Breakspear Hospital

Chelation Therapy

This booklet provides information about Breakspear Hospital's chelation therapy programme and provides general information about which conditions chelation may help, how it works, and about sources and absorption of heavy metals.

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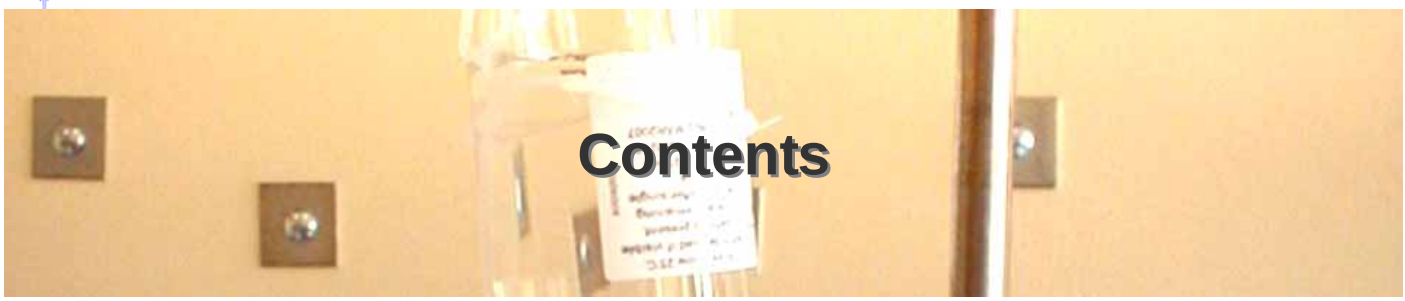


Contents

Introduction

Chelation *(pronounced key-LAY-shun)* therapy is a method of removing toxic heavy metals from the body. It is a highly effective treatment that can be used to reverse the pathology of some of the most life-threatening and debilitating diseases which affect mankind.

Chelation is a term adopted in the 1920s to describe the process where a substance captures or binds with a metal. The word chelate comes from the Greek word chele, meaning “crab’s claw”. This refers to the ‘claw-like’ structure of the organic chemical ethylene diamine tetra-acetic acid (EDTA), the most widely used chelating agent.

Chelation therapy is the standard treatment used in the UK National Health Service (NHS) for acute heavy metal poisoning. For over 20 years Breakspear Hospital has been using chelation therapy to treat a wide range of conditions.

Broadly, chelation therapy can be used to help with:

- coronary and cerebrovascular disease
- autoimmune conditions
- chronic fatigue syndrome
- autistic spectrum disorders
- allergic disorders
- neurological conditions and neuropathies
- preventative medicine and anti-ageing

In the hands of Breakspear Hospital’s trained and experienced clinical staff, chelation therapy is one of the safest and most effective of medical procedures. Also, it is relatively inexpensive.

Breakspear Hospital’s chelation programme starts with a consultation with one of our qualified physicians who will ask about the patient’s medical history and evaluate his/her current state of health and may recommend some evaluative tests.

The chelation programme usually involves a series of intravenous infusions of EDTA solution, several other vitamins and minerals, which work synergistically (in combination) and a supportive programme of nutritional supplements. Other chelating agents we use are sodium 2,3-dimercaptopropane-1-sulphonate (DMPS) and meso-2,3-dimercaptosuccinic acid (DMSA). These are sulfhydryl-containing compounds, which bind to metallic elements. (See section *How chelation therapy works*.)

The treatment is prescribed on a case-by-case basis, which involves taking into account the patient’s size, weight and clinical condition.

Each infusion is administered whilst the patient is medically supervised.

Patients’ toxic and essential mineral levels, and kidney and liver functions are tested at regular intervals using blood and urine samples, which are evaluated at independent accredited laboratories.

This booklet has been prepared to give a general overview of the chelation therapy programme at Breakspear Hospital. If you need more clinical explanations or references, this information is available upon request.

Conditions helped by chelation therapy

Chelation therapy is used when it has been confirmed that heavy metals have accumulated in the body, especially in those people with chronic disease.

Circulatory problems

Chelation therapy has demonstrated benefits in most diseases where reduced blood flow is a factor.

It is a safe treatment that improves blood flow without surgery. Chelation has been the mainstay of non-surgical treatment for people worldwide for decades. It can also be used after bypass surgery and many patients have subsequently benefited greatly.

Along with improving blood flow, chelation therapy can reverse symptoms of hardening of the arteries.

