | Charcoal | Clay | Saccharomyces Boulardii |
|---|---|---|---|---|
| **Ochratoxin** | X | X | | |
| **Gliotoxin** | | | X | X |
| **Trichothecenes** | | X | X | |
| **Aflatoxin** | | X | X | |
| **Zearalanone** | | | X | X |
| **Enniatin B** | | | X | X |

# Dealing with Mould

Mould is everywhere, both indoors and outside, and many moulds are harmless. However, there are some, frequently referred to as “Water damage moulds” that can grow on porous materials that have got wet and not been dried quickly (within 48 hours), which can cause health issues.

If you are having difficulty addressing health issues with diet, supplements and lifestyle changes, or notice that you feel better when you are out of the house (or place where you feel ill) or go on holiday, then feel poorly again on returning home, it is worth considering whether mould may be an issue.

## Immediate steps – Reducing Exposure:

**Are you able to leave your home?**

**Yes:**

If you have somewhere safe to move to, go. Take as little as possible with you, in order to reduce cross-contamination.

**No:**

If you are not able to leave:

- Open windows for a minimum of ten minutes in the morning and evening, leaving internal doors open to enable air to flow through your house. This will dilute contaminated air, reducing the concentration of mould spores and mycotoxins.
- Leave windows on vent.
- Be outside as much as possible.
- Create a “safe space” by using an air purifier and Dehumidifier. Humidity level should be kept between 45 – 55%

Air Purifier Example: OKTOAir Intellipure Compact

Dehumidifier Example: Meaco 20 litre Low Energy Platinum Dehumidifier.

## Testing

In order to determine a plan of action, you need to know what you are dealing with. As such, testing is needed to understand this.

**Home:**

**Environmental Relative Mould Index (ERMI)**

In order to determine what moulds are present in your home (or wherever it is that you react, eg workplace), the most helpful test is an ERMI. Several of the mould companies will conduct this for you, but do be aware of that costs vary widely.

Eg: Colab Eu Dust: ERMI + Endotoxin

**Environmental Mould and Mycotoxin Assessment (EMMA)**

This will test for a number of mycotoxins. Whilst this may be interesting, it does not seem to pick up all the water damage moulds.

**Air Tests**

Air tests can be useful for testing inside wall cavities. Do NOT rely on an air test, such as those offered by some of the best known mould remediators. These do not offer any level of accuracy in terms of amount or species of moulds. For example, the air is gathered at arm height. Two of the more toxic moulds are heavy and don’t float in the air.

**Urine Mycotoxin Test**

A Mycotoxin urine test can identify the presence of mycotoxins in the body. This may be from current and / or historic exposure. These are available from your FM doctor

Eg: Mosaic Diagnostics Mycotoxin Urine analysis

Realtime Lab Mycotoxin Panel E8400

**Immune testing for mould:**

Tests for Mould allergies also help us to work out whether IgE immune reactions or just pure toxin-mediated side effects are a problem.

https://www.gdx.net/core/sample-reports/1004-IgE-Molds-Sample-Report.pdf

**MARCoNS screening:**

In patients with low immunity and mycotoxin issues there is often colonisation of the nasal and sinus passages with drug-resistant bacteria known as multiple antibiotic-resistant coagulase-negative staph (MARCoNS). You can read about these here: https://www.cirsmap.com/marcons-treatment-guide

We can offer MARcons screening from Colab (nasal swab).

## Identifying Issues in the Building

Ideally, you would hire an independent Indoor Environmental Professional to inspect for Mould, then someone else to do the remediation, in order to avoid any conflict of interests. In the UK, there are very few knowledgeable remediators, so it can be very difficult to separate the two activities.

Building Forensics are highly recommended for inspection, but are very expensive.

Having used a number of organisations and received a wide range of quality of reports and findings, the most affordable and thorough organisation for inspection we have found is Mould Focus. They also provide a remediation service.

Other companies you may wish to use include:

Pure Maintenance

Action Dry

## How to reduce mould spores in the air

Once you have conducted testing, you may wish to take action to reduce mould spores in the short term. Fogging can be useful for this purpose**. Please note, that it will not address the causes of mould.**

- Sanondaf uses Hydrogen Peroxide and is very reasonably priced.
- Pure Maintenance uses Peracetic Acid (essentially, vinegar) and is expensive.
- **Do it yourself** You can buy a fogger and do this yourself. The Minion 2 is a negative ion dry fogger (very small, negatively charged, mist particles). This can be used effectively with EC3. EC3 is a proprietary blend of citrus seed extracts that helps reduce mould spores from the air.

