

Food Hero: Basil Kransdorff, Creator of e'Pap. A South African doctor created a revolutionary porridge that is saving lives!

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The late Dr Basil Kransdorff a South African doctor developed a nutrient loaded porridge, developed specifically to cater to feeding HIV patients and babies.

When the late Dr Basil Kransdorff and wife Rose were helping an NGO called CARE (Community AIDS Response) at the Joburg General Hospital, little did they know that this would start a worldwide debate on Food Security vs. Nutrition Security.

In 2000, a time when there was no medication, Doctors were telling patients diagnosed with HIV to go home, eat a healthy well-balanced diet and prepare to die. It was a difficult time when little was known about treating those living with HIV offers Dr Kransdorff.

An industrial chemist by trade, a social entrepreneur at heart, Dr Kransdorff was ‘commissioned’ by his wife to advise CARE what to put into food parcels funded by the Elton John Foundation.

Dr Kransdorff added:

“Using the advice from the Doctors, it became our mission to create an affordable single food portion that delivered many important nutrients found in a healthy well balanced diet. We well understood it is impossible for poor malnourished people to afford to eat a “well balanced diet”.

“We recognized people were dying from opportunistic diseases like TB or pneumonia because of low nutritional status. This was a key learning as it highlighted the importance of a nutritional intervention.

As a social entrepreneur with access to some of the brightest minds in the world helped to better understand the key technical challenges, Dr Kransdorff was able to develop an affordable food loaded with micro-nutrients branded as e'Pap.

The e'Pap journey led them away from the limited concept of 'food security' through 'stomach-filling' to a new focus called 'nutrition security'. He defines nutrition security as the basis of sustainable development – the nutrition economy that results from communities made up of “nutrient replete” physiological function human beings that are better able to find their own solutions to poverty and health challenges. The nutrition crisis is not new. It has grown exponentially over the past 100 years as the food chain became compromised due to modern agriculture and food processing practices.

“Part solutions in current interventions use billions of dollars to address the problem fail to create sustainable change. A nutrient replete person is our goal.” says Dr Kransdorff.

Current commercial farming practices produce an excess of macro stomach filling nutrients but leaves the body dysfunctional because of “hidden hunger” (micro nutrient deficiencies). If the body's daily requirements of micro nutrients are not met it results in an accumulative deficit that result in the body becoming more malnourished daily. Part solutions that don't address the daily deficit and leave people malnourished and dysfunctional.

Nutrient content in fruit and vegetables has dropped up to 76% over the past 50 years in the USA and Europe. Proof that modern intensive agriculture practices create the problem. The result is a global crisis of mass starvation of micronutrients in communities both rich and poor.

Such is the success of e'Pap in improving nutrition, energy and productivity for those who consume it, that up to two million servings a month of e'Pap are distributed in Africa.

Dr Basil Kransdorff – Scientist, Entrepreneur, Philanthropist

2 December 1946 – 14 December 2016

Basil Kransdorff was born into an entrepreneurial family in Zimbabwe and, as a child, he worked with his mother to create an arts and crafts business that utilised the talents of local women. He qualified as an industrial chemist and worked in that field until his wife, Rose, came home one day with a request.

He holds a BSC degree with majors in Chemistry and Geology and a BSC Honors in Chemistry from the former University of Natal (1969). In the field of nutrition he has written and researched on micronutrients and their bio-efficacy and works closely with international experts in the field.



Rose, who had been an anti-apartheid activist during the struggle, and had suffered 111 days of detention, was helping an AIDS support project in Johannesburg. The AIDS pandemic was just hitting South Africa. There were no drugs available, and the only advice for patients was to go home and eat a healthy, balanced diet. It was advice that few poor South Africans could afford, so the project became involved in distributing food parcels. Rose asked Basil to support this work as part of his corporate social responsibility. He was keen to help, but he questioned the nutritional value of much of what went into such food parcels. They usually contained staple foods, like refined white maize meal, white sugar, cooking oil and maybe some beans, but it was precisely these depleted foods that were causing malnutrition in the first place.

