TARMEN – HÄLSANS MODER

"Hedra Din Hälsas moder – tarmen och dess bakterier – på det att det må gå Dig väl och Du må länge leva på jorden” 2 Mosebok 2:12

Stig Bengmark MD PhD

stig@bengmark.se
www.bengmark.com
www.synbiotics.se

MITT BUDSKAP IDAG: MULTI-STRAIN SYNBIOTICS IN DISTAL COLITIS

Symbiotics installed in the intestine, 10 patients, studied before (D0), and after 7 (D7), 14 (D14) and 21 (D21) days of treatment:

<table>
<thead>
<tr>
<th></th>
<th>D0</th>
<th>D7</th>
<th>D14</th>
<th>D21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urgency</td>
<td>1.9</td>
<td>1.2</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Episodes of diarrhoea</td>
<td>2.4</td>
<td>1.3</td>
<td>0.9</td>
<td>0.8</td>
</tr>
<tr>
<td>Nightly diarrhoea</td>
<td>0.5</td>
<td>0.1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Visible blood</td>
<td>2.2</td>
<td>1.2</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Consistency of stool</td>
<td>1.1</td>
<td>0.9</td>
<td>0.7</td>
<td>0.8</td>
</tr>
</tbody>
</table>


Mina nuvarande STÖTTARE

David Bengmark – “koncernchef”
Ludvig Ekelund – “Founding CEO/VD” Super Synbiotics (SSAB)
Teresa Garcia – Marketing Manager, SSAB
Peter Nählsedt – f.d. VD för Probi – Arbetande Styrelseordf SSAB
Fredrik Henge – e-handelsspecialist, mångårig erfarenhet från bl.a CDON, styrelseledamot SSAB
Bengt Mårtenson – f.d. Koncerndirektör i Arla-gruppen, styrelseledamot SSAB
Lennart Persson – F.d. VD Medipharm (Arla), styrelseledamot SSAB
Anna Andersson – Hälsotjänare, KRAFT-instruktör, Coach
Henrik Nyberg – VD för Inpac AB i Lund –bolaget som sluttillverkar, förpackar och skickar Synbiotics till kund - http://www.inpac.se

HEALTH HAS THREE MAJOR LEGS – all are needed – honour them all!

Sitt på Malmö Museum – 1800 meter från Triangeln

SPIRITUAL HARMONY

EXERCISE
PROPER FOOD

© 2019 Scandic Hotel Malmö
DISEASE, GENES, ENVIRONMENT
- example cancer

ENVIRONMENT
90-95 %

DIET
app 1/3

GENES
5 %

DIFFERENT TIME & LIFESTYLE – DIFFERENT DISEASE PATTERN

A TZUNAMI OF PROSTATE CANCER –JAPAN
The age-adjusted death rate in ChDs such as prostatic cancer rose in Japan during the period 1948 - 98
25-fold parallel to increases in intake of:
egg 7 X
meat 9 X
dairy 20 X
Ganmaa D et al Medical Hypotheses 2003;60:724-730

THIRD MILLENNIA DISEASES
DRAMATIC increase in incidence in recent 27 years (1990 – 2017) in USA
Lear R. The Root Cause in the dramatic rise of Chronic Disease
https://app.box.com/s/iyjuzrxtkx3gpblu4vmt0wjrgsxykuzc

Chronic fatigue syndrome 11027 percent
Bipolar disease in youth 10833 percent
Fibromyalgia 7727 percent
Autism 2094 percent
Celiac Disease 1111 percent
ADHD 819 percent
Lupus 787 percent
Hypothyroidism 702 percent
Osteoarthritis 449 percent
Sleep Apnea 430 percent
Diabetes 305 percent
Alzheimer's disease 299 percent
Mental Depression 280 percent
Asthma 142 percent

FORECAST ALZHEIMER USA – 2050
Hebert LE et al. Arch Neurol 2003;60:1119-1122

Professor Dale Bredesen, professor of neurology, Univ of California, Los Angeles
Recommended diet: Mild ketosis, complex carbohydrates: about 10-15 servings of non-starchy vegetables/day consisting in low-glycemic fruit such as berries, healthy fats – mostly mono-unsaturated foods such as nuts, seeds, low-mercury fish PLUS a 12-hour nightly fast + a 3-hour fast before bedtime (i.e. 15 hours nightly fasting)
almost identical with my “TWELWE COMMANDMENTS”
FECAL TRANSPLANTATION (FMT) IN MULTIPLE SCLEROSIS – 3 PATIENTS
Borody Th et al Am J Gastroenterol 2013;52: Suppl 2; abstract 952

😊 Patient 1. Male 30 yr, wheel-chaired, constipation. 
5 FMT infusions. Regained walking ability. Remains well & without any relapses, 15 years post-FMT.

