

2.7.4. Upper levels

For most substances ingested, the rule “the dose determines the toxicity” applies. Thus, through supplement use or contamination even high dose of nutrients can cause severe health problems. Essential or non-essential minerals, e.g. Pb, Cd taken up from the soil by plants in excessive amounts can be dangerous. Upper levels have been determined for nutrients (Institute of Medicine 2000). While some nutrients are water soluble and more easily excreted when ingested in abundance, fat-soluble nutrients like vitamin A can easily cause problems as they will accumulate in the body. When nutrients are ingested through diverse food, it is uncommon to ingest an overload. This is one of the reasons to biofortify crops as chances of over dosing are generally low. One must however realise that technically it is possible to raise levels of plant phytochemical to toxic levels by both classical breeding and genetic modification.

References

Institute of Medicine. 2000. DRI Dietary Reference Intakes: Applications in dietary assessment. DOI: 10.1016/S0002-8223(02)90177-X