Laboratory-Id N°.
Received
Report
Last Name
First Name Patient 7
Date of Birth

Biovis Diagnostik MVZ GmbH

Index BIOL

Flora Status

Flora Index	7	Indication of a significantly altered flora situation

Complete evaluation of the flora findings
The indicator flora shows **a weak acidification flora** and a decrease of putrefactive bacteria (Escherichia coli). The **increased pH-value** (→ **6.7**) seems suspicious.

Obligatory anaerobic main pathogenic organism
Weak bifidus flora leads to impairment of the **colonisation resistance** in the large intestine. Bifido bacteria and bacteroides species develop a microbial barrier by occupying mucosa receptors. These counteract colonisation and proliferation of pathogenic bacteria, yeasts or parasites. Weak bacteroides flora leads to ecological niches, which promote **endogenic infections**.

Supplementary Parameters

Determination of Digestive Disorders

The measured concentrations of fat and nitrogen lay within normal limits. Pronounced digestive disorders or nutritional errors can therefore by largely ruled out.

High sugar concentrations are often caused by **carbohydrate intolerances**. Very frequent are before all **lactose intolerance** (15 – 22 %) and **fructose malabsorption** (30-40%).

Determination of Maldigestion

Digestive function of the pancreas
Pancreatic elastase 1 correlates closely to the digestive function of the exocrine pancreas. The value obtained for patient 7 speaks for an adequate function of the organ.

Bile Acids in Stool
The concentration of bile acids was within normal range. Loss of bile acid as cause of maldigestion can therefore be excluded. There is no ileum dysfunction.

Determination of Malabsorption

Mucosa Integrity and Permeability
Increased alpha-1-antrypsin values indicate inflammatory mucosa irritations, which may lead to impaired absorption of metabolic food products and micronutrients. Increased alpha-1-antitrypsin values normally come along with increased intestinal mucosa permeability. Large amounts of food allergens pass the mucosa block and thus strain the following systemic body defence system.

Mucosa Immunity

Mucosa Integrity and Permeability
The normal sIgA concentration in stool indicates **adequate mucosa immune system activity.** As there are signs of inflammatory mucosa reactions, the “normal” value may, however, be due to superposition by simultaneous inflammatory reactions.

Therapy Recommendations

The **increased α-1-antitrypsin values** in the stool sample of **Patient 7** indicate **inflammatory mucosa alterations.**
Regardless of the cause of the marker increases, an attempt should first be made to achieve healing of the mucosal reactions by means of anti-inflammatory measures. According to recent studies in patients with CED, this is achieved particularly well by the administration of phosphatidylcholine (lecithin), which also leads to the creation of an effective mucosal barrier by stabilising and strengthening the mucosa mucus. Since intestinal microbiota can partially convert phosphatidylcholine into TMA (trimethylamine), which is further metabolized in the liver to TMAO (trimethylamine N-oxide) and can promote vascular inflammation and arteriosclerosis, it is advisable to reduce the lecithin dose and to increase the desired effect by a simultaneous administration of **L-glutamine**, **butyrate** and/or **resveratrol**. While L-glutamine, as a nutrient of the intestinal epithelial cells, counteracts mucous membrane irritation or a "leaky gut syndrome", butyrate and resveratrol have mainly mucous membrane protective and anti-inflammatory effects. Resveratrol inhibits the formation of TMA and therefore optimally complements phosphatidylcholine therapy. Up to now, only few products (e.g. Colon Guard Premium®) offer active agent combinations as described above. Mostly isolated lecithin (PhosSerine® Complex, SpongiCol Collagen-Lecithin®) or L-glutamine (e.g. L-Glutamine®, Adamin G®, Aminoplus® Glutamine) are offered.

Milieu Stabilisation by Promoting the Intestinal Acidification Flora
Because of the weak acidification flora milieu stabilizing measures seem sensible. This is possible by giving lactic acid developing bacteria. The duration of the therapy should be 3 to 6 months.
Orally taken acidifiers lead to the formation of a transient lumen flora, which acidifies the intestinal milieu by metabolic processes and thus promotes the reconstitution of the intestinal acidification flora.
Based on the present flora situation and inflammatory mucosa irritations we recommend Omni-Biotic Stress Repair. It is a probiotic agent, which aside from its influence on the micro flora also has strong **anti-inflammatory** and **mast cell stabilizing properties.** Via cytokine release reduction, stabilization of the mast cells and increased mucin development Omni-Biotic Stress Repair leads to reduced mucosa permeability (Leaky Gut) and stabilizing of the tight junctions. According to recent studies the probiotic agent also has a preventive effect where psychic impacts of stress are concerned. Alternatives of similar composition or indication: Ecologic 825, Synbiotic Neuro Fit, Lactobact Forte.

