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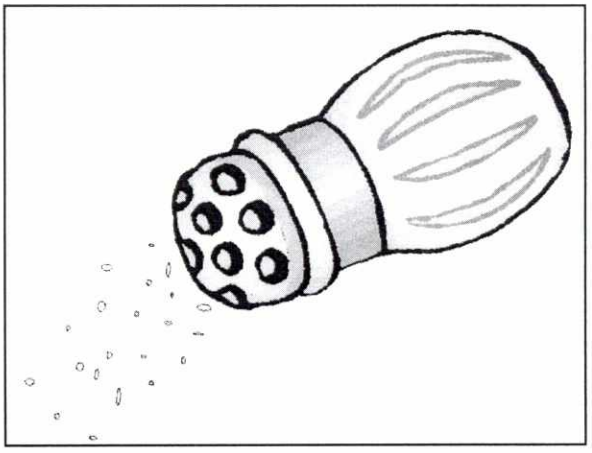
Iodine deficiency: Easy solution made difficult

The faulty and inefficient distribution mechanism of potassium iodate is behind Pakistan's abysmal performance in addressing the huge public health problem of iodine deficiency. The chemical named potassium iodate (KIO3) is added to plain table salt to convert it into iodized salt.



Pakistan is rated amongst the countries, where iodine deficiency is a serious public health problem. According to a recent research published in Pakistan Journal of Medical Sciences around 50 million people are suffering from iodine deficiency, 6.5 million of whom are facing severe type of deficiency. Up to 90 per cent population of hilly areas of NWFP, AJK and Northern Areas and numerous pockets of population in Punjab is iodine deficient. Over a third of women of reproductive age and children under five suffer from severe iodine deficiency.

Ironically, only 17 per cent of the overall population uses iodized salt in our country, which is incredibly low even if compared with countries with similar socio-economic conditions like Bangladesh (78 per cent) and Nepal (93 per cent).

Pakistan started an aggressive media campaign for replacement of plain table salt with iodized one in 1994. Six year long exercise however began and ended on TV screens. Experts analyzing the marked failure pointed towards a number of issues. But people at the helm of affairs opted to blame the failure on just one factor – rumors that the iodized salt was 'an imperialist conspiracy to covertly control the population of a Muslim country'.

"This rumor did make rounds in public. But then such things are said by certain elements about each and every thing. It is wrong to assume that people blindly follow all such propaganda. Our experience tells us that the failure of campaign for iodized salt has been unduly blamed on this conspiracy theory," says Mohammed Asif of Punjab Lok Sujag, an organization that runs a campaign against iodine deficiency disorders in Okara district.

The easy option of blaming it on ignorance of illiterate masses, has moved the focus away from the real causes of this disastrous failure of a wonderful public health initiative.

Table salt in Pakistan is processed and distributed by very small units – chakkis – or salt mills. These mills are every where. Even a large village of over 7,000 population can have its own mill providing salt to village shops. Big grocers in towns also install their own salt mills.

It takes next to nothing to iodized salt in terms of cost. A fraction of a paisa is the expense of iodizing one kilogram of salt. But this seemingly favourable economy is not without problems. The chemical used to iodize the plain salt, potassium iodate, is simply not available.

UNICEF has been importing potassium iodate in Pakistan and providing it to provincial

TheNetwork for Consumer Protection
40-A Ramzan Plaza, G-9/Markaz, Islamabad
Ph: 051 226 1085, Fx: 051 226 2495; www.thenetwork.org.pk

health departments at a low price of Rs 150 per kg. The health departments however never bothered to institute an efficient system to make this available to the small and numerous salt mills spread across the length and breadth of the country. One cannot expect a small rural salt processor to travel to the provincial capital, file an application in the health department and contest the great bureaucratic hurdles race and come out as a winner with a one kilogram potassium iodate as a trophy.

Punjab health department made a half hearted attempt a few years ago at improving its supply system by involving a private distributor. But that distributor incidentally happened to be a close associate of a health official and the initiative fizzled out after allegations of potassium iodate being black marketed. (The open market price of the substance is Rs 2,000 per kg while the subsidized Unicef price has been Rs 150 per kg.)

A new international agency Micro-Nutrients Initiative (MI) has now taken over the responsibility of promoting iodized salt in the country. The agency is working closely with the federal ministry and the provincial departments and has set eight districts as its initial target. The agency is hoping that it will make the vital substance KIO3 available at district level through Executive District Officers (EDOs) Health. The agency has also prepared a pre-mix of KIO3 that can only be used to iodize table salt and would block its black marketing for other industrial and commercial uses.

It will take a few years to really know the impact of the new strategy adopted by the new international agency. But the initiative does not seem to be a comprehensive, nation wide campaign and wide spread use of iodized salt by people of Pakistan still looks like a distant dream.

Iodine deficiency – the hidden hunger

Iodine is a mineral element. It is required as a trace element in minute quantity by the human body. A spoonful of the substance is all that human beings need in their entire life span.

Thyroid glands located in front lower portion of neck use iodine to produce certain hormones that in turn set the metabolic rate of human body functioning. Low or no intake of iodine hampers the functioning of this gland and in an attempt to make up for this deficiency the gland enlarges itself. This condition is known as goiter.

But goiter is perhaps the only condition caused by iodine deficiency that is visible. There are a host of health problems that scientists associate with this deficiency that have no clear or painful symptom. For example lethargy or low level of physical energy and low intelligence (or IQ). Researchers have demonstrated that school performance of

children with proper iodine intake increases remarkably. Iodine is vital in supporting proper mental development of children. Its deficiency can causes irreversible mental retardation. Number of cretin children in a community is used by the medical experts to

gauge the intensity of iodine deficiency in that area.