😊 Patient 2. Male 29 yr, wheel-chaired, severe constipation. Regained walking ability. 3 years pst-FMT on maintains normal motor, urinary and GI function.

😊 Patient 3. Female 80 yr, severe chronic constipation. Regained walking ability - now long distances unassisted. The patient asymptomatic 2 years post-FMT.


DISCRETE PERSISTANT CHRONIC INFLAMMATION
- THE MOTHER OF DISEASE
Bengmark S. J Clin Nutr 2004;23:1256-1266

UNDERSTANDING INNATE IMMUNITY
= UNDERSTANDING INFLAMMATION
= UNDERSTANDING DISEASE
- Perinatal 😞
- Postprandial 😞

Inflammation – the Mother of Disease!

MALFUNCTIONING INNATE IMMUNITY
😊 Reduced number & function of monocytes and macrophages
😊 Reduced expression of Toll-like receptors
😊 Reduced efficacy of dendritic cells to activate both T & B cell
😊 Decreased killing ability of natural killer (NK) cells
😊 Reduced efficacy of macrophages and neutrophils: impaired respiratory burst, reactive nitrogen intermediate production & decreased ability to destroy pathogens & Impaired production of several cytokines

Available at http://bengmark.com/research-articles/

Available at http://bengmark.com/research-articles/
A recent study found that 60 percent of American adults live with at least one chronic disease.

42 percent have more than one disease.

Leading to spending of hundreds of billions of dollars in health care costs every year.

POSTPRANDIAL INFLAMMATION & ENDOTOXEMIA

INDUCERS OF POSTPRANDIAL INFLAMMATION

INDUCERS OF POSTPRANDIAL INFLAMMATION
Rich in: Saturated Fat (animal fat) Monosaturated Fat (sunflower oil 85%, olive oil 75%, canola oil 58%) LFHCC + Complex Carbohydrates

MICROBIOTA & OBESITY

Obese (n=68) Controls (n=44) P-value

<table>
<thead>
<tr>
<th>Strain</th>
<th>Obese (%)</th>
<th>Controls (%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>L. plantarum</td>
<td>0 (0%)</td>
<td>8 (18.2%)</td>
<td>0.0004</td>
</tr>
<tr>
<td>L. paracasei</td>
<td>10 (14.7%)</td>
<td>17 (38.6%)</td>
<td>0.004</td>
</tr>
<tr>
<td>L. reuteri</td>
<td>6 (8.8%)</td>
<td>1 (2.3%)</td>
<td>0.16</td>
</tr>
<tr>
<td>L. rhamnosus</td>
<td>3 (4.4%)</td>
<td>4 (9.1%)</td>
<td>0.27</td>
</tr>
<tr>
<td>L. ruminis</td>
<td>3 (4.4%)</td>
<td>4 (9.1%)</td>
<td>0.27</td>
</tr>
<tr>
<td>L. salivarius</td>
<td>5 (7.4%)</td>
<td>2 (4.5%)</td>
<td>0.43</td>
</tr>
</tbody>
</table>

OBESE PREGNANT WOMEN – SOURCE OF INFLAMMATION
Basu S et al Obesity 2011;19:476-482

LEAKY BARRIERS
Maccaferri S et al Dig Dis 2011;29:525–530
MOTHERS LIFESTYLE RELATES TO PERINATAL INFLAMMATION AND LONG-TERM HEALTH

LEAKY PLACENTA
A shocking 9/20 (43%) of umbilical cord blood, cultivated from healthy neonates, born by cesarean section, demonstrate positive growth:

Enterococcus faecium, Propionibacterium acnes, Staphylococcus epidermidis & Streptococcus sanguinis


ALLERGY, ADHD & GUT RECONDITIONING
Erika Isolauri & Seppo Salminen

2001 – Mothers from families with high burden of allergies received during the last 2-4 weeks of pregnancy and the baby during first 6 mo Lactobacillus GG

2003 – 14/53 (26%) in the probiotic group and 25/54 (46%) in the placebo group developed atopic eczema
Kalliomäki M et al Lancet 2003;361(9372):1869-1871

2015 - Probiotic-treated individuals showed no ADHD or Asperger syndrome - 0/40 = 0% in contrast to placebo group - 6/35 (17.1%) - every 6th child
Pärtty A et al Pediatr Res. 2015;77:823-828

PREVENTING DYSBIOSES IS KEY TO DISEASE & INFECTION CONTROL

A striking local preponderence (70-90%) of IgA immunocytes in the gut: plasma cells, plasma blasts

The gut content is constantly tested by recognition cells such as dentritic cells (DC)

