

# INDIVIDUALLY SPECIALLY TARGETED SUPPLEMENT AND DIETARY INTERVENTION SHOWS PROMISING RESULTS IN A COHORT OF CHILDREN WITH AUTISM SPECTRUM DISORDER (ASD)

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## BACKGROUND

The most important developmental phase in any person's life is the first 1000 days from conception, when basic genetic and epigenetic programming take place. Influences from different factors during this phase may change the way genes are expressed, even in generations. For most biochemical pathways there are different "security pathways", which in an exposed first generation may impose a shut-down or activation of genes with other consequences than in the second generation. Current scientific data suggests that many illnesses may stem from a similar, underlying patho-physiological process as autism. Since the 1950's infants have been exposed to more xenobiotics before the age of 2 than before (new xenobiotics -vaccines, additives, paracetamol, antibiotics, etc.). An exposure for second generations (like for the first ) can influence epigenetics more. Feeding of infants has changed since the 1950's. Infant formula may differ in ingredients from mothers' milk. Children diagnosed with ASD have been rising in the past 20 years. It may indicate that people with a certain genetic DNA profile are more vulnerable to xenobiotics, and may develop an imbalance in their biochemistry manifesting itself as autism. We are born germfree. Microbiota will develop in specific order (in a window of establishment ) during the first two years of life. If a window is missed, it may result in lifelong consequences.

## THE NORWEGIAN APPROACH-

### A WAY TO SUCCESSFUL IMPROVEMENT

We have followed a cohort of ASD children aged 2-10 years and tried successfully to regulate relevant factors. Initially, a questionnaire going through a child's history, information from parents and observing the child. Urine tests showing >100 diff. markers and blood tests following 60 markers are evaluated. Thereafter, we design a specific plan for each child with follow-ups. Most start with a change in diet. Acetyl-L-carnitine and taurine are most commonly used for a year, thereafter in intervals. Essential minerals are supplemented depending on diet and/or test results.

### APPROACH

Extensive anamnesis (questionnaires/interview/observe). Genetic analysis, urine (Table A) and blood (Table B) test. Feces should be stored. Start analysis and treatment as soon as possible. Follow up every 3 months for 2 years minimum. Available for parents on phone. Try to answer same day. Important to cooperate with parents. Best results. Improvement 3-6 mo. after starting.

Treatment period before maintenance - Individually . Some examples:

Child 9 months -9 months treatment period before maintenance.  
Child 4 years -2.5 years treatment period before maintenance.  
Child 6 years -5 years treatment period before maintenance.  
Hormones affect microbes. Puberty important period.

### START TREATMENT

Milk - Casein free diet  
Gluten free diet  
Soy Free diet  
Limit Corn flour  
Specific diet for each person, including which flour to use.

### SPECIFIC INTERVENTION

-Acetyl L- Carnitine and Taurine  
-Based upon clinical experience -Oxytocin  
-If necessary with diet -Calcium  
**The following substances may be added.**  
-Omega 3 -variable intervention  
-B and D vitamins and minerals – Based upon laboratory findings.

### Chelating procedure -main protocol based on Porphyrin test

If various Porphyrins are high; Chelate. Chelating agent – Succinic Acid  
Various protocols.\*  
Give minerals Citramine II™ Thorne when chelating. Based upon clinical experience  
No Acetyl Carnitine and Taurine during chelating days.  
\*Protocols can be obtained.

## CASE

### Child 4 year old with Autism DSMIV.

Started GFCFSF diet without wheat -starch. Mostly meat from wild animals –like moose and reindeer. Avoided corn flour due to angry spells. Parents reported better without corn flour. No quinoa, amaranth, sorghum or buckwheat. Supplemented Omega 3, 6, low dose B-vitamins, low dose calcium, creatine for 6 months-, milk thistle for 6 months, enzyme and Epsom salt cream. After 12 months; added fava beans to diet, fruit and berries, Acetyl Carnitine, Biotin, Taurine, Selenium, high dose MB12, Zinc and more DHA. Follow up at the clinic every 3 months from 5 years old. Some adjustment of diet as the child wanted more variety, some corn flour introduced. Slow and steady loss of autistic traits and slow gain of speech, motor skills, social interactions, play, and cognitive abilities. Diagnosis lost at 7 years, but needs to keep to diet and supplements otherwise regression. Supplements today are; Acetyl Carnitine, Taurine, Selenium, Low dose b-vitamins, Omega 3, Zink, Calcium and enzymes when necessary.

