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Natural Ways to Control Thyroid :Releasing T-4-Thyroxine&T-3-Triiodothyronine.

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Abstract

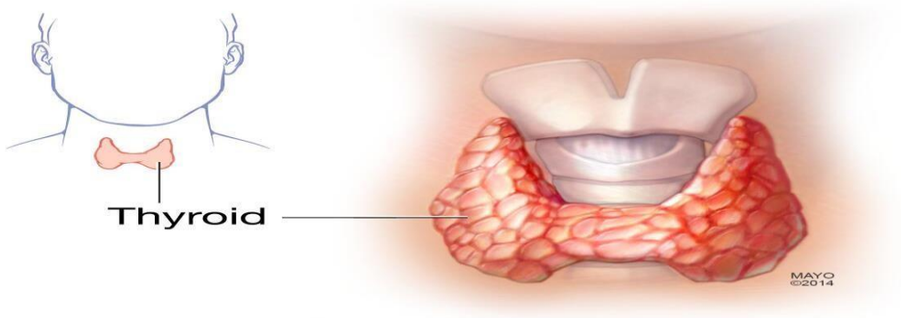
Excess limit of Thyroid (due to the deficiency of Iodine) is the cause of various diseases like Prikson / Alzhimer etc. Thyroid is a butterfly shaped gland at the base of neck which produces T-3 and T-4 hormones to control the use of the rate of the use of carbohydrate and fats by the cells of body and swelling at the neck too. Iodine deficiency disorders, which include goiter also , are a group of diseases that result from a relative lack of iodine in the diet. It is the single most common cause ofpreventable mental retardation and 38% of the world's population are said to be at risk fromlackof I2. Medical intervention techniques, for example iodization of table salt, are well-established and have been responsible for reducing the global problem. This report summarizes our study of environmental factors implicated in producing iodine-deficient environments and how an improved understanding of iodine geochemistry can be used to reduce the Iodene Lack problems risks. In the areas proper in iodine in the environment the study is summarized.With a better knowledge of the geochemical behavior ofThyroid and its migration through the food chain we can suggest environmental solutions for reducing. The natural content can be better managed to achieve a more favorable supply of bioavailable Thyroid. The retention of this mobile trace element Iodene in the soil has to be encouraged but it must not become so strongly fixed that it is no longer bioavailable. The soil Eh/pH, organic content, and soil texture are seen to be important controllingfactors.

Keywords-Thoiroid,Hormones,T-4- Thyroxin,T-3-TriiodothyronineEtc.

Introduction-

In areas of significant Thyroid excess, where the local population havelittle or no scope for managing their own environment because of extreme poverty and harsh conditions, adding iodine from an outside source is the only practical approach. This can be achieved by adding iodine to water used for drinking and irrigation or using iodine-rich In a typical synthesis, about 0.001 mol Mn (acac)2 was added to the three necked flask, fertilizers. However, such supplementation can only be cost effective if measures are taken to ensure that the iodine is not readily lost from the environment to which it has been added .In most areas of our country, with the exception of generally iodine-rich coastal regions, populations totally dependent on the local environment for their source of iodine and are likely to control thyroid. and the adventitious sources of iodine added during food processing.we all face a danger if our diet lacks iodine and the consequence is a number of medical conditions grouped under the general heading of iodine lack problems(ILP). Only a trace amount of iodine is required, as little as 100–150 µg is the recommended daily dose, less than three grammes of iodine during the course of a lifetime. Cretinism, mental retardation, decreased fertility, increased perinatal death and infant mortality will result from instances of severe iodine deficiency.An understanding of the role of

weak bond between theπ-system of benzene ring and vacant d system of copper atoms, which gives slightly iodine in (Fig1- Mayo@2014 Thyroid)



diet (specifically for its thyroid function) was recognised.The main thrust of effort to reduce the risks from iodine deficiency disorders is coordinated by the International Council for the Control of Thoiroid (ICCT). Therefore there is need a non-profit, non-government organization for the sustainable elimination of surplus thyroid and the promotion of optimal Thyroid control worldwide'. Much of the effort in eliminating ILP centres on the use of medical prophylaxes and roceeds relatively successfully without a sound understanding of its principal cause, a deficiency of iodine in the environment, thyroid can be controlled. There is a perceived need for a better understanding of the geochemistry of iodine so we canensure that the small environmental amounts available are used in the most efficient way. Hence, where iodine is added directly to the environment by methods such as dripping into irrigation water we will be better able to ensure that it reaches the food chain.The aim of this project has been to look at factors controlling the bioavailability of iodine in the Earth's surface and suggest environmental solutions to reduce the risks from ILP by supplementing medical intervention schemes where necessary. The output from the work is specifically aimed at informing the medical community about the geochemical behaviour of iodine in the environment.

