

6.xiv. SULPHUR.

i. SULPHUR IN THE MINERAL AND VEGETABLE KINGDOMS.

1. Sulphur is another word for brimstone.
Sulphur is a nonmetallic, combustible, smoky, acid, fitful volcanic element that occurs in beds of clay, also in combination with certain metals forming sulphates and sulphides, and usually occurs in the vicinity of volcanoes.
2. Sulphuric acid is the king of all acids.
3. Most Sulphur comes from vegetables and volcanoes.

ii. SULPHUR, ITS NATURE AND CHARACTERISTICS.

1. Sulphur is almost lemon coloured, although the colour varies somewhat in different countries, season and temperatures.
Sulphur is a nonconductor of electricity.
2. It becomes a liquid between 111 degrees and 137 degrees centigrade. It solidifies again at 160 degrees and becomes a fluid, for the second time at 208 degrees and boils at 420 degrees.
It becomes a vapour at 422 degrees centigrade.
3. Sulphur is sensitive to air currents, to atmospheric gases, electricity and is changed chemically when subjected to heat, cold, moisture, and other conditions. It is tasteless, but has a peculiar odour when melted, or when subjected to friction. It is remarkable for its allotropic character, or for its ability to unite with all the metals and nearly all the nonmetals, for its tendency to form crystals and for its capacity to exist in many forms and manifestations. Sulphur is insoluble in water, but is easily taken up by spirits of turpentine and by certain oils.
4. Sulphur is used in the manufacture of gunpowder, in vulcanising, in the manufacture of metals and of sulphuric and sulphurous acids. It is used in industry as a Sulphur gas; and is used in many forms as a medicine.
5. Sulphur is a strong disinfectant, it purifies.
6. Sulphur is not an element of strength.

iii. FUNCTIONS OF SULPHUR IN THE HUMAN ORGANISATION.

1. Sulphur is contained in living tissue, being especially utilised in the construction of protoplasm. It is absorbed by plants as a sulphate. Sulphur promotes the flow of bile, but cannot alleviate pain. It has a particular effect upon the liver by promoting the secretion of bile.
2. A diet that is rich in Sulphur reduces the liver in a patient who suffers from enlargement of the liver. Sulphur food for that same reason is very valuable to stimulate the secretion of bile, and for the purpose of overcoming enlargement of the liver.
3. Sulphur foods act upon the cerebrum as a mild hypnotic, although its action is slow, for it requires from one to ten days for such a diet to act vigorously upon the brain. A man who eats Sulphur food to excess can, over a period of time, become sedated by its effect.
4. Sulphur is found in hair, nails and horny tissue. Keratin is a substance that is found in all horny tissue such as nails, hair and feathers. It is found in the epidermis of the skin. It is a mixture of many complex proteinous substances. It yields tyrosine and leucine when analysed in the laboratory. Keratin is found in the cornea of the eye. Keratin differs from proteins in general in the sense that it contains a high percentage of Sulphur.
5. Sulphur is present in the form of Sodium sulphate in many of the tissues and body fluids. Sodium sulphate is needed in the tissues as a detoxifier.

6. The human body contains nearly four ounces (115 grams) of Sulphur.
7. Free Sulphur is utilised by the physiological functions almost every hour of the day, although the amount that is used is not accurately known to science.
8. A Sulphur diet has a radical effect on the physiological and other functions causing certain bodily taints and impurities to be thrown to the surface of the skin for elimination. A Sulphur diet acts strongly upon the skin. The nature of Sulphur is such that it exerts a powerful influence on the internal organs, throwing taints, miasms, impurities etc. to the surface of the body. This results in congestion of the capillaries, veins, skin and nerve tissue at the surface of the body.
9. Sulphur is an uproarious element, agitative, expulsive and convulsive.
10. It acts as an angry undercurrent wherever it is present, producing explosions at the surface, as may be seen in volcanoes, beneath which the Sulphur element is at work. Sulphur assists evaporation and surface radiation of bodily heat, but it increases internal heat and organic gases in the liver, nerves, and sex areas of the brain and genitalia.
11. Sulphur heat and organic gases escape readily through the skin when Sulphur is abundant in the body, and when cold winds, cold water or cold moisture strike the surface of the body, but not otherwise.
12. A Sulphur diet has the power to force impurity to the surface of the skin, resulting in pimples and eruptions. Sulphur has a warming effect upon the skin, producing travelling waves of heat accompanied with ruddiness of the skin and greater action in nerve function.
13. Sulphur intensifies nerve action. It acts on every cell in the body.
14. It acts upon every drop of blood, and upon every nerve fibre and cerebral neuron, and yet its effect is like an angry undercurrent and a hypnotic sleep combined. It acts as an explosive and yet a hypnotic on nerve action, through the nerves, upon the nerve cells and upon the nerve endings. It acts slowly and cumulatively. It is a stirring dynamic element, acting like a volcano and compelling the expulsion of disease organisms.
15. About four percent of Sulphur is found in hair. Red hair has more Sulphur than golden hair. Golden hair has more Sulphur than sandy hair. Sandy hair has more Sulphur than light brown hair. Light brown hair has more Sulphur than dark brown hair. Black hair has the least proportion of Sulphur. It is possible to affect the hair colour through eating a Sulphur diet and certain Nitrogen or vegetable pigments.
16. A normal supply of Sulphur is necessary to regulate nerve impulses and to maintain a uniform temperature in the nerves, in the brain centre of the senses, in the nerves and plexuses of the sexual organs, in the spinal reflexes, in the optic centres, in the heat centres of the body, in the Median glands, in the oily secretions, such as the perilymph, endolymph, cerebrospinal fluid, neurolin in nerve and brain matter, the gonoblastic fluid, and others.
17. The mental outlook and nerve tension is high in Sulphur patients. Great sulphur consumption favours versatility, emotionality, adaptability, purification, but not strength.
18. Sulphur and Carbon, if used as a large percentage of additives in steel tools and instruments, makes them brittle and useless. Sulphur and Carbon have the same effect upon the human organisation and upon the brain. The diffusion of cells, the strength and durability of tissue, the power of brain for continued activity, the hardness, wiriness, endurance of bone and muscle are, qualitatively, not as great when Sulphur is excessive in the human organism.
19. But the qualities of nerve heat, of nerve tension, of the tone of the nerve impulses, of idealistic and romantic feelings, of the deeper emotions, impressionability, responsiveness and emotional tone, are greater when Sulphur is abundantly assimilated and utilised.

20. Sulphur is formative and life sustaining. It is the agent of emotional expression. It surrounds, supports, and enters into life and nerve processes. The ovum and the egg yolk are supplied with a liberal quantity of this life supporting, heat producing, neurolinic and formative element in an organised form. Dead Sulphur or inorganic Sulphur is of no value to an ovum, nor to an egg yolk. The ovum pays no attention to drug Sulphur. The Sulphur in the ovum could be called living Sulphur, which is also the case with the Sulphur found in the egg yolk.
21. Sulphur enters into and supports life in the budding protoplasm of the male and female reproductive principles. Without Sulphur the ovum would be useless, and so would the egg-yolk. Without Sulphur, no chick would be hatched, no infant would be born. "No Phosphorus, no thought", says the German philosopher. He might as well have added, "No Sulphur, no sensation, no communication of our inner feelings with body and matter, no sense, no life and soul expression". Without Sulphur, Phosphorus would soon burn out our brain, so that we would all end our lives in an institution.
22. Sulphur, however, is transformed, converted and completely reorganised before it enters into the workshop of thought and emotion, as a supporter and medium of expression of emotion and of nerve life.
23. Sulphur moreover, has a great deal to do with the phosphoropsychical processes and serves as the communicating medium between inner mental life and sensory physical states. Sulphur is the communicative regulative and magnetic medium of thought action, nerve impulses, psychical capacity, nerve conduction of the senses, and emotive transmission.
24. Lack of sulphur affects the life, the nerve and the expression of inner feelings and results in a peculiar kind of neurasthenia, psychoneurosis, enfeeblement of the mind, or psychocoma, which is very difficult to cure.
25. The lady with her ovoid shaped head, oval face, soft, velvety, warm and delicately rosy skin, with her elastic, wiry, wavy luxuriant, golden or light brown hair, her warm, glittering magnetic, intelligent, blue-gray or light hazel, soulful eyes; whose complexion changes with the varying weather conditions as readily as the Sulphur element, or like the chameleon changes its colours; who is electrical in touch, responsive, emotional, moody, intense, fond of luxuries, versatile, fanciful, tall and proportionate, beautiful, highly keyed, volcanic in feelings; elastic and firm, yet soft in tissue; graceful in movements, firm in joints, harmonious in build, graceful and stately in form, neat, tidy and particular; who among ladies, is the queen of beauty, proportion and youth - is like a harp with a thousand strings, and rules the hearts of men, has abundant Sulphur.
26. Sulphur is a poor conductor of muscular electricity, which is why it retains acid in the body.
27. Sulphur produces nerve, brain, skin and liver heat, and hence causes nervousness.
28. Sulphur causes sluggishness; people who have much Sulphur, rise late in the morning.
29. Exesthetic people cannot bear hardships, nor a rough life, they suffer first with cold hands, then warm hands; they suffer from heat, etc. So they must have pleasant environment.
30. Sulphur is an enhancer of subconscious activity, therefore Sulphur people worry without realising it.
Sulphur increases:
 - a. Sensitivity,
 - b. Nerve, brain and liver heat,
 - c. Rouses the skin,
 - d. A dissatisfied mind.
31. Sulphur creates alertness and activity of the emotions.

32. Sulphur people like cold water baths (for the oxygen), to cool the nerves and to overcome sluggishness that accumulates overnight. They desire and need abundant fresh air.
33. Sulphur throws impurities to the surface, hence Sulphur people do not contract diseases easily.
34. The joints of Sulphur people are nearly always weak.
35. Sulphur helps to construct protoplasm, promotes bile secretion and facilitates the growth of hair and nails.
36. Sulphur favours surface heat radiation.
37. Sulphur increases the beauty of the complexion.
38. Sulphur regulates nerve impulses, and transmission of temperature.
39. Sulphur is found in the life substance, in the neurolin, and in cerebrospinal fluid.
40. Sulphur assists the tone of the psychical functions.

iv. CONSTITUTIONS IN WHICH SULPHUR IS INHERENTLY

1. **Excessive:** Exesthesic, Nervi-Motive.
2. **Deficient:** Calciferic, Carboferic, Nitropheric, Pargenic; also Exesthesic, because of excessive Sulphur consumption.

v. SYMPTOMS WHEN SULPHUR IS EXCESSIVE.

1. Sulphur excess makes the disposition volcanic, feelings moody, temperament spasmodic, desires paroxysmal. The person becomes similar to the source of Sulphur - volcanic. Now she is well and happy, then feverish, ugly, morbid and excitable. Now life is a poetic dream; later the mental horizon darkens and nothing pleases her. Complaint, hopefulness, temper, love, fear, stubbornness, peace, health, depression, joy, pessimism, optimism, planning, wishes, fright, courage, self-condemnation, distrust, pride, faith, carelessness, independence, dependence, exclusiveness, charity, selfishness, economy, stinginess, liberality, serenity, abuse, kindness, emotional excitement, sociability, geniality, hatred, cheerfulness, friendship, hostility, forgiveness, regret, doubt, trust and many other contradictory qualities fuse, mingle and melt and separate in the crucible of the inner feelings, brain and body in such persons.
2. They are born domestic actresses who play the leading role in a constantly changing drama. From a gentle lamb or a cooing pigeon, they change to an angry spitfire.
3. The love of a man in whom Sulphur consumption is excessive is ardent, intense, romantic, even with an excess of feeling, but his love is changeable. For today his sweetheart is a goddess, tomorrow he may not care for her, or for marriage, home, friends, studies, or even life itself. The Sulphur patient is sulky in the morning but happier towards evening.
4. The functions are torpid in the morning. The real day begins about eleven o'clock with a Sulphur patient. Before that time she is only half-awake, possibly angry, irritable and hard to please. Emotional changes and changes in the complexion are peculiar to Sulphur patients. They are fitful, capricious, acid, touchy, particular, fastidious and sometimes volcanic.
5. They are subject to spasmodic moods. She changes quickly from happy to sad, from lively to indolent, from repose to impulse, from alacrity to lassitude. They have their spells of ill humour, are cranky and pleasant in turns, and are easily thrown into a panic.
6. Obsessive counting is a Sulphur symptom. Dry hair, trembling pupils, dependent pride and a metallic taste in the mouth are prominent excess Sulphur symptoms.

7. Excessive Sulphur consumption results in the generation of Hydrogen sulphide gas, which destroys the Iron in the red corpuscles of the blood. The iron in the haemoglobin of the blood is metamorphosed and its ferric essence gives rise to this Iron taste in the mouth.
8. The Sulphur patient craves high Sodium foods: chocolate, juicy food, tart beverages, sour cooling mucilaginous drinks or tonics, greens, vegetables, strong tea. They may even long for beer in hot sultry weather, or for vinegar, because of internal ferments and gas pressure.
9. Eating alleviates her symptoms for the time being, but aggravates her ailments in a few hours. She may say that her head feels as if it has been lifted off. This is due to brain tension.
10. She has a craze for frosty air, nightly room breezes, storm and elemental commotion. She is a fresh air enthusiast. She wants the cold wind to play upon her face in her bedroom. Intense cold has a pleasing effect of her.
11. The menstrual cycles are often spasmodic. She is very forgetful. She is sometimes as peevish as a petulant baby. A warm room smothers her. Lying on the back in bed irritates the sensory nerves. Lying prone in bed is resting. Sitting results in tension and flatus. Talking weakens the brain, producing lassitude and provoking temper outburst. Erect static positions urge the blood to the liver, spleen and heart, producing pain in these organs. Climbing results in dizziness.
12. Fresh, breezy air, or looking at cool, heaving clouds billowing, or seeing thunderbolts, or being out in the rain and storm, always soothe nerves and pacify emotions.
13. The Sulphur person is a puzzle to doctors. He does things in fits and starts. He is unequable, spleeny, whimsical, captious, and fitful. Now he is well, and then he is sick. He is a good soul but impossible to his marriage partner. He dislikes cooking odours, fumes and heat.

vi. SYMPTOMS WHEN SULPHUR IS DEFICIENT.

1. Pressure, tension, fitfulness, fussiness, impatience, weak ankles, late hours, prominent emotional irritability fondness for change and variety, tendency to hysterical outbursts, volcanic outpourings of emotion with extreme impatience and touchiness. Intentions may be noble, but they are spasmodic. The disposition is affected. This affects accomplishments. The finger muscles are jerky.
2. The transmission of nerve impulses from the brain is increased, which affects the blood vessels. Dizziness, dislike for prolonged talking and reasoning, weakness of the throat are Sulphur deficiency symptoms. The patient craves vigorous pressure or massage, but dislikes gentle touches or massage movements. He may be ambitious but lacks in fortitude. Swallowing is difficult. The pulse is short and quick. He sleeps late in the morning and is up late at night. The appetite is poor in the morning. The skin pigment is similar to the colour of Sulphur. His complexion changes many times during the day.
3. Like Sulphur, he is sensitive to temperature changes, or atmospheric gases and fumes. The epigastric region is sore. Gas is generated in the alimentary tract, and red corpuscles are broken down in great numbers. He suffers from stuffiness, dyspnoea, acid formation, gas generation, and lack of Magnesium and blood salts.
4. The vocal organs are in a state of dryness, and the throat is filled with mucus. She feels faint and seeks a dark, quiet, cool room. She feels stuffy in head, feet, liver and spleen. She gets out of breath easily in sultry places or in warm rooms.
5. The disposition is peevish, the moods fitful, and the wishes changeable. In the morning they are always tired and the eyelids are so weak, that they can hardly open them.

