

The Return of Soy

● Miracle Crop of our time

By Onche Odeh

Farmers in Benue state have described as unfortunate, the continuous layoff of the Taraku Soy milling factory, saying it has caused their fortunes to plunge.

They are, however, excited that Karma Foods, with its Soy milling factory located in Gwagwalada, near Abuja, has opened another door of livelihood for them by creating additional market for the crop described as the magic crop.

The farmers, most of whom had taken into orange and mango farming as a way of maximising income through exports to countries like Cameroon, Chad and Niger in the absence of a ready market for Soybeans, expressed their excitements in Makurdi, Benue state capital where they gathered for a workshop organised by the International Institute for Tropical Agriculture (IITA) in collaboration with Karma Foods and the University of Agriculture, Makurdi (UAM) to position Benue state as the hub of Soybeans production in Nigeria.

Igyo Ali Zaki, a farmer from Mbagen-Mbatyou in Buruku Local Government Area of the state, who spoke on this in an interview with

Sunday Independent in Makurdi said, "The death of Taraku Mills killed Soybeans business for Benue farmers. Many of us, like me have gone into orange and mango farming for export to countries like Cameroon, Chad and Niger. But it is unfortunate because we were making some good fortunes until things became bad with the Taraku milling factory."



A Soy Farmland

According to Zaki, the piles of blames being piled on the government is not making things better, as he urged private investors, like Karma to make efforts to create good markets for soybeans in the state.

"We are ready to farm Soybeans, but who do we sell to. We need good pricing and arrangements with buyers that do not work against the farmers," Zaki said.

The farmers are not happy that pricing arrangements with buyers are usually hijacked by middle men, whom he described as shylock.

Similarly, another farmer from Vandeikya, Joshua Iyumbe, noted that the cost of inputs is a major impediment to commercial soybeans farming.

Current pricing of soybeans shows that a bag is sold for about N9,000 whereas a bag of fertilizer is sold at between N6,000 to N7,000.

Meanwhile, the farmers are happy that Karma Foods is setting up a huge market opportunity for them with the establishment of a 75,000 metric tons processing capacity

[continue on page 3](#)

Nutrition and Cancer Prevention

By Busayo Olawale

Globally, cancer is a major public health burden, accounting for one in eight deaths overall – more than AIDS, tuberculosis and malaria combined. Cancer is one of the leading causes of death worldwide and represents a tremendous burden on patients, families and societies.

In 2008 there were 12.4 million new cases of cancer diagnosed and 7.6 million deaths from the disease. Based on projections, cancer deaths will continue to rise, and by the year 2030 the burden is set to more than double: there will be 26.4 million cancer cases, 17 million deaths and 75 million people living with the disease. More than half of cancer cases and 60% of deaths from cancer occur in less developed countries.

The lifetime risk of developing cancer is now more than one in three and by 2015 this is expected to rise to one in two (source: global burden of cancer fact sheet).

Estimates from the World Health

Organization, WHO, suggest that there is an estimated 100,000 people diagnosed with cancer in Nigeria each year. Clement Adebamowo of the Division of Oncology, at the University College Hospital, Ibadan, Nigeria, says that while infectious diseases like AIDS are most common in Nigeria, cancer is fast emerging as a health care priority in Nigeria.

The National Cancer Institute describes cancer as a term used for diseases in which abnormal cells divide without control to invade other tissues. The organs in the body are made up of cells, which divide and multiply as the body needs them.

When these cells continue multiplying when the body does not need them, the result is a mass or growth, also called a tumor. These growths are either malignant or benign. The benign growths are harmless and can be removed, while the malignant growths are the ones that lead to cancer. Cancer can affect just about every organ or tissue in the human body, such as the lung, colon, breast, skin, blood and bones.

Causes of Malnutrition in Pregnancy

- Francis Aminu, PhD

Individual nutritional status depends on the interaction between food that is eaten, the overall state of health and the physical environment.

Malnutrition is both a medical and a social disorder, often rooted in poverty. Combined with poverty, malnutrition contributes to a downward spiral that is fuelled by an increased burden of disease, stunted development and reduced ability to work.

Poor water and sanitation are important determinants in this connection, but sometimes improvements do not benefit the entire population, for example where only the wealthy can afford better drinking-water supplies or where irrigation is used to produce export crops.