Programming/tuning the immune system
Each DC commands about 1200 T-cells

DYSBIOSES LEAKY GUT & INDUCING INFLAMMATION FACILITATING INFECTION & DISEASE

THE DENDRITIC CELL IN ACTION

Kraehenbuhl JP, Corbett M. Science 2004;303:1624-1625

DENDRITIC CELL & IMMUNE REGULATION
Van Baarlen P et al PNAS 2009;106:2371-2376

LEAKY GUT & DYSBIOSES

FACILITATING INFECTION & DISEASE

DENDRITIC CELL & IMMUNE REGULATION

Antigenic well Fragments
Lymphoid follicles

Lamina propria

Dendritic cell

Mesenteric lymph node

MALT

GALT

Antigenic patch

B cell

Immune b (helper)
**ANTIBIOTICS**  ➔  **DYSBIOSIS**  ➔  **DISEASES**

Highest number of PRESCRIPTIONS

Louisiana Mississippi, Alabama, Arkansas, Tennessee, Indiana, West Virginia

**METABOLIC SYNDROME - A GLOBAL TZUNAMI**

- strongly associated to modern agriculture & mass-produced cheap processed foods

EPICENTRE: Louisiana Mississippi, Alabama, Arkansas, Tennessee, Indiana, West Virginia

Soon to lead “the league of unhealth”

**GLOBAL STROKE INCIDENCE**


**SIX DANGEROUS METABOLIC MANIFESTATIONS**

Today strongly associated with consumption of “Western-type” foods

Suggested in 1923 by Eskil Kylin, Eksjö, Jönköping and Stockholm.

- Abdominal obesity
- High blood pressure
- Elevated blood sugar release
- Elevated blood triglycerides
- Low blood HDL cholesterol
- Fatty liver & fat-infiltrated skeletal muscles
- High blood uric acid

**THE QUARTET OF DEATH**


- Excessive body weight
- Hypertension
- Impaired glucose homeostasis
- Atherogenic dyslipidemia
**DYSBIOSIS-INDUCED METABOLIC DISORDERS**

Cani PD et al Diabetes 2008;57:1470-1481

**LPS = ENDOTOXIN – THE VILLAIN**

**WESTERN DIET**

- Increased LPS absorption
- Increased permeability
- Endotoxemia
- Endotoxin shock

**FOOD INTAKE & CHRONIC INFLAMMATION**

- High intake in bacterial toxins
- High intake of proteotoxins in certain foods: casein (dairy), gluten & ATIs (wheat, rye, barley), zein (corn)
- High intake of heat- and storage-induced proteotoxins: glycated (AGEs), lipoxidated molecules (ALEs), processed carbohydrates
- Low intake of fresh plant foods; vegetables, fruits, spices induces:
  - Dysbiosis: reduced numbers & diversity
  - Leakage of various body membranes: leaky gut, leaky airways, leaky skin, leaky vagina, leaky eye, leaky nose, leaky placenta, leaky blood-brain barrier etc.

**ATIs A “SUPER”- TRIGGER OF INFLAMMATION**

ATIs – antitrypsin inhibitor - app 4% of wheat proteins – express strong inflammation-inducing abilities – associated with:
- Coeliac disease
- Asthma
- Multiple Sclerosis
- Rheumatoid arthritis
- Inflammatory bowel disease
- Non-coeliac sensitivity
- Systemic lupus erythematosus
- Autoimmune encephalomyelitis etc
- A potent microflora will break down ATIs.

**METABOLIC SYNDROME & DYSBIOSIS**


**DYSBIOSIS-INDUCED METABOLIC DISORDERS**

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- A potent microflora will break down ATIs.
ATIs-INDUCED INFLAMMATION


LPS = Endotoxin

TMAO = Trimethylamine Oxide

HEATING OF FOODS – NEGATIVE EFFECTS


HEAT-INDUCED TOXINS (AGEs & ALEs)

MEAT, POULTRY, FISH: AGE content increases with exposure to higher temperatures:

comp: Boiling 1000 vs Frying 9000 kU/serving


DAIRY: CHEESE, espec. hard cheeses

POWDERED MILK (espec. ice cream, baby & clinical nutrition formulas)

GRAIN PRODUCTS: Toasted bread, bread crusts & crisp breads

VEGETABLE OILS: ex. heated olive oil ca 8000 kU/100 ml

OTHERS: Egg yolk powder, lecithin powder, coffee, espec dark roasted, hard-cured teas, roasted and salted peanuts, dark and sugar-rich alcoholic beverages - high in i.g. broth, Chinese soy, balsamic vinegar, Cola drinks etc

