This is a short guide on interpreting hair mineral analysis if you selected to have only the chart printed.

Blood generally looks at blood chemistry. Hair analysis looks more at tissue physiology and is a more longer term picture.

For the toxic minerals, it most likely means the mineral is coming from some source that is not healthy for you.

Ratios and amounts of various minerals are important in interpreting the results.

Table showing meanings of various mineral ratios:  

<table>
<thead>
<tr>
<th>Minerals</th>
<th>Ratio</th>
<th>Basic System</th>
<th>Meaning of abnormal ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ca:Mg</td>
<td>6.67:1</td>
<td>Blood sugar</td>
<td>If &gt; 10 or &lt; 3.3 = poor blood sugar handling; diabetes or hypoglycemia</td>
</tr>
<tr>
<td>Ca:K</td>
<td>4.0:1</td>
<td>Thyroid</td>
<td>&gt; 4:1 = hypothyroid</td>
</tr>
<tr>
<td>Na:Mg</td>
<td>4.17:1</td>
<td>Adrenal</td>
<td>&gt; 4:1 = overactive adrenals</td>
</tr>
<tr>
<td>Na:K</td>
<td>2.5:1</td>
<td>Vitality</td>
<td>&lt; 2:1 = adrenal exhaustion, allergies</td>
</tr>
<tr>
<td>Zn:Cu</td>
<td>8.0:1</td>
<td>Genital-Urinary</td>
<td>&lt; or &gt; 8:1 = reproductive hormone imbalance</td>
</tr>
<tr>
<td>Ca:P</td>
<td>2.5:1</td>
<td>Protein</td>
<td>&gt; 2.5:1 = inadequate protein intake</td>
</tr>
</tbody>
</table>

This figure shows ideal amounts of calcium, magnesium, sodium, and potassium. The late Dr. Paul Eck has determined that certain ratios relate to fast and slow oxidative ideas that add meaning to Metabolic Typing. A slow oxidizer has high calcium and magnesium with low sodium and potassium. A fast oxidizer has low calcium and magnesium with high sodium and potassium. Then there are various combinations of these (mixed oxidizers).

The ideal ratios of various minerals are depicted on the results of your hair analysis.

For example, when sodium is high, it most likely is due to high aldosterone because of adrenal stress. Aldosterone causes inflammation, whereas cortisol is anti-inflammatory. Both have adrenal origin. If the sodium is high in the hair, most likely it means weak adrenals, and not because we are eating too much salt.
In contrast, a low sodium/potassium ratio indicates more chronic stress, meaning a higher cortisol secretion in the exhaustive stage of stress.

A high sodium/potassium ratio (more sodium) in a slow oxidizer may reflect a hidden copper toxicity. Cadmium, mercury, nickel, and perhaps even aluminum, manganese, and iron toxicity may cause a high sodium/potassium ratio.

Zinc lowers sodium and raises potassium. Magnesium may be involved in the balance. A high sodium/potassium ratio may mean kidney stress as well. A low ratio may be associated with a weak immune system, whereas high ratio may mean autoimmune problems. A person has to look at the overall health picture.

It is rather common to see high aluminum in the hair. Sources of aluminum toxicity can come from beverages in aluminum cans, aluminum-containing antacids, anti-perspirants, baking power, drying agents in salt and other products, processed cheese, and bleached flour. Fluoridated water can increase leaching of aluminum from aluminum pots and pans.

Aluminum blocks the action potential or electrical discharge of nerve cells. It can reduce intestinal activity, and cause memory loss, loss of coordination, confusion and dementia. This can be made worse by kidney dialysis. Early symptoms include headache, colic, dry skin, and flatulence.

Low hair iron may not mean a lack of dietary iron but rather a low bio-availability. We need to be aware of getting too much iron, especially for older people.

A low copper may mean low calcium and magnesium, connective tissue problems, neurotransmitter and immune problems.

Manganese is needed for sugar metabolism, tendon and ligament function, and thyroid activity.

Zinc is needed for protein synthesis, vision, digestion, prostate health, skin, hair and nail health, and immune support.

Chromium is needed for sugar and carbohydrate metabolism.

Selenium is needed to convert T4 to T3 in the thyroid.

Phosphorus is involved in energy production among many others. Protein is a good source of organic phosphorus.

It is best to balance the minerals with an overall program and not to just supplement the low minerals. Life style comes in here too.