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OUR FIRST DIET AFTER BIRTH IS BREAST MILK, BUT THE VITAL LIPIDS IN WHOLE MILK ARE NOW DESTROYED BY HOMOGENIZATION

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ABSTRACT

Lipidomics is the function of billions of vital lipid molecules forming our brain and spinal cord. In the serum of cancer patients there could transiently appear lipids stemming from the central nervous system (CNS), following herpes virus infections. Dietary substitution utilizing CNS-lipid precursors as in whole milk could compensate this lipid depletion. Oral supplementation led to physiologic therapeutic effects. Lipidomics, depicts studies on neurobiology describing the clinical function of billions of vital lipids contained in our brain and spinal cord, articulated as a harmonious synaptogenesis. The aim is to relate certain clinical features and expressions of this immensely complex panel of psychodynamic functions regulated by this multifaceted brain-lipid network. Our daily mental function and stress caused by excessive exercise consumes certain of these vital CNS-lipid molecules. Healthy reconstruction of this physiologic consumption of CNS-lipids proceeds during our sleep providing that our serum contains vital CNS-lipid precursor components supplied via our diet containing whole milk in which the cream (lipoprotein) is not destroyed by homogenisation. A combined dietary ingestion of whole milk together with prion-free CNS-lipids can restore normal cell induction, improve the motor, and mental balance of patients.

Keywords: Homogenization, Lipoprotein, Allergen, Metal ions.

Contribution/ Originality

Ingression

This treaties will explain the vital importance of supplying our central nervous system (CNS) with the important dietary lipids and lipid precursors which are vitally needed to compensate the daily consumption, caused by motor and mental stress. A dramatic release of metal ions into the circulation of body fluids could definitely impair the cell control system, since e.g. free Ti could block the receptor site on the cell lipoprotein membrane structures and decrease its regulatory signals.

1. INTRODUCTION

Neurogenic lipids were detected by two-dimensional thin-layer chromatography in the blood of cancer patients following herpes virus infections. It coincided with formation of new tumours, located in the enervated area 1979. This CNS lipid depletion could orally be

compensated since vital lipid components can be absorbed from the intestine of the patient and reconstitute a functional normal “lipidome” through the blood-brain barrier.

The lipidome is responsible for the most vital physiologic functions in our body. Some of the numerous neurological reactions involved are listed in Table 5. These dynamic lipids represent the countless lipid molecules forming 70% of our brain tissue, while 30% of the substance is formed by supportive proteins, lipoproteins and proteine-lipids. Together they shape our utterly complex neural network, securing a harmonious synaptogenesis, articulated as normal – motor and cognitive bodily functions, Table 5. [A-P]. A short survey of the psychodynamic entities listed in Table 5 will be presented.

- A. *Embryogenesis leading to harmonious synaptogenesis.*
- B. *Consciousness, Intellect, Fantasy, Memory, Intuition, Experience and Telepathy.*
- C. *Inductional CNS is linked to cancer control and healthy gene transcription.*
- D. *Blood-brain barrier lesions upset the inductional cell control, (e.g. herpes virus infections).*
- E. *Neurological pain, the warning signal from nerves, is alleviated by ingestion of CNS lipids.*
- F. *Melanoma satellites appear in the enervated axonal area- due to impaired induction?*
- G. *Lymphopoietic stimulation by a CNS-lipid molecule containing Titanium (Ti), as cobalt in B₁₂.*
- H. *Burn-out stress in sportsmen, post traumatic stress & sleep disorders eased by CNS diets.*
- I. *Idiopathic neural pain “Tallberg syndromes” and insomnia are mitigated by dietary CNS-lipids.*
- J. *Cholesterol levels dip from ingestion of extracts made from brain-lipids and membranes.*
- K. *Marked regional depletion of CNS-lipids in spinal cord autopsies may link it to atherosclerosis.*
- L. *Rheumatic, neuropathic, poly-arthritis, fibromyalgia, Crohn’s disease respond to CNS diets.*
- M. *CNS-lipid monomers may be involved in controlling allergic reactions via cell-receptors.*
- N. *The etiology of Autism Spectrum Disorder (ASD) and ADHD seem to be due to a deficiency of circulating vital CNS-lipids during gestation, and after birth.*
- O. *A prolonged relative lack of vital CNS-lipids may cause anorexia and infertility.*
- P. *Mitochondrial lesions lead to derangements in the lipidome.*