Civil conflicts and wars, by

[continue on page 3](#)

How Malnutrition Affects Pregnant Women

- Francis Aminu, PhD

Malnutrition affects pregnant women in 2 major ways: the mother and the unborn baby, in both cases it can lead to death.

The height of a woman is associated with past socio-economic status and nutrition during childhood and adolescence.

Low pre-pregnancy BMI and short stature are risk factors for poor birth outcomes and obstetric complications. In developing countries, maternal underweight is the leading risk factor for preventable deaths and diseases.

Women who are very short (less than 151 cm high) because of stunting in childhood are more likely to have difficult births.

Women who had vitamin D deficiency while at they were growing may have deformed pelvic bones which make child birth difficult.

If a woman does not eat enough, she cannot build up stores of fat and other nutrients. She uses her own muscles and

[continue on page 4](#)

Push for Soya Beans

By Ibrahim Apekhade Yusuf

DYNAMITE comes in small shapes and sizes so the saying goes. But small as a dynamite may seems, it has the power to deliver even more catastrophic harm when compared to its gargantuan cousins such as grenade, pump action rifle, AK 47, etal!

Without making light of the issue, the soy seed can easily be compared with the dynamite as far as size and shape is concern. But that is as far as the comparison can go.

At the risk of pontificating, of all the natural

endowments man is blessed with, the soy seed has come to symbolise a whole lot. To the discerning mind, soy seed literarily depicts power, freedom from want and hunger, and wait



The Soy beans

for this: a world of possibilities and even much more!

At least, this is the impression yours sincerely came away with recently after an interface and discussion session with Dr. Jim Hershey, arguably one of the leading lights in soy nutrient advocacy across the globe.

Hershey, who sits atop as the Executive Director, American Soybean Association's World Initiative for Soy in Human Health (WISHH) has seen it all as far as the dynamic world of soy is concerned.

Democratisation of soy

At that meeting Hershey brought the rest of us to speed on how his home country has been able to democratise soy to such an extent that it has become

[continue on page 3](#)

How to Prevent Malnutrition in Pregnant Women

The PROFILES analysis for Nigeria shows that the productivity benefits of iodine supplementation to Nigeria's economy is tangible due to the elimination of iodine deficiency disorders; the reduction of child stunting and anemia in women of reproductive age. In addition to the huge economic gains: over 10,000 lives of mothers will be saved by reduction of anemia in women; and over 4,000,000 newborns will be saved from mental impairment due to the elimination of iodine deficiency in women of reproductive age.

These benefits will not be attained if a real commitment to improve the nutritional condition of Nigerian pregnant women is not made. To this effect, the following priority nutrition actions must be fully implemented and sustained.

1. Ensure that the iodine requirements of pregnant women are met.

Specifically: ensure that all table salt is adequately fortified with iodine; and ensure that the promotion and consumption of iodized salt is sustained.

2. Ensure that the iron and folic acid requirements of pregnant women are met.

Specifically: ensure that all pregnant women receive adequate iron and folic acid supplements as well as adequate counseling on the use of such supplements;

Explore the efficacy and effectiveness of supplements for pregnant women containing multiple micronutrients;

Ensure that all health workers provide appropriate counseling for malaria prevention, treatment and control; and



Nutritional supplementation required for a healthy pregnancy

Promote the consumption of iron-rich foods including foods fortified with iron

3. Ensure that the vitamin A requirements of pregnant women are met. Specifically:

Ensure that all women receive two doses of vitamin A as soon as possible after

delivery at 24 hours interval and not later than 8 weeks post delivery;

Promote the consumption of locally produced vitamin A rich foods including fortified foods.

4. Ensure adequate nutritional support for adolescent girls, pregnant women and lactating mothers; specifically:

Ensure a minimum nutrition and

reproductive health package for adolescent girls at every health facility;

Establish nutrition counseling for mothers and fathers during antenatal visits;

Provide nutritional counseling for lactating mothers (especially for primigravidae) and their partners in post-natal centers;

Promote the establishment of community breast-feeding support groups as avenues for nutritional counseling to women.

5. Ensure appropriate nutritional care and support for people living with HIV/AIDS; specifically:

Establish dietary guidelines on appropriate nutritional care and support for people living with HIV/AIDS;

Train all health personnel on the appropriate implementation of such guidelines; and

Strengthen the HIV patient care giving services with nutrition counseling

6. Ensure the prevention and control of nutrition-related non-communicable diseases; specifically:

Promote food based dietary guidelines for good health;

Promote a healthy lifestyle with emphasis on the prevention of smoking, alcoholism, and sedentarism.

