

Chlorosodic mineral waters

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The category of chlorosodic waters are those in that NaCl concentration per liter exceeding 1g, respectively 393 mg sodium / l and 607 mg Cl / l, whose origin is linked to salt deposits.

Depending on their chlorosodic concentration, these mineral waters can be:

- hypertonic, the concentration of sodium chloride exceeds 14 g/l. These are sea waters and salt lakes or those derived from underground or surface (mines) salt deposits. The concentration of these waters in our country varies from 15 g/l (Black Sea) to 260 g/l at Ocna Dej, 266 g/l at Ocna Mures. These waters also contain other ions like Ca, Mg, K, SO₄, etc. They are used for inhalation and external cure, because they are irritating to the stomach and intestinal lining.
- Hypotonic, isotonic or slightly hypertonic from mineral springs and are usually mixed containing gas and other substances like: bicarbonate, sulphate, CO₂, H₂S, etc., They are used for inhalations, sprays and internal treatment.

Chlorosodic waters are used in therapy depending on their concentration in the external and internal cures, inhalations, sprays, gargles.

1. Internal cure or crenotherapy use hypotonic or isotonic waters, whose concentration does not exceed 10-14 g/l. Are indicated particularly for digestive disorders (gastroduodenal, intestinal and bile ducts), but also for diabetes.

The pharmacodynamic action is exerted on gastric mucosa, stimulating gastric secretion and intestinal motility and secretion. Ingestion of these minerals activates digestive enzymes having a significant effect on intestinal amylase and inflammation mucus dissolution.

Chlorosodic water change gastrointestinal motility by cumulative action of chlorides, sodium bicarbonate and hydrogen sulfide. Sodium hydrogen carbonate content in varying proportions in the chlorosodic water occurs in gastrointestinal motility increasing by reflex because stimulating the vagus nerve, nerve which accelerates tube wall contractility.

Also, hydrogen sulfide present in low concentrations in mineral water potentiates the action of the vagus nerve. Due to these properties, chlorinated hydro cure is indicated in constipation.

Internal cure with chlorosodic mineral waters influence the liver function. It was noted that administration of the water worse samples of patients with hepatitis and alter the enzyme equipment of the liver cells. For these reasons, whenever there is suspicion of hepatitis is contraindicated the use of these waters.

In contrast, to persons without clinical or biological signs of hepatitis, chlorinated hydro cures is prescribed in order to increase the amount of bile salts eliminated through the bile (choleretic effect).

Such waters are found in resorts: Malnas, Slanic Moldova, Bazna, Herculane, Someșeni, etc.

It seems that waters of springs 1 bis and 15 of Slanic Moldova can be used with good efficiency out choleretic effect, even in the treatment of hepatitis stabilized.



Baile Herculane

After intestinal resorption, mineral water acting on metabolisms of carbohydrates, lipids and protides. In general, chlorosodic waters have hypoglycaemic activity. This is partly due to stimulation of insulin secretion (pancreatic hormone that reduces blood sugar levels) under the direct influence of chloride ions. In this way reduces blood circulating glucose concentration and excreted in urine.

During internal cure can be seen a real improvement in tolerance of food carbohydrates, limiting the marked increasing of glucose. Associated antidiabetic medications, chlorosodic waters enhances the effect of drug treatment, reduce printing times daily doses of drugs.

The water in some causes associates these effects to reduced acidosis, which we find frequently in diabetic metabolic disorders. In the diabetes diet is recommended to use chlorosodic hydro-sodic waters from the Singerz resort (Hebei and no.4 springs), Slanic Moldova (source no. 3), Malnas and Someseni (source no. 2).

Under the action of mineral chlorosodic waters from Singerz, Malnas, Stoiceni, Zizin and Tusnad resorts blood fat concentration is changed.

Drinking these waters produce lower plasma cholesterol, but instead increases the amount of triglycerides in the blood. For these reasons, chlorosodic water are not used in the treatment of dyslipidemia (metabolic disorder characterized by increased blood fat).

Protein metabolism presents it changes. Generally, the amount of uric acid in blood is reduced under the action of chlorosodic water, which is way they are used in the treatment of hyperuricaemia and gout (especially water from Stoiceni). It also increases the amount of urea (toxic product derived from protein metabolism) excreted in urine. These properties indicate chlorinated hydro cure to people without liver damage, but who have a tendency to retention of urea (renal failure early, hipercatabolic states, etc.)