  After fogging, give time for the particles to settle, then use a HEPA vacuum to remove what has been brought down onto surfaces.

  Conscious spaces stock foggers, EC3 cleaning and laundry products for UK purchase

## Cleaning your belongings

**Cleaning Clothes / bedding etc**

Whether these can be saved will depend on your level of sensitivity.

Wash clothes away from your safe space. It is recommended to hang clothes outside until you are sure that you are able to tolerate them. Bringing them into the house may cause cross contamination.

A suggested washing protocol:

1st wash - EC3 or ammonia (this can be done outside, by soaking items in a bucket with the EC3 or ammonia solution)

2nd wash - Borax (Do not use Borax substitute)

3rd wash – Epsom Salts

For detail on how to do this, please see: Surviving Toxic Mold protocol

Conscious Spaces has a range of mould treatments from EC3:
https://consciousspaces.com/search?type=product%2Carticle%2Cpage%2Ccollection&options[prefix]=last&q=mould*

### Mould and Mycotoxin Online Resources

Change the Air Foundation

Clean Your Stuff – a thorough guide on how to determine what belongings may be able to be saved and how clean them

Toxic Mold Answers – Functional Medicine Methodology

Mast Cell 360 – this site is primarily focussed on MCAS, but does have some great resources on mould, including some dedicated courses.

Mast Cell 360 Facebook group

Effective Cleaning of the Home – John Banta

Cross Contamination – Matt Kelly

### Low Mould diet:

A diet low in sugar and starch (especially amylose), can help to reduce yeast fermentation in the gut and can help to reduce internally generated mycotoxins. When combined with fasting and avoidance of foods containing mould this approach can be successful (especially in mild cases).

Low Mould / Low Amylose diet

Low Mould coffee options: Balance Coffee Exhale Coffee

In extremis, we even see a role for the Carnivore diet (perhaps temporarily to achieve symptom control).

https://heartandsoil.co/the-carnivore-diet-start-here/

https://carnivore.diet/

### Low Dose Naltrexone (LDN) for CIRS and Mould Allergy

LDN can be helpful for patients with either mould allergy (IgE immune allergy to mould), or other immune reactivity to both mould and mycotoxins. It acts as an anti-inflammatory and can help to reduce damage done by persistent immune responses to Exposure. You can read more about LDN and its uses at the LDN Research Trust

For those with histamine reactions or Mast Cell Activation Disorder, LDN (or even Ultra low dose Naltrexone), can be tried alongside low histamine diet, Mast cell stabilisers (Cromoglicate, Ketotifen and Famotidine), antihistamines (Quercetin, Fexofenadine) and Limbic Retraining programmes to reduce the severity of the reactions (see separate handout on Histamine Sensitivity Treatment Options).

### Anti-Fungal Therapies:

Alongside a low Mould diet (avoiding foods known to be often mould contaminated and high in sugars), we can use antifungal therapies to reduce yeast in the GI tract and in the body as a whole.

#### Prescription anti-Fungals:

There is a lot of interest online at the moment about using high doses of Itraconazole / Sporanox or Fluconazole to treat internal Mycotoxin overgrowth. These are powerful prescription antifungals that can kill internal yeasts and which are indicated if we have proof of internal mould colonisation with toxic moulds. However, they are also toxic to the liver - not making them an ideal approach for patients with toxicity issues. Currently, we are still waiting for further data on safety and efficacy of this approach and at the moment (due to lack of safety data and UK guidelines on prescribing), it's not something we can offer. However, we still have a number of effective and less toxic anti-fungals at our disposal including:

### Pure nystatin powder

This is available to order from the clinic admin team if your doctor has advised it. This drug is not absorbed when taken orally and is non-toxic (it could also theoretically be put up your nose in a Neti Pot).

**Nystatin dosing:** A 5ml plastic teaspoon is needed for measuring the dosage. This contains 8 million i.u. of pure nystatin powder. This is much more than in the NHS prescribed liquid nystatin, which contains 100,000 i.u. per ml.