6. The nervous system, the sensory nerves, the portal system of the liver, the colon, the spleen and the male sexual organs are usually the seat of the trouble.
7. Hydrogen sulphide is the main cause of the ailments for the following reasons:
 - a. Sulphur consumption is too great;
 - b. Sulphur is not normally assimilated;
 - c. Sulphur food are not properly combined in the diet with Magnesium, Sodium and Iron;
 - d. The alimentary canal, the tissues and the secretions are always in a state of acidity so that unless an acid neutralising food is also taken, Sulphur forms more acid and more gas;
 - e. Because of Sulphur acid and gas and also because of lowered oxidation, destroyed blood salts and not enough Sodium in the diet, carbon dioxide is not properly excreted;
 - f. Irritability, emotionality, petulance, pains, discomfort, so much Phosphorus is broken down in the brain that Phosphorus products become another source of acidity, destroying the Magnesium supply, leaving the eliminative avenues filled with waste matter in which germs and germ toxins thrive, only to further aggravate ailments.
8. She suffers from anaemia and lack of blood oxygen in the system. The menses are spasmodic, as are many of the physical functions.
9. She dislikes small towns, crude people, stingy men, literary platitudes. She needs intermissions and rest.
10. She is an excellent judge of art and culture, refinement, classics, beauty and socialisation.
11. She is often cross in behaviour, touchy in disposition, captious in moods, irritable in temper, freakish in wishes, fitful in love, often repellent to others in word and action, although she does not mean any harm. She is proud yet sensitive.
12. The complexion may be pale pink, or delicately ruddy, because of capillary congestion and nerve irritation on the surface of the skin.
13. Impetuosity is her greatest fault.
14. Her mind works faster than her tongue. Hence when her tongue refuses to act as fast as her mind or emotions, she gets tongue-tied or hysterical.
15. She is stubborn from sentiment, but not from reason. Kindness soothes her nerves.
16. She has many wavering, moody, variable, fitful haughty moods, but she is never fickle. She wants to be humoured. She is gloomy, moody, careless, tired, dull, happy, jealous, playful, quarrelsome, loving, sympathetic, restless, nervous, lonely, sad, timid, weary and faint in turns.
17. She dislikes foreigners and other races. She also dislikes long sermons. She has an instinctive fear of snakes and wars.
18. She is a poor judge of motion, distance, time balance, efficiency, real values, speed, momentum, mechanics, kinetics and physical events.
19. Direct questions irritate her. Her sense of balance is disturbed.
20. She worries much about her good looks.
21. She is a patient for a high altitude, frosty air and moisture. She has much heat in the blood.
22. It is Sulphur gas or Sulphur products that are at the root of all of those symptoms; they are Sulphur symptoms. She is not herself when Sulphur is very active in her.

vii. HOW TO REDUCE SULPHUR IN THE BODY.

1. **Foods:** Omit foods rich in Sulphur.
2. **Climates:** Live in a high altitude in the hills, where the air is fresh and the climate is cold and dry.
3. **Mental exercise:** Do not use the emotional mind or brain any more than necessary. In other words avoid temper, passion, fretting, nervousness, irritability, and other unfavorable emotions.
4. **Physical Exercise:** Spend much time in the cold, dry, fresh, open air. Do plenty of horse riding, rowing and walking. Take in addition, very cold sponge or shower baths. Never take Turkish baths or any other hot or warm baths, whether sick or well.

viii. HOW TO INCREASE SULPHUR IN THE BODY.

1. **Foods:** Eat raw foods rich in Sulphur. Cooked Sulphur foods generate gas.
2. **Climate:** Live in a low altitude where the atmosphere is warm and stuffy.
3. **Mental Exercise:** Be emotional as much and as often as possible.
4. **Physical Exercise:** Stay indoors much, and be lazy.

ix. PEOPLE WHO REQUIRE SULPHUR FOODS

1. **In abundance:** Phlegmatic people, mentally dull people, people who use their brain much. Exesthesic, Calciferic, Carboferic, Nitropheric, Atrophic, and Pargenic people. Exesthesic people require raw Sulphur foods because of excess Sulphur consumption.
2. **Very little:** Healthy Exesthesic and healthy Nervi-Motive people; also Myogenic, Oxypheric and Lipopheric people.

x. INFLUENCE OF AN EXCESSIVE AMOUNT OF SULPHUR FOODS ON

1. **Health:** It results in disease.
2. **Disposition:** The disposition becomes spasmodic.

xi. INFLUENCE OF A DEFICIENT AMOUNT OF SULPHUR FOODS ON

1. **Health:** Leads to disease.
2. **Disposition:** Disposition becomes temperamental or emotional.

xii. DISEASE TENDENCIES OF PEOPLE IN WHOM SULPHUR IS IN EXCESS.

1. Fevers become intermittent; disposition varies, symptoms change, diagnosis becomes difficult.
2. Sulphur acts on the cells, skin and sexual function, but when eaten to excess, digestion is disturbed, assimilation suffers, Hydrogen sulphide is generated which destroys the red corpuscles of the blood.
3. It results in bloating, congesting, skin affections, acrid discharges, tension, constriction, pityriasis, headache, psoriasis, burning in the soles of the feet, sudden prostration, spasmodic symptoms, hysteria, menstrual disorders, dizziness, drowsiness, muscular weakness, formation of tumours, autointoxication, de-oxidation, bloodlessness, paraesthesia, erotic habits, temper, boils and pustules.

4. Phenard says that:
 - a. One fifteen hundreds percent of Hydrogen sulphide in the air kills a bird;
 - b. One eight hundreds percent of this gas in the atmosphere is fatal to a dog;
 - c. One two hundred and fiftieth percent kills a horse.
5. Phenard says that a man can withstand from one to three percent of this gas in the atmosphere for a brief time, but lastly the man suffers from faintness, vertigo trembling, convulsions, de-oxidation of the blood, because this gas unites with the iron in the haemoglobin in the red blood corpuscles and destroys the power of the blood to carry oxygen.
6. This is also the case with the Sulphur person, when there is Sulphur gas generation, Sulphur acids, gases and products are dangerous to the blood, to the blood salts and to oxidation.

xiii. FOODS THAT PEOPLE WITH EXCESS SULPHUR SHOULD

1. **Eat:** Foods containing: Magnesium, Manganese, Sodium, Potassium, Iron, raw vegetable Sulphur. Inhale fresh air in abundance. Live in a cold climate, high altitude.
2. **Avoid:** Carbohydrates, cooked Sulphur foods, all gas producing foods.

xiv. HELPFUL HINTS.

1. Sulphur acid and gas products lessen the blood salts and reduce oxidation. A blood test does not reveal the trouble, for even if the number of red corpuscles is normal, the condition of the haemoglobin is such that the red corpuscles cannot carry oxygen - not even when the iron is present in the haemoglobin, nor when the haemoglobin is normal. This is the reason why every Sulphur patient is more or less anoxyaemic, and this is also the reason why the person is a fresh air fanatic.
2. Under the influence of Sulphuric acid the tissues suffer, especially the mucous membranes. It neutralises alkalis, removes water and precipitates albumin. It burns the stomach, the throat, and produces intense thirst. It leads to collapse and suffocation.
3. Sulphuric acid is known by the black stain that it leaves on lemons. It overcomes alkalinity of the blood, causes acidity of secretions and the system, and interferes with carbon dioxide removal from the tissues.
4. Sulphuric acid produces ammonia in the tissues and fluids of carnivorous animals and thus protects the blood salts.
5. When foods that are treated with various kinds of Sulphuric acid or Sulphur preparations are eaten, they lead to doctor bills, operations, sickness, loss in efficiency and a great deal of suffering. Never eat foods treated with Sulphur.
6. Sulphur is cumulative. It is retained day by day until autointoxication in all its forms develops.

xv. WHEN A SULPHUR DIET IS NEEDED.

1. When patients are gloomy in the morning;
2. When they are peevish and irritated by little things;
3. When are repentant after outbursts of temper and displeasure;
4. When the skin is dry, soft, velvety and Sulphur-like in pigment, yet anaemic;
5. When there is a tendency to sensations of numbness, stuffiness and suffocation.
6. When there is a strong desire for sensationalism.

7. When idealism is morbid.
8. When patients retire late and rise late.
9. When the appetite is poor from the morning until almost noon.
10. When love is morbid or perverted.
11. When there is a great fondness for travel, or pleasure in the hills or woods, stormy water scenery, storms, cold showers.
12. When there is a dryness in the tissues, walls of the body canals or channels of elimination, capillaries, glands, eyelids, liver, kidneys, colon, veins, heart, cerebellum and heart walls.
13. When there is a tendency to sexual perversion.
14. When there is a great pain during the periods, but not before or after.
15. When there is a strong dislike of cooking smells, fumes, and smoke or of staying in the kitchen.
16. When moods, wishes, plans, love, fear, will, physical functions, heart, digestion, liver, spleen, eyes, bladder, kidneys, voice, are spasmodic in action.
17. When there is an excess of emotional irritation and outbursts of temper that are nothing more than juvenile theatricals.
18. When the mind acts faster than the tongue and there is a tendency to hysterical outbursts, screaming, crying, and complaining.
19. When there is a great demand for pauses for rest, air, motion and pleasure during working hours, which indicate that the functions are spasmodic.
20. When sentimentality or stubbornness prevails over rules, regulations, laws, duty, discipline, reason and love.
21. When there is a strong Sulphur-acid odour to the perspiration, excretions, and expectoration or in the body or on the breath or in discharges, pustules or eruptions.
22. When discharges are corrosive and likely to produce brown or yellow-brown or dark yellow stains on the linen.
23. When there is a wavering stubbornness one minute and repentance the next.
24. When there is rush of blood to the brain.
25. When the hair falls or is dry and the scalp itches in sultry weather, in heat or in the evening.
26. When there is a granulation of the eyelids, irritation of the eyes.
27. When the tip of the nose is red and shiny.
28. When there is a dryness, with swelling of some parts of the body such as the skin, gums, eyelids, inner throat, liver, spleen, uterus, accompanied with pulsations in that dry anaemic part.
29. When the saliva is fetid, the throat burns and there is a partial closure of the respiratory tract, causing distress, redness with inflammation of the face accompanied with much irritation and a tendency to hysteria.
30. When the patient appears healthy, rosy skinned and yet is miserable and full of pain, congested, plethoric, or full of tough mucus.
31. When food aggravates before 11 A.M.
32. When the patient is sleepy, dull, torpid in the morning, inclined to sleep late; or if the patient rises early, she is morose, miserable, fussy, angry, dull, torpid and hard to please.
33. When the urine is fetid and green.
34. When there is a burning sensation in the membranes.
35. When there is an almost manic desire for open doors and windows.
36. When there is continual trouble with the throat, stomach and colon.
37. When the stomach is acid, resulting in gas generation, with intermittent indigestion.
38. When the feet feel hot and the patient craves very cold water over the feet and perhaps throws off the covers from the foot end of the bed at night.

39. When motion, walking, working, severe emotion and excitement produce a flow of blood to the neck and back, resulting in stiffness of those areas.
40. When there is a tendency to read sensational, trashy news.
41. When the patient quarrels quickly and afterwards cries and pleads.
42. When a patient rearranges her furniture often.
43. When a milk diet gives rise to nausea, acidity and eructations with tension in the abdominal muscles.
44. When the patient feels that she must absolutely eat or collapse, and she feels worse about an hour after eating.
45. When chills travel upward; when pain travels downward.
46. When there is internal pressure towards the body surface.
47. When the feet burn and the nerves are irritable.
48. When very strong light irritates.
49. When the patient feels neglected by their spouse or others.
50. When mental states vary like the weather in spring.
51. When ailments, symptoms and diseases are difficult to comprehend.
52. When the symptoms continually change.
53. When there is a great dislike for strangers, foreigners, heat, sultry weather, noise, vibration, disturbances, car motion, balance, gravity.
53. When there is a sense of great weariness, weakness, and lassitude, which compels the patient to lie down often.
54. When the patient misplaces things and can't find them.
55. When there is indifference to the condition of others.
56. When there are tingling, chiming, humming, or warbling noises in the ears.
57. When there is a numbness and pain from vibratory motion in cars, trains or otherwise.
58. When the heart palpitates when a patient climbs a hill, or walks up a stairway, because of a greater demand for Oxygen.
59. When there is a dropsical tendency with cold knees.
60. When there is nightly nervous perspiration on the chest.
62. When the doctor thinks that the patient's illness is nothing but a product of the imagination.
63. When the patient makes noble resolutions but violates their own resolutions as fast as they make them.
64. When odours and noise cause nausea; when fumes cause suffocation.
65. When moisture soothes and rush confuses.
66. When the patient retires in a cool dark room, bundles up their body, applies cold applications to their face and neck and hot applications to the stomach.
67. AT SUCH TIMES A DIET RICH IN SULPHUR FOOD IS NEEDED.

xvi. PRINCIPAL SULPHUR FOODS (ALPHABETICALLY ARRANGED).

1. Horseradish is very stimulating to the vital organs, skin function and to the brain. It acts as a fire, and can lead to excessive brain and nerve irritation, with extreme Sulphur symptoms. Hence, horseradish should be consumed sparingly, unless there is considerable dullness of the mind or senses.
2. The mineral Sulphur is very high in Ash Content, but is not contained in vitamins; care should therefore be taken in its consumption in drug form or as a food preservative, because in this form it is harmful to the liver, and to a great many other vital functions.

3.

BEST SULPHUR FOODS	ASH CONTENT	SULPHUR	CONTAINS VITAMINS	BETTER TO EAT
Cabbage, red	0.77	15.30	No	Raw
Carrots	1.60	11.13	Yes	Raw
Chestnuts	1.35	11.94	Yes	Raw
Coconut	1.00	5.09	Yes	Raw
Figs, dried	2.86	6.75	Yes	Raw
Milk, Human	0.45	5.95	Yes	Raw
Nuts, Almond	2.30	4.61	Yes	Raw
Oranges	0.80	5.80	In seeds	Raw
Spinach	2.10	6.90	No	Cook 3 min.

4.

SECOND BEST SULPHUR FOODS	ASH CONTENT	SULPHUR	CONTAINS VITAMINS	BETTER TO EAT
Cabbage, white	1.11	9.11	No	Raw
Cauliflower	0.83	13.00	No	Cooked
Egg Yolk	1.90	0.30	Yes	Raw
Onions	0.70	5.68	Yes	Raw
Parsnips	1.60	0.20	Destroyed	Cooked
Peaches	0.30	5.70	In stones	Raw
Radishes	0.74	6.50	Yes	Raw
Rape	0.14	1.15	In seeds	Raw/cooked

5.

THIRD BEST SULPHUR FOODS	ASH CONTENT	SULPHUR	CONTAINS VITAMINS	BETTER TO EAT
Apples	0.50	6.10	In seeds	Baked
Asparagus	0.54	6.20	Destroyed	Cooked
Brassica napus	0.90	0.40	No	Raw/cooked
Cherries, light	0.90	5.11	In seeds	Raw
Cucumbers	0.44	6.99	In seeds	Raw
Gooseberries	0.40	5.90	Yes	Raw
Grapes	0.50	5.60	In seeds	Raw
Horseradish	1.50	30.80	Yes	Raw
Potatoes	1.00	6.59	Destroyed	Baked
Shrimp	1.60	High	Destroyed	Boiled

6.xv. MAGNESIUM.

i. MAGNESIUM IN THE MINERAL AND VEGETABLE KINGDOMS.

1. Magnesium is one of the metals of the alkaline earths, and is widely distributed in organic matter. It is also a constituent of animal and vegetable tissue. Magnesium is found in many rocks, such as soapstone, talc, dolomite, augite, and others. The bitter taste of seawater and of some mineral waters is due to the Magnesium salts.
2. Dolomite is composed of Magnesium carbonate and Calcium carbonate, and of these compounds a cement is made that hardens and sets under water.

ii. MAGNESIUM, ITS NATURE AND CHARACTERISTICS.

1. The fusing point of Magnesium is 230 degrees centigrade. It is a grey-white metal having a silvery lustre, and is malleable and ductile.
2. It is light in weight, alkaline and flexible and confers the same qualities to human tissue, thus imparting alkalinity, suppleness, elasticity, leanness and pliability to tissues. It also imparts elasticity and leanness to vegetables.
3. It is a white, earthy, insoluble, absorbent, antacid, mildly cathartic and tasteless as a powder; it occurs in a free state in nature, but usually extracted from ores.
4. When Magnesium combines with Oxygen it becomes Magnesium oxide, also called Magnesia. Hydrated Magnesium carbonate is called Magnesia alba; this is used a great deal in medicine. Magnesium is the metallic base of Magnesia.
5. Magnesium is tart or pungent in taste.

iii. FUNCTIONS OR MAGNESIUM IN THE HUMAN ORGANISATION.

1. Magnesium imparts the pungent bitterness that is peculiar to Epsom salts and the combined action of Magnesium and Sulphur that provides the laxative and purgative properties to Epsom salts. In whatever food Magnesium is present, that food becomes a laxative. Magnesium is found in abundance in certain natural mineral waters such as: Pullna, Rubinat, Carlsbad, Friederickshal and Hunyadi Janos. These waters are highly laxative and purgative if taken in large quantities. These waters can affect some patients adversely. It is much better for patients to utilise laxative Magnesium containing foods if there is constipation, as inorganic Magnesium inhibits absorption in the alimentary canal, than to use mineral waters that contain inorganic Magnesium.
2. Normally about three ounces (85 grams) of Magnesium, or a little more, is present in the tissues of the body, but Magnesium is used functionally from birth to death by every human being. Physical function cannot be maintained very long without this alkaline, laxative, flexibility producing and nerve-calming element.
3. Magnesium makes the body fluids more alkaline and the tissues, tendons, muscles and nerve function more elastic. It produces flexibility to limbs and joints. It has a beneficial affect upon the bowels. It acts upon glands, serous and mucous membranes, on the nerves which control digestion and nutritional uptake, nerves of excretion and elimination, upon the generative function and indeed upon the processes of life in general.
4. Magnesium food is purifying, cool, alkaline, laxative, nerve calming and sleep producing. It is not sleep producing because of anaesthetic properties, but because it strengthens the nerve function, by counteracting body gases, toxins and acids, and autointoxication products. It is purifying to the intestines.

