


**Regenerus Laboratories**
**Aero 14, Kings Mill Lane**
**GB-RH1 5JY Redhill, Surrey**
**Fax:**
**Name** Sample Client

**Date of Birth**
**M/W:** W

**Address** .

**Patient No.** 000000

**Lab. Number** 10002813

**Requested** 14.11.2018

**APNr** 4095

**Height**  cm **Weight**  kg **Body Mass Index**  0,0 **Reported** 20.11.2018

### ANAMNESE

Keine Angaben

### RESULTS OVERVIEW

1. Iron is low, we recommend control of ferritin.
2. Selenium is above therapeutic range, we recommend reduction of dosage under substitution.
3. Good provision of vitamin B6.

Further therapeutic control recommended.

Kind Regards

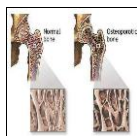
Dipl.Biol. B. Knabenschuh /Dipl.Biol.W.Mayer

### BASIC CHECK UPS



Iron	46	µg/dl	50-170	<div><div></div><div></div><div></div></div>
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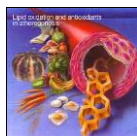
### OSTEOPOROSIS



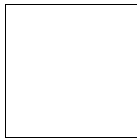
#### Osteoporosis

Vitamin D (25-OH)	67,7	ng/ml	30 - 80	<div><div></div><div></div><div></div></div>
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### ESSENTIAL NUTRIENTS



Potassium	4,0	mmol/l	3,4-5,1	<div><div></div><div></div><div></div></div>
Magnesium (WB)	1,35	mmol/l	1,29 - 1,69	<div><div></div><div></div><div></div></div>
Calcium	2,36	mmol/l	2,2-2,55	<div><div></div><div></div><div></div></div>
Selenium (WB)	283,0	µg/l	121 - 168	<div><div></div><div></div><div></div></div>
Zinc (WB)	489	µg/dl	400 - 750	<div><div></div><div></div><div></div></div>
Copper	102,0	µg/dl	65 - 165	<div><div></div><div></div><div></div></div>
Vitamin B2				
Vit. B2: FAD	224	µg/l	137 - 370	<div><div></div><div></div><div></div></div>
Vitamin B6	140,0	µg/l	5 - 30	<div><div></div><div></div><div></div></div>
Vitamin B12	856	pg/ml	200 - 950	<div><div></div><div></div><div></div></div>
Folic Acid (S)	11,8	ng/ml	4,6 - 18,7	<div><div></div><div></div><div></div></div>
Vitamin E/Tocopherol	10,90	mg/l	5 - 16	<div><div></div><div></div><div></div></div>



## **EXPLANATION**

Iron is primarily a component of haemoglobin (the red colouring substance in blood). 10 - 20% of the body's iron can be found in the liver, pancreas and bone marrow. Up to 5% is found in myoglobin (the substance responsible for the red colouring in muscle). Iron is also a cofactor for numerous enzymes that are essential for energy production or the detoxification of harmful substances. Iron deficiency is exacerbated by the following factors: Medications (antacids, Tetracycline), diet, vegetarian diet, drinks containing high concentrations of tannin (coffee, tea), disturbances in resorption and heavy blood loss.

Women are much more prone to iron deficiency because of their monthly periods. The body requires increased amounts of iron during pregnancy, breast feeding or in competitive sports. The symptoms of iron deficiency are tiredness, loss of appetite, paleness, lack of concentration, cracked skin and increased susceptibility to infection.

Iron storage is actively controlled. If the body's iron reserves are empty then the iron resorption is increased in the intestine, when they are full then iron resorption is reduced. This prevents the possibility of an iron overload. Iron from animal sources has a higher bioavailability than that from plant sources. Vitamin C increases iron resorption. Meat, fish, poultry, wholemeal products (oats, millet), legumes (soya) and some vegetables are rich in iron. When planning iron substitution the following factors should be considered: the iron should be present in a divalent form or as a chelated, glycinated or gluconated form, because the resorption of these forms is considerably better. The blood iron levels are subject to severe fluctuation due to the dietary habits. Determination of ferritin levels provides much more precise picture of the body's iron reserves. High levels correlate with the increased formation of harmful hydroxylated radicals and an increased risk of protein, and oxidation or lipid peroxidation.

Increased iron levels can appear in cases of iron utilisation disturbances, haemolysis, iron overload, acute hepatitis and supplementation.

**Selenium** is an essential component of various enzymes (> 30) that have to perform vital functions in the body i.e. glutathione peroxidase, thioredoxin reductase or deiodinases. Selenium is especially important in the synthesis of thyroid hormones, in protection from oxidative cell damage, immune function (T- and NK cell activity), tumour prevention and therapy, virus resistance and neurotransmitter synthesis. Saltwater fish, prawns, algae, meat, lentils, asparagus and whole meal products are particularly good sources of selenium. Selenium deficiencies are often seen in one sided nutrition (i.e. vegans), but increasingly also with normal nutrition due to selenium deficiency of the environment. Ideal selenium levels are > 90 µg/l with a daily intake of ca. 200 µg. In older persons, immune deficiencies, chronic inflammatory diseases or cancer the selenium requirement is increased, 200 - 400 µg daily intake may be necessary. Selenium excess (long term intake of > 800 µg/d) should be avoided as it can lead to toxic symptoms i.e. disturbances in the hair and nail structure, thinning of the hair, vomiting, diarrhoea as well as garlic smell. In persons taking selenium on a regular basis the whole blood levels should be sporadically checked by the laboratory.

**Vitamin B6** is the collective name for 3 main vitamins: pyridoxine, pyridoxal phosphate and pyridoxamine that have primarily the same effects and can be metabolised from one form to another. The most important form (60% in blood) is pyridoxal phosphate (PLP) which is a cofactor for numerous enzymes. The half life is about 30 days, pyridoxal makes up about 15% of the vitamin B6 found in blood, but unlike pyridoxal phosphate it is able to cross the blood brain barrier. Vitamin B6 is important in protein metabolism, functioning of the nervous system (neurotransmitter synthesis), the immune system and haemoglobin synthesis. In combination with folic acid it also plays an important role in the breakdown of homocysteine. Deficiencies can be due to chronic digestive disturbances, high alcohol or coffee consumption, taking contraceptive pills or other medications (i.e. antibiotics, anti hypertensives). Care should also be taken during post menopausal hormone replacement therapy (HRT) that sufficient B6 is taken. Symptoms of vitamin B6 deficiency include red, flaking painful skin changes in the regions surrounding the nose, eyes and mouth, iron resistant anaemias, neurological disturbances and depression. Vitamin B6 can be found in wholemeal products, nuts, bananas, lentils, avocado, spinach, liver, fish and meat. Daily requirement for women 1.6 mg/day (during pregnancy 2.6 mg/day) and men 1.8 mg/day. Administration of vitamin B6 in higher doses has proved to be effective in various illnesses these include reduction of symptoms in premenstrual syndrome, as well as increase in concentration ability.

antiinflammatory effects. The omega-3 fatty acids, gamma tocopherol, SAME, Isoflavones (Soya) or polyphenols (Red wine, Resveratrol), green tea (epigallocatechines) also have good antiinflammatory activity and reduce CRP levels.