The normal starting dose is ½ level teaspoon per day (but very sensitive patients can start much lower as needed). The teaspoon should be levelled with a knife and excess powder returned to the pot. A ½ level teaspoon can be reasonably well estimated by removing half of the powder on the teaspoon with the knife and also returning it to the pot. This ½ level teaspoon can then be added to the juice or other fluid and shaken or stirred to disperse it. It should be taken three times day, with the dosage gradually increasing.

Nystatin powder can be ordered from the office. NB - there are 20 level teaspoons of powder in a pot and so you can work out how long a pot will last depending on what daily dose you are currently taking.

| Teaspoons per day | Divided into | For |
|---|---|---|
| ½ | 3 equal amounts | 5 days |
| ¾ | 3 equal amounts | 5 days |
| 1 | 3 equal amounts | 5 days |
| 1 ¼ | 3 equal amounts | 5 days |
| 1½ | 3 equal amounts | 5 days |
| 1¾ | 3 equal amounts | 5 days |
| 2 | 3 equal amounts | one month + |

### Undecylenic acid (previously Thorne SF722):

Dose is 1-5 capsules three times a day titrated up slowly as tolerated. As die-off can be unpleasant, sensitive patients may need to start slowly at even 1 capsule a day. Especially at lower doses, this can be used for 3 months plus. You can tell if it's working if you get a die-off response on dose increases.

Thorne Undecylenic Acid

### Monolaurin (antiviral and antifungal):

Again, this can be slowly titrated depending on sensitivity and patients needing very low doses can use the tiny pellets of Lauricidin. Those tolerating higher doses can use the capsule formulations.

Lauricidin pellets: Dose: Start at between 5 pellets 3 times a day to 1/4 a 'scoop' three times a day depending on sensitivity levels. Take with or after meals, swallowed with water or juice (do not take with hot liquids). Increase to 1/2 blue scoop three times daily thereafter. Max dose one blue scoop three times a day. Can be used long term for suppression of both yeasts and Viral levels.

Designs For Health Monolaurin-Avail dose is 1-3 capsules daily according to tolerance. 2-3 months minimum treatment usually required and can also be used longer term to suppress re-growth.

Other strategies include oregano (short term), garlic (depending on sensitivities in patients who are not sulphur sensitive), caprylic acid and essential oils

### Anti-Fungal Yeast Probiotics:

The non-pathogenic yeast Saccharomyces Boulardii can be used to help reduce the overgrowth of toxic moulds in the gut and elsewhere and may be well tolerated where anti-fungals are not. The exception may be in patients with mould allergies – who may experience gut disturbance or worsening symptoms with the probiotic form if they are allergic to yeast in general (but this is rare).

Optibac Saccharomyces Boulardii Dose up to 6 per day for 2 weeks for severe overgrowth but 1-2 capsules daily for maintenance dosing. These probiotics are low histamine and well tolerated in MCAS and histamine sensitivity.

**Treating Nasal / sinus infection with MARCoNS or mould / yeast overgrowth:**

Washing with a saline sinus rinse with a Neti pot or Sterimar Spray is a good baseline

Essential oils can be added such as citricidin (Grapefruit seed Extract), or other essential oils (peppermint, eucalyptus and Marjoram can be used). How to use essential oils in a Neti Pot

There is also a nasal spray available with Citricidin:

NutriBiotic Nasal Spray with Grapefruit seed Extract

Despite their use elsewhere, we don't encourage the use of either silver or nasal EDTA given our concerns about metals toxicity / metals redistribution with these.

However, if you wish you could help the break-up of the sinus biofilm with nebulised NAC (often used in chronic lung disease sufferers to clear mucous from the chest). NAC vials are available on prescription (prescribe as Acetylcysteine 2g/10ml solution for infusion ampoules)

Home nebulisers for use with NAC

## Active Detox Plans

Chelators (pronounced key-lay-tors): Can be medications including DMSA, EDTA or DMPS (found in small quantities in many medications or health products), with the ability to move and bind heavy metals. These are not normally available as over the counter preparations. There are a few clinics (typically in Ireland), which offer intravenous chelation therapy, however, we strongly recommend avoidance of any 'fast' form of detox such as this - due to the risks of re-distribution toxicity (especially to the kidneys).