A. Embryogenesis Leading to Harmonious Synaptogenesis.

One third of all human genes are expressed in the nervous system leading to complex genetics and phenotype expression. Following completion of the Human Genome Project” (HGP) 2003, it was clear that only 22.000 genes form the chromosomal repertoire. These were still too few to explain our physical condition. We need to unlock the function of additional biological factors to improve our understanding of health and disease! Consequently, certain biologists thought that the next logical extension of genomics would be to study “proteomics” i.e. the complex formation of hundred thousands of biologically active quaternary proteins, steric peptides, and amino acids conjoined with essential metal ions forming biological signal systems. Human mitochondria are, among their numerous functions, also directly involved in the

continuous evolution of living matter. Embryogenesis starting with fertilization asserts its first action field.

Human mitochondrial mtDNA is an asymmetric double stranded circle consisting of 16,569 base pairs, formed by a heavy and light strand. Mammalian mitochondria are mainly maternally inherited and the ovum contains 100,000 of them. Around the neck and mid-piece of the sperm relatively few but large paternal mitochondria are wrapped in the axoneme. These actually enter the ovum at fertilization. This fusion could lead to a genome capable of constructing organ specific mitochondria obligatory for normal embryogenesis. The observed interaction between mtDNA, nuclear nDNA, and RNA mediated protein import to the mitochondria may assist the genome to form organ specific mitochondria - capable of regulating gene transcription.

The nucleotide sequence homology of chromosomes detected following HGP, with human, monkey, rat and flies amounting to 99, 96, 60% respectively was surprising. If evolution was based on solely random mutations, it would not result in such chromosomal nucleotide homologies. As mitochondria furnish energy for the cell nucleus but also regulate the genome they must, over eons, have been involved in creating all chromosomes in living organisms. In addition to studies on *genomics* and *proteomics* a prime task should now be to study the central function of CNS *lipidomics*, *the mission of billions of vital lipids in our brain and spinal cord*.

The overriding scientific problem for basic science is presently to try to understand brain function and solve the riddle of epigenomics. Tissue specific mitochondrial mtDNA and nuclear nDNA interact and a vast majority of mitochondrial proteins are nucleus encoded and imported into mitochondria, targeted selectively to various compartments of the - outer and inner membranes, intermembrane space, and matrix. Certain components of the import machinery are "heat shock proteins", and regulators of mitochondrial biogenesis seem also to be associated with peroxisome genes (PPAR- γ) through which mitochondrial and nuclear genomes may communicate. Special RNA activities are thus triggered - participating in the expression of epigenetics. In the future our goal should be to learn to use stem-cell activating organ specific gene-regulatory mitochondria in medicine and biology, and expose how this *harmonious chaos*, we call health, is modulated in developmental biology and regeneration.

Since 70% of the brain substance consists of billions of different cognitive lipid molecules, maturation characteristics for these factors were looked for. The fetal brain and spinal cord is induced during the first trimester, necessitating a high pool of circulating maternal lipid-soluble substances. Humans also display a rapid brain growth still for about two years after birth with early postnatal development at a rate of 250,000 neurons per minute.

Until puberty there is a constant increase of neurons, axon diameter and myelination representing the important continuation of brain maturation into adulthood. This constant development "*hypermorphosis*" in humans leads to a brain weight to body weight, 3.5 times that of apes, by the time we are full-grown. This prodigious extended neuron production, over 20 months after birth, has led to the claim that our gestation, as a point of fact, is >20 months. New

neurons are still formed in the adult brain especially if it is constantly mentally trained. *Endothelial cells in brain capillaries have characteristically numerous organ-specific mitochondria*, at variance with other tissue capillaries. In these brain capillaries their interconnected *endothelial cells form tight junctions*, which let through only lipids or lipid soluble components into the brain, but excludes many toxic substances.