5. In case of poisoning from aluminium, barium, ferrous sulphate, phosphorus, muriatic acid, antimony, chloride, all sorts of Magnesium foods and even Magnesium drugs, are very efficacious. They are equally essential in cases of ptomaine poisoning. Magnesium foods prevent phosphatic deposits from forming in the joints and the solid structures, which otherwise could result in gout, arthritis and bone ailments, especially when uric acid and urea are present in tissues and fluids, when there are products of past, improperly eliminated infectious processes, or when the eliminative avenues are partly closed up, obstructed or slow.
6. Magnesium indirectly promotes brain action, by neutralising phosphorus compounds generated by strenuous brain action, which generates excessive Phosphorus consumption. It has a cooling effect upon the nervous system and upon the brain. It prevents sleeplessness because it prevents noxious acids, gases and toxins from affecting the body.
7. A Magnesium diet is preferable to the taking of hypnotics. Magnesium is sedative to the nerves. It helps in filtration, osmosis and most of the eliminative functions. It prevents congestion and the hardening processes from taking place. It increases magnetisation, alkalisiation, as well as the electrical processes that take place in the muscles.
8. Magnesium produces a beneficial effect in highly sensitive, sympathetic, yet excitable natures, in highly sentimental, high tempered people, upon erratic natures, upon highly pathetic and romantic ladies, upon all people in whom motor impulses, brain ganglia, the nervous system and the sensory nerves are overactive, hot, irritated and inflamed, or in whom the whole neurological machinery acts under high nerve tension. One of its greatest spheres of action is its ability to counter the effects of Phosphorus breakdown products.
9. Magnesium phosphate, together with Calcium phosphate, is found in small quantities in almost all tissues. Magnesium carbonate is found in small traces in the blood. Magnesium acts favourably upon pain sensation, upon the channels, organs and functions of elimination, upon certain acids, toxins, germs and gases, but not upon all aspects of these.
10. Magnesium helps to construct the white muscle and nerve fibers, which is an important functional sphere of Magnesium. Magnesium uses water and albumin to assist in the construction of these white muscle and nerve fibers.
11. Magnesia is converted by the acids in the stomach into soluble salts, which are highly laxative. Magnesia is an antidote to arsenic poisoning. Magnesium carbonate stirs up the abdominal contents, which, when the stomach is acid, results in the generation of gas and consequent disagreeable eructations, but removes indigestible products from the stomach and intestines; therefore, in times of a very acid stomach, it is a valuable vehicle to remove autointoxication products caused by a wrong diet.
12. Magnesium, like chlorine, is a cleansing, laxative, germicidal element, only in a different capacity. It is cooling to the nerves and nervous system, to the sensitive linings in cells, and to the function of perception of pain in the cerebrum.
13. Magnesium foods should be eaten liberally by all people who are highly impulsive, excitable, nervous, emotional, sensitive and hyperaesthetic.
14. Magnesium food relaxes the brain, promotes sleep, cools the liver, settles down fevers, calms nerve endings and the nervous networks, stops a certain kind of heat, soothes the generative system, stops spasmodic action of motor nerves, relieves nerve generated cramps, reduces temper, relieves pain in perineural and periosteal structures and in linings containing fine nerves capable of intense pain sensations, mainly through the neutralisation of certain acids, by destroying infection and by speeding corruptive matter out of the system.

15. Magnesium food is important when the cerebrospinal fluid has been made less viscous through the drying up effects of excessive passion, exhausting healing practices, overwork of the brain, hypnotic and other trance states, by the poison of snakes, or otherwise, thus leaving nerve and brain matter hot, dry and irritated.
16. It is important when the mind wanders, or when the patient indulges in excesses, or when he is clairvoyant, or when he is possessed by irrational moods.
17. It is important for neural and cerebral functioning, not directly but indirectly. An intense nervous system, keen perceptions of pain, great Phosphorus and Sulphur consumption, which results in large quantities of Phosphorus and Sulphur products in the body, require Magnesium food. It makes the tissues flexible, supple, and alkaline; the disposition quiet, the mind serene, the temper placid, the nerves restful, and the deportment sedate, principally by its laxative, neutralising and germicidal properties.
18. Magnesium is the most relaxing and cooling of all chemical elements.
19. Too much Magnesium over-sedates and makes the brain and the body sluggish, it also irritates the mucous membranes and deranges sexual function.
20. Magnesium is required for the following functions:
 - a. For elimination.
 - b. For bodily sanitation.
 - c. To clear up a pale, muddy complexion.
 - d. To make the brain more active.
 - e. To prevent tumours of the brain.
 - f. To provide building materials for the brain.

iv. CONSTITUTIONS IN WHICH MAGNESIUM IS INHERENTLY

1. **Excessive:** None.
2. **Deficient:** Almost all Constitutions, but especially: Exesthesic, Nervi-Motive, Neurogenic, Pathetic, Desmogenic, Marasmic, Calciferic, Isogenic, Sillevitic, Carboferic, Oxypheric, Atrophic, Medeic and Pargenic, in fact, all Constitutions where there is a great deal of excitement and brain activity.

v. SYMPTOMS WHEN MAGNESIUM IS EXCESSIVE.

1. If Magnesium is introduced in excessive quantities in drug form or perhaps even in food form, it takes vitality away from nerve matter and produces semi-anaesthetic states of the nervous system, which results in the following:
 1. Impairment of the brain;
 2. Oppression of the mind;
 3. Dulling of the nerve centres;
 4. Deadening of the nerves and perception, which results in weak mindedness;
 5. Great drowsiness in working hours and terrifying dreams when sleeping;
 6. Affects the brain and generates fear and anxiety;
 7. Blunts the perception of quantity, place, duration, distance and time;
 8. Partially loses the power of recognition and identification of people and objects;
 9. Lack of judgment and perception of the objective world or of place, duration, distance, time, quantity, form, shape and constituency;
 10. The place perception is unreliable, as are almost all perceptive brain areas;

11. Life is like a lethargic dream;
12. He abhors teasing;
13. Gives foolish answers, lack of awareness of his own answers and actions, and of the answers and actions of other people;
14. Lack of interest in life and business;
15. He warns people of future evils;
16. He imagines that fate is against him;
17. Delusions in regard to people who do not exist anymore, dead animals, blood;
18. Day dreams accompanied by horrible fears;
19. Affects the nerves in the small intestines and the nerves in the entire alimentary tract unfavorably;
20. Phosphorus and Sulphur by-products are not eliminated or possibly Magnesium has a bad effect upon the Sulphur and Phosphorus constituents of the body;
21. He complains of pressure over the orbits of the eyes;
22. He cannot study in the evening;
23. He retires early and cannot keep awake at any social gathering or business meetings;
24. He becomes sleepy as soon as the sun passes the noon meridian;
25. He falls asleep over his work;
26. He suffers from a feverish appetite, continually changes the subject in conversation, changes his preoccupation and generally acts spasmodically;
27. He has periods of gluttony and periods of aversion to food;
28. Brain work aggravates his ailment;
29. He is discontented with life;
30. He is drowsy in the afternoons, after sunset, in the morning and after vigorous brain activity;
31. Concentration is impossible;
32. He is restless at night, not in nerve but in muscle;
33. He wakes up and falls asleep again and again;
34. His urinary system is very active during sleep but urination is difficult;
35. Public opinion does not bother him, but teasing embitters him;
36. The communication fibers of the brain and the white muscle fibers are disturbed;
37. Most of the functions are dulled.

vi. SYMPTOMS WHEN MAGNESIUM IS DEFICIENT.

1. The nervous system is in a state of dynamic intensity;
2. The patient is very restless, full of eagerness to work and industriousness;
3. He is too energetic and sees new possibilities in every enterprise;
4. Exhaustion in physical and mental activities, cerebral neurasthenia, perhaps cerebellar exhaustion;
5. The nervous system and brain are in a state of excessive nervous tension;
6. Headaches develop when rushed;
7. Near-sightedness, due to brain dysfunction, glasses do not correct the deficiency in sight;
8. She forgets details about books, accounts, notes;
9. Horse riding makes her feel better;
10. Wild thunderstorms, the rush of water, the cry of a baby are soothing to her;
11. She says she feels as though her skull is broken and that the top of her head has pain like a tooth ache;
12. She is subject to haemorrhages and develops freckles even in winter;
13. Red colours cause the eyes to ache;
14. Dark blue colours depress the mind;

15. White has a soothing affect upon the eyes and nerves;
16. The skin is very sensitive;
17. The skin is like it is electrically charged, and appears to be used in breathing;
18. She cannot wear woolen or heavy clothes, or she feels like she is suffocating even in cold weather;
19. Her head gets so hot she wants her hair cut short, or she splashes cold water on her head or applies a cold compress;
20. Her scalp and skin are gritty;
21. She is sensitive to electrical currents and batteries;
22. If she goes near an electric heater, or a generator or electric motor, she feels worse;
23. Her teeth are affected by the electric current of the telephone;
24. If she lives or lingers near strong electrical currents, she suffers from toothache and growths under the teeth;
25. Tobacco smoke and odours make her sick;
26. She feels as though something terrible, harmful, or fatal is going to happen;
27. She is sensitive to weather changes;
28. Her tissues and blood become acid during a storm;
29. It feels as though the mental machinery is so tight that the wheels cannot move;
30. As the evening approaches she becomes thirsty and she craves acid foods and drinks;
31. Nerve and brain matter is dry in the Magnesium deficient patient;
32. The Magnesium deficient patient may be forced to suddenly leave the dinner table because of nausea, and vomit;
33. The shoulder muscles are charges with blood so that they become stiff;
34. She is nervous and neuralgic;
35. Vibratory motion of trains, cars, vehicles produces an accumulation of blood at the base of the brain.
36. She gets excited and loses her temper;
37. Thoughts vanish, intentions fade away, wishes and desires are spasmodic, love is capricious, purposes are impermanent, habits are wavering, appetite is fitful, the mind is full of imagination, the disposition is unstable, character mutable, conduct fickle, wishes abnormal, attention volatile, inclinations inconstant, thoughts fanciful, sentiments captious, feelings whimsical, nerve transition fitful;
38. She is fearful, fastidious, easily offended, premonitory, full of omens, full of wants but does not know what these wants are;
39. She may want to eat clay (pica);
40. Anger appears rapidly and disappears just as quickly;
41. She complains of an earthy taste in the mouth;
42. She stumbles and falls easily;
43. A very typical Magnesium deficiency symptom is that strong pressure to the painful nerve eases the pain and quiets the pain centres in the brain, and may stop the pain completely for some time, even when strong analgesics fail.

vii. HOW TO REDUCE MAGNESIUM IN THE BODY.

1. **Foods:** Omit food and drugs rich in Magnesium. No food and chemicals counteract Magnesium in the body except albumin, and albumin cannot be efficiently utilised except by heavy labourers.
2. **Climate:** No special affect. Hot, dry climate may possibly reduce an excess of Magnesium.
3. **Mental Exercise:** Use the intellect and the emotions very actively, especially the emotions.
4. **Physical Exercise:** No special affect.

viii. HOW TO INCREASE MAGNESIUM IN THE BODY.

1. **Foods:** Eat Magnesium rich foods. Omit high albumin foods.
2. **Climate:** Live in a cool, soothing, high ozone climate in the hills at a medium altitude.
3. **Mental Exercise:** Stop using the intellect and the emotions and the passions.
4. **Physical Exercise:** No special affect, except perhaps by light and easy exercises.

ix. PEOPLE WHO REQUIRE MAGNESIUM FOODS

1. **In abundance:** All Constitutions, especially all excitable people, hot-headed people, highly strung people, nervous and emotional people, all hard brain workers, all intense temperaments.
2. **Very little:** Nitropheric people, also easygoing Isogenic people who are very dark in complexion.

x. INFLUENCE OF AN EXCESSIVE AMOUNT OF MAGNESIUM FOODS ON

1. **Health:** Irritation of the mucous membranes, derangement of metabolism, disturbance of menstruation, colic, spasmodic functions. It is almost impossible to eat Magnesium food to excess except where Magnesium food is selected and eaten in combination with foods rich in no other chemicals.
2. **Disposition:** Drowsy, dreamy, lethargic, listless, full of inertia, ill-humoured.

xi. INFLUENCE OF A DEFICIENT AMOUNT OF MAGNESIUM FOODS ON

1. **Health:** It results in ill health.
2. **Disposition:** The disposition becomes fussy, nervous, irritated; the nerve centres erratic, nerves irritated; the emotions hypersensitive, the digestive tract full of disease organisms, linings become inflamed, angry pimples appear, urine becomes hot, red, turbid, smoky, and loaded with Phosphorus; it results in darting pains, colic, membranous contraction, nervous cramps, psychosomatic problems; hysterical, sensational, nervous tendencies; irrational actions, carbonic or acid nerves like those seen in Dementia or Paranoia, which are caused by defective communication in the white fibers in the brain.

xii. DISEASE TENDENCIES OF PEOPLE IN WHOM MAGNESIUM IS IN EXCESS.

1. Nervous tissue becomes unsettled almost to the point of having nerve action blocked, because the white nerve fibers are not able to transmit mental, motor and sensory impulses and sensations.
2. White brain matter becomes affected, and leaves the patient in a weak minded condition with many delusions, which may result in Paranoia.
3. It may develop into atrophy of the brain, shrinking of the cerebral meninges, loss of perception, reason, sequence of expression, self-direction and control.
4. It may result in hypertrophy, intestinal adhesions and gas generation that results in unpleasant eructations.
5. The whole digestive tract may become irritated and phlegmatic, which at first causes abdominal obesity and later in great emaciation.

6. Fluids and blood may be drawn from the tissues, resulting in the drinking excess fluids and in the rushing of vital nutritional substances through the intestines.
7. It results in weakness and relaxation of the digestive tract and muscles, and in sluggishness of cell activity and the general functions.
8. It may irritate and deaden the menstrual process.
9. It may result in paralysis of mental function, nausea, excessive beer drinking, alcoholic hypertrophy, disturbance of brain function and even Dementia.

xiii. CHEMICALS IN FOOD THAT PEOPLE WITH EXCESS MAGNESIUM SHOULD

1. **Eat:** Any kind of food that has a constipating, overheating affect.
2. **Avoid:** Foods containing Magnesium and also drugs containing Magnesium.
- 3.

xiv. HELPFUL HINTS.

1. Epsom salts is another name for Magnesium sulphate; it has a powerful effect upon accumulated autointoxication products in the intestines.
2. Epsom salts increase the action of the intestines by attracting fluids from the intestinal structure and contents, and by the speedy expulsion of fluids, germs, autotoxic products and excreta from the intestines. Perhaps no other salts have a more beneficial affect upon the colon if used in a warm water enema and injected into the colon for purposes of colonic irrigation. If people will eat those foods that are rich in Magnesium they do not need to take Epsom salts, nor Citrate of Magnesia.
3. If too large an amount of Citrate of Magnesia is drunk at a time when the digestive tract is not acid, it is very likely to coat the entire digestive tract with an earthy coating; but if the digestive tract is in an acid condition, it has no such effect.
4. Excess of Magnesium results in deficient communication between cerebral impulses.
5. Patients who are obese become more obese under the influence of Magnesium foods and drugs, and patients who are lean become leaner under the influence of an excessive intake of Magnesium foods and drinks.
6. People who drink beer or liquor to excess always suffer from alcoholic hypertrophy and from intestinal adhesions.
7. Vibratory motion as that in a train produces neuralgia, trembling of the nerves, toothache and other pains in a Magnesium deficient patient.
8. Temperature changes, great excitement, outbursts of temper, gases in the atmosphere or in the room, smoke, fumes, drafts or artificial heating will eventually always cause severe neuralgia.
9. The whole nervous system is in a state of excess tension.
10. Walking results weakness of the back and in back pain.
11. When the patient is jarred or lies in one position or stretches or bends down to lift something heavy, it irritates the nerves and nerve centres in the viscera.
12. Magnesium deficiency is closely related to the generation of vicious, ill-tempered and defective children, with a strong neurotic and psychotic tendency.

xv. WHEN A MAGNESIUM DIET IS NEEDED.