Iodine deficiency is also responsible for a number of reproductive health problems like still births and miscarriages. The iodine deficiency issue is of added importance in Pakistan as this is a country with one of the highest maternal mortality rates in the world.

Iodine is found naturally in soil. It enters the human food chain from there. But over millions of years this element has been washed down and away from the surface through running rain and river waters. This is one reason it is most deficient in sloped mountain areas.

But the deficiency is not exclusive to mountains. In the plain land of rivers, Punjab, it has been washed away by the continuous floods. There are extreme iodine deficiency pockets in Okara, Pakpattan, Jhang and other districts where entire villages suffer from goiter.

Iodine is found in abundance in seas as this is where the water action on land surface ends. The communities that have sea food in their daily diets do not face this deficiency.

First ever campaigns to end iodine deficiency through supplementation were run in mountain areas of US and Europe in 1920s. Public health experts have tried out many ways to end iodine deficiency in human body for example, injectable iodine, iodized oil and even iodized water. But experience has proved that table salt is the best carrier for iodine. Salt enrichment is preferred since it needs a very minute amount of iodine, only 50 microgram iodine in 1 gram table salt or 1 gram iodine for 20 kg of salt). Iodine does not change the taste or color of salt.

World experiences

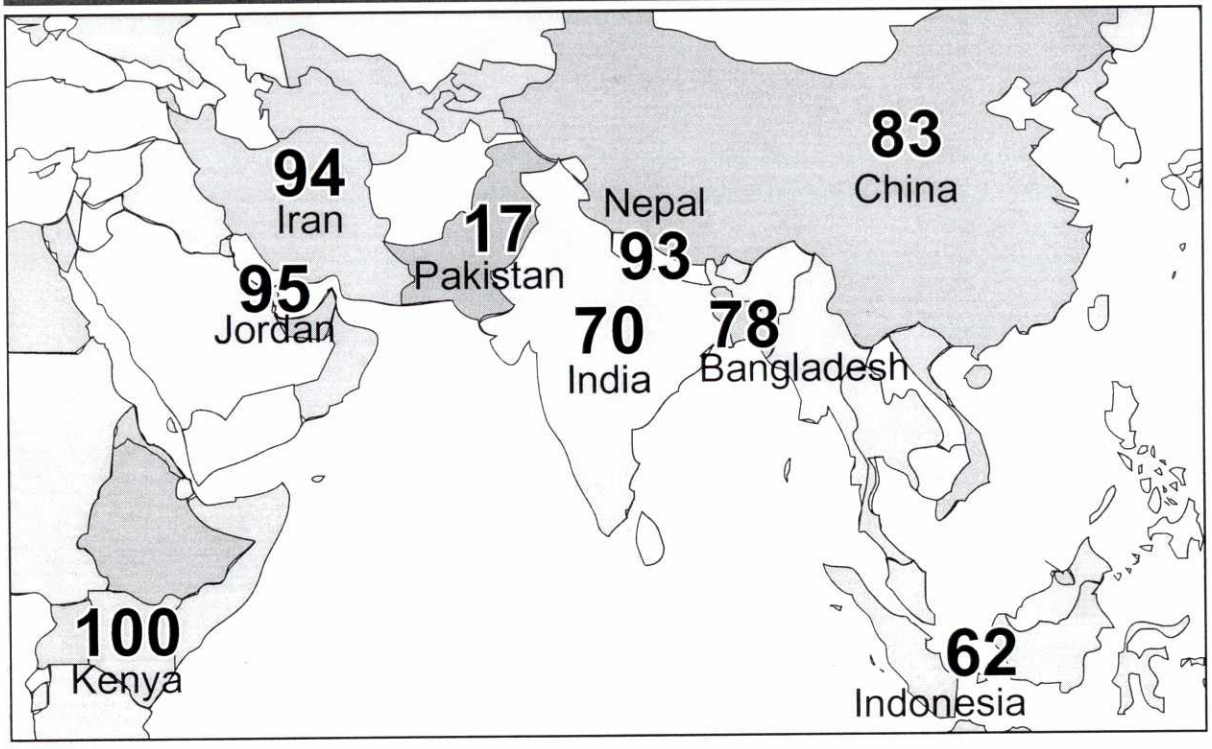
Iodine deficiency is natural in various countries and the number of iodine deficient people is increasing day by day. According to WHO figures 655 million people faced iodine deficiency in 1990. Now there are approximately one billion people suffering from it.

Most of the developed and developing countries took concrete measures in time to cope with this problem by cultivating the iodized salt consumption culture. China, India and Iran, in our neighborhood marked a rousing success in this context. In China, the iodized salt consumption rose from 39 to 95 per cent in just five years. 95 per cent of Iranians, 70 per cent of Indians and 78 per cent of Bangladeshis use iodized salt in their daily diet.

The preparation, sale and import of non-iodized table salt is prohibited in various countries by law. There have been many attempts by international health agencies to lobby Government of Pakistan to enact law making it compulsory for all salt processors to iodize salt. Since sale of goods comes under

Iodized salt consumption in various countries (%)	
Pakistan	17
India	70
Nepal	93
China	83
Nigeria	98
Jordan	95
Kenya	100
Zimbabwe	80
Indonesia	62
Brazil	95
Iran	94
Bangladesh	78

Iodized salt consumption in various countries (%)



the jurisdiction of provinces, the iodized salt has to be enacted by the provinces separately. NWFP and Balochistan have enacted laws in this regard but Sindh and Punjab have been reluctant.

For more information please contact
Rasheed Chaudhry
Media Coordinator
TheNetwork for Consumer Protection in Pakistan
Mobile: 0321 501 7355

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