Dietetic Treatment
Inflammatory mucosa reactions require dietary measures in the sense of **bland balanced diets**, which in spite of disordered resorption provide for sufficient consumption of metabolic food products and micronutrients. Detailed information about bland balanced diets can be found in the attached flyer. It contains a lot of practical tips for application in everyday life.

Check-up
After the therapy a check-up may be carried out after 8 – 12 weeks.

With kind regards

Your Biovis-Diagnostik

Attention: *The recommendations given are only advice based on the compiled findings and possible clinical information. They are exclusively addressed to the therapist/physician and are* ***not intended*** *for direct transfer to the patient. They cannot replace diagnosis and therapy of the treating therapist. The recommendations for therapy are a suggestion. The responsibility for the final selection/measure/dosage lies with the medical professional/therapist responsible for each individual case. Please also note that there may be contraindications/interactions associated with the recommended medication/nutritional supplements for pre-existing primary diseases and when taking certain medication. These must be investigated by the medical professional/therapist before starting therapy.*

To achieve a special medical purpose, the dosing recommendations for individual substances may be higher than those of EU Regulation 2016/128.

Easily Digestible Diets - Inflammatory Markers in Stool

In your stool samples inflammatory markers like for example calprotectin or alpha-1-antitrypsin were found. This means there are obvious inflammatory irritations of the intestinal tract. To relieve the inflamed areas of the gastro-intestinal tract, the consumption of poorly tolerated foods should be avoided or at least limited. They should be replaced by easily digestible foods.
These are the most important goals:

- Relief and regeneration of the gastro-intestinal tract
- Balanced nutrient and energy supply
- Compensation of certain nutrient deficiencies.

Foods to be avoided:	
Flatulent vegetables	cabbage, leak, onions, paprika, mushrooms, pulses, cucumbers
Hot spices	chilli, pepper, paprika powder
Foods with high fat content	deep-fried, fat fish, lard, fat cheese, mayonnaise,
Foods with high sugar content	sweets, products with sugar substitutes (fructose, sorbitol etc.)
All too hot or too cold foods and drinks	
Fizzy drinks, alcohol and coffee	

If food is tolerated or not depends on the individual person concerned. Intolerances may have an effect, like for example **"acquired lactose/milk sugar intolerance"** caused by gastrointestinal inflammations.

If flatulence respectively diarrhoea occurs within an hour after eating milk products, this should be clarified (e.g. with the aid of a breath-gas test).

All in all the diet should consist of easily digestible foods with a fine structure and low to medium fibre content, which do not strain the intestinal functions too much (see right). At the same time foods should contain a lot of valuable nutrients, e.g. vitamins and minerals.

Longer term intestinal irritations result in reduced nutrient consumption.

This often concerns following nutrients:

- fat-soluble vitamins: A, D, E and K
- B -vitamins
- iron
- selenium
- zinc
- sodium
- potassium

Well tolerated are most of the time...:

- Tender young vegetables and green salads
- Porridge/purée of flakes/wholemeal
- Unsweetened finished mueslis
- Brown rice, millet, amaranth, quinoa, buckwheat
- Wholemeal bread with fine crumb structure, wholemeal crisp bread and zwieback
- Fine-structure wholemeal pastry
- Pasta, potatoes
- Eggs, curd, lean fish, poultry, veal
- Fruits, ripe and low-acid, e.g. melons, passion fruits, bananas
- Honey, fruit butter and small amounts of fruit purée

Frequently **fat digestion disorders** occur; this means fats consumed with food are partly excreted undigested with stool (steatorrhoea). So-called MCT-fats[1] can be used especially in case of fat resorption disorders. The switch to these fats should be gradual to give the intestines time to adapt. Products like margarine, oils, cheese spread or spreads are partly enriched with vitamins or omega-3 respectively omega-6 fatty acids. (MCT-fats are available in health shops).
In case of temporary lactose intolerance it is more difficult to provide the calcium required. Therefore one should resort to lactose-free calcium carriers.

- Mineral water with calcium contents >250 mg / litres
- Calcium enriched soya drinks and products e.g. offered by Alpro or Vitaquell.
- Lactose reduced milk and respective products.
- Fruit juices (diluted) with added calcium
- Vegetables with high calcium content like broccoli and fennel.
- Sesame- and nut butter (easier to digest than whole seeds and nuts).

Oxalic acid inhibits calcium consumption. This acid occurs only in plant-based foods. The products below have very high oxalic acid concentrations.

- *Cacao*
- *Spinach*
- *Rhubarb*
- *Sorrel*
- *Chard*
- *Black Tea*

Therefore care should be taken that milk products are not consumed at the same time as above mention foods.

Finally some additional tips:

- Chew thoroughly – this makes work easier for the gastro-intestinal tract.
- Take your time when you eat.
- Drink a lot to balance loss of liquid