Dietary *vital lipids, precursor molecules, and cholesterols* are transported through these tight junctions, as well as essential trace element ions, into the brain substance. These metabolic components compose billions of precursor lipid molecules and cholesterols inducing normal synaptogenesis. Active transfer of vital lipids into the brain substance is among other systems also mediated by so-called receptor-mediated endocytosis. In this process folic acid, cholesterol, and B₁₂ vitamin seem to be utilized, and Prolactin may be involved in producing progenitor nerve cells. One remarkable feature in the induction of brain, for which the Hedgehog signal transduction pathway is important, as it needs cholesterol, since this is critical for the catalytic cleavage of Sonic Hedgehog protein, (derived from the notochord), to sustain nerve induction.

The large surface of the endothelial membranes (180 m² in gray matter) permits exchange of lipid soluble gases O₂ and CO₂ while glucose, as the sole energy source for the brain, is shuttled across the barrier by the endothelial, for use by neurons and glia. The gene that codes for Glut1 resides on human chromosome 1.

Amino acids are transported across barrier endothelial cells by three carrier systems: the L system, the A system, and the ASC system. leucine and valine (and L-DOPA) are transported by the Na⁺ independent L system located at luminal and abluminal endothelial membranes. Glycine and neutral amino acids with short linear or polar side-chains, like alanine and serine are transported by the energy dependent Na⁺, A system. The A and ASC transport systems are exclusively located at the abluminal endothelial cell surface, at variance with the L system located on both endothelial membranes. Specific ion channels mediate electrolyte movement across the blood-brain barrier. This abluminal endothelial pump removes extra-cellular K⁺ rising after intense neuronal activity. These luminal and abluminal channels and astroglia work together to regulate Na⁺, K⁺, and -ATPase.

These crucial metabolic components compose billions of precursor lipid molecules and cholesterols inducing normal synaptogenesis. In this modulation folic acid, B₁₂ vitamin and prolactin stimulate the production of neuronal progenitor cells. One remarkable feature of the Hedgehog signal transduction pathways is the importance of cholesterol, since it is critical for the catalytic cleavage of Sonic Hedgehog protein.

This utterly complex process involves the healthy interplay of organic and inorganic essential components in addition to the need for inductational vital lipid molecules during gestation to secure the birth of a mentally normal offspring. Anyhow, these are vital characteristics of the human brain that make us special.

1. Retention of the fetal neuronal growth rate after birth, requiring vital lipid molecules.

2. Migration of cells from prosencephalon to the diencephalons, improving intellect?
 3. Increased activity of transcription with five times more mRNA, over brains of apes.
 4. Continuation of brain maturation into adulthood leading to improved mental capacity.
 5. Blood-brain capillaries have specific tight junctions, and numerous mitochondria.
 6. The high content of vital lipid molecules (70%) induced in a normal functional brain.
 7. Diverse clinical effects caused by dietary CNS lipids, e.g. improving mental health.
 8. One should discern between the health impacts from vital CNS lipids and energy fats.
 9. Lesions in mitochondria and peroxisomes cause lipid-metabolic and neurologic disorders.
- Functional tissue-specific mitochondria and peroxisomes present in our brain secure “lipidome” physiology

B. Consciousness, Intellect, Fantasy, Memory, Intuition, Experience and Telepathy.

The neurobiology of consciousness has started to interest neuroscientists although, atomic physics has not much to present to guide us in these studies on mind and soul (psyche) representing the essence of normal life! William James defined 1890 consciousness as a stream of continuous brain activity involving attention, intentionality with self-awareness of perceptions (qualia) accessible only to the person experiencing it. The phenomenon of “blind-sight” where patients suffering from total blindness if forced to make a choice on the basis of what is shown before their eyes can make decisions as if they can see, a form of perceiving without being conscious of it. They may be activated by synchronous firing of cortical neurons at frequencies around 40 Hz but the receptor system is even more enigmatic.

