

## All the Salt in China

Pix: Ray w/ kids doing goitre checks

Ray: (from field ftg) Almost everyone we can feel some goiter. Normal child under normal conditions, we shouldn't be able to feel the goiter at all.

I can feel from him. Yup...he's positive too.

Probably 90% or more of them has an easily palpable goiter and this is highly abnormal; and this is very indicative of in the recent past, this is a severe iodine deficient area.

*Narration: These children exhibit small goitres, a swelling of the thyroid gland due to a lack of iodine. Goitres are but one of the larger group of iodine deficiency disorders, known collectively as IDD. A small goitre is generally a reversible condition but may indicate the presence of other problems.*

Pix during narr: slo-mo of an unidentified doctor inspecting an old man's goiter

Ray: This group of children seemingly happy and normal, but we now have strong evidence they have grown up a good part of their lives living under significant iodine deficiency. Those children are a little bit delayed in terms of the stage of schooling.

*Narr: For years, people thought iodine deficiency caused only two conditions: goitre and, more extremely, cretinism, severe mental and physical retardation.*

Pix during narr: black and white slo-mo of young cretin

Dr. Wang Jian, Director, Gansu Provincial Endemic Disease Institute: At the time, we knew iodine deficiency would cause cretinism. What we didn't know was how much these deficiencies would harm intellectual abilities—that it had less visible effects.

Pix: young cretin laughing, black and white, slo-mo

Dr. Ray Yip, Senior Advisor Health and Nutrition UNICEF China: People fail to recognize that everybody, every child born in a iodine deficient area has suffered a substantial intelligence, or IQ loss.

*Narr: As recently as 1993, more than 60% of China's population was at risk for iodine deficiency. Mountainous areas like Gansu province are especially vulnerable because erosion has leached most of the iodine out of the soil and ground water.*

Pix: new classroom sequence begins; Ray talks to class in Chinese

*Narr: In this particular classroom, a large percentage of the first and second graders are 11 and 12 years old. Typically Chinese children enter the first grade at 7 or 8 years old.*

Pix: begin testing montage

Ray: The late starting may indicate late readiness for school, and this may reflect the fact that developmentally, or intelligence-wise, those children were set back such that they require a couple extra years for them to be ready to attend school. And this is indicative of an area of severe IDD.

Pix: Ray and shots of his chart and continue intercut w/ kids taking a test

Ray: This is the normal IQ distribution where the mean is about a hundred; bright, and exceptional above hundred thirty, difficult to educate and retarded below seventy. Now if you have a population who suffer from iodine deficiency, there is a shift, an average shift of ten points. You will have a curve which is ten points lower. The whole curve is shifted downward. Of course, the mean is lower, which is ninety points for this IDD affected population. So, that means when everybody suffer a few points IQ loss, you have much fewer very bright children. You also have a much greater burden because you have much greater proportion of the children who are substandard in term of intelligence.

I think that's the real tragic part of the story of the IDD problem--the generalized downward shift due to the IDD.

Cut to: disappearing kid sequence

Ray: That means there's a substantial drain to the development of China when more than 1/2 the population cannot meet their full potential of mental development as a result of living in an IDD area without specific measures.

## 2. Salt as the solution.

Pix: Begin salt mining montage

Ray: The change in how to solve the problems migrated from regarding iodine deficiency as a health and medical problem that requires a direct medical intervention to that of using the salt as a vehicle of introducing the iodine to make sure everybody is prevented from developing iodine deficiency.

Pix: begin salt factory processing plant montage

Ray: It's clear now that by just using the salt as the primary or the single vehicle to add iodine has been shown to be effective. Many countries now has declared IDD eliminated, because of assurance of all the salt consumed is properly iodized. The key is for the salt

sector to understand, they are contributing to something that's terribly important, because the people who make salt – the salt farmers, the salt merchants, the salt producers, many of them don't know, the product they have could be something that can save people's mental capacities, make children smarter, makes a country stronger, because nobody ever told them that.

Mr. Ma Chong Zhong, *Vice President, Lanzhou Salt Company*: It is a contribution to the whole society. Not only should I raise my own understanding of the situation but all the salt workers must be aware of the value of their work.

Ray: Once you tell salt producers what they sell and what they produce day to day by a small addition of iodine, which is of relatively small cost, as well as relatively little amount of trouble, it can make a huge difference.