## URINE TEST Laboratoire Philippe Auguste, France\*

1 uP Uroporphyrin	40 succin/fumarate ratio	79 beta OH Butyrate
2 7cxP Heptacarboxyporphyrin	41Kynurenate	80 Aceto Acetate
36cxP Hexacarboxypeophyrin	42Xanthurenate	81 beta OH But/AC
45cxP Pentacarboxyporphyrin	43beta OH Isovalerate	82 Oxalate
5PcP Precorprophyrin	44Homocystein	83Glycolate
6cP Coproporphyrin	45Methyl malonate	84 2 Methyl Hippurate
7gluten derivatives	463OH 3Methyl glutarate	85 Ac. trans Muconique
8major gluten derivative	47Pantothenate (vit B5)	86 Phtalates
9gluten morphine A4	48Pyridoxate ( vit B6)	87 5-oxo-proline
10gluten morphine A5	49trans Cinnamate	88 Paracresol
11gluten morphine C	50Caffeate	89 Benzoate
12gluten morphine B5	51Ferulate	90 4 OH Benzoate
13casomorphine 1-3	52Benzol-Glycine	91 Hippurate
14casomorphine 1-4	53Phenylacetate	92 3 OH Phenylacetate
15casomorphine 1-4 NH2	54Homovanillate HVA	93 4 OH phenylacetate
16casomorphine 1-7	55diOH-Phenylacetate DOPAC	94 3,4OH Phenylprop.
17casomorphine 1-8	56Vanylmandelate VMA	95 4OH Phenylacetate
18peptide P1	57MHPG sulfate	96 2OH Phenyl prop.
19peptide P2	58mhpg/vma ratio	97 4OH Phenyl prop.
20peptide HK1	595OH-Indoleacetate 5HIA	98 3,4OH phenylprop.
21peptide HK2	60Quinolinate	99 Indole-3-Acetate
22peptide glu-try-gly	61Guino/kynu ratio	100 Tricarballlylate
23peptide glu-trp-gly-NH2	62Phenyl pyruvate	101 Glycerate
24deltorphin	63pOH Phenyl pyruvate	102 Beta cetogluturate
25dermorphin	64act. Phe Hydroxylase	103 Citramalate
26indolyl-acryloyl-glycine	65Citrate	104 Tartarate
278-oxo-deoxyguanosine	66cis Aconitate	105 Arabinose
288-oxo-Guanosine	67Isocitrate	106 Arabinitol
29Hypoxanthin	68aKetogluturate	107 Indoxyles
30Xanthine	69TCAI part 1	108 CYS-GLY/HCY rat.
31Inosine	70Succinate	109 Cysteiny-Glycine
32Ceto Isocaproate	71Fumarate	110 Glutathione
33Ceto Isovalerate	72 Malate	111 GSH+ CYS-GLY
34Ceto Methyl Valerate	73Oxaloacetate	112 CYS-GLY/GSH rat.
35Ethyl malonate	74TCAI part 2	113 gGLU CYS/CYS-GLY
36Asipate	75TCAI1/TCAI2	114 gGLU-CYS/CG+GSH
37Suberate	76Pyruvate	115 Cysteine
38Methylsuccinate	77Lactate	116 Creatin
39Methyladipate	78lactate/TCA intermed	117 Urate/Crea ratio

**Table A**

## BLOOD TESTS

More than 60 blood test in the full test  
All of the following are used\*

B- Leukocytes  
B- Hemoglobin HB  
B- CBC.  
B- Neutrophil  
B- Lymphocyte  
B- Monocyte.  
B- Eosinophil -%1  
B- Basophil -% 1  
B- Eosinophil 90  
B- Mercury.  
B- Lead.  
B- Ammonium  
s-25 vitD-OH  
s-1,25 (OH)2VitD  
s- Ferritin.  
s- TSH.  
s- Fritt T3 (triiodothyronine)  
s- Creatinine  
s- Cholesterol

s-Magnesium  
s-Calcium.  
s-Phosphate  
s-Alkaline Phosphatase ALP  
s-Lipase.  
s-Iron.  
s-Zinc.  
s-Copper.  
p- Homocysteine  
s- Methylmalonic acid  
s-IgG + subclass  
s-IgM.  
s-IgA.  
s- Vitamine A  
s-Vitamine K  
s-selenium.  
s-ASAT.  
s-ALAT.  
s-Vitamine E  
s-Iodine.

\*The whole list can be obtained by mail  
[post@biomedclinic.no](mailto:post@biomedclinic.no)

**Table B**

**More than 90% of children at the clinic demonstrate clinical improvement**  
**CONCLUSION:**  
**AUTISM IS TREATABLE!**