I have a remarkable patient who suffered for years from spells of unconsciousness variably involving epileptic seizures. A teratogenic cyst was found in her temporal lobe diagnosed as an oligoastrocytoma lobi temporalis dx. This benign embryonic tumour was extirpated with a good clinical result. 11 years later after she had her third child and was stressed she started to experience short irregular spells of unconsciousness without seizures. I advised her to digest CNS-lipids in the form of canned healthy piglet brain (prion-free). The spells of unconsciousness disappeared immediately after ingesting 70 g of total CNS containing lipids (Neurofood Ltd. Helsinki 00200). The positive therapeutic effect has lasted for months and we are now trying to elucidate the active lipid component/s from these billions of functional lipid-molecules present in our brain. This break with dualism regarded as separate natures of mind and soul, stemming from ancient Greek philosophy attests that consciousness in this respect is a biological phenomenon effected by physiologic cogent lipid components.

C. Inductional CNS is Linked to Cancer Control and Healthy Gene Transcription

In certain malignant cell forms like skin basalioma these skin cells are derived from the neural crest and have therefore a linkage to CNS lipid factors. In numerous cases suffering from recurrent aggressive basalioma the cancer is cured by a dietary supplement containing CNS lipids

and essential trace-element metal ions. Melanocytes are also embryonically derived from the neural crest. In the treatment of skin and uveal melanoma the disease progress can be halted and in certain cases complete regression has been obtained when the dietary supplementation has been supported by active specific immunotherapy using autologous tumour. In the healing process transformed *electron dense* mitochondria gather around the nucleus of the malignant melanoma cell and signal to them to regain normal healthy transcription without apoptosis or scar formation.

D. Blood-Brain Barrier Lesions Upset the Inductional Cell Control, (e.g. Herpes Virus Infections)

This lesion causing an outflow of essential lipid molecules lead to the simple effort to correct the resulting regional deficiency by feeding patients with the potentially missing CNS components i.e. well prepared prion-free brain or canned healthy piglet brain (Neurofood Ltd. Helsinki). The clinical results showed that these vital lipids could be absorbed from the intestine and be transferred into the CNS which quelled certain symptoms of the neural deficiency.

E. Neurological Pain, the Warning Signal from Nerves, is Alleviated by Ingestion of CNS Lipids

The common fact is that cancer patients often suffer from pain of various intensity. The impression was that the pain actually represented a warning signal from the nerves that they could not produce certain critical lipidomic components. CNS lipids are readily absorbed from the intestine into the blood and transported in the circulation to the nerves, craving for the vital lipid factor which they could not produce themselves. The pain subsided thanks to this physiologic metabolic substitution, without side-effects. It could produce a prolonged analgetic effect. It also had a definite positive effect on the "life-quality" of cancer patients.

F. Melanoma Satellites Appear in the Denervated Axonal Area- Due to Impaired Induction?

Melanocytes derive from the neural crest and have therefore some resemblance to nerve cells in general, as well as the basal cells in the skin. The melanoma incidence is increasing worldwide. Biological metabolic supplementary treatment utilizing certain amino acids, trace-element salts and CNS-lipids have in randomized prospective studies (> 150 patients) shown highly significant better survival rates and disease free intervals (with median follow-up > 170 months) than patients on standard treatment. The tendency for melanoma satellites to appear in the vicinity of the primary tumour has often been recorded. Excision with a wide margin does not therefore always prevent recurrent disease since we have only removed by surgery the symptoms of the disease and not even tried to correct the etiology conformed by a complex metabolic deficiency. Postoperatively melanoma patients (of any Stage) should always be offered a treatment aimed at

correcting the metabolic deficiency using ready made powders containing the missing natural components, for 2 € per day (Tallberg, 2001).

G. Lymphopoietic Stimulation by a CNS-Lipid Molecule Containing Titanium (Ti), as Cobalt in B₁₂.

With the dietary attempt to compensate the outflow of CNS-lipids through the injured blood-brain barrier a surprising observation was made. The often depressed ecto-enzyme activity on white cells from cancer patients' white cells could normalize in three days following ingestion of CNS lipids. The rapid improvement of the depressed activity showed that there was an agent which stimulated the white blood cell function, a lymphopoietic lipid factor. This CNS-lipid contained titanium, regarded as a collateral to the cobalt in B₁₂ for erythropoiesis.