1. When the digestive tract has been inflated by an army of abnormal bacteria and accumulated waste matter;
2. When catarrhal discharges are tenacious;
3. When the flatus or the stool has a sour odour;
4. When the complexion is pale, muddy and sickly;
5. When the patient is emaciated;
6. When the blood has become acid;
7. When jaundice weakens the ambitious brain worker;
8. When children suffer during dentition;
9. When there is constipation;
10. When phosphatic products and body gases block the intestines and form gas pockets;
11. When sleeplessness is caused by bacterial toxins at work in the intestinal tract;
12. When young girls suffer from fainting, nervous conditions and headaches;
13. When ladies faint in cars, trains, or public places, or are subject to emotional outbursts;
14. When boys suffer from St. Vitus Dance, or dysentery, especially during the sultry months of July and August.
15. When heat plays havoc with nerve and brain matter;
16. When large quantities of Phosphorus by-products are released;
17. When the blood becomes overheated so that the cells of the spinal cord and brain tissue become overheated, resulting in heatstroke or sunstroke;
18. When there is a tendency to peritonitis, intestinal stasis or cholera;
19. When secretions are acrid;
20. When nerves and brains are in a feverish condition;
21. When nerves are erratic when a large amount of mental work is done, during passion, fear or grief;
22. When toothache comes and goes;
23. When there is a craving for earthy, metallic substances;
24. When there is an earthy taste in the throat;
25. When the neck and the shoulder muscles ache;
26. When rest and recuperation are needed after becoming overexcited;
27. When details about the house, books, systems, orders, notes or music are constantly forgotten;
28. When the expectoration is yellow;
29. When the menstruation is late, with a scanty flow, accompanied by sore throat, backache, chills, weakness, and coryza;
30. When pains are relieved by pressure;
31. When the white of the eye is yellow;
32. When there is a tendency to hardening of the liver;
33. When there is weakness of the abdominal muscles;
34. When there is a strong tendency to infection or a fear of snakes. When there is sensitivity to heat, electric currents, batteries, electrical equipment, heaters, metals, artificial heat, animals and people, or to the electrical tension in the atmosphere;
35. When gas is generated mostly in the evening;
36. When there is a swimming sensation in the head;
37. When there are aching sensations all over;
38. When the perspiration is oily;
39. When the patient goes to sleep over his work, or when he sees visions before falling asleep;
40. When he is very sensitive to static electricity;
41. When there is intolerance to the pressure from clothes;
42. When there is much anticipation of events;
43. When the complexion alternates between red, pale and earthy;
44. When the fingers and eyes are restless;
45. When ordinary summer heat creates great distress;

46. When there is sudden increase in blood pressure on rising from a recumbent position;
47. When there are burning vesicles in the mouth;
48. When there is a tendency to vomiting at meals or when riding in a car or train;
49. When the patient feels chilly after relaxing into a warm bed or into a warm room;
50. When the patient appears to fall, or feels like he may fall when he is standing still;
51. When creepy feelings or tired feelings creep over the patient when he is sitting still;
52. When symptoms and ailments are aggravated at night;
53. When symptoms and ailments, or pain sensations, reach a climax about once every six weeks;
54. When there is a craving for strong coffee, motion, pleasing work, exercise, breezy air, cold sponge baths, ducking the head into cold water or placing the head on the cool ground, or a liking for severe thunderstorms, or fondness for running water, or when the cry of babies, bright surroundings, light colours, or perhaps magnetic massage, are pleasurable to the patient;
55. When strong pressure has a soothing, resting, relieving affect upon the patient;
56. When there is intolerance to woolen clothes, fur or heavy fabrics;
57. When there is a strong desire for tart fruits or foods;
58. When the patient must become physically fit before they can feel better;
59. When there is a tendency to diarrhoea in autumn and in spring;
60. When the neck and jaw muscles are jerky;
61. When the pain is relieved by walking in the fresh air;
62. When there is a strong tendency to neuralgia;
63. When the baby clenches his fist when breathing in and pushes his fist forward and upward, or perhaps inserts the whole fist into the mouth;
64. When a patient feels he must protect himself against electrical currents;
65. When there is a tendency to frequent urination with a burning sensation after urination;
66. When the urine has a yellow paleness and there is indican in the urine;
67. When the patient faints after he eats because of gas pressure in the stomach;
68. When the thumb feels weak and numb;
69. When the patient sleeps with his eyes half open, and there are jerky movements in his muscles;
70. AT ALL SUCH TIMES A MAGNESIUM DIET IS IMPERATIVE

xvi. PRINCIPAL MAGNESIUM FOODS (ALPHABETICALLY ARRANGED).

1. Do not use Mineral water or Sea Water, as the Magnesium in these is inorganic;
2. Eat these foods without sugar, as sugar leaches Magnesium, and develops acid and gas.
3. Nuts should not be eaten by themselves, but should be ground and sprinkled on other foods and eaten at meals.

4.

BEST MAGNESIUM FOODS	ASH CONTENT	CONTAINS MAGNESIUM	VITAMINS	BETTER TO EAT
Cheese, Goat's whey	Very High	2.48	Destroyed	Raw
Citric fruits	Varies	Varies	In seeds	Raw
Coconut	1.00	9.40	Yes	Raw
Egg Yolk	1.90	1.10	Yes	Raw
Figs	2.66	9.21	Yes	Raw
Prunes	0.66	5.50	In stones	Raw
Grapefruit	Low	Very high	In seeds	Raw
Milk, Goats	1.74	2.48	Yes	Raw
Nuts:				
Almonds	3.10	17.66	Yes	Raw + salted
Beechnuts	3.86	14.15	Yes	Raw
Chestnuts	3.00	7.47	Yes	Raw
Walnuts	2.13	13.00	Yes	Raw
Oranges	0.80	5.90	In seeds	Raw
Rye	1.81	11.22	Destroyed	Cooked/baked
Spinach	2.10	6.40	Destroyed	Cook 3 mins

5.

SECOND BEST MAGNESIUM FOODS	ASH CONTENT	CONTAINS MAGNESIUM	VITAMINS	BETTER TO EAT
Barley	2.70	12.50	Destroyed	Cooked/baked
Beans	3.26	7.15	Destroyed	Cooked/baked
Cherries	0.90	4.90	In seeds	Raw
Corn	1.51	15.50	Destroyed	Cooked/baked
Fish: Smelt, Sole,				
Whiting	1.60	3.90	No	Broiled
Gooseberries	0.40	5.85	In seeds	Raw
Meat: Frogs legs,				
lamb's shoulder,				
tender chicken	1.10	3.21	Destroyed	Broiled
Oats	3.02	7.10	Destroyed	Cooked/baked
Peaches	0.30	5.20	In stones	Raw/cooked
Peas	2.58	8.00	Destroyed	Cooked
Prunes	0.78	4.98	In stones	Raw/cooked
Shredded Wheat				As
Biscuit	1.65	11.30	Perhaps	manufactured
Wheat:				
Flour	0.70	9.10	Destroyed	Cooked/baked
Whole	2.00	12.10	Destroyed	Cooked/baked

6.

THIRD BEST MAGNESIUM FOODS	ASH CONTENT	CONTAINS MAGNESIUM	VITAMINS	BETTER TO EAT
Apples	0.50	8.75	In seeds	Raw/baked
Grapes	0.50	4.20	In seeds	Raw + seeds
Rice Flour	8.90	7.90	Destroyed	Cooked/baked

6.xvi. PHOSPHORUS.

i. PHOSPHORUS IN THE MINERAL AND VEGETABLE KINGDOMS.

1. Phosphorus is common in some rocks, in fertile soil, in animal and vegetable tissues and in guano. Phosphates have an important function in mineral formation and plant growth. The most important Phosphates in life processes are: Sodium phosphate and magnesium phosphate. Phosphatic manures are often used to replenish soils and consist of bone phosphate mixed with other phosphates. Metallic Phosphorus compounds are often called phosphides.
2. Phosphate of lime, a type of calcareous earth is used for improving and fertilising the soil for crops and plants. Phosphoric acid is present in the soil, primarily in combination with lime and phosphate of lime in the form of phosphates; these phosphates are in turn mainly found in those plant parts that are rich in protoplasm.
3. A good phosphate supply is needed to promote Nitrogen assimilation in plants. Phosphorus is found in the casein of milk, in egg yolk, in the hulls of wheat, corn, barley, oats and buckwheat, which hulls are usually discarded by the miller, to be fed to pigs and horses, which paradoxically need less Phosphorus than man.
4. It is difficult for a weak stomach to digest oatmeal, wheat bread made of whole wheat, and other heavy foods, but for people whose digestion is poor, it is easier to digest and extract Phosphorus from some easily digestible grains and vegetables, from fish and from properly prepared fish broths.
5. Phosphorus is found in decayed wood, which changes to soil, rocks, etc; then into the vegetable kingdom, then through the food chain into brain tissue.

ii. PHOSPHORUS, ITS NATURE AND CHARACTERISTICS.

1. Chemical studies in the laboratory have discovered that Phosphorus is a nonmetallic, highly poisonous, yellowish white and somewhat waxy element; that its melting point is between 42 and 44 degrees centigrade; that it vaporises at 288 degrees centigrade; and that it does not conduct electricity. It is flammable and burns with a white flame. It undergoes slow combustion when exposed to air in an ordinary room temperature. It emits a white vapour and appears luminous in the dark.
2. Phosphorus must be stored under water to prevent its combustion in the air. It is insoluble in water and slightly soluble in alcohol.
3. Through medical studies we learn that it is one of the most powerful stimulants known; that it is one of the most diffusible substances and also that it is extremely poisonous. Phosphorus is allotropic; by keeping Phosphorus for a long time below its boiling point, it can be precipitated in another form.
4. There is another form called red Phosphorus. This form of Phosphorus has very different properties to ordinary Phosphorus, being red, brittle, hard, non-poisonous, and not easily combustible. If red Phosphorus is heated to 260 degrees centigrade, it changes back into the ordinary form of Phosphorus and burns with a brilliant flame.
5. Phosphorus was called Lucifer in the past, which is a Latin word which means Light Bearer. The word Phosphorus is the Greek word for this element and also means bearer of light.
6. Many Phosphorus containing objects have a property called phosphorescence, which is a luminosity produced by Phosphorus. Putrefying fish often contain such quantities of Phosphorus that they appear luminous at night. The glowworm is so deeply laden with Phosphorus that it produces a beautiful light in the dark.

Chemists tell us that the fireflies of the West Indies produce a glow bright enough to enable one to read at night by their light because of their high charge of Phosphorus. Multitudes of microscopic organisms which inhabit the seas, swamps, rivers and bogs contain so much Phosphorus that it often appears that they seem to be on fire with lurid flames which leap to and fro. In graveyards and on some boats, where Phosphorus bearing organisms and fungi are plentiful, many strange light effects occur.

7. This luminosity of Phosphorus is seen in animals, some of which possess more phosphorescence than others, such as for example the jellyfish, fungi, glowworms, earthworms, fresh water worms and marine worms; and also fish in the ocean depths, some of which appear as strings of phosphorescent lights in their watery home.
8. Phosphorus is the element of intelligent life.
9. Phosphorus has an affinity for Sulphur and readily combines with it; it is used with Sulphur in matches.

iii. FUNCTIONS OF PHOSPHORUS IN THE HUMAN ORGANISATION.

1. The use and function of Phosphorus in the human body is more important than the study of the chemistry of Phosphorus as manifested in mineral and vegetable kingdoms. Phosphorus is normally present in the body in a quantity of about two pounds (about one kilogram); almost enough to cause fatal poisoning of one quarter of all the people in Chicago (pop. 1921 approx. 1.5 million). And yet, although one single man has that much poison in his brain and body, he lives and thrives. Phosphorus is directly associated with the cell nucleus. It is present in the fluid and solid tissues in the form of Potassium phosphate. In the bones it is found as Calcium phosphate.
2. Phosphorus is especially important in the nutrition of nerve tissue and helps to increase bone density. It acts upon the sensory nerves, the sensory areas in the brain, the nerve centres, the sympathetic nervous system, the nerves and nerve distribution and ganglia in general and especially upon the nerves of the heart. It has, when present in adequate amounts, a stimulating effect upon the generative organs and upon the bone production.
3. Phosphorus is essential to the higher intellectual functions, for the idealistic, altruistic, religious and psychic feelings, for the brain's subjective functions, for the physical senses, especially taste and touch.
4. Phosphorus, when associated with the stronger elements, stimulates the tissues to greater metabolic action.
5. Phosphorus is the element of thought, emotion and intelligence. The Phosphorus element belongs to the studious man. When we think we consume Phosphorus. The more we think the more Phosphorus we consume and the more work we throw upon the liver.
6. After an orator has captivated his audience by his display of metaphor; after a philosopher has used his brain in reasoning, writing, thinking and teaching, and investigation; after a musician has fascinated his audience with the art of his music; after any intellectual effort, any emotion, sentiment, passion, appetite, or all brain action, there are greater quantities of Phosphorus in the urine. This indicates that Phosphorus consumption in the brain has been greater during processes of cerebration. Phosphorus is a bone and brain worker. It helps to build bone, to repair bone, to nourish the brain and to feed nerves.
7. It stimulates bone production. When there is a lack of Phosphorus in the bones, bone tissue becomes soft and gelatinous, instead of being hard, dense, compact and elastic. Phosphorus increases the number of the red blood corpuscles. This does not mean that the red corpuscles are made of Phosphorus. It simply means that Phosphorus has an indirect effect upon the manufacture of the red blood corpuscles. Phosphorus improves tissue nutrition at large.

- If there is a lack of Phosphorus in the body, the metabolism suffers and health cannot be maintained for very long.
8. When bone tissues become soft, and there is a tendency to rickets; it is an indication that Phosphorus is needed in the body, as well as Calcium and other mineral salts. Phosphorus performs an important function in the mucous membranes by its tonic action upon these.
 9. Without Phosphorus the brain decays and intelligence leaves. Lack of Phosphorus leads to sterility, brain softening, neuralgia and pus production. The intelligence soon leaves and the patient slips into a state of unconsciousness. Nor can Phosphorus be withheld from the diet for any length of time and subsequently be supplied without serious consequences.
 10. A child who is going to school is utilising brain Phosphorus very strongly. If adequate Phosphorus is not supplied, that child will soon suffer from brain weakness. No amount of tuition can help such a child.
 11. Ammonio-magnesium phosphate appears in the urine when a patient suffers from dyspepsia, alkaline fermentation, or cystitis. One can be sure, that if a child is supplied an inadequate amount of Phosphorus, or if the child's system cannot assimilate Phosphorus, that disorders of some kind will appear.
 12. Leucine and Tyrosine always appear in the urine when a patient suffers from Phosphorus poisoning, or from yellow atrophy of the liver, or from feverish (hot) degeneration of liver tissue.
 13. Lecithin is a main constituent of egg yolk. Lecithin is a complex lipid that is widely distributed throughout the human body and in some animals. It is found mainly in bile, milk, semen, egg yolk, nerve issue, red blood corpuscles, serous fluids, lymph and pus. It is one of the constituents of bile that holds bile salts and fats in solution.
 14. Lecithin is composed of Carbon, Hydrogen and Nitrogen, but contains also Oxygen, Fluorine, Iron, Sulphur, Calcium, Phosphorus and a nerve lipid called neurol or glycerophosphoric acid, and also a vitamin called Choline. If the diet is lacking in the vitamins, neurol, Phosphorus, Oxygen, Sulphur and certain essential nerve salts, then lecithin cannot be manufactured.
 15. Lack of the lecithin in body tissues causes impotence, atrophy of the nerves, degeneration of brain function, intellectual decline, pus formation and general physical degeneration. If adequate Phosphorus is not present in body tissues, lecithin cannot be formed. If Phosphorus is withheld from the diet, lecithin is not manufactured for the brain and nerves. This results in neurasthenia, mental degeneration and wasting of the body.
 16. The egg yolk contains the vital principle essential for the creation of life, sometimes called the "vitellus". The vitellus is a nucleoprotein, a considerable proportion of which is composed of Phosphorus.
 17. If the phosphorus part of the egg yolk is absent, or if the Phosphorus part in the vitellus is lacking, either in the egg yolk or in the creative principle of man, a chick could not hatch nor could a baby be born. Phosphorus has a great deal to do with generative life and growth. Phosphorus stimulates life to unfoldment in and through the formative life processes.
 18. The chemical composition of white blood cells has been inferred from an analysis of pus cells that are identical and also from lymphocytes from the lymph glands. White blood cells are about ninety percent water, while the remainder consists mainly of proteins, of which nucleoproteins and cell globulins are the most abundant. These two are characterised by the presence of a considerable quantity of Phosphorus, amounting to as much as ten percent.
 19. Lecithin, fat, glycogen and also various phosphates are moreover present in white blood cells. Phosphorus is here in demand as elsewhere, and if not supplied results in lowered metabolism and poor immune function.