Atherosclerosis is characterised by the deposition of fibrous tissue, cholesterol and calcium plaques on arterial inner walls, restricting blood flow. It is caused by multiple complex factors, including abnormal accumulation of metals and excess calcium. The reduced blood flow to vital tissues and organs can result in heart disease, heart attacks, stroke and dementia.

Our arteries are made of muscle fibres and elastic tissue. These have to stretch and contract with each heartbeat. Plaques lead to inelasticity through the build up of calcium in the arterial wall. This form of calcium forms a matrix with cholesterol, making it difficult for the cholesterol to be broken up. One of the methods of chelation called EDTA removes this excess calcium, allowing plaques to shrink, so that arterial walls become softer and more pliable, and as a result blood flow is increased. As the organs of the body begin receiving a better supply of blood, they become more efficient and the body becomes healthier.

There are many published studies which show improvement in blood flow and symptoms following a chelation programme.

Anti-ageing and healthy practice

Chelation therapy is also a mode of treatment frequently used in anti-ageing medicine and is a common practice for preventive medicine. Removing toxic heavy metals from the body is an important part of detoxification for improving health. The concept of preventative medicine applies to our approach to many of the chronic diseases we regularly treat at Breakspear Hospital.

Specific chronic illnesses that can improve with chelation therapy

- coronary heart disease
- autism
- autoimmune conditions including rheumatoid arthritis and systemic lupus erythematosus (SLE)
- chronic fatigue
- neurological conditions, including motor neurone disease, stroke and multiple sclerosis (MS)
- peripheral vascular disease
- diabetic neuropathy
- high blood pressure
- hyperactivity
- senility, cognitive decline and Alzheimer's dementia

Amalgam fillings

Any person with amalgam fillings and concurrent illness/ illnesses should consider a chelation program.

Research has shown that mercury from fillings can reduce the effectiveness of the body's immune system, resulting in increased susceptibility to bacterial and viral infections. In addition, it has been associated with arthritis, migraine, epilepsy, food, chemical and inhalant allergies, Candida and other yeast overgrowths and neurological disturbances such as multiple sclerosis, which it can mimic or exacerbate. Removal of fillings is only half the battle; the mercury must be eliminated from the body as far as is practicable. Breakspear's patients are advised to go on an oral nutritional chelation therapy programme to achieve this end. Supplementation should include glutathione, methionine, vitamin C and zinc.

DMPS therapy can commence only once all amalgam fillings have been removed. DMPS is an extremely potent chelator of mercury and can find its way into the saliva. It can remove loose or surface mercury from the amalgam, potentially leaving harmful mercury surfaces exposed.

At-home and occupational exposure

Although environmental heavy metals are not entirely a modern phenomenon, our exposure has drastically risen as a result of an exponential increase in the use of heavy metals in industrial processes and products. There is lead in paint and tap water, chemical residues in processed foods and cosmetic products including shampoo, mouthwash, toothpaste and soap. There are also metals used in production of plastics.

In addition to the hazards at home and outdoors, many occupations involve daily heavy metal exposure. People with occupational exposures to metals include physicians, pharmaceutical workers, those in any dental occupation, laboratory workers, electrical engineers, hairdressers, painters, plastics manufacturers, printers, welders, metalworkers, cosmetic workers, battery makers, engravers, photographers and potters. It is recommended that these people should be tested and treated for their body burden of toxic metals.

Chronic fatigue

Chronic fatigue syndrome (CFS) is a chronic condition with well documented immune dysfunction. CFS sufferers should be tested to assess their burden of toxic metals. If the source of metals is obvious (for example, amalgam fillings), this should be removed wherever possible. Prior to removal of amalgams, nutritional support and initial chelation should be undertaken to optimize the immune system.

If anyone is suffering from any chronic illness, and has been exposed to metals, it would be advisable for them to undergo a provocation test to assess the body's burden of toxic metals.

Frequently, metals other than mercury also play a significant role in chronic illness. Apart from obvious occupational exposures, one may have accumulated metals from unrecognised environmental sources. For example, high levels of cadmium, antimony and arsenic are neuro-toxic and immunotoxic. The doctors at Breakspear will be able to advise patients about whether they should consider concomitant metal provocation/neutralisation testing.

Neuropathies and neurological diseases

The broad group of neuropathies and neurological diseases includes diabetic neuropathy, neurological conditions such as multiple sclerosis, Parkinson's disease and motor neurone disease. As some of the heavy metals are directly neurotoxic such as lead, mercury and antimony, it is essential to investigate for and treat elevated levels of metals.