Basil was keen to ensure that his contribution had nutrient value, so he began some research. What he was to unearth shocked him. With the enquiring mind of a scientist, he started asking questions. He soon realised that the doctors he spoke to knew almost nothing about nutrition. From his reading, he learned about our compromised food chain, resulting from soil depletion and the machinations of the food industry. He was to discover the well-meaning, but futile efforts of international agencies to fortify food and tackle famine relief. Worse still, he searched for a product that made nutritional sense and could correct malnutrition. Surprisingly, no one was manufacturing such a product.

It did not seem to him to be rocket science. One could start with the staple food, maize, and add a more nutritious staple, like soy. If one was then to ensure that the grain was unrefined, so as not to remove any nutrients, and pre-cooked, because cooking destroys nutrients, this would be a good start. If one then added into a small meal portion the recommended daily allowance (RDA)

of all the essential micronutrients in a form that was likely to have some bioavailability, then malnutrition would be in retreat. And so it was that Econocom Foods and its first product, e'Pap, were born. The 'Pap' part was chosen because that is what the maize porridge staple is called in South Africa.

Basil was to learn that one reason for refining grain was to prolong its shelf life. The cereal fat may contain important micronutrients and omega oils, but it can cause clumping of the flour, which tends to become rancid. Special packaging was needed to address this. As to the added nutrients, Basil had discovered what had been taught in biochemistry classes in the 1960s, that phytic acid, found in grain, combines with important minerals such as iron, zinc and, to a lesser extent, calcium and magnesium, to form insoluble phytates, which cannot be absorbed. This process contributes to the mineral deficiencies in people whose diets rely on these foods. Phytic acid also chelates vitamin B3, the deficiency of which is known as pellagra. For these reasons, phytic acid is known as an antinutrient. It makes it futile to attempt the mineral fortification of maize flour with inorganic minerals.

To circumvent this difficulty, Basil obtained his minerals from Albion in the US. Since their establishment in 1956, Albion has become the world leader and innovator in the manufacture of amino acid chelates. These are better than other types of minerals because they are designed for better absorption. In order to be absorbed, minerals from foods or supplements have to be combined with a carrier molecule. When this molecule is an amino acid – a protein building block – the mineral/amino acid compound forms a stable molecule, which does not combine with phytic acid. And because the body is efficient at absorbing amino acids, chelated minerals are more easily transported across the intestinal wall than non-chelated minerals.

Less easy to solve was the problem of the added vitamins. Basil sourced these as isolates, fully aware that their stability was poor and their bioefficacy was low, but he felt he had no other choice. The one big advantage of e'Pap in this connection was that, being whole grain, Basil had not started out with seriously vitamin-depleted cereals. Once he learned of the superiority of food state nutrients, he was excited about exploring this possibility.

Basil was not a medical doctor and he was not a nutritionist, but he took the trouble to learn nearly everything there was to know about nutrition. More than this, he meticulously designed a product to deal with what is now known as Hidden Hunger and to make those who consume it nutrient replete. And he was still keen to learn and to improve the product if he could.

DSM Nutritional Products is one of the world's leading suppliers of vitamins, carotenoids and other ingredients to the feed, food, pharmaceutical and personal care industries. The business has sales of more than €3 billion and a long tradition of innovation that benefits people, planet and profit. DSM produces isolate nutrients and works closely with the Micronutrient Initiative, the Amsterdam Initiative against Malnutrition and the Global Alliance for Improved Nutrition (GAIN) to eliminate vitamin and mineral deficiencies in the world's most vulnerable populations. You might think that these enormously powerful international agencies might be interested in hearing about e'Pap. But you would be wrong.

To address micronutrient deficiencies, especially in the most vulnerable, on GAIN's advice, South Africa began a food fortification programme in 2004, adding iron, zinc, vitamin A, B vitamins and folic acid to all maize and wheat flour. But five years later, the project was judged a resounding failure. Apart from a modest improvement in folic acid status, the prevalence of vitamin A, zinc and iron deficiencies in children had all increased.

Fortifying or supplementing a defective diet with micronutrients in the form of chemical isolates is now commonplace, despite a plethora of scientific evidence that they are poorly absorbed, rarely act in the body in the way intended and, in some cases, may even be toxic. So, what is GAIN now recommending? More of the same. It beggars belief and forces one to ask, 'Whose interests are they serving?'