20. Phosphorus is the agent of life and growth. It is the element of luminosity. Phosphorus affects the vital functions and is essential in plant growth. It is an important element in fish and it is therefore found in large amounts in their flesh; it increases the generation of muscular electricity in animals. In man Phosphorus favours the same processes and also the higher cerebral functions. When it acts mainly in a person's muscles, he becomes more electrical.
21. In some types of people the electrical quality of phosphorus acts principally in the brain and nerves and less in the tissues and they become more magnetic. As long as a man is alive, his fingers appear luminous when held against strong light; but when life has gone, the bones of the fingers appear dark.
22. Phosphorus evidently helps to keep a man's body and soul together, the animals' life and body together, and plants' life force and matter together.
23. Phosphorus has much to do with intuition, dreams, mental activity, the generation of mental images, physical sense perception, sensory perception, the ability to generate inventive ideas, obsession, delusion, and many parapsychological phenomena.
24. If Phosphorus were low, life would be operating under low pressure.
25. Life could not organise substance for material growth and feeling. Phosphorus is one of the essential elements of organogenesis.
26. The higher forms of organic life would be impossible without normal quantities of Phosphorus and Sulphur.
27. Every thought and emotion breaks down phosphorus. Some mental (Phosphorus) people are unusual; many of them have bad habits, are not normal, and not practical.
28. Phosphorus acts on the higher qualities of man. A person dies or goes insane if temperature of brain reaches 44 degrees, because Phosphorus substances in the body change their composition. Sunstroke is the result of overheating of the brain, hence, Mental Primary Constitutional types should avoid heat, especially a hot sun.
29. Phosphorus is electricity at work in the muscles and in the world.
30. Phosphorus works on the brain and nerves, and with the subjective and unconscious mind.

iv. CONSTITUTIONS IN WHICH PHOSPHORUS IS INHERENTLY

1. **Excessive:** Neurogenic.
2. **Deficient:** Carboferic, especially in a physical sense; Atrophic, because Phosphorus is used in excess in the brain, therefore it is deficient in a large number of functions. Phosphorus is deficient in all children and adults whose mental functions appear deficient.

v. SYMPTOMS WHEN PHOSPHORUS IS EXCESSIVE.

1. It is excessive in Neurogenic people, hence they always crave excitement. They are extravagant and spend money foolishly. They lack judgment in economics and the practical aspects of life.
2. They argue that thoughts are things. They take a great interest in mental suggestion and in religious and mystical healing. Suggestion has a remarkable effect upon their physique, disorders, symptoms and habits. They say, "Talk health and health is yours", "Talk success and it comes to you", "Think of disease and it overtakes you". They are interested in speculative philosophy. Their imagination is lively. They are enthusiastic idealists. They have faith in the future, in divine assistance and in mental suggestion, but have no faith in work, effort, diet, etc.
3. They are idealistic fanatics and enthusiasts. They have more ambition and optimism than strength and power. They become somnambulists or sleep walkers.

Their brains work in Latin, Greek and mathematics when their eyes are asleep. Their subjective minds seem to be awake, while their muscles, nerves and objective mind is locked in slumber.

4. They imagine themselves to be under the influence of invisible forces.
5. Their foreheads are hot; feet and hands cold and their nerves are irritated. Their minds are overactive, but their will power, power of decision, practical judgement and ability to concentrate are weak and unreliable.
6. They are excitable. Their excitable moods are followed by faintness. Their mental attitudes are extreme, varying, sudden, and spasmodic. Hope and expectation are excessive. Laughter, hilarity, optimism and speculation are also excessive.
7. They think they know more than anyone else, and they argue about it, especially when it is a question of theory, doctrines, creeds, philosophy, mystical ideas, esoteric philosophies, religion and strange and outlandish beliefs.
8. Their religion is dogmatism and idealism.
9. They may imagine that everything around them is false, insignificant and inferior.
10. They talk about "The Great Unknown", about "The magnetism in things" and about "The Spirit Essence".
11. They despise a practical life, money matters and purposeful pursuits.
12. They are almost boneless.
13. They are lively, remarkably responsive, wide-awake, quick to understand and to learn, but equally quick to forget.
14. Their feet, eyes, arms, fingers, head and senses are restless and the tongue is busy.
15. They sigh for other worlds, and would be perfectly willing to go beyond the clouds and live in the ether, clouds and moonshine.
16. They would rather build a house with thoughts than with mortar, bricks, stones and wood or steel.
17. When they are children, they grow rapidly upward, but never outward.
18. They are restless in movement, spasmodic in tendencies.
19. They think that work is degrading, and that the development of doctrines and theories is the loftiest calling in life.
20. They take deep interest in the sky, in supernatural beings, celestial phenomena, in the habits of migratory birds, in airships, aircraft, space travel, aeronautic apparatus, submarines, speed and motion, altitude and space; aviation, invention, modernism, revelation, adventure, parapsychology and idealistic philosophy.
21. Their muscles are too slender.
22. They imagine that they can think themselves wealthy, that they can heal a broken bone by thought, that they can cure themselves by faith, that they can make prosperity walk into their homes by mere thinking.
23. They have more faith in thought than in science, work, business and effort.
24. Excess Phosphorus:
 - a. Causes imagination (psychological).
 - b. Stimulates the generation of strong intuitive impulses.
 - c. Over-inspiration in religion, etc.
 - d. Get angry, crazy, or excitable if aroused.
25. Oxidation is slow in Phosphorus people. The greater the consumption of Phosphorus, the lower the oxidation.

vi. SYMPTOMS WHEN PHOSPHORUS IS DEFICIENT.

1. Low oxidation in the tissues; chilliness produces hunger;
2. When they come to the breakfast table, their appetite leaves them;
3. They have strong desires for cold, icy, stimulating and refreshing things;
4. Poor appetite alternates with great hunger;
5. Weakness of the sexual system;

6. Changes of position increase nerve pain;
7. They feel as though they cannot use their brain without getting a headache;
8. Excitement, or use of the brain, results in anxiety and uneasy sensations in the epigastric region;
9. News weakens them;
10. They lack will power, self direction, power of control, executive power;
11. Their excitable moods are followed by faintness and nervous collapse;
12. They are so involved with their own ailments that they manifest great indifference towards others, they always talk and think about themselves;
13. Their mental attitudes vary, changing from tears to laughter, from pessimism to talkativeness, from optimism to great despondency;
14. They imagine danger to themselves from things below them, above them, or fear that something is hidden somewhere;
15. The heart, the disposition, the nerves and the brain cells are adversely affected by lightning displays in the sky; every Phosphorus deficient person prefers to hide away at such a time and the heart thumps and pulse races;
16. They have no courage, no will power, no power of decision, no desire for action, no spirit of enterprise;
17. They grope for ideas, but their minds cannot act;
18. They sink into a mental chaos from which they cannot easily emerge;
19. They look into the mirror and see a hundred little creases in their face;
20. They appear aged beyond their years.
21. They are drowsy, mentally dull and wakeful during the day, and afraid in the dark.
22. They are as timid as a child, prone to take a gloomy view of themselves and their own condition.
23. They are helpless prey to an awful fear, which seems to fill their brains, nerves and blood;
24. They cannot tolerate the clamour of trains, the rush and noise of cars, the din of machinery, the clank of metals, the noise of aircraft, the fuss of children, babies crying, customers rushing or the scuffle of passengers;
25. They crave peace and quiet.
26. They become disgusted with the world;
27. They may take a notion to live in the forest away from society and live like a hermit; although they may be high society celebrities when they feel well and things are going well for them;
28. They always think of imaginary troubles;
29. They are extremely sensitive of their own imperfections;
30. The mind is sick, nerves are starved, brain matter is toxic and nerve substance acid;
31. The nerves seem to deflate when criticised, blamed or scolded, and this causes further exhaustion;
32. There is a morbid fear of people;
33. She cries easily; she is weak, timid and unable to provide her own needs;
34. They feel that they are the weakest of the weak, and yet they are proud;
35. Some parts of the body may seem half paralysed;
36. If the physician asks them to put out the tongue, they may not have the power to do so;
37. Anything unfavorable, dark, troublesome or noisy, has a bad effect on them;
38. Morbidity takes possession of the Phosphorus deficient;
39. They feel as though their limbs have been dismembered;

40. The mind and nerves are in a state of morbidity, caused by Phosphorus by-products, acidity in the nerves and toxic substances in brain and tissues;
41. Phosphorus by-products are evidently retained because of the lack of renewable Phosphorus in the system, the resulting acidity and auto-intoxication makes a Phosphorus patient so morbid and forlorn when sick;
42. The hair becomes grey at the roots; the person becomes impatient, nervous and filled with fear and may collapse;
43. Intellectual people are liable to become scrofulous because they are unable to take up oxygen;
44. Phosphorus people like to go up in the air, while of the Osseous and Vital primary constitutions like to stay on solid ground or even go down into basements;
45. A HEALTHY NEUROGENIC PERSON DOES NOT HAVE SUCH SYMPTOMS AND CHARACTERISTICS, EXCEPT IN A MODIFIED FORM, BUT DELICACY ALWAYS CHARACTERISES THE NEUROGENIC PERSON.

vii. HOW TO REDUCE PHOSPHORUS IN THE BODY.

1. **Foods:** Omit foods rich in Phosphorus.
2. **Climate:** Live in a warm, moist climate and at a low altitude.
3. **Mental Exercise:** Do not cultivate idealistic emotions.
4. **Physical Exercise:** Participate in physical and pleasing exercises, i.e. use the body, but not the brain, nor stimulate the emotions.

viii. HOW TO INCREASE PHOSPHORUS IN THE BODY.

1. **Foods:** Eat foods rich in Phosphorus.
2. **Climate:** Live in the hills where the climate is cool and refreshing, and where there is plenty of ozone in the atmosphere.
3. **Mental Exercise:** Cultivate normal but not excessive idealistic emotions.
5. **Physical Exercise:** Will not increase Phosphorus consumption in the body, unless the exercises are slow and prolonged so that they flex and affect the bones.

ix. PEOPLE WHO REQUIRE PHOSPHORUS FOODS

1. **In abundance:** Intellectually slow and deficient people, Atrophic people, people who suffer from sterility or impotence, people who are low in vitality, people who are using their emotions or their brains excessively, students, lawyers, preachers, musicians, orators; in fact all intellectual and idealistic people, because they use their brains and burn up Phosphorus in the brain, and thus rob the blood and the body of Phosphorus which is needed in body tissue.
2. **Very little:** Nearly all people are in need of Phosphorus, even Neurogenic people who tend to have an excessive Phosphorus consumption. In them the Phosphorus is burned up in the brain and nerves rather than in the tissues. This robs the tissues of phosphorus and weakens them.

x. INFLUENCE OF AN EXCESSIVE AMOUNT OF PHOSPHORUS FOODS ON

1. **Health:** The influence is favourable until excessive, when it results in disease.
2. **Disposition:** The disposition becomes morbid, the nerves depressed, and the mind impractical.

xi. INFLUENCE OF A DEFICIENT AMOUNT OF PHOSPHORUS FOODS ON

1. **Health:** It results in Atrophic states of brain, nerves and body, perhaps even in pus formation, tuberculosis, or some pus generating disease.
2. **Disposition:** The mind is too intellectual, bright and genius-like; the nerves are excessively sensitive; there is a nervous and emotionally sensitive disposition.

xii. DISEASE TENDENCIES OF PEOPLE IN WHOM PHOSPHORUS IS IN EXCESS

1. Neurological, vital and spasmodic: This may result in fatty degeneration of the liver, fatty degeneration in the tissues, in the muscles, heart, kidneys, intestines, glands of the stomach; or in progressive emaciation, degenerative changes in connective tissue, disturbed metabolism, great tendency to paralysis, sleepwalking, neurasthenia, bronchitis, nervous diseases, haemorrhages, albuminuria, jaundice, exhaustion, neuralgia, heart disease, the withdrawal from reality, hypersensitivity of the sexual glands, delusions and delusional speech.

xiii. CHEMICALS IN FOOD THAT PEOPLE WITH EXCESS PHOSPHORUS SHOULD

1. **Eat:** Foods that are rich in Magnesium, Calcium, Fluorine, Silicon, Potassium, or in the essential salts.
2. **Avoid:** They should avoid starches, fats, sweets, and meat.

xiv. HELPFUL HINTS.

1. The Neurogenic needs a diet that is rich in lecithin, in nerve lipids, Calcium and vitamins.
2. The Neurogenic needs a cool climate, a high altitude and ozone rich air.
3. The Neurogenic needs plenty of sleep and rest.
4. The Neurogenic needs pleasurable recreation.
5. The Neurogenic needs a Magnesium diet to break down Phosphorus by-products.
6. The Neurogenic needs the association with Calciferic people, whether he likes them or not and he should not accuse them of being "Materialistic", as he always does.

xv. WHEN A PHOSPHORUS DIET IS NEEDED.

1. In case of neuralgia;
2. In brain degeneration;
3. In mental insufficiency or deficiency;
4. In impotence;
5. When the face is bloodless and pale;
6. When there is a dislike for exertion and work.
7. When the patient makes an effort only when excited and stimulated and collapses when the excitement is over;
8. When the patient feels that there is something that is gnawing at his vitals, or undermining his life;
9. When he appears healthy, yet feels and acts like a dying man, or appears to be the victim of his own imagination, always dreading his future and deeply concerned about his ailments.
10. When there is depression with a tendency to nightly discharges;
11. When there is prostration during the menstrual period;
12. When there is numbness in some part of the body, or in areas of the skin;
13. When there is insensibility to pain, heat or cold, or when there is a loss of control of some finger or a hand, an arm, or perhaps the tongue.
14. When there is a twitching in the muscles of the eyelids;

15. When there is a great variability in the symptoms, one follows the other, so that as one ceases the other starts;
16. When there is a dislike for the opposite sex;
17. When there is a constant tendency to be scornful;
18. When there is a dislike for consecutive brain work;
19. When there is a sensitivity to pressure;
20. When there is a hardening of wax of the ears;
21. When the skin is wax-grey or waxy and blue;
22. When sores have a dark blue, or dark green colour;
23. When there is a delicacy and weakness, perhaps an alabaster complexion in young girls or boys;
24. When there is defective bone metabolism;
25. When there are degenerative changes taking place in bones and joints with emaciation of the tissues of the arms and the legs, or even complete mental and physical decay;
26. When there is slowness in learning how to walk;
27. When the child awakens and screams with pain at night.
28. When some of the bones are enlarged and swollen;
29. When the appetite is poor;
30. When body temperature is variable;
34. When bean sized hardnesses form in the glands of the neck and other glands;
35. When the metabolism is low;
36. When the face flushes easily from excitement;
37. When the head is too large and the body is frail;
39. When the disposition is very sensitive, and the mind is too mystical;
40. AT ALL SUCH TIMES A DIET RICH IN PHOSPHORUS IS IMPERATIVE.

xvi. PRINCIPAL PHOSPHORUS FOODS (ALPHABETICALLY ARRANGED).

1.

PHOSPHORUS FOODS	ASH CONTENT	CONTAINS PHOSPHORUS	VITAMINS	BETTER TO EAT
Barley, Whole	2.70	32.80	Destroyed	Cooked/baked
Beans	3.26	38.90	Destroyed	Cooked/baked
Bran, Wheat	High	Very High	Yes	Chew raw, do not swallow
Cabbage, red	0.77	3.90	Destroyed	Cooked
Corn	1.51	45.60	Destroyed	Cooked/baked
Egg Yolk	1.10	37.60	Yes	Raw
Fish, viz: Clams, crabs, haddock, herring, lobster, oysters, salmon, trout, whiting	1.60	About 38.16	Destroyed	Baked
Lentils	3.04	33.30	Destroyed	Cooked
Meat	1.10	42.50	Yes, if raw	Raw or juiced
Milk, viz:				
Cow's	0.71	28.45	Yes	Raw
Goat's	1.74	13.78	Yes	Raw
Human	0.45	22.66	Yes	Raw
Nuts, viz:				
Almonds	3.10	43.60	Yes	(Grated and
Beechnuts	3.86	30.50	Yes	(sprinkled
Walnuts	2.03	43.70	Yes	(on foods
Oats, Whole	3.02	25.60	Destroyed	Cooked/baked
Peas	2.58	35.90	Destroyed	Cooked
Rice, Wild	1.00	53.76	Destroyed	Cooked/baked
Rye, Whole	1.81	47.70	Destroyed	Cooked/baked
Wheat, Whole	2.00	47.20	Destroyed	Cooked/baked

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CONSTITUTIONAL CHEMISTRY.

THE NEW TRACE ELEMENTS.

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7. THE NEW TRACE ELEMENTS.

CREDITS.