Autism and hyperactivity

Children who develop autism usually have a biochemical variation leading to the inability to detoxify metals. As a result, heavy metals may accumulate according to the child's environmental exposure. Chelation is therefore important to reduce the neurotoxic effects of metals on the developing brain.

We have also concluded that it is important to evaluate hyperactive children and adults for accumulation of heavy metals.

Cognitive decline

Heavy metals in the brain are clearly associated with increased risk of Alzheimer's dementia. Alzheimer's dementia has been found to be associated with excess accumulation of aluminium, iron, cadmium, lead and mercury in the brain. We believe these to be directly contributory to the development of cognitive decline. Although chelation is unlikely to reverse advanced dementia, it is effective for prevention and can reverse milder toxicities.

Autoimmune conditions

Autoimmune conditions include a very large group of conditions whose cause, or set of causes, are not well understood. Once again, since the immune system is significantly compromised by heavy metals, it should be investigated to establish whether they are present.

People who are highly allergic or chemically and electrically sensitive will also benefit from having toxic metals removed.

Many other conditions

As you can see, there are a variety of reasons for chelation to be used in many of the previously listed conditions, to remove heavy metals from the body and improve circulation.

Chelation is an important form of depuration or detoxification. Therefore it is applicable to many chronic diseases where toxins play a part.

At Breakspear Hospital, our specialist physicians have researched, and have had many years of experience using

The dangers of toxic metals

Toxic metals are metals that are found in the environment which inevitably get into our bodies. There are some harmful heavy metals that are regularly accumulated over the course of everyone's life but there are also ones that are linked to specific occupations and various living environments. Even essential nutrient metals can be toxic if they are in excess or when abnormally situated in the body.

Toxic heavy metals include:

- aluminium
- arsenic
- antimony
- cadmium
- lead
- mercury
- nickel

These heavy metals are toxic to the nervous system, kidneys, cardiovascular system and immune system. They compromise gastrointestinal integrity and therefore nutritional status. This leads to a vicious cycle of reducing nutritional and immune system status. Furthermore, they are carcinogenic (cancer-inducing). Heavy metals have also been identified as factors affecting human fertility.

These metals are used widely in the manufacture of plastics, rubber, dental materials, pesticides, chemicals, kitchenware, food, cigarettes, cosmetics and in the coal-fired industries, to name a few. It is therefore important to be aware of the sources which one can readily avoid. Avoidable sources include: mercury amalgams, cooking utensils and cigarette smoke.

There are a number of illnesses that make some people even more susceptible to absorption of these toxic metals. Some of these illnesses affect children.

Heavy metal exposure in the home or in the workplace is not an entirely modern phenomenon. For example, historians have cited the contamination of wine by lead-lined jugs and cooking pots as a contributing factor in the fall of the Roman Empire. Another example is the Mad Hatter character in Alice in Wonderland who was modelled on a hat maker, who used mercury to stiffen hat material and became psychotic from mercury toxicity.

The following summaries describe the three most common toxic metals found in people today:

Lead

There are many sources of lead that can contribute to ill-health. Lead contamination is not uncommon in foods such as shellfish, offal (internal organs of animals) and canned food.

Exposure to lead can also be from a variety of sources in our environment. Examples are leaded petrol, paint, newsprint and coloured advertisements, hair dyes and rinses, dolomite, soft coal, pewter ware, pesticides, fertilisers, pottery, cosmetics, tobacco smoke, air pollution, rubber toys and storage batteries.

Lead can also be found in drinking water that has been through lead pipes, especially in soft water areas.

Lead tends to target areas such as bone, liver, kidney, pancreas, heart, brain and nervous system. It alters cell membrane permeability, enzyme function, osteoblast production and blood formation.

Symptoms

Symptoms of lead toxicity include the following:

- anaemia
- anorexia
- constipation
- abdominal discomfort
- weakness, fatigue, and malaise
- headache
- pallor
- loss of appetite
- convulsions

Supplementation

To help in protecting one's body, protective nutrients such as calcium, iron, zinc, vitamins C and E and high sulphur amino acids may be taken. Garlic, eggs and beans are beneficial foods which provide these nutrients.

Mercury

Mercury is one of the most toxic substances known to mankind.

Mercury can be found in thermometers, paints, explosives, electrical apparatus, batteries, mercurial diuretics, fungicides, fluorescent lamps, cosmetics, hair dyes, salt water fish caught in contaminated waters, manufacture and delivery of petroleum products.