However, this category also includes 'Natural chelators' found in the body and in many nutraceuticals (including over the counter at Holland and Barrett). These can be more difficult to avoid and some of our patients have been encouraged to take them (perhaps even by us before we knew better). These too should be avoided and include:

Natural chelators are Alpha-Lipoic Acid (ALA), glutathione, chlorella, coriander (as well as spirulina and dandelion for the ultra-sensitive patient). Some dentists and 'iv drip salons' offer IV. Glutathione as a wellness treatment (for hangovers and partying). These have anecdotally caused great harm to some patients with metals toxicity and should be avoided completely.

**Our Advice to avoid:**

- AVOID ALL glutathione therapy (especially IV): Although replacement can help to move metals, as it is not as strong a chelator, glutathione can often move more metals out of storage than it can effectively remove from the body – creating a phenomenon known as 're-distribution' of metals (effectively re-toxifying tissues). There are numerous cases of this therapy causing severe side effects.
- AVOID ALL IV chelators: Intravenous administration of glutathione/ DMPS/ EDTA or other chelators should be avoided due to the potential for high levels of toxic metals re-distribution.
- AVOID Natural chelators including Alpha-Lipoic Acid (ALA), glutathione, chlorella, coriander (as well as spirulina and dandelion for the ultra-sensitive patient). Unless using ALA therapy in the Half-life dosing regime.

If you're not convinced by our advice, you can read about the very significant side effects experienced by others when using these weak chelators here:

https://cutlersuccessstories.weebly.com/what-not-to-do.html

Although less toxic and 'well' individuals may get away with the use of weak chelators (and may even feel better), we know from our 'canaries in the coal mine' that toxin re-distribution is likely to be taking place with these agents – something we cannot recommend.

## Confirming toxicity:

Clinical presentation and the history is often the best indicator of toxicity. If you got sick when moving house to a water damaged building, this should be seen in your timeline analysis as a red flag for mycotoxins. If you work as a dental nurse or dental amalgam placement or removal started your illness then mercury may well be your poison.

In addition, we look for signs of poor detox capacity in our testing:

**New Patient screen:** High iron or high Transferrin saturation may suggest iron transport disorders / Hereditary Haemochromatosis – associated with iron overload and metals transport disorders. Lead toxicity is often associated with low white cell count (causing immune disruption).

**Elemental Analysis:** High copper (often seen with low B6 and poor detox in prylouria), high manganese and high selenium can suggest metals transport disorders and a tendency to metals toxicity.

Low selenium and low vanadium are both associated with high glutathione turnover in active detox states.

Both high or very suppressed levels of heavy metals in the bloodstream may be associated with poor detox capacity (or use of chelator therapy).

**Metabolomix:** High or low pyroglutamate can signal problems with active detox or glutathione insufficiency. If you have 10 dental amalgams then pyroglutamate should be raised – normal / suppressed levels would suggest loss of glutathione production capacity.

Cystathioninuria is strongly associated with problems processing on the sulphur pathways and defective glutathione production. Often accompanied by B6 deficiency and sometimes seen with low homocysteine. Patients with these traits are more likely to be sulphur sensitive and require very low dose ALA.

**Hair Analysis:** Most patient with chronic toxicity will not show raised toxic metal levels on the test. However, many exhibit the interesting phenomenon of 'deranged mineral transport (very low levels of multiple minerals in the hair), which is thought to be largely attributable to the effects of chronic toxicity on the ability of the hair follicle to mineralise the hair. Unfortunately, hair analysis alone is not highly reliable – but it is a safe and cost-effective way to check for likely abnormalities when the history is unclear. It's also useful for checking for lead toxicity and to assess how well detox is progressing over a 12-month period.

**Trial of ALA:** Given the possibility of false negative hair analysis, the safest way to confirm toxicity is by doing a 'trial round' with ALA according to the half-life dosing principals (fast release ALA is taken every 3-4 hours and slow release every 6-7 hours for a 3-day period as part of a precise regime). A response to the ALA (positive or negative) is really the best way to know if the therapy will be helpful.

Large doses of ALA (or any chelator including DMSA), can be very toxic, cause metals re-distribution and should always be avoided. For this reason, we do not advise any patient to undergo 'urine challenge testing' for heavy metals (as advocated elsewhere).