AGEs & INFLAMMATION-INDUCTION

Bohlender JM Am J Physiol Renal Physiol 2005;289:F645-659

AGES IN VARIOUS MILK PRODUCTS

Baptista J, Carvalho R Food Res Int 2004;37:737-747

Table 2. Oxidative and cellular events associated with AGEs or HAGE activation

<table>
<thead>
<tr>
<th>AGEs</th>
<th>Erythrocytes</th>
<th>Endothelial cells</th>
<th>Macrophages</th>
<th>Neutrophils</th>
<th>Monocytes</th>
<th>Neutrophils</th>
<th>Monocytes</th>
<th>Neutrophils</th>
<th>Monocytes</th>
<th>Neutrophils</th>
<th>Monocytes</th>
<th>Neutrophils</th>
<th>Monocytes</th>
<th>Neutrophils</th>
<th>Monocytes</th>
<th>Neutrophils</th>
<th>Monocytes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epoxy</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
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<td>Low</td>
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</tr>
<tr>
<td>Carboxyl</td>
<td>Low</td>
<td>Low</td>
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<td>Low</td>
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<tr>
<td>Nitroso</td>
<td>Low</td>
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<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
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<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

Storage in room temperature 1-2 years
**ACRYLAMIDE IN FOODS & UNHEALTH**


Acrylamide is a strong inducer of acute and chronic diseases, which has among other effects

- **NEUROTOXICITY**
- **NEFROTOXICITY & CARCINOGENICITY**

**HEAT-INDUCED ACRYLAMIDE SYNTHESIS**


Figure 6. Acrylamide concentrations (micrograms per kilogram), corrected for weight loss, in French-fried potatoes heated in a temperature-programmed oven.

**DISEASES WITH ELEVATED AGES/ALEs**

- ADHD
- AGING
- AUTISM
- Allergy & Autoimmune diseases
- Alzheimer’s disease
- Amyotrophic lateral sclerosis
- Atherosclerosis & Cardiovascular diseases
- Chronic kidney, liver & pulmonary disorders
- Chronic ophthalmic diseases
- Creutzfeld-Jakob disease
- Diabetes
- Epilepsy
- Familial amyloidotic polyneuropathy
- Fibromyalgia
- Hormone deficiencies
- Huntington’s disease
- Macula degeneration
- Multiple sclerosis
- Osteoporosis
- Parkinson’s disease
- Polycystic Ovary Syndrome
- Rheumatoid diseases
- Ruptured Achilles tendon
- Sepsis
- Stroke

**ADVANTAGES OF RAW FOOD VEGAN DIET**

Fontana L et al. Rejuvenation Res. 2007;10:225–234

Consuming a low-calorie low-protein vegan diet of unprocessed and uncooked plant derived foods

Recruited from The St. Louis Vegetarian Society and a Raw Food online magazine (Raw Food News, www.rawfoods.newsmagazine.com)

SBP=Systolic blood pressure, DBP=Diastolic blood pressure, HOMA-IR=Homeostatic model assessment - a method used to quantify insulin resistance and beta-cell function.

hsCRP=high sensitive c-reactive protein – indicator of inflammation

**RECOMMENDATION for optimal health:** 1 – 1 ½ kg/person/day

Eating 800 g fruit and vegetables a day – or 10 portions – is associated with:

- 28 % reduced risk of cardiovascular disease
- 24 % reduced risk of heart disease
- 33 % reduced risk of stroke
- 13 per cent reduced risk of total cancer
- 31 % reduction in premature death

**PLANT FOOD PREVENT CHRONIC INFLAMMATION**


Eating 800 g fruit and vegetables a day – or 10 portions – is associated with:

- 28 % reduced risk of cardiovascular disease
- 24 % reduced risk of heart disease
- 33 % reduced risk of stroke
- 13 per cent reduced risk of total cancer
- 31 % reduction in premature death
SPICES – EFFECTS ON GLYCATION


LIFESTYLE CAUSES OF DEATH


“WARNING SIGNALS” - CHRONIC INFLAMMATION

Unexplained fatigue, sleep problems, frequent headache, hair loss, gray hair, dandruff, acne, skin rashes, dry eyes, frail nails, dry mouth or increased salivation, reduced sex functions, irregular menstruations, obstipation or diarrhea, osteoporosis, overweight, frequent infections, mental depression, easy breathless, sweaty feet, sweaty hand palms etc.

www.bengmark.com

PRESENT POOR EATING – POOR IMMUNITY

THE FRONT DOOR – A SHORTCUT

60 % are Sugar and Sugar-like substances which enters the body in upper jejunum via mainly the arterial system < 15 %

THE BACK DOOR – THE DANGEROUS ROUTE

app 30 % animal fats & vegetable oil enters via the body via the lymphatic system and remains in circulation for hours > 10 %

THE MAIN DOOR

< 20 % raw greens, vegetables, fruits are Foods for Microbiota and reaches the large intestine after 2-3 hours, enhancing immune system & preventing inflammation app 80 %

MICROBIOTA DIVERSITY – ANCIENT CULTURES


PALEO CULTURES: YANOMAMI - MALAWIANS

WESTERN COUNTRIES

THIRD GENERATION PROBIOTICS

SYNBIOTIC 2000

a product for the third millenium
RESEARCH BACKGROUND: THE 1986 EXPERIENCE

1986: Review of 81 extensive liver resections
Prophylactic antibiotic (ampicillin, cephalosporin, tetracyclines) given to 57/81 patients
No antibiotics to 24/81 patients