Establish nutrition clinics for people in special need of nutrition support.

Dietary Causes of Cancer

By Busayo Olawale

Nutrition has a very important role to play in predisposing one to cancer. The National Cancer Institute estimates that at least 35% of all cancers have a nutritional connection.

Most cancers have multiple possible causes, but the focus here is on dietary causes of cancer. When lifestyle factors such as smoking and exercise are included the associated risk becomes much stronger and may be as high as 85%.

About 30% of cancer deaths are due to the five leading behavioral and dietary risks –

- ✎ high body mass index
- ✎ low fruit and vegetable intake
- ✎ lack of physical activity
- ✎ tobacco use
- ✎ alcohol use

Some dietary causes of cancer, according to World Cancer Research Fund on Food, Nutrition, Physical Activity and Cancer Prevention are listed below:

-Excessive intake of red and processed meat. Some studies show that consumption of grilled meat leads to an increased risk of stomach cancer, colon cancer, breast cancer, and pancreatic cancer, a phenomenon which could be due to the presence of carcinogens in foods cooked at high temperatures

Excessive intake of grilled or roasted foods

Excessive consumption of alcoholic beverages

Excessive consumption of canned or other processed foods

Excessive consumption of foods and drinks that promote weight gain, like energy-dense foods and sugary drinks

Excessive intake of salts

continue from page 1

Push for soya beans

one of the most common item available in every home whether in terms of its by-products or even its raw form.

"Developing countries are driving protein demand as the global population grows. Raising low-income consumers out of poverty is the most important factor in future global demand for food, and WISHH has the strategic plan to help them at the same time we expand the U.S. soy market."



Soy flour, used for baking

"Fifty years of U.S. soy market development have shown that helping people understand how to use soy for nutrition, both for human health and for livestock production, increases worldwide demand for U.S. soy," said WISHH Executive Director Jim Hershey.

The potential appetite for protein is projected to increase by 75 percent by 2025 compared to 2001, according to research from the National Soybean Research Laboratory. Since U.S. soybean farmers founded WISHH in 2000, WISHH has worked in 23 countries including Nigeria to improve diets, as well as encourage growth of food industries.

The WISHH program is managed from ASA's world headquarters in Saint Louis.

Editorial Team

Akin Jimoh
Editor-in-Chief

Kayode Iyalla
Editor

Akinlolu Akinpelumi
Assistant Editor

Ayodele Adesanmi
Graphics Layout and Design

Writers

Onche Odeh
Head, Education/Science Desk
Independent Newspapers Ltd,
Nigeria.
10'MIT Knight Fellow
10'MBL Science Journalism

Francis Aminu
(PhD, PGDip)
Country Director,
Micronutrient Initiative,
Abuja, Nigeria

Ibrahim Apekhade Yusuf
Head, Business (Sunday)
The Nation Newspaper

Busayo Olawale
B.sc Human Nutrition
MPH Health Promotion &
Education (in view)
University of Ibadan.

... Benue farmers return to Soy

factory in Gwagwalada, Abuja. The factory is located within two to three hours road travel from Benue, providing ready market for the farmers.

Karma Foods Limited is establishing a \$20million factory that will begin to take delivery of locally produced soybeans at the end of this year's harvest.

This, according to Chairman of the firm, Dipak Mirchandani, would open up new marketing opportunities for Nigerian soybean farmers.

The company plans to source 100 per cent of its soybean demand locally, as Mirchandani said, "We hope that this investment will help reposition soybean production in Nigeria, and more importantly, it will profit the Nigerian soybean farmer because he now not only has options to sell his products, but also can plant with a sense of security and the assurance that his produce has a committed buyer."

Speaking on the leverage provided by Karma Foods and partners, Head, Intellectual Property and Technology Transfer Unit, Federal University of Technology, Akure, Ondo State, Dr. Ayo Ajayi, who pointed out that Soybeans was first successfully bred in Makurdi, after its introduction to Nigeria in 1908, said Benue farmers now have a rare opportunity to maximise the business potential in farming.

According to him, it is not a good testimony that Kaduna has overtaken Benue as the highest soybeans producing state in Nigeria.