Since the spinal cord has segmentally induced all other organs during embryogenesis and locked them in their function at birth. The white cell is the only nucleated single-cell organ of the body, which has not been locked in its function at birth, and it should be able to selectively react on demand, during our lifetime, to fend us from diverse challenges, i.e. viruses, bacteria, and cancer. Therefore they would need this inductive contact with the spinal cord factors. The immune system can then be adjusted as required, during adulthood. Characterization of this lipid soluble vitamin-like substance would be valuable as it could improve the immunity of a whole population.

H. Burn-Out Stress Syndromes in Sportsmen, Battle Fatigue, Sleep Disorders Eased from CNS Diets.

Many cancer patients suffered from stress linked depression. In breast cancer patients it may even be associated with an increased cancer incidence. The present extensive use of estrogen substitution given to healthy females with its effect on lipid metabolism, coincides with the increased breast cancer and lymphoma incidence during the last decades. This provoked change in the hormone balance can lead to a marked decrease in the female patients' serum inhibin level, although the activin stays normal. A similar shift is recorded in orchiectomized prostate cancer patients. In healthy pregnant females this same shift in inhibin/activin levels is seen but normalizes after parturition. If oestrogen substitution in a healthy postmenopausal female simulates pregnancy her body may not understand that there should not be proliferating cells eventually leading to malignant transformation. This risk can be evaluated based on a serum assay for inhibin / activin costing 8 €.

The alarmingly increase in the incidence of depression and burn out syndromes may be due to the indiscriminate fat-free diets presently recommended. The body can then not compensate the daily consumption in the brain due to the lack of necessary lipid building blocks in the serum.

I. Idiopathic Neural Pain “Tallberg Syndromes” and Insomnia are Mitigated by Dietary CNS-Lipids.

This unprovoked pain afflicts cancer patients and appears during sleep usually in the late phase at sunrise. If they then ingest some grams of a prion-free, ether/alcohol extract made from CNS-lipids, their pain quelled. Their spinal cord may not be able to produce certain vital components but oral CNS-lipid supplementation is readily absorbed from the intestine into the blood, in ten minutes. These patients suffer often from sleep disorders, are usually also stiff when they wake up in the morning, but this motor derangement can also be overcome by CNS-lipids. This stiffness can be controlled by morning gymnastics and exercise - which seem to activate the spinal-cord lipid metabolism. Normal motor function depends, as well, on functional lipdomics.

J. Cholesterol Levels Dip from Ingestion of Extracts Made from Brain-Lipids and Membranes

Despite the high cholesterol content in brain, dietary compensation was deemed necessary because some of the CNS-lipids had been shown to leak out through the blood-brain barrier. The cholesterol fright, required regular controls of the level during active supplementation with cholesterol containing brain lipid components. Surprisingly, a standard dose given once a week to 32 cancer patients caused the cholesterol level to decrease in all, as well as the triglycerides.

Seven patients (median age 57 years) then got a daily standard dose containing 4g of ether/alcohol extracted brain lipids. Their mean cholesterol level fell from 7.0 to 3.71 mmol/l \pm 0.25. All had a cholesterol level under 4 mmol/l. This experiment was reproduced 20 years later, and the results showed again a marked decrease in the cholesterol levels. This positive reaction is deemed to be caused by some factor in the brain membranes (enzyme?) which consumes cholesterol as one co-factor in the reconstitution of the brain lipidome. The cholesterol level fell, with shifts in the LDL & HDL composition and total lipids, in two weeks from a daily ingestion of CNS-lipids, and manganese.

