AN EXPERIENCE IN THE UNIVERSE OF MAGNESIUM
AN EXPERIENCE IN THE UNIVERSE OF MAGNESIUM
CLMD is worldwide!
(Chronic Latent Magnesium Deficiency)
Ronald J. Elin, M.D., Ph.D.
A. J. Miller Professor and Chairman

Medical Education:
Dr. Elin received his M.D. degree in 1966 and Ph.D. with a major in biochemistry and a minor in pathology in 1969. During that time Dr. Elin completed residency training in anatomic pathology. After a straight medicine internship at the University of California Hospital at San Diego Dr. Elin went to the National Institutes of Health. Dr. Elin spent three years in the National Institutes of Allergy and Infectious Disease as a research associate and completed a clinical pathology residency. In 1975 Dr. Elin became the Chief of the Clinical Pathology Department and in 1977 the Chief of the Clinical Chemistry Service within that department; positions that Dr. Elin held until 1997. Dr. Elin moved to the Department of Pathology and Laboratory Medicine at the University of Louisville in 1997.

Specialties:
American Board of Pathology Anatomic and Clinical Pathology—1974
Subspecialty of Medical Microbiology—1976
Subspecialty of Chemical Pathology—1980
American Board of Medical Microbiology—1977
American Board of Clinical Chemistry—1980

Research Interests:
Dr. Elin has had a research interest in mineral metabolism, particularly magnesium, properties if endotoxin, interference with clinical laboratory testing, and definition of the reference range.
CLMD
Chronic Latent Magnesium Deficiency

- 1983
- Stroke Belt

- Soil Depletion
- Anorganic Fertilizers
- Food processing
- Stress & Lifestyle
- Medicines (!)
ANTACID CAUSES MAGNESIUM DEFICIENCY: Tip of the Iceberg?

PhD successfully defends thesis about magne

PhD defence Anke Lameris
Date: 4 February 2014
Time: 12.30 hrs
Location: Aula of the University
Speaker: Anke Lameris
Title: Divalent Digestion: Insight in Intestinal Ion Transport

More information:

Dr. Marianne Mousain - Bosc fights against one of the most dangerous drugs: "Stop with Methylphenidate for children with ADHD, they need Magnesium in stead!"

Read her epoch - making book:

Click for French version

Click for Dutch version
2016
MAGNESIUM COMMUNITY
World Wide

- Awareness (supplementation = inevitable / SDRM Mexico 2013)
- Which Supplement? / Elin--> MgCl2 superb bioavailability!
- Which MgCl2?
The 'Magnesium Aware community' is rapidly growing. Worldwide and it’s high time!
LIFE ESSENTIALS

- Water
- Oxygen
- Magnesium

Magnesium runs 327 enzymatic processes!

- WHO
- FDA
- < 50% RDI
LIFE ESSENTIALS

Water
Oxygen
Magnesium

in ocean
abundantly available

on land
smart approach needed
Interstitium

We carry our own Ocean
BREAKING!

MAGNESIUM & CANCER

Correlation
cancer and magnesium deficiency = proven

Colo-rectal cancer, prostate cancer,
lung cancer, esophageal cancer,
pancreatic cancer,
EBV-driven (Burkitt, Hodgkin, sarcoma, etc.)
MAGNESIUM & PARKINSON & ALZHEIMER

INFLAMMATION
& DIABETES
& METABOLIC SYNDROME
& HYPERTENSION
& STROKE
& CARDIO VASCULAR DISEASE
& DEPRESSION
& PMS
& MIGRAINE
& - - - - -

INFLAMMATION
INFLAMMATION

- Cancer
- Cardiovascular
- Neurological diseases
- Alzheimer's disease
- Autoimmune diseases
- Pulmonary diseases
- Arthritis
- Diabetes
Too low in Magnesium ....

- Inflammation & calcification
- oxidative stress (free radicals)
- wide variety of conditions
- accelerated ageing
- aggravation of diseases
- intensification of pain perception
What are the causes of magnesium deficiency in Western population?

- Anorganic fertilizers in modern agriculture
- Food processing
- High Calcium diet (Mg/Ca ratio!)
- Lifestyle (stress, stimulants, sugar, high sodium intake)
- Medicine
Symptoms of Mg-deficiency

- Cramps, restless legs
- Insulin resistance
- Seizures
- Arrhythmias
- Hypertension
- Insomnia
- Sexual dysfunction
- Memory disorders
- ADHD & learning disorders
- Character change
- Parkinsonism

- Migraine
- Depression
- Osteoporosis
- Pre- & Eclampsia
- Irritable Bowel Syndrome
- Chronic fatigue
- Obstipation
- Hypersensitive bladder
- Psoriatic-like skin disorders
- Excessive sweating
- Immunological disorders

etc.
Magnesium Status Determination

Appropriate test fails

What counts is Intracellular Free Mg

Serum magnesium = 1%
1. Mario Barbagallo
Magnesium and aging
These are the survivors
Magnesium & Healthy Ageing