"Benue has proven records of being the state in Nigeria with the highest soybeans output. It is not so good to hear that the state is now second to Kaduna, a state with lower rainfall, being a major requirement for good soybeans production," he said.

Ajayi pointed out that IITA and other institutions in the country have developed technologies and methods of breeding high quality

soybeans for which he said Benue could tap into with benefits.



A Soy plant

Meanwhile as a means to meet her soybean demand, Karma Foods and researchers from the IITA, under the Tropical Legume project and the University of Agriculture Makurdi will be backstopping farmers in Benue state with best practices in soybean production.

"We see Benue farmers as key stakeholders in this project because the state plays a leading role in soybean production," says Mirchandani.

The company, the biggest soybean factory in Sub Saharan Africa outside of South Africa, says it will be creating tens of thousands of jobs along the soybean value chain, which will help reduce the level of unemployment in Nigeria.

Similarly, IITA's Systems Agronomist, Dr. Alpha Kamara, says the emergence of Karma Foods will go a long way in increasing soybean production in northern Nigeria with a resultant increase in farmers' income.

He disclosed that IITA and partners are already promoting soybean production through the provision of high yielding improved varieties, creating awareness, promoting sustainable seed production systems (community seed schemes) and strengthening the capacities of seed companies to package and sell improved seeds.

Described as a 'miracle bean' or 'golden bean' because of its cheap protein-rich grain, soybean production in Nigeria has been stymied by unfavorable market which often times results to cyclical gluts.

According to Molecular Geneticist/Plant Breeder at the University of Agriculture Makurdi, Dr. Lucky Omoigui, the new partnership between research and industry will create sustainable demand and supply for the commodity, and make the farmers proud hence they now have a very large and committed buyer who is reaching out to them.

Over the years, IITA has made substantial efforts to improve the productivity of the crop by developing high yielding, early maturing varieties capable of nodulating in association with local rhizobia, and possessing other good agronomic traits. The institute has also developed and released rust resistant soybean.

Health and Economic Benefits of Soy

Soy beans which is classed under the plant legume, is mostly found in Southeast Asia. It is found in various sizes as well as seed coat colours, right from black, brown, blue, yellow or mottled. In terms of nutritional value, soybeans have a rich nutrient content.

Apart from being an excellent source of proteins, it also contains all the essential fatty acids, calcium, magnesium, lecithin, riboflavin, thiamin, fiber, folic acid and iron. Soy beans are an imperative source of vegetable oil and protein. Most of the soy products act as perfect replacements for meat and dairy products specifically required for the vegans and vegetarians.

Food processors in the country are showing strong interest in value-added soy products because of the nutritional and health benefits and the cost effectiveness as protein substitute and extender.

Interestingly, this is fallout of the recent market development activities conducted in Nigeria by the American Soybean Association's World Initiative for Soy in Human Health (WISHH). Several bakeries, beverages and snack food producers have ran satisfactory tests and are now eager to incorporate soy products in their production processes.

Direct human consumption of soybeans is significant in Nigeria, especially among rural low-income groups that cannot afford other alternative protein sources such as meat, fish and eggs. Beginning in the early 1990s, the International Institute of Tropical Agriculture (IITA) promoted the use of protein-rich soybeans in everyday foods to curb malnutrition.

The IITA estimates the cost of protein, when purchased as soybeans, to be only about 10 - 20% of the cost of protein from meat, eggs, fish or milk. Soybeans are now widely consumed and are readily used in the production of soymilk, soy cake, soy yogurt and the fortification of local carbohydrate-based Nigerian food staples. Dawadawa, a local food seasoning is also produced from soybeans.

Government sources estimate that about 25 per cent of Nigeria's domestic production is consumed directly in rural areas as human food.

Nigeria's achievement of the Millennium Development Goals (MDGs) by 2015 will largely depend on its attainment of high level of nutrition and elimination of malnutrition in the country.

This was the verdicts given by experts at a media workshop in Lagos recently. Malnutrition, they argued, was a contributory cause of more than half of under-five deaths in Nigeria.

Firing the first salvo, Deputy Director, Nutrition, Lagos State Ministry of Health Dr Abimbola Ajayi, said nutritional adequacy was a prerequisite for wellbeing of an individual, stressing that nutrition is crucial to the achievement of the eight MDGs and that inadequate nutrition among the young and the old

are widely neglected by the populace.

