

## Elektrolyte, pH-Wert, Spurenelemente

### Elektrolyte,

z.T. Ionen, für die Funktion der [Zellen](#) essentielle [Säuren](#), [Basen](#), [Salze](#) im [Cytosol](#).

essentielle	Vorkommen	Bestandteil von Zellen (~ Ur-Meer-Habitate)
<a href="#">Natrium</a>	Vorwiegend extrazellulär	
<a href="#">Kalium</a>	Vorwiegend intrazellulär	
<a href="#">Magnesium</a> ,	Vorwiegend intrazellulär	<a href="#">Magnesiumstoffwechsel</a>
<a href="#">Calcium</a>	Intra- und Extrazellulär	
<a href="#">Chlorid</a>	Intra- und Extrazellulär	
<a href="#">Phosphat</a>	Intra- und Extrazellulär	<a href="#">Phosphatstoffwechsel, FGF23</a>
<a href="#">HCO<sub>3</sub></a>	Intra- und Extrazellulär	
<a href="#">H<sup>+</sup></a>	Intra- und Extrazellulär	Protonen ( <b>H<sup>+</sup></b> ) in wässriger Lösung ( <b>Säuregrad</b> ) <a href="http://www.kabilahsystems.de/ph.pdf">http://www.kabilahsystems.de/ph.pdf</a>

**Physiologische Prozesse**, wie elektrische Aktivität (Stress) oder Aktivierung von Neurotransmitter-Rezeptoren, führen zu Schwankungen des intra- und extrazellulären pH-Wertes. Die physiologischen Verhältnisse werden über die Nieren, die Atmung und die Schweißsekretion extrem stabil gehalten. **Eine intakte pH-Regulierung ist die Folge eines intakten Zyto-Skeletts.** Die intrazellulären pH-Werte werden durch Zytoskelett-Toxine in den sauren Bereich verschoben, bei Menschen mit intakter Zellatmung (Mitochondrien) aber nicht durch die Ernährung.

**Patho-physiologische Prozesse (Zytoskelett Toxine)** z.B. Durchblutungsstörungen, Ischämie, Bronchialasthma, epileptische Anfälle etc.. Diese können zu massiven und lebensbedrohlichen Veränderungen des intra- und extrazellulären pH-Wertes in den sauren Bereich führen.

### Essentielle Spurenelemente (Mensch):

essentielle	Vorkommen	Bestandteil von und Funktion
<a href="#">Eisen Fe</a>	Fleisch, Blut	<a href="#">Hämoglobin</a> Wachstums-Beschleuniger für die meisten Bakterien
<a href="#">Schwefel S</a>	Eiweiß	~ Urmeer - Katalysator: FeS, Cystein, Methionin, <a href="#">Coenzym A</a> , <a href="#">Thioester</a> , Complement
<a href="#">Nickel Ni</a>		~ Urmeer - Katalysatoren: Fe <sub>4</sub> NiS <sub>5</sub> , Fe <sub>5</sub> NiS <sub>8</sub>
<a href="#">Silicium Si</a>	Bier, Sand	~ statt Kohlenstoff. <a href="#">Mucopolysaccharide</a> in Epithelien und Bindegewebe
<a href="#">Selen Se</a>	Eier, Fleisch	Bestandteil von 30–50 Selenoproteinen wie der <a href="#">Glutathionperoxidase</a> ,
<a href="#">Iod I</a>	Meeresfische, Krustentiere,	Bestandteil der <a href="#">Schilddrüsenhormone</a>
<a href="#">Zink Zn</a>	Schalentiere, Muskelfleisch	<a href="#">Kollagen</a> , <a href="#">Thymulin</a> , <a href="#">Testosteron</a> , am Abbau von Alkohol durch die <a href="#">Alkoholdehydrogenase</a> , beteiligt. Gegenspieler zum Histamin.
<a href="#">Chrom Cr</a>	Fleisch, Vollkornprodukte, Pflanzenöle, Bier	Bestandteil des Glucosetoleranzfaktors
<a href="#">Cobalt Co</a>	Fleisch, Hülsenfrüchte, Brokkoli	Bestandteil von <a href="#">Cobalamin</a>
<a href="#">Fluor F</a>	Schwarztee	fördert als Kristallisationskeim die Einlagerung von Calciumverbindungen in Hartgeweben
<a href="#">Kupfer Cu</a>	Getreide, Nüsse, Kakao, einige grüne Gemüse, Schalentiere	Bestandteil zahlreicher Redoxenzyme
<a href="#">Mangan Mn</a>	Schwarztee, Nüsse, Vollgetreide, grünes Blattgemüse	~ Urmeer – (Manganknollen in der Tiefsee) Katalysatoren: Mn <sub>4</sub> CaO <sub>4</sub> , Mn <sub>4</sub> CaO <sub>9</sub> .3H <sub>2</sub> O, Mn <sub>8</sub> [Ba,K]1-2O <sub>16</sub> , Aktivator und Bestandteil zahlreicher Enzyme, antioxidativer Metabolismus, Knorpel- und Knochensynthese, Gluconeogenese, essentiell bei Borrelien (anstelle von Eisen)
<a href="#">Molybdän Mo</a>	ubiquitär	Bestandteil des universellen Molybdän-Cofaktors
<a href="#">Vanadium V</a>	Hülsenfrüchte, Nüsse, Meeresfrüchte	ungeklärt

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« **Borrelia treated with lethal doses of desloratadine exhibited a significant loss of intracellular Mn specifically and a severe structural damage to the bacterial cell wall. Our results support the possibility of developing a novel, targeted therapy to treat Lyme disease by targeting specific metabolic needs of Borrelia.** »

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<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4392553/>  
„**A recent study on cows fed genetically modified Roundup®-Ready feed revealed a severe depletion of serum Mn. Glyphosate, the active ingredient in Roundup®, has also been shown to severely deplete Mn levels in plants.**

**Here, we investigate the impact of Mn on physiology, and its association with gut dysbiosis as well as neuropathologies such as autism, Alzheimer's disease (AD), depression, anxiety syndrome, Parkinson's disease (PD), and prion diseases.**“

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**„Deficiencies in cholesterol and sulfate supplies to the blood and to the tissues are the most important factor behind modern diseases.“**

**Möglicherweise essentielle Spurenelemente (Mensch):**

<a href="#">Arsen</a> As	Algen, Krebstiere	~ <a href="#">statt Phosphor</a> L-Arginin-Verstoffwechslung
<a href="#">Bor</a> B	Ubiquitär, z.B. Rote Bete	Essentiell für Knochen- und Gehirnstoffwechsel
<a href="#">Lithium</a> Li		Natriumantagonist; Anfallsprophylaxe bei Schizophrenie / Li-Orotat: Serumspiegel Kontrolle! (Zielwert 0,5 – 1,2 mmol/l)
<a href="#">Rubidium</a> Rb		
<a href="#">Zinn</a> Sn		
<a href="#">Barium</a> Ba		

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