Although it would be difficult to give due credit to all those authorities and researches who, by their writings have contributed either directly or indirectly to the information in these notes, I would like to make special mention of V. C. Rocine D.Sc. as I was most fortunate to gain access to the original notes of his teachings and therefore was able to format the information presented below in the same concise manner as that used by him.

FORWARD.

These notes are the result of combining my own and others' more recent studies in the area of trace minerals and have been prepared as a companion to lectures and existing text to mineral therapy. These notes are not intended to comprise a concise textbook on Mineral Therapy, but are intended as a basic study guide to augment the information given in relation to the other minerals in V.C. Rocine's notes.

INTRODUCTION.

Food provides energy and materials called nutrients needed for growth and renewal of tissues. Protein, carbohydrate, and fat are the three major components of food. Vitamins and minerals are found in small amounts in food, but are just as important for normal function of the body. Fibre, found only in foods from plants, is needed for a healthy digestive system.

During digestion, large molecules of food are broken down into smaller molecules, releasing nutrients that can be absorbed into the blood stream. Carbohydrates and fat are then metabolised by the body cells to produce energy. They may also be incorporated with protein into the cell structure. Each metabolic process inside the cells is promoted by a specific enzyme and often requires the presence of a particular vitamin or mineral.

WHAT CAN GO WRONG.

Dietary deficiency of essential nutrients can lead to illness. In poorer countries, where there is a shortage of food, marasmus resulting from lack of food energy and kwashiorkor from lack of protein are common. In the developed world, however, excessive food intake, which leads to obesity, is more common. Nutritional deficiencies in developed countries result from poor food choices and usually stem from the lack of a specific vitamin or mineral such as that seen in iron deficiency anaemia.

Some nutritional deficiencies may also be caused by an inability of the body to absorb nutrients from the food (malabsorption) or to utilise them once they have been absorbed. Malabsorption may be caused by a lack of an enzyme or an abnormality of the digestive system. Errors of metabolism are often inborn and are not yet fully understood. They may be caused by failure of the body to produce the chemicals required to process nutrients for use.

WHY SUPPLEMENTS ARE USED.

Deficiencies of the kwashiorkor/marasmus type are not usually treated by drugs, but by dietary improvement, and perhaps with food supplements. Vitamin and mineral deficiencies are usually treated with appropriate supplements. Malabsorption disorders may require continued use of supplements or changes in diet. Metabolic errors are not easily treated with supplements or drugs. Dietary changes may be tried.

Obesity has been treated with appetite suppressants or low energy bulk substances. The preferred treatment includes reduction of food intake, altered eating patterns and increased exercise.

MINERALS.

Minerals are elements, which represent the simplest form of matter. Many minerals are essential in trace amounts for normal bodily processes. The body is unable to manufacture these substances itself and therefore we need to take them in through the diet. Most of the minerals are required in extremely small amounts and each individual mineral is present in one or more foods.

A balanced diet that includes a variety of different types of food is likely to contain adequate amounts of all the minerals. Inadequate intake of any mineral over an extended period can lead to symptoms of deficiency. The nature of these symptoms depends on the mineral concerned.

Recommending supplements of one or more minerals maybe due to a variety of circumstances: to prevent mineral deficiency from occurring in people considered at special risk; to treat symptoms of deficiency; and in the treatment of certain medical conditions.

WHY THEY ARE USED

i. PREVENTING DEFICIENCY.

Most people in Australia obtain sufficient quantities of minerals in their diet, and mineral supplementation is, therefore, unnecessary in most cases. People who are unsure about whether their present diet is adequate may assess a week's diet with a list of foods that are rich in minerals, and compare this with their intake. Mineral intake can often be boosted simply by increasing the quantities of fresh foods and raw fruit and vegetables in the diet.

Mineral therapy is most commonly medically prescribed for people with intestinal diseases that reduce the absorption of minerals from the diet.

Certain groups in the population are, however, at an increased risk of mineral deficiency. These include those who have an increased need for certain minerals that may not be met by dietary sources - in particular, women who are pregnant or nursing often are recommended to supplement their diet with iron. Iron enriched cereals are recommended for infants over the age of six months. The elderly who may not be eating a varied enough diet may also be at risk of mineral deficiencies. Strict vegetarians and others on restricted diets may not receive adequate amounts of all the minerals.

In addition, those fed intravenously or by stomach tube and are on artificial nutrients for prolonged periods, those suffering from disorders in which absorption of nutrients from the bowel is impaired, and those who take drugs (for example, lipid lowering drugs) which reduce mineral absorption, are usually given additional minerals.

Most mineral preparations are available without a prescription, however, it is important to seek professional advice before starting a course of mineral supplementation so that a proper assessment can be made of the individual requirements.

Mineral supplements should not be used as a general tonic to improve wellbeing - as they do not do so - nor should they be used as a substitute for a balanced diet.

ii. MINERAL DEFICIENCY.

It is rare for a diet to be completely lacking in a particular mineral. But if intake of a particular mineral is regularly lower than the body's requirements, over a period of time, the body's stores of minerals may become depleted and symptoms of a deficiency may begin to appear. In Australia gross mineral deficiency disorders are most common among vagrants, alcoholics and those on low incomes who fail to eat an adequate diet.

RISKS AND SPECIAL PRECAUTIONS.

Minerals are natural substances. Supplements containing these can be taken without risk by most people. It is however important to be careful not to exceed the recommended dose, as some minerals may accumulate in the body. Dosage needs to be carefully calculated, taking account of the degree of deficiency. Overdosage at best has no therapeutic value and at worst may incur the risk of seriously harmful effects. Preparations containing several times the recommended daily intake are best avoided. Fortunately, the amounts of each mineral contained in a given tablet are usually not large and are not likely to be harmful unless the recommended dose is greatly exceeded. Single mineral supplements can be harmful because minerals compete for absorption therefore an excess of one mineral may increase the requirements for others.

IN CLOSING - MINERALS.

Minerals are inorganic chemical elements that are not attached to a carbon atom. They participate in many biochemical and physiological processes necessary for optimum growth, development and health. There is a clear and important distinction between the two terms mineral and trace element.

If the body requires more than 100 milligrams of a mineral each day, the substance is labeled a "mineral". If the body requires less than 100 milligrams of a mineral each day, the substance is labeled a "trace element".

Many minerals are essential parts of enzymes. They also participate actively in regulation of many physiological functions, including transportation of oxygen to each of the body's 60 trillion cells, providing the stimulus for muscles to contract and in many ways guaranteeing normal function of the central nervous system. Minerals are required for growth, maintenance, repair and health of tissues and bones.

Most minerals are widely distributed in foods. Severe mineral deficiency is unusual in the Western world. Of all the essential minerals, only a few may be deficient in a typical diet. Even so, there are exceptions. Iron deficiency is common in infants, children and pregnant women. Zinc and copper deficiencies occur fairly frequently.

7i. CHROMIUM.

i. CHROMIUM IN THE MINERAL AND VEGETABLE KINGDOMS.

1. Name: Chromium.
Symbol: Cr
Atomic number: 24
Relative atomic mass: 51.996
2. Most countries have adequate levels of Chromium in their soil.
3. Generally American farming soils are deficient in Chromium.
4. Chromium toxicity can result from industrial overexposure, such as tanning, electroplating, steel making, abrasives manufacturing, cement manufacturing, diesel locomotive repairs, furniture polishing, fur processing, glass making, jewelry making, metal cleaning, oil drilling, photography, textile dyeing, wood preservative manufacturing.
5. A small organic essential compound called the glucose tolerance factor comprises Chromium; it is required to enhance the action of insulin within the body.
6. Although the above has been extracted from brewer's yeast, its complete structure and function still eludes researchers.

ii. CHROMIUM, ITS NATURE AND CHARACTERISTICS.

1. Chromium, like iron, is highly electrical.
2. When Chromium is highly positively charged, it is best absorbed and most effective in the living system.
3. Chromium is widely distributed in the tissues, although in extremely small amounts.
4. An estimated safe and adequate dietary intake for Chromium is between 50 and 200 micrograms per day.
5. Chromium exists in the blood in very minute amounts.
6. The daily average amount of Chromium absorbed by adults is between 80 to 100 micrograms.
7. NOTE: Nutritional science has yet to quantify the exact amount of Chromium present in foods; that is why there are varying amounts shown in different food source tables.
8. About one third of the population in Western society gets less than the essential intake.
9. Chromium is almost entirely removed in the refining of foods.

iii. FUNCTIONS OF CHROMIUM IN THE HUMAN ORGANISATION.

1. The total Chromium content of the adult human body is estimated at less than 6 milligrams.
2. Chromium is mainly stored in the kidneys, the spleen and the testes.
3. Trace amounts of Chromium are also found in the heart, the lungs, the pancreas and the brain.
4. Chromium is readily excreted via the kidneys.
5. Chromium is necessary for the utilisation of carbohydrate.
6. Chromium is necessary for the utilisation of fats.
7. Chromium is necessary for the formation of protein.
8. Chromium facilitates the uptake of glucose into the cell and thus releases metabolic energy.

9. When Chromium is lacking, blood glucose levels increase.
10. The body retains about 3% of the dietary intake, so very little accumulation of Chromium occurs within the body.
11. If the diet is too low in Chromium, the human body will adapt by absorbing as much Chromium as possible from the food eaten.
12. If the diet is too high in Chromium, the human body will adapt by absorbing less Chromium from the food eaten.
13. If the diet is too low in protein then the level of Chromium present in the body will be low.
14. Chromium stores will be depleted if there is an excessive amount of iron in the diet.
15. If the diet is high in processed foods, then the body's stores of Chromium will be depleted.
16. If the diet is high in refined carbohydrates then the amount of Chromium present in the body will be depleted.
17. Chromium normally decreases as pregnancy progresses.
18. If Chromium remains too high during pregnancy then the child will be too small.
19. Chromium stores are depleted by repeated pregnancies.
20. When Chromium is lacking, coronary artery disease occurs.
21. If the Chromium levels are adequate then wound healing is enhanced.
22. Chromium increases the sperm count.
23. Chromium improves the frequency of conception.
24. The body's ability to store Chromium decreases with age.
25. Older people are more likely to have slight Chromium deficiencies because many lack an appetite or the desire to prepare and eat proper meals.
26. If the diet is poor then an increase in Chromium is essential.
27. People who drink alcohol to excess deplete their Chromium stores.
28. Individuals who abuse drugs will lack Chromium.
29. If there is a chronic wasting illness then Chromium is lacking.
30. Patients, who have had recent surgery, will be low in Chromium.
31. If a portion of the gastrointestinal tract is surgically removed, then the absorption of Chromium may be diminished.
32. Chromium is essential for those who have recently suffered severe burns or injuries.

iii. FUNCTIONS OF CHROMIUM IN THE HUMAN ORGANISATION.

Chromium is required for the following functions:

1. For a stable blood sugar.
2. For glucose to be used for energy.
3. For the formation of protein.
4. For healthy adrenal glands.
5. For the brain to function properly.
6. For good quality blood.
7. For a healthy circulatory system.
8. For a healthy heart.
9. For a properly functioning immunity.
10. For a healthy liver.
11. For the formation of healthy white blood cells.

iv. SYMPTOMS WHEN CHROMIUM IS EXCESSIVE.

1. Chromium excess is rare and is usually due to secondary factors such as impaired liver and kidney function.
2. Chromium toxicity can result from industrial overexposure, such as tanning, electroplating, steel making, abrasives manufacturing, cement manufacturing, diesel locomotive repairs, furniture polishing, fur processing, glass making, jewelry making, metal cleaning, oil drilling, photography, textile dyeing, wood preservative manufacturing.

3. Long term exposure to Chromium may lead to skin problems.
4. Perforation of the nasal septum and lung cancer may result from excessive Chromium.

v. SYMPTOMS WHEN CHROMIUM IS DEFICIENT.

1. Chromium is lacking if tumors occur in the back of the nasal passages.
2. If there is uneasiness in the limbs.
3. If there is pain in the shoulder blades and at the back of the neck.
4. If there is pain in the knees and in the balls of the feet.
5. If there is a drawing pain in the soles of the feet when walking.
6. If there are frequent, watery, stools with nausea and vertigo.
7. If there is a tendency towards haemorrhoids that bleed.
8. If there is a weakness in the small of the back.
9. If wounds heal slowly.
10. If there is a chronic wasting illness and poor immunity.
11. If there is poor growth and development.
12. If there is heart weakness from arterial hardening.
13. If there is paleness and poor quality of blood.
14. If there are symptoms that come and go suddenly, and return periodically.
15. If there is a lack energy and the person fatigues easily.
16. If there is a decreased resistance to infections.
17. If there are yeast infections of the skin, the mouth and the vagina.
18. If there is a tendency to arthritis.

vi. PEOPLE WHO REQUIRE CHROMIUM FOODS

1. People who suffer from Arthritis, atherosclerosis, diabetes, heart disease, hypoglycaemia, mental illness, and protein-calorie malnutrition.
2. Those who live where the soils are deficient in Chromium.

vii. PRINCIPAL CHROMIUM FOODS (ALPHABETICALLY ARRANGED).

Apples,
Beef,
Brewers yeast,
Black pepper,
Calves' liver,
Chicken,
Clams,
Dairy products,
Eggs,
Fish and seafood,
Fresh fruit,
Grapes,
Green leafy vegetables,
Honey,
Legumes,
Meats,
Mushrooms,
Nuts,
Oysters,
Potatoes with skin,
Raisins,
Root vegetables,
Whole grain wheat and rye flour cereals.

**PLEASE REFER TO APPENDIX A.1. FOR FURTHER INFORMATION ENTITLED:
IDIOSYNCRASY AND MINERAL IMBALANCE OF CHROMIUM.**

7.ii. COPPER.

i. COPPER IN THE MINERAL AND VEGETABLE KINGDOMS.

1. Name: Copper.
Symbol: Cu
Atomic number: 29
Relative atomic mass: 63.546
3. Copper is a reddish-brown metallic element.
4. This malleable metal was the first metal used to make tools and weapons.
5. Copper is mined in many countries throughout the world.
6. Copper is very soft on its own, but it can be hardened by being mixed with other metals.
7. Copper when mixed with tin makes bronze.
8. Copper when mixed with zinc makes brass.
9. Copper is a very good conductor of heat and electricity.
10. Copper is used in industry to make electric wires and cables as well as water pipes.
11. Copper is used as a pigment in many artists' powders.
12. At one time Copper was used by doctors and vets as an ingredient in ointments for wounds.
13. Copper's poisonous qualities were first noted in coppersmiths, when workers suffered from chronic poisoning, with colic, diarrhoeas, cough, and difficulty with assimilation of food being the main symptoms.
14. Acute Copper poisoning is rare.
15. Symptoms of Copper poisoning are violent stomach cramps, vomiting, pale face, icy cold extremities, restlessness at night and violent headache.
16. If the sufferer survives acute copper poisoning then liver disease always follows.
17. A homeopathic preparation is made from the triturated pure metal.
18. Copper toxicity can result from contaminated swimming pools; drinking water; copper pipes; metal utensils; fungicides; environmental pollution; cigarette smoking; contraceptives; certain foods high in copper.

ii. COPPER, ITS NATURE AND CHARACTERISTICS.

1. Copper is a very good conductor of heat.
2. Copper is a very good conductor of electricity.
3. Copper is an acid mineral.
4. Copper is a trace mineral widely distributed throughout the body in very small amounts.
5. Copper is required for tissue respiration in the living organism.
6. Copper combines in the living organism with many other minerals.
7. Haemocyanin is a copper protein complex that is found in the blood of certain invertebrates. Haemocyanin's purpose is to carry oxygen, and its function is therefore similar to that of haemoglobin.
8. Copper is an essential part of two other substances that fulfil a key role in oxygen metabolism in all life on this planet.

iii. FUNCTIONS OF COPPER IN THE HUMAN ORGANISATION.

1. Copper is an essential trace mineral.
2. The adult human body contains 100 to 150 milligrams of Copper.
 - i) About 64 milligrams of Copper are found in the muscles.
 - ii) 23 milligrams of Copper are found in the bones.
 - iii) 18 milligrams of Copper is found in the liver.
 - iv) The liver contains the highest concentration of Copper in the body.
 - v) Trace amounts of Copper are found in every living cell.