K. Marked Regional Depletion of Cns-Lipids in Spinal Cord Autopsies May Link it to Atherosclerosis

The aim was to identify the lipid component/s which had leaked out through the blood-brain barrier, and thus eventually be able to supply the missing agent. Segmental pieces from the spinal cord of patients who died of gastric or renal cancer were therefore analyzed. The spinal segments enervating these organs were appraised to be at the level of Th1 for gastric, and the Th9 vertebrae for renal cancer. All lipids contained in spinal cord biopsies of 1 cm thickness were analyzed. The result was troubling. In two patients all lipids had markedly decreased only in the lower region, at the level of Th9, while the content of lipids was normal at Th1. In two cases this marked lipid depletion was found both at the level of, Th1 and Th9. This finding excluded a direct selective causal effect from a specific lipid component on gastric or renal cancer. The spinal

cord samples revealing this marked regional lipid depletion were actually taken from patients who died with atherosclerosis. The cases lacking CNS-lipids only at the lower level had succumbed with femoral arterial obliteration. The patients with lipids missing in both regions had died of heart failure. The lipids in the spinal cord form a prerequisite for blood vessels enervation, contraction and dilatation representing neural function would be missing in this spinal cord segment, but rigid vessels would calcify and obliterate. Atherosclerosis is a “troika” also in a clinical sense, as certain patients have circulatory distress mainly in their legs, while other cases have it in their mid section and die of heart failure. The third group suffers from atherosclerosis in their head region. This lipid metabolic dysfunction may be linked to the embryogenesis of the spinal cord which is induced in three segments during gestation. Regional derangements in the vital lipid metabolism could then emanate causing these circulatory symptoms.

L. Rheumatic, Neuropathic, Psoriatic Arthritis, Fibromyalgia, Crohn’S Disease Respond to CNS Diets

These sterile inflammatory diatheses seem to be linked to a metabolic deficiency in lymphopoietic CNS components. These often chronic ailments respond surprisingly well to the intake of CNS-lipids combined with certain amino-acids (especially Ile) and essential trace-element ions. In skin psoriasis as well as when it is expressed in its arthritic form the disease can be mitigated, and in certain cases even cured by natural dietary means, using readymade powders according to a formula presented, in 2007 (Tallberg, 2007), involving also CNS-lipid ingestion. Patients suffering from fibromyalgia should ingest CNS-lipids, Arg and Leu, supplemented with the trace-element salts used in bio-immunotherapy. Crohn’s disease also dramatically responds to a similar dietary regime as seen with fibromyalgia. It is possible that there is a depressed signaling to the immunocytes due to reduced physiologic levels, or production, of the physiologic CNS-lipid component, (containing Ti, see section G), regulating the immune-response. An aberration in the response linked to the immune-system could lead to these idiopathic sterile inflammatory diatheses.

M. CNS-lipid monomers may be involved in Controlling Allergic Reactions via Cell-Receptors

This surprising revelation emanated from strictly randomized studies in treating the seasonal, spontaneous allergic skin reaction “summer eczema” in horses utilizing a homeopathic treatment schedule. This “over-production” of lipid signal components aggregate spontaneously into big molecular structures. These would then again be too big to fit the appropriate lipid cell-membrane receptors regulating the allergic reaction. The intense shaking will emulsify lipids in the serum, and thus they would float. In repeated dilutions these emulsified lipids would not appreciably decrease. With the final dilution in alcohol could dissolve these lipid signal structures

into monomers. The monomer fed could then attach the cellular membrane receptors, whereby this corrective signal would normalize the allergic reaction.

N. The etiology of Autism Spectrum Disorder (ASD) and ADHD Seem to be due to a Deficiency in Circulating Vital CNS-Lipids during Gestation, and after Birth

The marked increase in the incidence of ASD and ADHD during the last decades coincides with the indiscriminate “fat-free” diets presently prescribed. It is not hereditary since no mutation could have affected the whole western world during the last decades. The prime need for a cure is the daily intake of vital dietary lipid-molecules, but this solution is usually over-looked, since the industry prefers medicines.

The physiologic consumption of these essential CNS lipid molecules is caused by daily mental activity and stress. A healthy diet for pregnant females should therefore contain these vital lipids, e.g. butter, fatty fish, well prepared brain, chicken liver, eggs, and sweetbread supplying the essential building blocks and precursor molecules, like cholesterol, required to restore the constant physiologic utilization of CNS-lipids in our brain. We should avoid an indiscriminate fat-free diet regime, whereby we involuntarily also restrict the intake of these essential vital lipids essential to preserve a functional physiologic lipidome.