Expatriating, Obialor said there are many simple products now available in the market that contain key beneficial nutrients and essential minerals and can also serve the purpose of animal meats; people should switch to such products.

All said, many analysts however hold the view and very strongly too that there is an urgent need for a strategic action by government at all levels to ensure full democratisation of soy in the country given its socio-economic and health benefits.

continue from page 1

...Malnutrition in Pregnancy

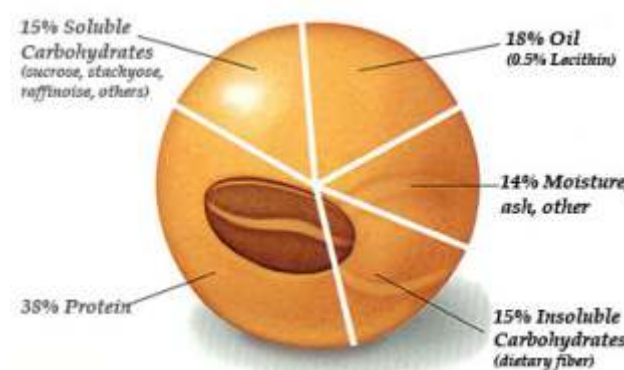
damaging water infrastructure and contaminating supplies, contribute to increased malnutrition.

During pregnancy, women need extra energy and nutrients; as such those who do not get the extra food that they need may become undernourished. Women who are poor may be undernourished with poor stores of nutrients before they become pregnant. They may be unable to increase their food intake, and pregnancy makes them more undernourished.

Well-nourished women gain on average about 10kg during pregnancy. The 10 kg is made up approximately 3 kg for the baby's weight; 4 kg for the mother's uterus and breasts plus increased blood/fluid in her body and the placenta; and 3 kg for the fat store built up by the mother to produce breast milk after the baby is born.

During the first 6 months of pregnancy, most of the extra food is needed to build up the mother's tissues and fat store, while only a small amount is needed for the growing foetus.

However, during the last 3 months of pregnancy, more of the extra food is needed for the growing baby, and to build up the baby's stores of fat, iron, and vitamin A.



Composition of Soy

leads to malnutrition with its debilitating diseases and sicknesses and in turn low economic productivity.

Echoing similar sentiments, General Manager, Alltech Nutrients Limited, Mr. Silas Okuh stated that there were many simple products that contain key beneficial nutrients and essential minerals in the Nigerian market, but are hardly known or consumed by the Nigerian public. One of such, he said, was soybeans.

Chimezie Obialor, a nutritionist, said soy beans has high concentration of protein, and is a reliable healthy source of nutrient to consumers, adding that, the commodity abounds around us but

Dietary Recommendations to Reduce Risk of Cancer

By Busayo Olawale

continue from page 1

The American Cancer Society recommends the following foods to reduce the risk of certain cancers:

- Ø Soy beans or dried beans contain plant estrogen, which helps prevent against some pelvic cancers and breast cancer.
- Ø Tomatoes, carrots, and red peppers contain a healthy amount of vitamin C. They also contain carotenoids, which guard against prostate cancer.
- Ø Olive oil is known to reduce the risk of breast cancer.
- Ø Milk and milk products reduce the risks of both breast and colon cancers.
- Ø Salmon and other oily fish can help ward off cancer in general.
- Ø Greens and cruciferous vegetables are good at reducing the risk of some cancers more common in men, including esophageal, lung, rectal, stomach, and colon cancers.



fruits and vegetables essential for daily consumption

They may even reduce the risk of certain other cancers, such as breast, bladder, pancreas, and larynx cancers.

According to our experts, it is essential that one takes adequate diet. This diet should be rich in plant sources,

Foods	Cancer Type	Risk Reduction
Cruciferous vegetables	Bladder	50%
	Lung	30%
	Prostate	50%
Tomatoes	Prostate	25%
Citrus Fruit	Stomach, Esophagus	25%
Leafy greens (Dietary Folic Acid)	Pancreas	75%
	Breast (post-menopause)	44%
Lignans (flax seeds and others)	Breast (post-menopause, estrogen-receptor +)	28%
Carrots	Head and neck	46%
Apples, pears, plums	Head and neck	38%
Green Tea	Colorectal	57%
Vegetable oils & Nuts (Dietary tocopherols)	Prostate	32%
Vitamin D / Calcium	Breast (pre-menopause)	35%

A table showing protective links between consumption of specific foods and the incidence of cancer in human populations: Adapted and modified from: Béliveau, Gingras, Blaslyk, Eating Well, Living Well: An Everyday Guide for Optimum Health

especially fruits and vegetables that are abundant in micronutrients, antioxidants and phytochemicals, which have a protective effect on health.