Mercury can also be found in the so-called silver fillings in one's mouth. These fillings are in fact an amalgam of silver, tin, copper and zinc mixed with over 50% mercury.

Recently it has been proved that mercury is constantly leaked from the fillings and the amount increases up to fifteen fold with chewing, especially hot, salty or acidic foods.

Mercury can affect any of the regulatory systems of the body. It tends to target the central nervous system, thyroid and pituitary glands, the kidneys, circulatory, digestive and respiratory systems, appetite, pain centre and cell membranes, and tends to inhibit the transport of sugar and increase cell membrane permeability of potassium.

Symptoms

Someone with toxic levels of mercury in their body may experience:

- tremors
- salivation
- stomatitis (inflammation of the mouth)
- loosening of the teeth
- blue line on gums
- pain and numbness in extremities
- nephritis (inflammation of kidneys)
- diarrhoea
- anxiety
- headache
- weight loss
- anorexia
- mental depression
- hallucinations
- vomiting
- fever
- chills
- memory loss
- chewing and swallowing difficulties
- loss of sense of pain.

Supplementation

To help protect from mercury, protective nutrients such as selenium, vitamin C, pectin, and sulphur amino acids may be taken. Nutritional therapies include ascorbic acid, tocopherols, other antioxidants and pectin.

Cadmium

Cadmium is a naturally occurring toxic rare metal that can be found in cigarette smoke, air pollution, crops (such as sunflowers), seafood, teas, bone meal, phosphate fertilisers, oxide dusts, paints, welding, rubber tyres and soft water.

Cadmium tends to target areas such as the lungs, liver, kidneys, heart and blood vessels, brain, appetite and pain centre. This can lead to trouble in breathing, difficulty with kidney function, blocked appetite and smell centre, troubles with heart and blood vessel structure (hypertension or hypotension) and affects calcium metabolism.

Symptoms

Too much cadmium in the body, whether ingested or inhaled, may cause:

- hypertension
- hypotension
- emphysema
- kidney damage
- loss of smell
- loss of appetite

Supplementation

Protective nutrients such as calcium, copper, selenium, sulphur, zinc, vitamin C and amino acids may be taken to help protect the body. Foods such as garlic, eggs and beans contain these useful nutrients.

Since heavy metals have a deleterious effect on the immune system, removing them from the body is an extremely important part of achieving optimal health.

Testing for heavy metals

There are several ways to test for the presence of heavy metals. These involve testing the urine, faeces, hair and blood.

Each test will demonstrate a different aspect of the metal in the body but the best way to demonstrate the burden of metals is to perform a provocation test. This involves a urine test before and after a single oral dose of chelating agent. Completing a provocation test with a chelating agent accurately indicates the amount of 'loose' or extra heavy metal there is in the body.

Hair analysis gives information on one's previous exposure to toxic metals. Because hair analysis shows a history of exposure, it therefore infers the unwanted presence of metals but does not demonstrate the body's actual burden or net retention.

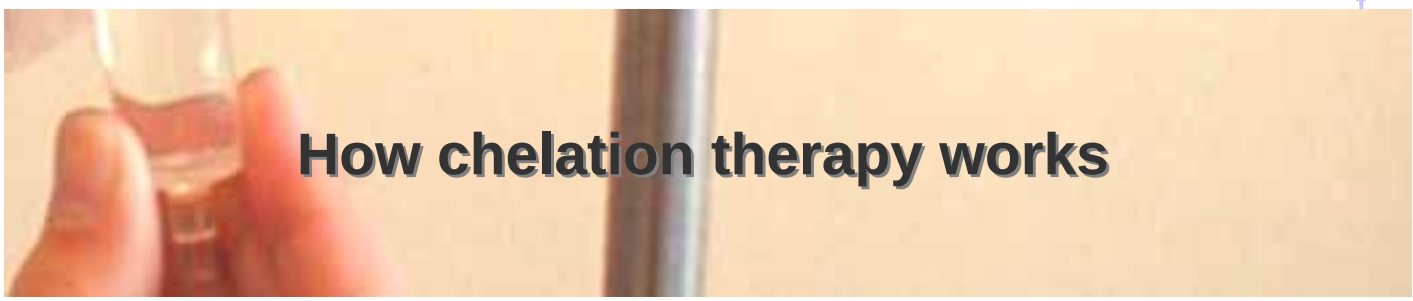
Blood levels are detectable only when one has acute poisoning such as by ingestion or accidental industrial exposure. Blood levels are not effective in assessing chronic low-level heavy metal exposure.