Morbidity: 33% (17% major)
INFECTIONS ONLY IN ANTIBIOTIC-TREATED PATIENTS
NO INFECTIONS SEEN IN THE PATIENTS WHO DID NOT RECEIVE ANTIBIOTICS

Ekberg, PhD thesis, Lund University 1986

Most lactobacillus strains are not probiotics

Suzuki C et al Int J Food Microbiol 2008;123:159-165

INNOCUOUS IMMUNE MODULATION - studied in 46 strains of lb. Lactis

<table>
<thead>
<tr>
<th>Strains</th>
<th>IL-6 (ng/ml)</th>
<th>IL-12 (ng/ml)</th>
<th>TNF-α (ng/ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S63</td>
<td>138</td>
<td>37</td>
<td>20</td>
</tr>
<tr>
<td>P99</td>
<td>100</td>
<td>23</td>
<td>10</td>
</tr>
<tr>
<td>H17</td>
<td>138</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>H45</td>
<td>4</td>
<td>2</td>
<td>0.33</td>
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<tr>
<td>O52</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>G50</td>
<td>10</td>
<td>2</td>
<td>16</td>
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<tr>
<td>1257</td>
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<td>0.23</td>
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<tr>
<td>HEC19453</td>
<td>21</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>O19</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>O20</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LPS</td>
<td>170</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

FERMENTATION ABILITY
The ability of 712 different LAB to ferment oligofructans (inulin, phepins) studied:
16/712 able to ferment the phepins &
8/712 able to ferment the inulin type fibre
Only four species had the ability:
Lactobacillus plantarum (several)
Lactobacillus paracasei subsp. paracasei
Pediococcus pentosaceus &
Lactobacillus brevis

Included in Symbiotic 2000

CONTROL OF PATHOGENS
The ability of 50 different LAB to control 23 different pathogenic C. difficile studied:

27 were totally ineffective
18 antagonistic to some
5 effective against all:
2 strains - Lb paracasei s. paracasei
3 strains - Lb plantarum


SYMBIOTIC 2000 - UNIQUE PROPERTIES

4 LACTOBACILLUS CHOSEN of 535 STUDIED:
All induce Bioactive Proteins
& cross-react with stress proteins
All transcribe NF-κB
All produce both pro-inflammatory (IL-1β, IL-8) and anti-inflammatory (IL-10) cytokines

Ljungh Å, Microb Ecol Health Dis 2002;3, Suppl 4:4

CHOICE OF LACTIC ACID BACTERIA TO SYMBIOTIC 2000

The abilities of 535 Lactobacillus strains to control inflammation and infection were studied
355 harvested from humans &
180 from plants
www.bengmark.com
**Lactic Acid Bacteria in Synbiotic 2000**

- All Produce Antioxidants, espec.
  - Lb plantarum and Pediococcus pentosaceus
  - Ljungh Å, Microb Ecol Health Dis 2002;3, Suppl 4;4
- All Induce Heat Shock proteins espec.
  - Leuconostoc mesenteroides and Lb paracasei subsp paracasei
  - Eleine Petrof, personal communication
- All Induce Beta-defensins
e espec. Pediococcus pentosaceus and Lb paracasei subsp paracasei

**Synbiotic 2000 Original**

40 billion Lactic Acid Bacteria:
- 10^10 of Pediococcus pentosaceus 5-33:3
- 10^10 of Leuconostoc mesenteroides 32-77:1
- 10^10 of Lactobacillus paracasei subsp paracasei
- 10^10 of Lactobacillus plantarum 2362

10 Gram Bioactive fibres:
- 2.5 g of beta-galactan
- 2.5 g of inulin
- 2.5 g of pectin
- 2.5 g of resistant starch

**Synbiotic 2000 in Lung Injury**


Placebo  Only fibres  Synbiotic 2000

**Synbiotic 2000 inhibits MultiResistant bacteria**

Professor Val Edwards-Jones, University of Manchester, UK

**Antibiotic-Resistant Bacteria**

A constant & fast increasing threat to global health

Lee Ventola C
Pharmacy & Therapeutics 2015;40: 277–283

**Forecasted Increase in Antimicrobial Resistance, 2050**

Jim O’Neill – Royal commission report December 2014

Deaths attributable to antimicrobial resistance every year compared to other major causes of death

Premature deaths in Antimicrobial resistance

<table>
<thead>
<tr>
<th>AMR – 2050 – increase app 15 times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tularus 60,000</td>
</tr>
<tr>
<td>AMR in 2030 10,000,000</td>
</tr>
<tr>
<td>Surgical site infections 1,200,000</td>
</tr>
<tr>
<td>Cancer 8,200,000</td>
</tr>
</tbody>
</table>