Prevention is better and cheaper than cure, so all efforts should be geared towards maintaining a healthy lifestyle in order to prevent terminal illnesses like cancer, which add to increasing mortality in the country and the world every year.

How Malnutrition Affects Pregnant Women

continue from page 1

other tissues to provide the energy, protein, fat, vitamin A, iron, and other nutrients for the baby's growth. Instead of gaining 10 kg during pregnancy, she may gain only 6 kg or less. Some malnourished women may not gain any weight at all during pregnancy; some weigh less after the baby is born than before they were pregnant.

Maternal iron deficiency increases risk of maternal mortality and morbidity, and also increases risk of foetal morbidity, mortality and LBW. It is estimated that, anemia is the underlying cause of 20% of maternal deaths. The PROFILES analysis shows that if no action is taken, about 6,400 Nigerian mothers will die annually because they were anemic. This is about 18 maternal deaths per day, every day.

In summary, given the magnitude of the consequences of malnutrition on survival, the improvement of the nutritional status of children and women in Nigeria is calling for action now.

The World Health Organisation (WHO) has actively developing strategies to prevent iron deficiency, including iron supplementation (especially in pregnant women); iron fortification of certain foods (especially wheat flour); and dietary modification to increase the bioavailability of iron.

Similarly, the NICE Fertility guidance (2004) reports that women who have a BMI of more than 29 are likely to take longer to conceive and those women who are not ovulating will increase their chance of conception by losing weight. There is substantial evidence that obesity (excess

energy intake) in pregnancy contributes to increased morbidity and mortality for both mother and baby. The CEMACH Maternal Death Enquiry (Why Mother's Die) found that approximately 35% of women who died (who had a recordable Body Mass Index) were obese.

Intrauterine growth retardation (IUGR) results in Low Birth Weight (LBW). Intra-uterine growth restriction is a condition where a baby's growth slows or ceases when it is in the uterus. Low birth weight is defined as a full term (>37 weeks gestational age – a baby born over 37 weeks since conception) birth weight of less than 2500g. IUGR is the most significant precursor of malnutrition in infancy. IUGR is a serious public health problem in developing countries but only effects about 2% in developed countries.

The major determinant of IUGR is maternal undernutrition, characterised by low pre-pregnancy body weight and short maternal stature (the mother being short in height), and an inadequate / low gestational weight gain. Other risk factors for IUGR are maternal anaemia (low body iron), smoking and infections (especially malaria). LBW due to IUGR increases risk of infant mortality and morbidity.

It increases susceptibility to severe malnutrition in childhood, as well as poor cognitive, mental and physical development. Evidence also suggests that LBW due to IUGR also increases the risk of chronic diseases in adulthood,

which therefore increases the health burden on society (see 2a epidemiological paradigms section of the syllabus). Continual LBW and stunting perpetuates an inter generational cycle of malnutrition, poverty and disease. Moreover, low birth-weight babies who survive are likely to suffer growth retardation and illness throughout their childhood, adolescence and into adulthood. Growth-retarded adult women are likely to carry on the vicious cycle of malnutrition by giving birth to low birth-weight babies.

Another effect is due to iodine deficiency disorder (IDD) which is referred to as a number of physical effects arising from a deficiency of dietary iodine. Iodine is needed for the production of thyroid hormones within the body.

These are essential for normal human growth and development, and a deficiency can cause retardation of growth of all organs. Extreme iodine deficiency in pregnancy and infancy can cause cretinism. Thyroid hormones are needed for the transition from life in the womb, to life outside the womb. Iodine deficiency can lead to a lack of these hormones, which can lead to still births.

The brain is very susceptible to damage during the foetal and early post natal periods. A post natal deficiency of iodine causes a slowing of mental processing which can permanently impair mental development. The intellectual disability in children resulting from iodine deficiency during intra-uterine life is permanent.

Furthermore, studies have shown that iodine supplementation in early life can lead to substantial improvements.