Mr. Dong Zhihua, *President, China International Salt Corporation*: The officials and workers on the salt front regard the various iodized salt projects to prevent iodine deficiency as a sacred job for eliminating diseases to ensure the health of China

Mr. Ma: Only if we do our job well is it possible to invigorate and enhance the intellectual abilities of the Chinese people.

Pix: ends w/ mom and son buying salt at market, then man buys salt, then mom and son leave market

### 3. The problem with non-iodized salt.

Pix: shots of Ray surveying the land, taking photos then quickly to testing kids salt , then to home salt test

Ray: There are many parts of China where salt is so abundantly available, you can literally bend down and pick up the salt for free.

Pix: Ray w/ Dr. Jian in front of salt pits

Ray: One of the key jobs we have to do is convince the people here to use the salt that comes from the factory instead of the salt from their own backyard.

Ray: People will say, why should I pay even a nominal cost for 1 kilo of salt come from the factory nicely packaged which is iodized. And then it's incumbent on us to say but, that will help you and your family and your children because iodine deficiency is a terrible thing.

Pix: Ray discovers boy with fake salt

Ray: (in classroom) We found one without the iodine

Pix: Ray goes to boy's home

Ray: Salt is basically a business. It's a market product. There are other people who seize the opportunity also to make a profit, and that's why this is cat and mouse game going on, because people can make money for selling salt. Legal or illegal.

Ray: So this is a case of fake salt or illegal salt which imitates using the identical packaging but meanwhile has an inferior product. The color actually looks not as white. And the granule is not as fine. But for the consumers, they cannot differentiate it. So only the testing can detect it.

Pix: Ray w/ salt official looking at bags of fake salt

Ray: Here are examples of illegal salt or counterfeit salt confiscated over time. Each package represents a different attempt from different counterfeiters. As you can see this makes it very difficult for the regular people to differentiate it from the real stuff that's produced here.

#### 4. The value of monitoring.

Pix: begin salt bagging by hand sequence

Ray: China really has developed one of the most rapid and effective IDD control program in the recent years, mainly investing and strengthening the capacity and operation of the salt industry.

Mr. Zhihua: We are very strict about the quality of our iodized salt. All provinces have their own laboratories and have clear-cut rules and regulations for testing the quality of the salt.

Ray: You need to have good functional or reliable laboratory in order to give you reliable information to know where to intervene, to detect areas which has more problems

*Narr: Salt monitoring is a two-part process. First, salt has to be tested to make sure it reaches the consumer containing the necessary amount of iodine.*

Pix: begin urine lab testing seq.

*Narr: Secondly, urine samples are checked to make sure that the inhabitants of this particular area are getting the right amount of iodine.*

Pix: lab tech w/ urine testing machine

Dr. Wang: If urine test results are not good, we can quickly contact local officials and ask them to notify pregnant women or would-be mothers in the area to tell them that they

may have nutritional deficiencies. We can rapidly adopt measures to make up for the shortage in the iodized salt supply.

## 5. Closing sequence

Pix: continue with lab shots for a bit, using some shots of people smiling, happy with their work. Move to a more general montage of people.

Ray: The progress on IDD has greater significance than just the elimination or reduction of IDD itself. It really gives us a clear confidence that other things, other problems, whether it be nutritional, health, or others, can be solved, if we just put our effort and find the right strategy and go after it.

Ray: We also have partners, who see the importance of this issue. They give us an opportunity to develop innovative approaches, to do good evaluation. And it's working.

Pix: montage of Ray doing various IDD related work, checking salt in homes, doing something in a lab, checking a child for goitre, talking to a class, watching salt workers do their thing, talking to salt industry people, testing illegal salt in the back of the confiscated truck,

Ray: The rapid reduction of IDD through universal salt iodization probably is the most cost-effective program, for the dollar you invest, for what you gain in terms of human resource potentials, in child intelligence.

Ray: People inherently care for their families, their children. If we can construct the right message, find the right channel to deliver it, they will know the value of the iodine,

Pix: begin ending seq. with Ray and kids going down stairs, Ray on screen first

Ray: Fortunately for China there has been a very rapid shift in the control of IDD. The iodine status has improved. The availability of the iodized salt has increased from less than 40% to that over 90% in 4-5 years time. The payoff's going to be when this generation children who were born in the last 4 or 5 years become adults. They're gonna contribute one heck of a lot. If the whole generation of people become smarter, it's going to be incredible. It's clear