INFLAMMATION & CALCIFICATION

Telomeres
DHEA
Cell repair mechanism
Protection and Detoxification

Mercury
Lead
Cadmium
Aluminium
> 327 enzyme processes

'Chanzime'
Channels
Enzymes
Just in case you are still confused MAGNESIUM not CALCIUM is the key to HEALTHY BONES
Cement in bone metabolism

Mg/Ca ratio is more important than absolute quantity
Netherlands = champion Ca-diet
Netherlands = champion osteoporosis
<table>
<thead>
<tr>
<th>Food rich in Magnesium</th>
<th>Food processing</th>
<th>Food processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beans</td>
<td>Food processing</td>
<td>Food processing</td>
</tr>
<tr>
<td>Green vegetables</td>
<td>Bodem depletion</td>
<td>Bodem depletion</td>
</tr>
<tr>
<td>Nuts</td>
<td>CA/Mg ratio</td>
<td>CA/Mg ratio</td>
</tr>
<tr>
<td>Chocolate</td>
<td>Intestinal absorption is poor</td>
<td>Intestinal absorption is poor</td>
</tr>
<tr>
<td>Grains</td>
<td>Life style and excretion</td>
<td>Life style and excretion</td>
</tr>
<tr>
<td>Broccoli</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avocado</td>
<td></td>
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</tr>
</tbody>
</table>
BECAUSE OF CA / Mg RATIO
SUPPLEMENTATION IS A MUST
OFFICIAL ADVICE SINCE 2013

- Pregnancy
- Sport & exercise
- Ageing
MEXICO 2013

Proven transdermal permeation
Transdermal Magnesium Oil & Bath

No intestinal side effects
Beneficial for skin
Mental & Neurological (relaxing) benefits
PERMEATION OF TOPICALLY APPLIED MAGNESIUM IONS THROUGH HUMAN SKIN IS FACILITATED BY HAIR FOLLICLES

Navin Chandrakanth Chandrasekaran\textsuperscript{1,2}, Washington Y. Sanchez\textsuperscript{2}, Yousuf H. Mohammed\textsuperscript{2}, Jeffrey E. Grice\textsuperscript{2}, Michael S. Roberts\textsuperscript{2,3}, Ross T. Barnard\textsuperscript{1}

\textsuperscript{1} School of Chemistry and Molecular Biosciences, Australian Infectious Diseases Research Centre, The University of Queensland, Brisbane, Queensland, 4072 Australia.
\textsuperscript{2} Therapeutics Research Centre, School of Medicine, Translational Research Institute, The University of Queensland, 37 Kent St. Woolloongabba, Queensland, 7613, Australia.
\textsuperscript{3} School of Pharmacy and Medical Sciences, University of South Australia, City East Campus, North Terrace, Adelaide, South Australia, 5001, Australia.

INTRODUCTION
Magnesium is an important micronutrient essential for various biological processes and magnesium deficiency has been linked to several inflammatory disorders in humans. Some anecdotal evidence and a few published results have attributed amelioration of inflammatory skin conditions to the topical application of magnesium. However, it is unclear the extent to which these observations can be extended to the protective barrier of skin.

OBJECTIVES
1. To understand permeation characteristics of topically applied magnesium ions on human skin.
2. To understand the effect of concentration and time on magnesium ion permeation through human skin.
### Assumed transdermal uptake of magnesium

Similarity in kidney and sweat glands of active reabsorption mechanism for magnesium could explain transdermal uptake of magnesium oil (MgCl₂).

#### Kidney

**Production of urine in nephron**

1. Blood enters urine production unit.
2. Proximal area with pre-urine which still contains much Mg²⁺ and Cl⁻ amongst other ions.
3. Distal area with active Mg²⁺ reabsorption in order to prevent excessive losses.

#### Sweat gland

**Production of sweat in sweat gland**

1. Blood enters sweat production unit.
2. Proximal area with pre-sweat which still contains much Mg²⁺ and Cl⁻ amongst other ions.
3. Distal area with active Mg²⁺ reabsorption in order to prevent excessive losses.

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**Kidney cross section**

![Kidney cross section diagram](image)

**Skin cross section**

![Skin cross section diagram](image)
Door Marscha van Noesel

Danie en Janse zijn overtuigd van de therapeutische werking van magnesiumchloride op magen en darmen. Zolang die werking niet wetenschappelijk is onderbouwd, willen ze nog voorzichtig zijn met hun beweringen. Daarom hebben Danie en Janse het Magnesium Health Instituut in Veendam opgericht. Daniel: "Ons doel met dit instituut is om de werking van magnesiumchloride te onderzoeken en in extreme gevallen zelfs het intrametaal in te stellen. Wat een symposium heeft gevestigd in een magnesiumliefhebber is evident en vast te stellen. Wel kan er diarree optreden wanneer er te veel magnesium wordt ingenomen, via tabletten bijvoorbeeld."

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THANK YOU FOR ATTENDING THE ZECHSTEIN MAGNESIUM COMMUNITY