Experimental and discussion-

The Thyroid surlpus prolems (TSP) due to Iodine lack problem (ILP) are a group of diseases that result from a relative lack of iodine in the diet. They are found throughout the world, in countries at all stages of development, although they are commoner in remote and deprived communities. The disorders includegoitre (a swelling of the thyroid gland in the neck), cretinism (mental retardation with physical deformities), reduced IQ, miscarriages, birth defects and deaths around the time of birth.Cretinism is the commonest avoidable cause of mental retardation on a global scale. It can be prevented by a sufficient supply of iodine to a pregnant woman, but once present is irreversible. It is the easiest of the disorders to measure and is used as a marker of the presence of iodine deficiency in a community. However, the presence of goitre must not be taken to indicate a lack of iodine in the local environment or food chain.The links between the environmental supply of iodine and the dietary intake remain unclear at this point and are sometimes compromised by the presence of other, competing factors which can accentuate the results of iodine deficiency in the body. Seawater is a major source of iodine in the geochemical cycle with average concentrations of around 58 µg/l iodine (figure opposite). Iodate (IO -) is the most stable form of iodine in seawater and this is reduced to iodide (I) in surface waters mediated by biological activity. Seaweeds and phytoplanktonrelease iodine-containing organic gases (e.g. CH3I and CH2I2) that pass into the atmosphere and are subjected to further chemical changes by the action of sunlight.

This is in contrast to inland soils where uniformly low levels of iodine predominate. Iodine can be re- volatilised from the soil-plant interface, also probably involving biological conversion of iodine to organic forms. It will migrate further away from the coast until precipitated again on the land.The weathering of rocks isalso a source of iodine in the surface environment. Organic-rich shales, for example, can average as much as 20 µg/g I. However, such rocks in terms of overall global distribution are rare and the Earth's continental crust is dominated by rocks averaging only 0.2 µg/g I and contributing relatively little iodine to surface soils. In termsof iodine deficiency disorders, it is the pathways from soil-plant-man and water-man that are of the most importance and iodine in soil, drinking waters and crops will be described in more detail here.The iodine status of a soil is a combination of the supply of iodine and the soil's ability to retain it The iodine fixation potential of a soil is a complex mixture of many factors that include the soil's organic content, the soil texture, the chemical form of the iodine, and the prevailing oxidation and acidity conditions (Eh/pH).The average iodine content for soils from the project's database (2151 results of screened data from all over the world) is 5.1 µg/g. Table:Natural Thyroid Status

I_2(natural:soil,soilwater,water,milk,wheat,veg.etc.)mcg/day	150-1000
Thyroid	
T3(microgm/dL)	160
T4(microgm/dL)	o7

Generally less than 10% of the soil's iodine can be extracted with cold water and this is a good indication of how much is bioavailable.Iodide is the most mobile form of iodine in the soil and is more readily taken up by plants than iodate. Acidic soil conditions favour iodide whilst alkaline oxidising conditions (such asthat found in dry thin soils of limestone areas) favour the less soluble iodate form. There is no need to invoke the presence of goitrogens in limestone areas that are noted for their high prevalence of IDD. Simple Eh/pH considerations would suggest the iodine in alkaline environments is less mobile. Natural Iodine –

1. I2 in Drinking Water

Surface waters are probably the best index of an environment's iodine status, although iodine deficiency disorders do occur in areas where water iodine levels are relatively high. Iodine in water represents the mobile form of the element (hence bioavailable) and waters are more easily analysed than soils and vegetation. Early work in the USA and UK suggests a threshold level of 3 µg/l below which an environment could be defined as iodine deficient. There is a wide range of results reported for the iodine content of drinking water from vegetables > fruit. If a major pathway for iodine into the plant system is through leaf adsorption, then leafy vegetables must be considered to have an advantage in concentrating iodine. The iodine content of plants is seen to increase with the proportion of leaves. Therefore, grain crops such as rice and wheat cannot therefore be considered as good providers of the element.

NaturalIodine–I_2inDrinkingWaterSurface waters are probably the best index of an environment's iodine status, although iodine deficiency disorders do occur in areas where water iodine levels are relatively high. Iodine in water represents the mobile form of the element (hence bioavailable) and waters are more easily analysed than soils and vegetation. Early work in the USA and UK suggests a threshold level of 3 µg/l below which an environment could be defined as iodine deficient. There is a wide range of results reported for the iodine content of drinking water from vegetables > fruit. If a major pathway for iodine into the plant system is through leaf adsorption, then leafy vegetables must be considered to have an advantage in concentrating iodine. The iodine content of plants is seen to increase with the proportion of leaves. Therefore, grain crops such as rice and wheat cannot therefore be considered as good providers of the element. Grazing animals and their products are richer sources of iodine, they act as concentrators of the element by grazing large areas of pasture on which iodine has been precipitated from the atmosphere. The levels of iodine in milk, eggs and meat are further raised by adventitious sources added during food production. This is iodine introduced to the food for reasons other than supplementation. For example, iodine levels in milk are high, because of the use of iodophors as antiseptic cleansing agents in milk production. In developed countries, cow's milk is the major contributor to dietary iodine exposure .

Conclusion-

The results of this study reveales that like many other health effects, the risks of TSP and ILP decrease with increased development. For areas of the world where marked economic and social development are unlikely to take place over the shorter term, low-cost environmental interventions could be used along side medical techniques to reduce the risks of ILP provided the political will exists to implement these measures. In many medically driven studies, the iodine deficient state of the population has been measures opposite to those that make the iodine more mobile are needed. Liming the soil (i.e. increasing its alkalinity) appears an effective way of immobilising iodine;f.Finding alternative sources of iodine-rich water. Deeper water sources are frequently more enriched in iodine, as seen in our Xinjiang case study;g.Preventing the removal of iodine by flooding. It may be desirable to reduce the number of flooding events since, although these mobilise and increase iodine bioavailability, in the long term they lower the soil iodine status in soils without regular repletion.The management of soil iodine as described is extremely complex and certain factors that are beneficial .

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