3. 50% of the total Copper content is found in the bone structure.
4. In the unborn child, blood is produced in the liver. Therefore the concentration of copper in the liver of the unborn child is 5 to 10 times higher than that of a liver of an adult. Pre-term babies and hospital patients who are artificially fed are susceptible to a copper deficiency.
5. Copper is absorbed into the bloodstream shortly after digestion.
6. Copper is stored in the liver and spleen until the body requires it.
7. Most of the Copper is excreted via the bile into the intestines and expelled with the faeces.
8. Copper must combine with manganese in order for the body to use iron.
9. Copper foods improve the functions of the digestive system.
10. The liver, the small intestine and the pancreas all need Copper to function properly.
11. Copper is needed to enable the use of oxygen at a tissue level.
12. Copper protects the lungs from infection.
13. Copper is essential for the colour pigmentation of the skin.
14. Copper is essential for normal hair colour.
15. Copper helps the body use vitamin C.
16. Hair analysis may be used to determine Copper within the body.
17. A balanced diet is often recommended rather than copper supplementation as Copper supplementation can upset the body's delicate mineral balance.
18. Copper is used as a nutritional supplement in anyone receives prolonged feeding into the veins or by means of a tube into the stomach.
19. Copper is required for the following functions:
 - i. For the formation of red blood cell.
 - ii. For the storage of iron.
 - iii. For iron to form haemoglobin for healthy red blood cells.
 - iv. For elastin formation which provides tissue elasticity throughout the entire body.
 - v. For a healthy cardiovascular system.
 - vi. For proper bone formation.
 - vii. For the normal growth.
 - viii. For normal skin pigmentation.
 - ix. For natural hair colour.
 - x. For the normal formation of coverings of the spinal cord.
 - xi. For the use of oxygen in respiration.
 - xii. For the healthy connective tissue.
 - xiii. For a healthy central nervous system.
20. Copper is mainly stored in the liver and spleen.
21. The Copper, content of natural foods is absorbed into the bloodstream shortly after digestion.
22. Copper is distributed to the liver, spleen, kidneys, heart, brain, bones and muscles.
23. Copper traces are found in every body tissue.
24. Copper is necessary for a healthy digestive system.
25. Copper foods assist in all respiration.
26. Copper is necessary for protein utilisation.
27. Copper is needed to colour the skin and hair.
28. Copper enables the blood to carry oxygen.
29. Copper enables the body to use vitamin C.

iv. SYMPTOMS WHEN COPPER IS EXCESSIVE.

1. Copper excess may be either chronic or acute.
 - i. Chronic symptoms mainly include; colic; diarrhoeas; cough; and difficulty with assimilation of food.
 - ii. Acute Copper poisoning is rare, with symptoms of violent stomach cramps, vomiting, pale face, icy cold extremities, restlessness at night and violent headaches.
 - iii. If the sufferer survives acute copper poisoning then liver disease always follows.
 - iv. Copper toxicity can result from contaminated swimming pools; drinking water; copper water pipes; metal utensils; fungicides; environmental pollution; cigarette smoking; hormone therapy; and certain foods high in copper.
 - v. An excess of Copper should be considered in those who suffer from anaemia; haemochromatosis; cirrhosis and atrophy of the liver; tuberculosis; cancer; Wilson's disease; and hyper-excitability.
 - vi. An increase in Copper absorption is often found in pregnancy and those suffering from rheumatoid arthritis, cirrhosis of the liver, myocardial infarction, schizophrenia, tumours, and severe infection.
2. Copper is excessive in the human body when symptoms appear periodically and in groups.
3. When the mental attitude is fixed, malicious and morose.
4. When the person suffers violent and contractive convulsions, which begin in the fingers and toes.
5. When the epilepsy aura begins at the knees, ascends to the hypogastrium, and is followed by unconsciousness, foaming, and falling.
6. When there are cramps in the calves and soles of the feet.
7. When the head is purple, and feels swollen with a bruise pain in the brain and in the eyes on turning.
8. When there is a sensation as if water were being poured over the head.
9. When giddiness accompanies many ailments, and with the head falling forwards onto the chest.
10. When there is an aching over the eyes.
11. When the eyes are fixed, staring, sunken, glistening and turned upwards.
12. When the eyes are shut and the eyeballs roll rapidly.
13. When the pale face is bluish and is distorted by a contraction of the jaw, with foam at the mouth.
14. When the nose has a violent sensation of congested blood.
15. When the mouth has a strong metallic, slimy taste, with a large flow of saliva.
16. When there is constant protrusion and retraction of the tongue like a snake.
17. When there is nausea, and vomiting which is only relieved by drinking cold water.
18. When the abdomen is tense, hot and tender to the touch.
19. When there is neuralgia of the abdominal viscera with violent and intermittent colic.
20. When the stool is black, painful, bloody, and there is tenesmus and weakness.
21. When the menses are too late and protracted and occur with cramps which extend into the chest, before, during, or after suppression of the menses.
22. When there is fatty degeneration of the heart, with palpitations, praecordial anxiety and pain.
23. When there are spasms and constriction of the chest; and spasmodic asthma, alternating with spasmodic vomiting.
24. When the cough has a gurgling sound which is improved by drinking water.

25. When there are spasms of the throat and dyspnoea with epigastric uneasiness.
26. When skin is bluish and marbled and skin is prone to ulcers, itching spots, and pimples at the folds of the joints.
27. When there is chronic psoriasis.
28. When the sleep is profound with shocks in the body and constant rumbling in the abdomen.

v. SYMPTOMS WHEN COPPER IS DEFICIENT.

1. Copper deficiency symptoms involve virtually every body system.
 - i. Copper deficiency is quite rare.
 - ii. Those who eat processed foods will deplete their reserves of Copper.
 - iii. Those who eat organically grown food high in cadmium will deplete their Copper reserves.
 - iv. Those who have an excessive amount of zinc within the system will have low Copper reserves.
 - v. Those who take hormone therapy will diminish their Copper supplies.
2. Copper is deficient in the human body when symptoms appear periodically and in groups.
3. When the quality of the blood is poor and the stores of iron are depleted.
4. When there is cyanosis.
5. When there is tiredness and shortness of breath.
6. When there is general weakness.
7. When the skin loses its elasticity and sags and ages quickly.
8. When there is fatty degeneration of the heart and angina pectoris is present.
9. When the pulse is slow or hard, full and quick.
10. When there is poor growth and development especially of the bones.
11. When the skeletal structure is deformed.
12. When the bones do not heal.
13. When there a loss of minerals in the bone.
14. When the bone fractures easily.
15. When there is poor skin pigmentation.
16. When the hair has lost its colour.
17. When the hair falls out.
18. When the covering of the spinal cord disintegrates.
19. When the central nervous system shows signs of weakness.
20. When there are ulcers on the skin that do not heal.
21. When the skin is itchy.
22. When there are sores that do not heal.

vi. PEOPLE WHO REQUIRE COPPER FOODS.

1. Copper is used as a nutritional supplement for anyone receiving prolonged feeding into the veins or through a tube into the stomach.
2. Copper is an essential component of a number of proteins and enzymes, thus those suffering from any type of wasting disease will require Copper.
3. People who live on processed foods will require Copper as this reduces normal Copper absorption.
4. People who have trouble with digestive function, bowels, kidneys, blood and bone.
5. Copper deficiencies will affect practically every system of the human body. Copper imbalance does not have a particular 'character', hence the general symptoms and specific complaints will lead to the prescription.

vii. PRINCIPAL COPPER FOODS (ALPHABETICALLY ARRANGED).

Almonds,
Avocado,
Barley,
Brazil nuts,
Buckwheat,
Cauliflower,
Dry split peas,
Hazelnuts (filberts),
Lamb chops,
Legumes,
Liver,
Molasses black strap,
Millet,
Mushrooms,
Mussels,
Nuts,
Oats,
Organ meats,
Oyster,
Peanuts,
Pecans,
Seafood,
Salmon,
Soybeans,
Walnuts,
Wheat germ and Whole grains.

Convenience foods, condiments, sweets and beverages are high in Copper.

**PLEASE REFER TO APPENDIX A.2. FOR FURTHER INFORMATION ENTITLED:
IDIOSYNCRASY AND MINERAL IMBALANCE OF COPPER.**

7.iii. SELENIUM.

i. SELENIUM IN THE MINERAL AND VEGETABLE KINGDOMS.

1. Name: Selenium.
Symbol: Se
Atomic number: 34
Relative atomic mass: 78.96
2. Selenium was discovered by Berzelius in sulphuric acid, and was prepared from the pyrites in the mines at Fahlun in 1818.
3. Selenium occurs on the elemental scale between sulphur and tellurium.
4. Selenium belongs to the VIb group in the periodic table of elements, along with tellurium and polonium.
5. Selenium is found either in its natural state, or, more often, as a metallic selenide.
6. Selenium is found in varying amounts in the soil, so the selenium content of food is directly related to the condition of the soil.
7. Selenium is found in vegetables.
8. Tuna is a rich source of Selenium.
9. Selenium is known to inhibit alcoholic fermentation by yeast and the activity of certain respiratory enzymes.
10. Many soils in China and parts of Australia are deficient in Selenium.
11. Many Governments including those in America and Australia have restricted the supply of supplemental Selenium.

ii. SELENIUM, ITS NATURE AND CHARACTERISTICS.

1. Selenium is required for normal growth and fertility and for the prevention of a wide variety of diseases that occur in animals and man if on a Selenium deficient diet.
2. Dietary liver necrosis in rats, multiple necrosis in mice, muscular dystrophy and heart necrosis in minks, exudative diathesis in chicks and turkeys, stiff lamb disease and ill thrift in sheep, white muscle disease in calves, and liver dystrophy and muscle degeneration in pigs, to name a few, occur if Selenium is deficient.
3. These diseases can be prevented by Selenium supplementation.
4. Selenium is an essential part of the immune system in all living organisms.
5. Selenium is involved in a variety of biological processes in every living organism.
6. Selenium works closely with vitamin E in the promotion of normal body growth and fertility.
7. Some of the disorders induced by a dietary means are responsive either to Selenium or to Vitamin E, indicating that a close relationship exist between the two nutrients.
8. Selenium is a constant constituent in the bones and the teeth of all living things.

iii. FUNCTIONS OF SELENIUM IN THE HUMAN ORGANISATION.

1. Selenium is an essential trace mineral.
2. The highest concentration of Selenium in the human body is found in the renal cortex, the pancreas, the pituitary, and the liver.
3. The concentration of most of the Selenium present in the body is variable.
4. If Selenium is present in the faeces, this indicates improper absorption.
5. Selenium has two vitamin helpers, vitamin E and vitamin A. These three substances enhance each other's actions. Vitamin E has a "sparing effect" on Selenium.

6. Selenium protects the cell membranes, cell nuclei and the chromosomes from damage.
7. Selenium therefore protects normal healthy tissue, while it slows the growth of cancer cells.
8. It appears that Selenium may prevent cancer partly by delaying cell division long enough for a damaged cell to repair its chromosomes.
9. An adequate supply of Selenium may provide effective resistance to cancers of the intestines, the rectum, the breast, the ovary, the prostate, the lung, the pancreas, the skin, the kidney and the bladder.
10. Selenium not only slows cell reproduction, but also promotes the formation a substance that turns reactive particles that can destroy a cell into harmless water.
11. Selenium plays an important role in the maintenance of a healthy immune system by helping with the production of the body's natural antiviral and anticancer chemicals.
12. Selenium can counteract some of the cancer causing effect of fat, and as it is known that a high fat diet provides a breeding ground for breast tumours, Selenium is a specially important for women prone to breast tumours.
13. Selenium's broadest role is to protect our cells from the low level but constant barrage of cancer inducing chemicals hidden in our air, food and water by removing these and other toxic substances from the system.
14. Kwashiorkor, a protein deficiency disease, has been successfully treated with Selenium.
15. Selenium preserves the elasticity of all skin tissues.
16. Premature ageing is related to Selenium deficiency.
17. Selenium is needed for the improvement of memory and the prevention of depression.
18. If Selenium is depleted than the energy levels will be diminished due to poor pancreatic function.
19. Selenium is required for a healthy reproductive system.
20. Selenium has a marked effect on the genitourinary organs, and often is indicated in elderly men, especially for prostatic and sexual weakness.
21. Selenium is required in very small quantities by the body.
22. Workers at industrial sites that manufacture glass, pesticides, rubber, semiconductors, copper and film are at an increased risk of developing toxic symptoms from inhalation, absorption through the skin and ingestion of Selenium.
23. Selenium is required for the following functions:
 - i. For the formation of enzymes.
 - ii. For a healthy immune system.
 - iii. For healthy eyes.
 - iv. For a healthy heart.
 - v. For a healthy pancreas.
 - vi. For healthy red blood cells.
 - vii. For normal tissue elasticity.
 - viii. For sexual/reproductive function.

iv. SYMPTOMS WHEN SELENIUM IS EXCESSIVE.

1. Selenium is said to be in excess when there is great debility.
2. When the hair falls out (alopecia).
3. When the teeth decay.
4. When the breath has a sour or garlic odour.
5. When there is nausea and vomiting.
6. When there are chronic liver affections.
7. When the liver is painful.
8. When the liver is enlarged with a fine rash over the liver region.
9. When the stool is constipated, hard and accumulates in the rectum.
10. When the nails are black.
11. When the nails break easily.

12. When the nails fall out.
13. When there is dizziness.
14. When there are dry, scaly, itchy, eruptions in the palms of the hands.
15. When the skin itches about the ankles and in the folds of the skin.
16. When the hair falls out from the brow, the beard and the genitals.
17. When there is itching about the finger joints and between the fingers and the palms of the hand.
18. Symptoms of Selenium toxicity include:
 - i) Bronchial pneumonia.
 - ii) Asthma.
 - iii) Precipitous drop in blood pressure.
 - iv) Red eyes.
 - v) Garlic odour of breath and of the urine.
 - vi) Headaches.
 - vii) Metallic taste.
 - viii) Nose and throat irritation.
 - ix) Difficulty in breathing.
 - x) Vomiting.
 - xi) General weakness.
 - xii) Other associated symptoms include:
 - a. Liver disease.
 - b. Degeneration of the heart muscle.
 - c. Children raised in selenium rich areas show a higher incidence of decayed, missing and filled teeth.
19. Megadose toxicity symptoms include:
 - i) Loss of hair.
 - ii) Loss of nails.
 - iii) Fatigue.
 - iv) Nausea, and vomiting.
 - v) Sour milk breath.

v. SYMPTOMS WHEN SELENIUM IS DEFICIENT.

1. Selenium is lacking when there is inflammation of the prostate and sexual weakness.
2. When in old age the individual is easily exhausted both mentally and physically.
3. When there is great debility after an exhausting disease.
4. When the mind has lascivious thoughts, with impotency.
5. When mental labour fatigues.
6. When there is extreme sadness, abject despair and uncompromising melancholy.
7. When there is pain over the left eye that is aggravated by walking in the sun or by strong odours.
8. When the scalp feels tense.
9. When there is a headache from drinking tea.
10. When there is incipient tubercular laryngitis.
11. When there is hawking of the throat followed by the raising of transparent lumps of mucus every morning.
12. When there is continual hoarseness of the voice.
13. When there is an early morning cough with bloody mucous expectoration.
14. When the hoarseness is worse during singing.
15. When there is much clear and starchy mucus.
16. When there is a desire for brandy and other strong drinks.
17. When there is a sweetish taste in the mouth.
18. When there are hiccoughs and eructations after smoking.
19. When there is a pulsation all over after eating, especially in the abdomen.
20. When there is a sensation in the tip of the urethra as if a biting drop were forcing its way out.
21. When there is involuntary dribbling of urine.

22. When there are cataracts.
23. When there is dribbling of semen during sleep.
24. When there is dribbling of prostatic fluid.
25. When there is irritability after coitus.
26. When the male has an increased desire but has decreased ability to perform sexually.
27. When the semen is thin, and odourless.
28. When the male suffers from sexual weakness.
29. When on attempting coition, the penis relaxes.
30. When there is a hydrocele.
31. When there is seborrhoea oleosa of the skin.
32. When there are comedones with an oily surface to the skin.
33. When there is acne.
34. When there are paralytic pains in the small of the back in the morning.
35. When there are tearing pains in the hands at night.
36. When the symptoms are worse after sleep.
37. When the symptoms worsen in the hot weather.
38. When the symptoms worsen from Cinchona.
39. When the symptoms worsen if there is a draught of air.
40. When the symptoms are worse after coition.
41. AT SUCH TIMES A DIET RICH IN SELENIUM IS NEEDED.

viii. PRINCIPAL SELENIUM FOODS (ALPHABETICALLY ARRANGED).

1. Asparagus,
Brazil nuts,
Brewer's yeast,
Broccoli,
Cabbage,
Eggs,
Fish,
Garlic,
Lobster,
Meats,
Onions,
Organ meats,
Scallops,
Seafood,
Shrimps,
Tomatoes,
Tuna,
Turnips,
Wheat germ,
Whole grains.
2. Shrimps 1 pound = 267 micrograms.
Mushrooms 1 cup = 8 micrograms.

**PLEASE REFER TO APPENDIX A.3. FOR FURTHER INFORMATION ENTITLED:
IDIOSYNCRASY AND MINERAL IMBALANCE OF SELENIUM.**

7.iv. ZINC.

i. ZINC IN THE MINERAL AND VEGETABLE KINGDOMS.