These countless essential lipids are crucial in compensating the physiologic requirement - facilitating the constant need to reconstruct the complex lipid-network forming our brain “lipidome”, in order to preserve normal health.

It is of crucial importance that the pregnant female can furnish these dietary *vital lipid* precursor molecules and cholesterol to her fetus from the first trimester, when the brain and spinal cord is induced and through gestation and lactation to secure a normal mental development [I Q] of her offspring. Humans have a rapid brain growth for about 2 years after birth, and brain maturation continues into adulthood. Due to this “hypermorphosis”, by the time humans are adults, the ratio of brain weight to body weight is 3½ times that of apes. During postnatal development there is an increase of 250,000 neurons per minute, 30,000 synapses are formed per square centimeter of cortex per second. As two thirds of this mass is formed by lipid molecules we can understand how important the maternal metabolic furnishing as well as the diet content of vital lipids is, as “CNS building block” especially also after birth to secure her child’s healthy intellectual and mental development. CNS lipid diets cure depression and burn-out syndromes proving that also adult brain function need these dietary components.

O. A Prolonged Relative Lack of Cital CNS-Lipids May Cause Anorexia and Infertility

A germane deficiency in vital CNS-lipids perhaps due to a too low dietary intake may prevent ovulation and conception because the female body can sense that a physiologic fetal development requires a minimal serum level of these vital lipids to secure proper induction and normal embryogenesis. This physiologic security reaction has been observed with certain wild bears in

Alaska where a pregnant female may abort her embryo if she has a too low vital serum lipid-level before she starts hibernation. Her pregnancy could then be dangerous during her winter sleep, as her fetus lacking proper lipidomic induction may not develop normally, and perhaps die in utero. Anorectic females may also therefore, as an analogue, have great difficulty to become pregnant.

P. Mitochondrial Point Mutations Cause Derangements in the Lipidome

Over one hundred point mutations have already been found in the mitochondrial genome since the HGP was completed. They lead to various ailments forming the “morbidity map” following mutations in the mitochondrial genome. These could also often affect the metabolism of myelin lipids causing distortions in the lipidomic function. That the mitochondrial genome so closely has a *link to lipid metabolism* is mirrored as various forms of neurodegenerative protein and lipid disorders. This supports the notion that mtDNA also has a central role in induction and regeneration of the billions of lipids in the CNS. Activation of tissue-specific mitochondria transformed them to become electron dense, as their cristae gathered an increased content of metallo-enzymes. This cell-regulatory function seemed to be involved in the healing of human malignant histiocytoma and melanoma in bio-immunotherapy. Based on mammalian cancer studies mitochondria seem not only to produce energy for the nucleus, but also to regulate the genome in the chromosomes they have created. In studies with prostate cancer patients the electron dense metallo-enzymes of transformed mitochondria were witnessed to empty into the diseased nucleus when tumour cells regained a healthy form. Mitochondria are also involved in the recirculation of organic matter and the decay process. Gene manipulation of foods may therefore hamper the metabolic processing, since mitochondria may not acknowledge the new foreign nucleotide sequence.

Mitochondria seem also to have a memory of the nucleotide sequences they have phylogenetically created during evolution. This probability is reflected by the surprising finding with Arabidopsis plants in which, despite identical mutations in both chromosomes 10% of the off-springs were normal. This finding does not require a change of Mendel's laws', but should rather be interpreted as if mitochondria have a memory of what they have created. In the reproduction process they may detect the mistake in the sequence they have made, and correct it.

In the interesting studies, by Hofred et al, on tissue engineered fetal skin grafts for paediatric burns tissue specific mitochondria could have activated stem-cells. The human male fetal skin grafts used lead to normal skin forming in the recipient female patient. The skin was not shaped by the male skin transplant! Fetal skin grafts may contain tissue specific skin-mitochondria which could activate any cell to produce new skin with the recipients' genome, thus naturally preventing rejection. This physiologic activation of stem-cells - general cell induction - utilizing tissue-specific mitochondria is ethical and medically sound, and may thus in the future be accepted as a precision therapy.