Faecal metal measurements are useful in infants, where stool is easily collected from the nappy and the child is on a limited diet and therefore with minimal metals, particularly mercury, in the diet.

In adults, faecal mercury may reflect only what has been in the diet and from amalgams, and not necessarily the body burden of metal.

If one suffers from a chronic illness, and has been exposed to metals (such as having mercury amalgams), it would be advisable to undergo a provocation test to assess the body burden of toxic metals.

Frequently, metals other than mercury also play a significant role in chronic illness. Aside from obvious occupational exposures, a person may have accumulated metals from unrecognised environmental sources. Doctors at Breakspear will be able to recommend if a provocation test would be advisable.



How chelation therapy works

Chelation is imperative when heavy metals have accumulated in the body, in particular in those people with chronic disease.

To rid the body of heavy metals, there are three modes which Breakspear Hospital's chelation therapy programme can use. These three modes are:

1) via the urine
2) via the gastrointestinal tract
3) via the skin.

Passing water

When the metals are in a compound which is water-soluble, they can be passed through the body by urination.

The chelating agent is introduced into the bloodstream in order for it to get into the tissues. The chelating agent in the bloodstream then binds to metal ions in the blood and tissues. This makes the heavy metal ion water-soluble and it can therefore be eliminated through the kidneys. The organic metallic compound is changed to an inorganic form which makes it safe for excretion through the kidneys.

Well functioning kidneys are needed for chelation therapy, and it is important to drink a lot of water during the programme.

It is recommended that an evaluation of heavy metals in the urine is completed before commencing the programme and also at the end of the programme.

Through the stomach

Normally, people use the gastrointestinal tract to remove harmful heavy metals that are found in our food and diet. When these metals are fat-soluble, bile from our liver and gall bladder binds to these harmful organic compounds. When the metal is bound to bile, it can be safely excreted through the gastrointestinal tract and comes out in our stool.

However, bile is sometimes re-absorbed in the gut and this leads to the metal being re-absorbed with it. To prevent this re-absorption, Breakspear medical staff can administer colestyramine or charcoal, which binds to the heavy metal in the gut and allows its passage through the stool. Chlorella also works to prevent re-absorption.

By way of the skin

Sweat is a normal mode of detoxification used by our bodies. Toxins that are water-soluble are excreted by the cells in the skin as sweat. Some heavy metals are excreted through the skin. To speed up this process, we use our IRATHERM® . This whole-body hyperthermia bed raises the body's surface and core temperature, causing a major therapeutic effect of boosting metabolism and accelerating secretion. The IRATHERM® is only used on alternate days, in conjunction with supplemental minerals (to help with replenishment) on the other days.

Administering chelation

There are several different methods of administering chelating drugs to patients. The methods of administration are:

1) Intravenous (IV), which involves a solution being fed into a vein
2) Oral, by capsules
3) Rectal, by self-administered suppositories
4) Transdermal, by the use of a lotion applied to the skin and covered with a patch

The main method of chelation therapy that we use at Breakspear Hospital involves the intravenous infusion of a synthetic amino acid, EDTA, together with other synergistic vitamins and minerals.

EDTA has a strong affinity for lead, calcium, chromium, cadmium, barium, beryllium, cobalt, copper, iron, strontium, mercury, magnesium, manganese and zinc.

When EDTA comes in contact with a positively charged metal, it releases hydrogen atoms and the metal becomes firmly attached. When EDTA is infused, it binds with the metallic deposits in the damaging plaque and other tissues. This resulting new compound is no longer chemically active and is water-soluble, allowing the kidneys to excrete it safely in urine.

All metals, even essential nutrients, can be toxic in excess or when abnormally situated. EDTA normalises the distribution of most metallic elements in the body and improves calcium and cholesterol metabolism by eliminating metallic catalysts, which damage cells by producing free radicals. Free radicals are believed to contribute to atherosclerosis, cancer and diabetes, and many other diseases associated with ageing.

Most of the body's calcium is normally attached to protein, as in the bone and cartilage. Chelation does not normally remove this form of calcium, but it will remove other calcium salts, like deposits in the joints and soft tissue, making it a useful tool in the treatment of some forms of arthritis.

Among other chelating agents is DMPS, which can also be given intravenously. DMPS has a stronger affinity for mercury.

DMPS and DMSA can be administered orally by capsules, which are prescribed according to body weight . Alternatively, DMPS can be given as a transdermal lotion application to the skin. This is particularly useful for administration to children.

EDTA can also be taken as self-administered suppositories.