1. Name: Zinc,
Symbol: Zn
Atomic number: 30
Relative atomic mass: 65.39
2. Zinc is a soft, blue white metal of moderate hardness.
3. Zinc does not corrode and is therefore used to 'galvanise' metals to protect them from corrosion, as well as in alloys such as brass.
4. It has many uses, for example, in dry batteries, radios, zips, car parts, electrical fuses, roofing and guttering, cable wrappings and organ pipes.
5. Zinc as a trace element is essential for both plants and animals and is found in most foods.
6. Zinc deficiency in humans causes loss of appetite and sense of taste, and slow healing.
7. Zinc ointments to promote healing have long been used in medicine.
8. Zinc is mildly astringent and protective to the skin and is used in dusting powders and lotions such as calamine, where it is combined with iron.
9. Zinc is made into homeopathic preparations by heating pure zinc and then grinding it to a fine powder. It is then triturated and diluted by succussion.

ii. ZINC, ITS NATURE AND CHARACTERISTICS.

1. Zinc will bind with high fibre cereal products such as wholemeal bread. Thus too much of these products in the diet will lead to a zinc deficiency.
2. Intestinal parasites may also lead to a zinc deficiency, as these can compromise nutrient absorption by the gut.
3. If the soil is deficient in zinc, then this will lead to a poor dietary intake and result in low zinc levels.

iii. FUNCTIONS OF ZINC IN THE HUMAN ORGANISATION.

1. The human body contains between 1 to 2.5 grams of zinc.
2. Zinc is vital for the development of children's bones and teeth.
3. Zinc is mainly stored in the bones, the teeth, the hair, the skin, the liver, the muscles and the testes.
4. Hair analysis can give an accurate assessment of the zinc present in an individual.
5. Zinc concentrations within the human body vary according to dietary intake and various disease states.
6. Zinc is one of the main healing minerals of the body.
7. Zinc is necessary for the repair of bone fractures.
8. Zinc is essential for healthy hair.
9. Zinc is necessary for the proper digestion of proteins and carbohydrates.
10. The organic zinc content is often lacking in refined carbohydrates.
11. Without Zinc the body cannot utilise sugar.
12. Zinc is necessary for a healthy prostate gland.
13. Zinc also is required for the manufacture of various male hormones and for the normal development of the genital organs.
14. Zinc is an essential mineral for growth.
15. All human tissues contain zinc, especially the thyroid gland, the pancreas and the reproductive organs.
16. A prolonged deficiency of zinc may lead to acne, diabetes, dermatitis, retarded growth and ulcers.

17. Zinc is required by the body to break down alcohol.
18. An excessive consumption of alcohol can lead to a zinc deficiency.
19. Zinc is required for the following functions:
 - i. For the maintaining of normal taste and smell.
 - ii. For normal growth and development.
 - iii. For the healing of wounds.
 - iv. For a normal healthy baby.
 - v. For the manufacture of new healthy cells.
 - vi. For the formation of healthy bones.
 - vii. For a healthy heart.
 - viii. For healthy joints.
 - ix. For a healthy liver.
 - x. For a healthy prostate gland.

iv. SYMPTOMS WHEN ZINC IS EXCESSIVE.

1. Zinc toxicity from inhalation is rare but can occur in some of the following occupations: In alloy manufacturing, brass foundry work, bronze foundry work, electric fuse manufacturing, gas welding, electroplating, galvanizing, paint manufacturing, metal cutting, metal spraying, rubber manufacturing, roof manufacturing, zinc manufacturing.
2. Zinc is in excess when there is lethargy and stupor.
3. When there is drowsiness.
4. When there is light-headedness.
5. When there is difficulty in writing.
6. When there is a staggering gait.
7. When there is restlessness.
8. When there is such excessive vomiting that dehydration occurs.

v. SYMPTOMS WHEN ZINC IS DEFICIENT.

1. Zinc is deficient when there is loss of taste and smell.
2. When there is suboptimal growth in children.
3. When there are patches of hair loss.
4. When there are skin rashes and multiple skin lesions.
5. When there is inflammation of the tongue.
6. When there is inflammation of the inside mouth.
7. When there is inflammation of the eyelids.
8. When the nail lifts from the nail bed.
9. When there is sterility.
10. When there is a low sperm count.
11. When there is delayed wound healing.
12. When there is delayed bone maturation.
13. When there is an enlarged liver and spleen.
14. When there is a decreased size of the testicles.
15. When the testicular function is less than normal.
16. When the growth is decreased or dwarfism occurs.
17. When there is infertility.
18. When there are symptoms of an immune deficiency disease.
19. When there are recurrent infections.
20. When there is fatigue, diarrhoea, unexplained weight loss and fever.
21. When there are swollen lymph glands.

vi. PEOPLE WHO REQUIRE ZINC FOODS

1. Zinc is indicated for those who are weary and run down from stress and overwork.
2. People who have difficulty in thinking because of nervous exhaustion.
3. Anyone with a deficient food intake or on an inadequate diet.
4. Vegetarians often require zinc supplementation.

5. Preschool children and people over the age of 55 years will have increased needs for Zinc.
6. Women require extra Zinc during pregnancy and when breast-feeding.
7. Individuals who abuse alcohol or other drugs will deplete their body's Zinc reserves.
8. People with a chronic wasting illness or those who experience excessive stress for long periods of time will require extra Zinc.
9. Individuals who have had recent surgery, especially if a portion of the gastrointestinal tract has been removed will need Zinc.
10. If there has been severe or recent burns then Zinc is necessary.
11. Anyone who is being treated with hormones or who takes diuretics for reasons such as high blood pressure, congestive heart failure or liver disease, will need Zinc foods.
12. If the soil is deficient in Zinc, the food plants grown in it will be deficient also.

vii. HELPFUL HINTS.

1. Zinc is needed when there is trembling, twitching and jerking.
2. When the symptoms tend to be worse at night, from drinking wine and after eating, although they may feel better while actually eating.
3. When there is an empty feeling in the stomach around 11 a.m. in the morning.
4. When the legs feel weak and twitchy, especially at night.
5. When the person feels exhausted but fidgety.
6. When there is a great desire to keep the legs moving.
7. When in a childhood illness like measles, the rash does not appear properly and the child is left feeling weak and low and twitchy, and possibly becomes chesty.
8. When the patient has great difficulty in thinking due to nervous exhaustion.
9. When the thoughts wander.
10. When the person is slow to answer.
11. When they repeat the question before answering.
12. When they forget what they are saying halfway through the conversation.
13. When there is depression.
14. When there is irritability.
15. When there is a general feeling of being worn out.
16. When there is pain in the coccyx, in the neck and in the spine.
17. When there is an aching, sore and bruised feeling, combined with weakness.
18. When the symptoms are worse from sitting or writing.
19. When the whole back feels sore and weak from too much stress.
20. When the legs feel weak and twitchy, especially in bed at night.
21. When eyes are sore, gritty and burn.
22. When the eye symptoms are worse during the evening, at night and after drinking wine.
23. When there is a feeling of sand in the eyes, especially in the inner corners.
24. When there is a general aggravation of symptoms during the evening and night so that the eyes water.
25. When there are nervous headaches.
26. When there are tearing and bursting pains in the forehead and in the sides of the head and in the temples.
27. When the headache improves with fresh air.
28. When the headache is worse after drinking wine.
29. When the headache is caused by overwork.
30. When the headache is bilateral or unilateral.
31. When the patient has a pale face.
32. When there are white spots on the fingernails.
33. AT SUCH TIMES A DIET HIGH IN ZINC FOODS IS NEEDED.

viii. PRINCIPAL ZINC FOODS (ALPHABETICALLY ARRANGED).

1. Beef liver,
Brewer's yeast,
Egg yolks,
Lecithin,
Meat,
Mushrooms,
Nuts,
Onions,
Peas,
Poultry,
Seafood,
Seeds,
Soybeans,
Spinach,
Sunflower and pumpkin seeds,
Wheat germ,
Whole grains (preferably sprouted).
2. Oysters 1 pound = 338 milligrams of Zinc.
Pumpkin seed 1 cup = 17 milligrams of Zinc.

**PLEASE REFER TO APPENDIX A.4. FOR FURTHER INFORMATION ENTITLED:
IDIOSYNCRASY AND MINERAL IMBALANCE OF ZINC.**

7.v. APPENDIX A

1. IDIOSYNCRASY AND MINERAL IMBALANCE OF CHROMIUM.

1. When Chromium interacts with insulin the combined effect may cause a decrease in the amount of insulin needed to treat diabetes.
2. When Chromium interacts with sugar, the sugar is partially destroyed by the chromium.
3. Chromium aids the transport of amino acids to the liver and heart.
4. Chromium enhances the effects of insulin in the utilisation of glucose.
5. Chromium makes insulin more efficient at this task, so that you need less to accomplish the job. High insulin levels in the blood are thought to be associated with hardening of the arteries. The connection between Chromium, insulin and atherosclerosis is quite significant. Medical research has examined samples from human aortas from areas of the world where atherosclerosis is very low, and compared them with samples of human aortas where atherosclerosis is more prevalent. The Chromium levels were considerably greater in accident victims as compared to those who had died from coronary artery disease (atherosclerotic heart disease).
6. Research also tested the effects of Chromium supplementation on glucose tolerance, insulin and serum lipids, including the HDL cholesterol. Over a twelve week period twenty-three adult males aged between 31 and 60 years, were given either 200 micrograms of Chromium or a placebo for five days each week. At the end of the experiment, a significant increase in the HDL cholesterol, a decrease in weight and a trend towards decreased triglycerides and insulin levels were noted in those who had the Chromium supplementation. None of these benefits were shown in the placebo group.

2. IDIOSYNCRASY AND MINERAL IMBALANCE OF COPPER.

1. Cadmium can interfere with copper absorption and utilisation.
2. Fibre can interfere with copper absorption and utilisation.
3. Molybdenum maintains appropriate ratio of copper in the body. If there are excessive amounts of copper, the molybdenum level drops. If there is an excessive amount of molybdenum in the body then the copper level drops.
4. Oral contraceptives increase copper levels, however the significance of this is unknown at the present time.
5. Phytates, which are found in certain cereals, can interfere with copper absorption and utilisation.
6. Vitamin C decreases absorption of copper. Large doses of vitamin C must be taken to produce this effect.
7. Zinc can interfere with copper absorption and utilisation.
8. Copper is present in two key enzymes of aerobic metabolism:-
 - i. Cytochrome c oxidase, which is responsible for the major part of the oxygen consumed by life on this planet.
 - ii.) Cytosolic superoxide dismutase, which catalytically scavenges the toxic free radical superoxide ion generated during aerobic metabolism.
9. Copper is an essential component of a number of proteins and enzymes, including lysyl, hydroxylase, dopamine beta-hydroxylase.
10. Plasma copper levels may increase in pregnant women and in people with rheumatoid arthritis, cirrhosis of the liver, myocardial infarction, schizophrenia, tumours, and severe infection.
11. Plasma copper levels decrease with hypothyroidism, dysproteinuria of infancy, kwashiorkor, sprue, and nephrosis.
12. In copper deficiency, iron absorption by the mucosal cells appears to be unaffected but the release of iron into the plasma is impaired.
13. The movement of iron from the ferritin stores to the plasma with resulting hypoferraemia occurs because the ceruloplasmin synthesis is decreased. Anaemia develops in all species due to depressed haeme synthesis.
14. Weight loss and death results in all those who are severely deficient in copper.
15. Low cytochrome oxidase activity appears to be the primary metabolic lesion resulting in neonatal ataxia.
16. The decrease in endogenous ATP synthesis resulting from the depression of aerobic metabolism leads to an inhibition of phospholipid synthesis required for myelin formation.
17. In copper deficiency there is a reduction in the amine (lysyl) oxidase activity resulting in bone and cardiovascular disorders.
18. Inhibition of the amine (lysyl) oxidase enzyme leads to diminished stability and strength of the bone collagen and the aortic elastin as a result of impaired cross linkage of their polypeptide chains.
19. Wilson's disease, or hepatolenticular degeneration, is associated with abnormalities in the metabolism of copper. Excessive copper absorption from the intestine, inadequate excretion of copper via the intestine, and synthesis of an abnormal liver protein with a high affinity for copper may be factors in the genesis of Wilson's disease.
20. Hypercupraemia is present in many acute and chronic microbial infections in humans. There is a copper redistribution from the liver to the blood, which is believed to be initiated by a leukocytic endogenous mediator (LEM) that stimulates liver ceruloplasmin synthesis.

3. IDIOSYNCRASY AND MINERAL IMBALANCE OF SELENIUM.

1. Vitamin C may decrease selenium absorption if taken with an inorganic form of selenium.
2. Selenium works closely with vitamin E and the sulphur containing amino acids in certain metabolic actions and in the promotion of normal body growth and fertility.
3. Some of the disorders induced by a dietary means are responsive either to Selenium or to Vitamin E, indicating that a close relationship exists between the two nutrients.
4. However, certain diseases are apparently caused by a deficiency that responds specifically to one nutrient but not the other. The role of Selenium in hydroperoxide destruction through glutathione peroxidase activity is one of these.
5. Vitamin A enhances the actions of Selenium within the body.
6. It appears that Selenium may prevent cancer partly by delaying cell division long enough for a carcinogenically altered cell to repair its chromosomes.
7. An adequate supply of Selenium may provide effective resistance to cancers of the intestines, the rectum, the breast, the ovary, the prostate, the lung, the pancreas, the skin, the kidney and the bladder.
8. Selenium not only slows cell reproduction, but also promotes the formation of an enzyme substance (glutathione peroxidase), which turns reactive particles that can destroy a cell into harmless water.
9. Selenium plays an important role in the maintenance of a healthy immune system by helping with the production of interferon, which is the body's natural antiviral and anticancer drug.
10. Selenium can counteract some of the cancer causing effect of fat, and as it is known that a high fat diet provides a breeding ground for breast tumours, Selenium is a special blessing for women who genetically are at risk of breast cancer.
11. Selenium's broadest role is to protect our cells from the low level but constant barrage of carcinogens hidden in our air, food and water by removing these and other toxic substances from the system.
12. Current studies suggest that selenium is involved in a variety of other important biological processes including the immune mechanisms, ubiquinone biosynthesis, and mitochondrial ATP biosynthesis.
13. Selenium is known to inhibit alcoholic fermentation by yeast and the activity of certain respiratory enzymes, possibly by forming complexes with essential enzyme sulfhydryl groups.
14. Selenium is required for normal growth and fertility and for the prevention of a wide variety of diseases that can be induced in experimental animals by dietary means.
15. Selenium supplementation can prevent dietary liver necrosis in rats, multiple necrosis in mice, muscular dystrophy and heart necrosis in minks, exudative diathesis in chicks and turkeys, stiff lamb disease and ill thrift in sheep, white muscle disease in calves and liver dystrophy and muscle degeneration in pigs to name a few.

4. IDIOSYNCRASY AND MINERAL IMBALANCE OF ZINC.

1. Zinc will chelate to phytates and high fibre products such as those found in whole meal bread. Thus too much of these products in the diet will lead to a deficiency of Zinc.
2. Parasites in the gut may also lead to a zinc deficiency, due to their interference with normal absorption.
3. Zinc interferes with the calcium absorption.
4. Zinc decreases the absorption of copper. Large doses of Zinc must be taken to produce this effect.
5. If the patient is taking cortisone drugs then this will interfere with lab tests for Zinc levels.
6. Oral contraceptives lower Zinc blood levels.
7. Diuretics increase Zinc excretion.
8. Zinc decreases the absorption of iron.
9. Zinc decreases the amount of tetracycline absorbed into the bloodstream. Zinc and tetracycline should not be mixed. They should be taken at least two hours apart.
10. Zinc assists in the absorption of Vitamin A.
11. Alcohol, even in moderate amounts, can increase the excretion of Zinc in the urine and can impair the body's ability to combine Zinc into its proper enzyme combinations in the liver.
12. Beverages such as coffee should not be consumed at the same time as Zinc because these will decrease the absorption of Zinc.
13. Studies in America indicated that due to a high consumption of milk poor in zinc, children over the age of four years had low zinc status. This presented as poor appetite, poor growth, and impaired taste. When zinc supplementation was given the appetite improved, the growth rate normalised and the taste returned to normal.
14. In the Middle East, a syndrome of dwarfism and hypogonadism with low zinc status has been shown to respond to zinc supplementation.
15. Acrodermatitis enteropathica is an inherited disease characterised by psoriasiform dermatitis, hair loss, paronychia, growth retardation, diarrhoea and death, resulting from an inability to absorb zinc. This disorder resulted in complete remission when zinc sulfate was administered.

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