**Urgent Threats**

- Carapomet-difficile
- Carbapenem-resistant Enterobacteriaceae (CRE)
- Drug-resistant Neisseria gonorrhoeae

**Serious Threats**

- Multidrug-resistant Acinetobacter
- Drug-resistant Pseudomonas aeruginosa
- Drug-resistant Klebsiella pneumoniae

**Extended-spectrum beta-lactamase-producing Enterobacteriaceae (ESBL)**

**Vancomycin-resistant Enterococcus (VRE)**

**Drug-resistant salmonella Typhimurium**

**Drug-resistant salmonella Typhi**

**Methicillin-resistant Staphylococcus aureus (MRSA)**

**Drug-resistant drug-resistant nontyphoidal Salmonella**

**Drug-resistant Shigella**

**Methicillin-resistant Staphylococcus aureus**

**Drug-resistant Fluconazole-resistant Candida (a fungus)**

**Extended spectrum beta-lactamase-producing Enterobacteriaceae (ESBLs)**

**Vancomycin-resistant Enterococcus (VRE)**

**Drug-resistant Methicillin-resistant Group B Streptococcus**

**Concerning Threats**

- Vancomycin-resistant Enterococcus faecium (VREF)
- Drug-resistant Group B Streptococcus
- Drug-resistant tuberculosis
A report commissioned by the UK government estimates that 700,000 deaths linked to drug-resistant infections & premature deaths occur presently globally each year & forecasted to increase to 10 mill. by 2050.

Predicting the world’s GDP to be:
- 0.5% smaller already by 2020 &
- 1.4% smaller by 2030
- with over 100 million premature deaths/year

2050 forecasted to reduce GDP to half
- A loss of annually $100.2 trillion

50 to 85% of transplant patients develop within 30 days after operation nosocomial infections

Compared effects of daily supply of Synbiotic 2000 and Only fibres daily from the day before surgery & during following 14 postoperative days.

30 day-infection rate:
- Synbiotic 2000 1/33 - 3%
- Only fibres 17/33 - 51%

Isolated bacteria:
- Synbiotic 2000 | Fibres only
  - Enterococcus faecalis: 1 | 11
  - Escherichia coli: 0 | 3
  - Enterobacter cloacae: 0 | 2
  - Pseudomonas aeruginosa: 0 | 2
  - Staphylococcus aureus: 0 | 1
  - Total: 1 | 18


Infections:
- Synbiotics 2000 5/40 - 13%
- Control (Only fibres) 16/40 - 40% p<0.05

<table>
<thead>
<tr>
<th>Infection</th>
<th>Symbiotic 2000</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wound infections</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Peritonitis</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Urinary</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sepsis</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Cholangitis</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Empyema</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>20</td>
</tr>
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SYNBIOTIC IN ACUTE PANCREATITIS

Oláh A et al Hepato-gastroenterology 2007;54:36-41

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<td>Total infections</td>
<td>9/33 (27%)</td>
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<tr>
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<td>2</td>
</tr>
<tr>
<td>Infected necrosis</td>
<td>2</td>
</tr>
<tr>
<td>Chest infections</td>
<td>2</td>
</tr>
<tr>
<td>Urinary infections</td>
<td>3</td>
</tr>
<tr>
<td>SIRS</td>
<td>3</td>
</tr>
<tr>
<td>MOF</td>
<td>5</td>
</tr>
<tr>
<td>MOF + SIRS</td>
<td>8</td>
</tr>
<tr>
<td>Late (&gt;48h) MOF</td>
<td>1</td>
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<tr>
<td>Complications</td>
<td>9/33</td>
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<tr>
<td>Surgical drainage</td>
<td>4/33 (12%)</td>
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<td>Mean hospital stay</td>
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SYNBIOTIC 2000 IN MULTIPLE TRAUMA

Kotzampassi K et al. World J Surgery 2006;30:1848-1855

102 patients supplied 15 days posttrauma with either Synbiotic 2000 Forte or placebo
The treated patients demonstrated reduced:
- Mortality
- Rate of infection (P = 0.01)
- Rate of SIRS & severe sepsis (P = 0.02)
- Numbers of days on mechanical ventilation (P = 0.001)
- ICU stay (P = 0.01)

SYNBIOTIC 2000 IN CHRONIC LIVER DISEASE


One month supply of Synbiotic 2000 reduces:
- Mucosal pH
- PPM flora: E. coli (p<0.001) Staphylococcus (p<0.05) & Fusobacterium (p<0.001)
- Endotoxin, ammonia/s, ALT/s, bilirubin/s & improved:
- Albumin/s and prothrombin
- Degree of disease at Child classification &
- Degree of encephalopathy at psychometric testing

MULTI-STRAIN SYNBIOTICS IN DISTAL COLITIS

Synbiotics installed in the intestine, 10 patients, studied before (D0), and after 7 (D7), 14 (D14) and 21 (D21) days of treatment:

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<th>D7</th>
<th>D14</th>
<th>D21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urgency</td>
<td>1.9</td>
<td>1.2</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Episodes of diarrhoea</td>
<td>2.4</td>
<td>1.3</td>
<td>0.9</td>
<td>0.8</td>
</tr>
<tr>
<td>Nightly diarrhoea</td>
<td>0.5</td>
<td>0.1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Visible blood</td>
<td>2.2</td>
<td>1.2</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Consistency of stool</td>
<td>1.1</td>
<td>0.9</td>
<td>0.7</td>
<td>0.8</td>
</tr>
</tbody>
</table>

**SYNBIOTIC 2000 FORTE IN INTESTINAL PARALYSIS INDUCED BY BRAIN TRAUMA**


Traumatic brain injury (TBI) markedly reduced contractile activity of the intestinal smooth muscle (P < 0.01), impaired ICC networks and densities (P < 0.01) & reduction of defecation/obstipation (P < 0.01).

**Application of Synbiotic2000™ Forte improves contractile activity of the small intestine (P < 0.01) & maintains contractile activity (P < 0.01)**

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**SYNBIOTICS AND ATHLETIC PERFORMANCE**

Dr Pedro Pujol, FACSM Depart Physical University of Barcelona

Study at the Olympic Training Centre in Barcelona. Six swimmers (4 women and 2 men) ingested regularly Synbiotic 2000 Original (40 billion LAB)

One of 2 men improved the Spanish record in 200 meters butterfly

Three of 4 women improved the Spanish records: 100 meters butterfly, 200 meters butterfly, 200 freestyle, 4x200 freestyle relays

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**SYNBIOTICS 2000 - REDUCTIONS IN INFECTIONS/POSITIVE BLOOD CULTURES**

Liver transplantation, 66 patients

| Patients with postop. infections | 16 => 1 = 94 per cent |
| Patients with pos. blood cultures | 11 => 1 = 91 per cent |
| Pancreatodudenumectomy for cancer, 80 patients | 16 => 5 = 69 per cent |
| Patients with postop. infections | 27 => 5 = 82 per cent |
| Patients with pos. blood cultures | 17 => 7 = 59 per cent |
| Severe pancreatitis – 62 patients | 15 => 9 = 40 per cent |
| Patients with infections | 17/30 (77%) => 17/35 (49%) |
| Severe trauma, treated with Synbtiotic 2000 Standard – 52 patients | 13 => 5 = 62 per cent |
| Patients with post-trauma infections | 13 => 5 = 62 per cent |
| Patients with pos. blood cultures | 13 => 5 = 62 per cent |

---

**SYNBIOTICS 2000: REDUCTIONS IN USE OF ANTIBIOTICS, ARTIFICIAL RESPIRATION, TIME IN ICUs & IN HOSPITAL**

Liver transplantation – 66 patients

| Days on Antibiotics | 3.8 => 0.1 = 3.7 = 97 per cent |
| Days in ICUs | 10.2 => 2.0 = 14 per cent |
| Days in Hospital | 27.9 => 27.8 = 1 per cent |
| Pancreatodudenumectomy for cancer - 80 patients | 10 => 2 = 80 per cent |
| Days on Antibiotics | 6 => 2 = 4 = 67 per cent |
| Days in ICUs | 22 => 17 = 5 = 23 per cent |
| Days in Hospital | 23.6 => 23.6 = 0 = 100 per cent |
| Severe acute pancreatitis – 62 patients | 19.7 => 14.9 = 4.8 = 24 per cent |
| Days in ICUs | 41.3 => 27.7 = 13.6 = 33 per cent |

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**CROHN’S DISEASE – DYSBIOSIS**

Haag L-M, Siegmund B. Front Immunol 2015 Sep 22;6:489

**PROBIOTICS IN IBD**

GUT RECONDITIONING (GUT MAKE UP) IN CROHN’S DISEASE


BEFORE TREATMENT

AFTER TREATMENT

THE MARCH from AGRICULTURE AQUA- & HORTICULTURE-based diet 😊😊😊😊

President Bill Clinton – now a vegan
radically changed diet, lost 20 lbs. in weight & improved his health, Clinton tells CNN.
After experiencing periodic heart problems leading up to the 2004 surgery, the former junk food lover now calls himself a vegan,
shunning meat, eggs, dairy and almost all oil
saying: "I like the vegetables, the fruits, the beans, the stuff I eat now" 😊
"I feel good, and I also have ... more energy." 😊

PLANT-BASED DIET & CORONARY ARTERY DISEASE 😊

Esselstyn CB Prev Cardiol. 2001;4:171–177

SAFE: grains?, legumes, lentils, vegetables, fruits, nuts and seeds
NOT SAFE: oils, dairy foods, meat, poultry, & fish (frequently containing unacceptable levels of PCBs, dioxin, and mercury)