Intravenous chelation is usually the most effective way of chelation but your doctor at Breakspear will discuss which method would be most suited to you.

Required nutritional supplementation

Chelating agents do not work in isolation; it is important that patients also take a supportive programme of nutritional supplements in conjunction with the chelating agents.

Supplementation is essential to replace the desirable nutrients that have been chelated. Chelating agents bind to positively charged metal ions and also bind to calcium, zinc, magnesium and calcium salts, removing some of them from the body.

In order to monitor and maintain healthy levels of essential minerals, before chelation therapy begins each patient's mineral levels will be checked. A nutritional supplementation programme will be prescribed on an individual basis according to the patient's size, weight and clinical condition. These nutritional supplements will aid and boost the body's pre-existing natural detoxifying processes.

The mineral supplements or infusions prescribed will replenish the essential minerals that have been chelated. Mineral levels will be re-checked half way through and/or at the end of the programme to ensure that a deficiency has not occurred.

Time involved

The time required for a complete chelation therapy programme may vary. The current standard intravenous (IV) regime is 3 days on then 11 days off, which is repeated 6 times.

Each chelating IV infusion is administered over 3 to 4 hours whilst the patient is medically supervised. Most patients have 1 or 2 infusions per week over a 3 to 6 month period. The time required for nutritional infusion sessions following treatment will vary with each patient's requirements.

Chelation may also be done with oral, transdermal or rectal preparations. These programmes usually also last 12 weeks and can be repeated depending on the amount of metal retention.

Considerations

Patients' toxic and essential mineral levels and kidney and liver functions are tested at regular intervals over the course of treatment. Renal failure is a contraindication to having chelation, as the kidneys are required to remove the heavy metals. However, if there is slight impairment of kidney function, chelation can still be done with lower doses of chelating agent. Pregnancy, lactation and active liver disease are also contraindications to chelation therapy.

Personalised details of how to take the chelating agents and minerals will be provided before starting the programme. Glutathione, cysteine or N-acetylcysteine must not be taken together with the chelation.

Dental concerns

Breakspear also recommends dental treatment to remove amalgam fillings. We commonly refer patients to specialist dentists who practice mercury free dentistry only.

It is important that when dentists are removing amalgams they reduce the exposure to mercury vapours as much as possible. It is also important that the best long-term restorations are used to minimize the amount of times teeth are "drilled and filled" in the future, as this is traumatic to teeth.

Removal of amalgam fillings should be part of a chelation therapy program. If amalgams are not eventually removed, chelation therapy that has been performed to remove heavy metals will not be effective as the metals will simply accumulate again in the future.

Possible side effects

Chelation is a safe medical procedure, though occasional side effects can occur. Vein irritation, mild pain, headache and fatigue may occur, and are controlled by adjusting dose and frequency of treatment, or with the use of other simple measures.

Chelating agents are generally very well tolerated. When taken by mouth in large doses, they may cause gastrointestinal upset which resolves soon after stopping them. DMPS may uncommonly cause mouth sores. (If this happens, the user should stop taking DMPS.)

Most patients experience few or no side effects and note reduction or elimination of their symptoms. The treatment can be used in conjunction with most other therapies for heart disease (anticoagulants, antihypertensives, and anti-arrhythmics) and the need for drugs is often reduced or eliminated after a course of chelation therapy. If performed early enough, chelation has frequently prevented the need for bypass surgery and coronary angioplasty.

Summary

Breakspear Hospital uses chelation therapy as a highly effective treatment to reverse the damage done by exposure to, and absorption of, toxic heavy metals.

We have treated adults and children for many different debilitating diseases and conditions. Patients with conditions ranging from anaemia, anorexia, hyperactivity, coronary heart disease and high blood pressure have all been treated at Breakspear Hospital. Chelation has clear benefits in most diseases where reduced blood flow is a factor.

We assure you that chelation therapy is safe and we have trained, experienced physicians and clinical staff to guide you through the process.

Our medical professionals will help you through the painless therapy from your initial examination including a thorough look at your medical history and records and a physical examination, as well as various toxicity tests, through to preparation for treatment and the administration of chelation and nutritional IV supplementation and the follow-up nutritional supplements programme. We have been helping patients though this process for over 20 years.

Breakspear Hospital has the facilities to provide services for children, young people, adults, disabled and the elderly.

Breakspear is a private hospital in operation since 1982. All new patients, or their guardians, can make an appointment to see a doctor directly. It is recommended that patients seek a referral from their general practitioner where possible, as we regularly correspond with local Primary Care Teams.

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