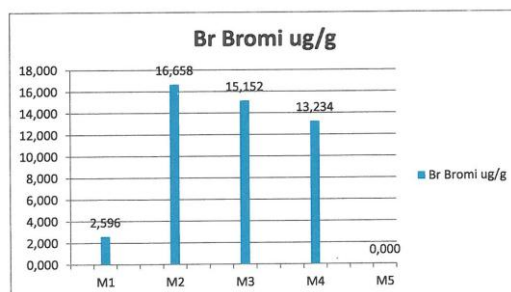
These various biological functions relating to the multi-factorial interaction between mitochondria; essential organic, inorganic components, vital CNS-lipids, nucleotide sequences and environmental factors modulate our health. In disease, these complex metabolic deficiencies can be mended to restore the internal milieu, which then can lead to new curative physiologic treatment modalities - if we only try to learn and understand this biological message!

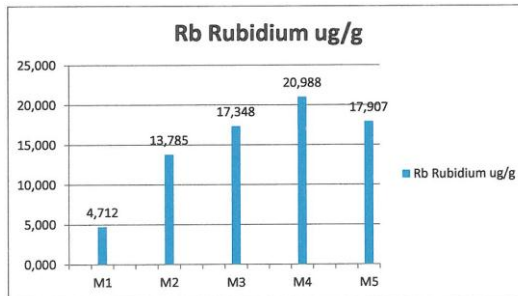
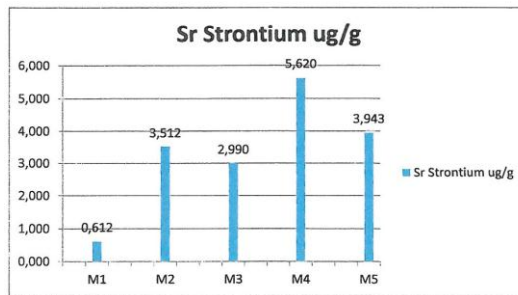
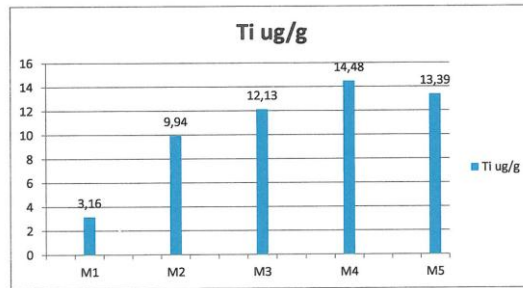
2. CONCLUSIONS

It is of vital importance that the consumption of CNS-lipids can be compensated by a very specific functional food intake. This metabolic compensation of a long standing (malignant deficiency) can be achieved by a natural food intake like in traditional Chinese medicine, practiced a thousand years ago. They fed patients with brain and exotic herbs and some were cured, also cancer patients', and this demonstrated that such dangerous deficiencies could be cured by an oral intake of the missing non-toxic natural components. At that time they could not delineate the nature of the curative components. Biotechnology has now furnished us with the knowledge of what pure natural alimentary components may overcome even complex metabolic deficiency diseases. Therefore the mutilation of the vital lipids in whole milk by rupturing the lipo-proteins forming the cream into a lipid, and especially a protein moiety which can cause milk allergies is definitely unhealthy. This pathologic reaction may complicate the possibilities to cause a physiologic cure.

REFERENCES

- Tallberg, T., 2001. The regulatory function of mitochondria on chromosomes in cancer cells. *Anticancer Res.*, 21(3A): 15-36.
- Tallberg, T., 2007. Evolution, this "Creative idea" Accomplished by mitochondria, and the danger with gene manipulation of foods. In, *Trends in biomedicine in Finland XXI*. ISBN 978-952-99568-3-8. ISSN 1236-925X. Brain, Nutrition, and Applying Functional Medicine Concepts to Neurological Disorders. (Tampere 1.11.2006), 2(4): 39-40.





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