This is due to sodium retention in the body in proportion to the amount of water equivalent. Thus, the volume of urine per 24 hours is reduced. It also noted an increase in potassium loss through urine. These actions are common in water consumption from resorts Malnas, Singeorz (Hebe) and Tusnad. Instead, use of a low mineralized sodium chloride water as those of Herculane (Hygeia) increase diuresis and urinary excreted amount of chlorine. The same effects are obtained with the waters os Someseni and Stoiceni.

2. Inhalations and sprays are used in: ORL disorders, lung, gynecological inflammation. For those sprays are indicated concentrations of 3-9 g/l and heated to 34-38° C.

Mucosal, sodium chlorosodic water osmotic effects of flushing, increase secretions and eliminate secretolitic secretion, inflammatory, etc.

For gynecological diseases are indicated in particular waters from Techirghiol and Sovata.

3. In the external cures, sodium chlorosodic water acts on the skin by the cumulative effect of the chemical exciting (chlorine, sodium, calcium, magnesium, sulfur, iodine, bromine etc.), thermal (temperature) and mechanical.

External cures are recommended for:

- Traumatic musculoskeletal disorders, degenerative rheumatism, abarticlar, peripheral and central neurological;
- Extrapulmonary tuberculosis in stabilized form;
- Chronic gynecological disorders;
- Endocrine functional disorders with hypofunction;
- Skin diseases

Sodium chloride acting on the cutaneous receptors by osmolarity change, flushing, cutaneous receptors excitation, leading to the onset of reflex exciting remote mechanism. Since 100 years ago, it was noted that chlorine salt water enters into the skin during the bathing. It is absorbed very slowly from and last in circulation and then eliminated from the body in urine even after several months of the end of balneary cure.

External cure can be achieved with cold salted water from and salt water springs. Cold salt water baths are indicated for locomotor disorders, peripheral venous-lymphatic circulation. In the hot salt water baths accumulate thermal effect with the effect of body weight downloading and hydrostatic force pushing up the salt water and chemical effects of NaCl.



Lacul Ursu, Sovata

Tabelul 1. Romanian chlorosodic mineral waters

Județul	Localitatea	Izvorul	Mineralizare (mg ‰)	Clor (mg ‰)	Sodiu (mg ‰)
	Ocna Mureș	Bazin	266 158	160 447	103 905
Brașov	Rodbav	Izv. Băi	15 328	8 805	4 435
	Veneția	Veneția de Jos	3 571	1 656	1078
Buzău	Sărata-Monteoru	Sonda IBF	185 575	113 405	63 430
Caraș- Severin	Băile Herculane	Hygeea	2 975	1 583	617
		Hercule I	3 518	1 949	753
		Hercule II	2 969	1 595	614
Cluj	Someșeni	Izv. 1	2 640	1 039	653
		Izv. 3	20 051	11 182	7 431
Dâmbovița	Vulcana	Puțul Cuza	32 269	18 786	10 987
	Gura Ocniței	Bazin Băi	256 900	152 226	98 756
Gorj	Săcelu	Bazin	34 019	16 823	15 352
Harghita	Praid	Sonda Principală	199 731	120 713	74 031
Maramureș	Ocna Șugatag	Bazin	119 456	71 891	46 523
Mureș	Sîngeorgiu de Mureș	Izv. Băilor	124 131	76 450	42 256
Neamț	Băltățești	Izv. Băilor	64 647	33 539	21 826
Prahova	Telega	Băi	134 631	80 723	52 191
Sibiu	Bazna	Sonda 11 IBF	46 733,9	27 962,9	16 903
	Ocna Sibiului	Horia	8 719	4 796	3 098
Suceava	Cacica Băi	Băi	265 779	158 787	102 664
Vâlcea	Băile Govora	Sonda	68 480	41 601,6	24 982
	Ocnele Mari	Băile Reci	216 259	124 966	84 467
Vrancea	Vizantea	Slatina	139 097	83 355	45 909
	Jitea	Izv. De la Băi	65 565	37 695	23 632

When water temperature is around 36-38 °C, occurs a marked muscle relaxation, as well as an improvement of peripheral blood flow, which get special treatment results Besides the direct excitation effect on the skin, chlorine baths occur on the body from and indirectly through the peripheral nervous system, whose excitation triggers a series of reactions in the body endocrine, nervous and metabolic adaptation to enhance the performance of the individual.in peripheral circulatory disorders.

If a patient of 70 kg is immersed in fresh water, it weighs 7.9 kg, weight who is reduced to 2.8 kg weight if assessment is done in a salt water bath.

Due to this effect, body movements are much relieved from and allowed a wider mobility.

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