**Mould:** For mould testing and treatment see mould advice below.

## Alpha Lipoic Acid Low dose titration with half-life dosing:

The only active Detox protocol we can recommend to our patients is the use of ALA on a half-life dosing regime. While we believe other agents may be safely used, they are not licensed for use in the UK and cannot be recommended by our doctors in the clinic. For those wishing to try the ALA therapy (which we have seen fantastic results in many patients with), we recommend using our modified ACC dosing programme (but with 2mg M/R ALA rather than 12mg fast release ALA starting doses).

In order to start taking ALA (slow or fast release), you must have no dental amalgams in situ and if you have had amalgams removed, you need to have digital intra-oral Bite-wing X-rays cleared by a SMART dentist (as even tiny 'specks' of amalgam left behind can cause serious re-distribution toxicity). You should, also wait a minimum of 3 months from the last amalgam removal to start taking ALA.

### Getting started on ALA:

ALA is a fantastically versatile and useful molecule – it's an antioxidant and helps the re-generation of other antioxidant molecules in the body. There is also a growing body of evidence to suggest that ALA both upregulates natural excretion of mercury and arsenic but also breaks down into a di-thiol molecule which also acts to mobilise and remove metals directly.

Before you decide to begin make sure you have all the information and support you need. We suggest you do several things:

- Make an appointment to see Dr Rosie or Karen our Health Coach or for practical advice and support on starting doses and what to expect
- Contact the office to sign up for our monthly Detox support group which many of our patients find helpful.
- Make sure you are amalgam free – if in any doubt have a chat with an IAOMT SMART dentist (see separate handout). ALA can only be started 3 months after the last of your amalgam (including specks), is removed.

If you want to do this yourself, you can read up on the ALA protocol in the ACC handbook here: https://noamalgam.com/product/the-mercury-detoxification-manual/. The only difference that we express in the clinic from the ACC protocol is that we can use slow release ALA with a gap of 6-7 hours between doses rather than normal ALA with just 3-4 hours between doses (slow release ALA requires a prescription).

If you're unsure whether this is for you, read some of the encouraging Testimonials from the Support Group here: http://cutlersuccessstories.weebly.com We can certainly add many of our own very positive patient stories to these.

Consider Joining the FB support group (although not if you are easily overwhelmed – there are a lot of quite sick people there struggling with the same issues that you have): https://www.facebook.com/groups/acfanatics/?ref=bookmarks This can be used to ask questions BUT we will provide support as needed also.

Think about trialling a 'round' of ALA to see how it affects you. ALA should be taken for 3-5 days at a time (periods referred to as 'rounds'), with breaks in between. At the end of a round, some metals re-distribution will occur and you may feel either better on or off round – depending on the stage of the chelation process.

**With a prescription for slow release ALA from Roseway:**

| | |
|---|---|
| Very sick patient with sulphur sensitivity | Try 0.5mg every 6-7 hours for three days (minimum 12 capsules) |
| Sick patient with no sulphur sensitivity | Try 1mg every 6-7 hours for three days (minimum 12 capsules) |
| Well patient, with sulphur sensitivity | Try 2mg every 6-7 hours for three days (minimum 12 capsules) |
| Well patient, no sulphur sensitivity | Try 5mg every 6-7 hours for three days (minimum 12 capsules) |

Dose timing examples with S/R capsules:

6am, 12 noon, 5pm, 11pm, 6am OR 6:30am, 12:30 pm, 5:30pm, 11:30pm, 6:30am

**Without a prescription:**

It's easy to source the ALA chelating agents from the website 'Living Supplements' and 'MandiMart' where they have tailor made ALA doses in various small dosages: https://www.livingsupplements.com/

| | |
|---|---|
| Very sick patient with sulphur sensitivity | Try 0.25mg every 3-4 hours for three days (min 24 capsules) |
| Sick patient with no sulphur sensitivity | Try 1mg every 3-4 hours for three days (min 24 capsules) |
| Well patient, with sulphur sensitivity | Try 1mg every 3-4 hours for three days (min 24 capsules)) |
| Well patient, no sulphur sensitivity | Try 5mg every 3-4 hours for three days (min 24 capsules) |

Dose timing examples with fast release capsules:

6am, 9am, 12 noon, 3pm, 6pm, 9pm, 12midnight, 4am, 6am (one 4-hour dose overnight allowed as metabolism slows)

**Taking a 'Round':** A 'round' is defined as a minimum of 64 hrs (3 days and 2 nights). The rest of the week is used for the body to recover. Only move on to the next round when you are back to your baseline.