INFLAMMATION REDUCTION – ECO-BIOLOGICALS raw & fresh plants, pro- and synbiotics

Isothiocyanates in cruciferous vegetables anthocyanins and hydroxycinnamic acids in cherries, blueberries, epigallocatechin-3-gallate (EGCG) in green tea, chlorogenic acid and caffeic acid in fresh coffee beans & fresh tobacco leaves, capsaicin in hot chili peppers, chalcones in apples, eugenol in cloves, gallic acid in rhubarb, hisperizin in citrus fruits, naringenin in citrus fruits, kaempferol in white cabbage, blueberries myrcetin in berries rutin and quercetin in apples and onions, resveratrol and other procyanidin dimers in red wine, virgin peanuts, blueberries various curcumoneoids, the main yellow pigments in turmeric curry foods, and daidzein and genistein from soybean

VITAMIN K IN FOODS micg/100 gr

<table>
<thead>
<tr>
<th>Food</th>
<th>Vitamin K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thyme, dried</td>
<td>1715</td>
</tr>
<tr>
<td>Sage, dried</td>
<td>1700</td>
</tr>
<tr>
<td>Parsley raw</td>
<td>1640</td>
</tr>
<tr>
<td>Amaranth leaves</td>
<td>1160</td>
</tr>
<tr>
<td>Kale raw</td>
<td>817</td>
</tr>
<tr>
<td>Mustard greens, raw</td>
<td>497</td>
</tr>
<tr>
<td>Spinach, raw</td>
<td>483</td>
</tr>
<tr>
<td>Basil, fresh</td>
<td>413</td>
</tr>
<tr>
<td>Beet greens, raw</td>
<td>400</td>
</tr>
<tr>
<td>Turnip greens, raw</td>
<td>251</td>
</tr>
<tr>
<td>Lettuce, raw</td>
<td>174</td>
</tr>
<tr>
<td>Broccoli raw</td>
<td>102</td>
</tr>
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THIRD MILLENIUM JUNKFOOD ?? ? 😊😊😊

Jam and marmalade
Milk & Latte
Potatoes & other tubers – EATEN WARM, NOT COLD
Red meat
Refined oils incl oils such as Olive & Canola oil
Tomato ketchup
Soft drinks
2. Limit/eliminate dairy products.
3. Limit red meat to 300 g/week. Avoid processed meat, pigmeat, beef from supplement-fed animals and farmed fish.
4. Limit/eliminate intake of long-chain fatty acids and processed oils. Focus on plant fats such as cocos and avocado.
5. Eliminate foods containing inflammation-inducing proteins: casein (diary), gluten (wheet, rye, barley) och zein (corn).
7. Avoid exposure to microbial toxins such as endotoxin, pesticides and other poisons.
8. Limit your sodium & chloride salt intake – increase the intake of iodine. Avoid fluoride, bromide and reduce chloride.
9. Limit/eliminate as much as possible exposure to chemicals including pharmaceutical drugs.
10. Focus on plant foods rich in proteins, fibres, antioxidants. Use grains such as amaranth, durrah, teff, quinoa, various seeds, peas, beans, lentils, almonds and nuts. Germinate/sprout seeds, peas, beans, lentils, almonds and nuts for 12-24 hours.
11. Focus daily fasting or Peak fasting (intake of calories 6/24 hours) either as SKIPPING BREAKFAST (no food before noon) or SKIPPING DINNER (no food after 14 pm).
12. Practisedaily fasting as Peak fasting (intake of calories 6/24 hours) either as SKIPPING BREAKFAST (no food before noon) or SKIPPING DINNER (no food after 14 pm).

© HEALTH: TWELVE COMMANDMENTS ©

© ANTI-INFLAMMATORY TURMERIC COCKTAIL ☺

Clves = kryddnejlka

1/2 teaspoon or more chilipepper powder
¼ teaspoon or more grounded cloves

Spread on sallad or mix with fruit dessert, yoghurt or juice or mix with ½ - 1 tablespoon apple cider vinegar in a glass of water

http://bengmark.com/anti-inflammatorisk-kryddblandning-till-cocktails/
"Every woman/man is the artisan of their own – and their children’s – health"

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AVAILABLE @:
www.benchmark.com
www.synbiotics.se
www.facebook.com/stig.bengmark

Video: http://bengmark.com/category/videos-clips/
Podcast: http://halosnack.libsyn.com/website/40-stig-bengmark-hlsans-12-budord-del-1
http://halosnack.libsyn.com/website/41-stig-bengmark-hlsans-12-budord-del-2
http://halosnack.libsyn.com/website/bonus-stig-bengmark-uppdatering-ap-12-budord-fr-hlsan

Helping Your Gut BACTERIA Can BOOST Your HEALTH

The danger of wallowing in the past
Let us not wallow in the past!

THANK YOU!