**Side effects:** If you experience significant re-distribution symptoms (when finishing the 'round' or even in -between doses), then discuss with the detox support group. You may need to shorten the duration between doses (maybe for 2h 45 mins on the 3hr regime or 5.5 hrs on the 6 hr regime), or lower the dose.

**Missing doses:** Stopping chelation at night will reduce the amount of metals removed and will cause 'redistribution'. This is especially important to avoid when using fast release ALA for the 3-4hr night doses. If you sleep through an alarm or miss a dose then the advice is generally to take a break for a few days before re-starting.

**Dose increase:** If you feel no symptoms, or symptoms are mild, stay at this dose. You can increase when you have managed 3 consecutive rounds with no symptoms (negative or positive). If 1mg produces symptoms that you are not able to tolerate, you can stop the round and treat for redistribution. Wait until you are back to your baseline, then try reducing the dose.

If you feel no symptoms at all over 3 rounds, you can double the dose. Again, wait until you have had at least 3 rounds with no symptoms before increasing again. With the slow release prescription ALA, you will have 8 weeks between dose increases, which can be decided with your doctor. As a general rule, it is recommended to increase the dose by a maximum of 50%.

### OSR / Emeramide (NBMI):

Emeramide is a very strong di-thiol chelator, with additional antioxidant and anti-viral properties. To read about Emeramide you can visit the company website (based in Ireland), and view links to the trial data done on patients with acute mercury poisoning in gold mining areas:

https://emeramed.com

https://emeramed.com/study-mercury-poisoned-gold-miners/

Unfortunately, this medication is not yet licensed or available to prescribe (although it continues to go through phase 3 trials in the US for acute mercury poisoning). This means we can't make clinical recommendations to use it. However, given lack of any other effective treatments being available, this is a treatment which we have watched other patients try and benefit from after reading about it themselves and deciding to try it with support of online groups.

We have decided to share information about OSR for patients on a pragmatic basis to those who we think may benefit from it. The information and links provided are so that you can read about it, discuss it with others who have used it, and then decide what to do for yourself.

Situations in which we feel OSR might provide a promising solution instead of ALA includes:

- Treatment in patients who are highly sulphur sensitive (and who will only tolerate tiny doses of ALA)
- Patients with MCAS or multiple chemical sensitivity
- Patients for whom topical ultra-low dose detox therapy might be of benefit
- Patients who are unable to clear dental amalgam from their system for whatever reason
- Patients with mould and metals toxicity who are still living in mould (as OSR will not mobilise mycotoxins)
- Patients suffering with toxicity due to lead, gadolinium or other heavy metals (for which ALA detox support is less effective).

One of the benefits of OSR is that is a very strong chelator and doesn't cause heavy metals re-distribution (unlike DMPS / DMSA, which we do not advocate the use of in the clinic, or ALA, which has to be used on its half-life to avoid significant re-distribution).

### Practical Information:

Please see the online information site on OSR to look at the option of trial of this detox support agent: https://www.facebook.com/groups/1359748427477127 The site has extensive information and an interactive support team that you can ask questions of.

The OSR can be ordered here from Andrew Terry Buttiġieġ (email *andrewandterry@hotmail.com* *)*

### Ultra Low dose / Topical therapy:

Initially, you can check for tolerance and effectiveness by using very tiny topical doses in olive oil. to do this you will need a 10ml amber glass dropper bottle, a micro-dosing spoon and OSR. For example:

- Microdosing spoons from Amazon
- Amber 10ml dropper bottles

Many advise starting with a 5mg- 6mg micro-scoop of OSR in 10ml of olive oil and adding 1 drop to the skin on the forearm (roughly 25-30mcg/drop if there are 200 drops in 10ml). Build up (as tolerated), to 3 drops daily for 5 days a week to check tolerance. In very sensitive patients this can be used to help support detox on a long term basis- either daily or 5 days a week.

If topical doses are effective you can choose to stick with them long term, or you could look at the options of taking larger oral doses in the future with support from the online forums. Members of our online Detox support group are also able to offer personal advice and their experience in trying these options.