Despite this antipathy, Basil achieved success. His conviction, passion and dogged determination to be of use to those less fortunate ensured this. He did not hesitate to speak out against vested interest or muddled thinking and, in the process, he made a few enemies. Despite this, an ever-increasing number of companies, aid organisations and communities are using e'Pap, which is now sold in eleven African countries, and it is the experience of those on the ground that e'Pap is transforming lives.

In 2011, Basil was awarded an Ashoka Fellowship for his entrepreneurial leadership and for the production and promotion of e'Pap. 'In his work, Basil is addressing the critical problem of Hidden Hunger in Africa. He is changing the approach to food production and consumption, and challenging society's current understanding of the importance of nutrient form in relation to bioavailability and bioefficacy. Calories alone don't fight malnutrition; understanding and providing the correct combination of micronutrients, in the correct form, does. Basil's objective is to create 'nutrient-replete' and 'physiologically functional' people, something that most nutrition and feeding programmes still fall short of achieving.'

In 2014, Basil was awarded an honorary doctorate from his alma mater, the University of KwaZulu-Natal. ‘Industrial chemist, social entrepreneur and CEO of Econocom Foods, Basil Kransdorff, is the co-inventor (with his wife, Rose Grealy Kransdorff) of an innovative and low-cost nutritional product – e’Pap – aimed at redressing micronutrient deficiencies in marginalised and poorer populations’.

In 2015, he was awarded the Rotary Foundation’s Paul Harris Fellowship.

Basil died suddenly, at the age of 70, on 14 December 2016. He leaves his wife and business partner, Rose, and a 15-year-old son, Daniel. He will be sorely missed by many. His favourite quotation came from Ayn Rand: ‘The hardest thing to explain is the glaringly evident which everybody had decided not to see’.

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Basil Kransdorff receiving an Ashoka fellow award from Ashoka director, Valeria Merino, in Kenya. (PHOTO SUPPLIED)

Basil Kransdorff - is a true change-maker par excellence

ALISON GOLDBERG

FOR MOST of his working life, industrial chemist Basil Kransdorff has been at the cutting-edge of new processes. He is father of the revolutionary, micronutrient-fortified e'Pap porridge, which earned him an Ashoka social entrepreneur award in April last year.

This drive for social change, he comments, is a feature of Ashoka's 3 000 Ashoka fellows around the world, half of whom have been responsible for policy changes in their home countries. The Washington-based NGO describes its fellows as being the "one in 10 million" real change-makers in society.

Kransdorff has a number of other credits to his name. Foremost, in 2000, as a result of his "fight for pension fund justice" in the Adjudicators Court (Kransdorff vs Sentrachem), legislation was implemented to force pension funds to distribute "members reserves" assigned as "surpluses" back to employees.

After leaving his former employer Sentrachem, he applied his specialist skills to the mining industry with technologies for mine dump rehabilitation, backfill and slimes dam settlement.

"The development of e'Pap arose curiously," he says. "It was at the start of the Aids pandemic in 2000. CARE (Community Aids Response) founder Jenny Marcus, for whom my wife Rose was a volunteer, successfully raised donations from former South African anti-apartheid legal activist-turned UK insurance businessman Joel Joffe, and the Elton John Foundation.

"Jenny asked me 'to apply some science' to food packs for HIV/Aids patients queuing outside the hospitals. Most had lost their jobs and been alienated by their families.

"As a social responsibility project, we accessed the best brains in the world on food fortification. We understood that nutrient form, nutrient interactions and bioavailability (absorption by the body) to achieve nutrient repletteness, were key."

Kransdorff remembers with special gratitude the contribution of the late Professor Oscar Penado of the Guatemalan Institute of Biochemistry for sharing his understanding of nutrition.

"In the early stages of the HIV pandemic anti-retrovirals were not yet available, so doctors advised their patients to 'eat a well-balanced diet', something which was unaffordable to most.

"Most were advised to return to their ancestral homes to die so that the transport costs would not be a burden on their families. Because most people were succumbing to opportunistic diseases, we concluded, nutrient status was important."

The e'Pap formulation approach was designed to deliver many of the important micronutrients found in a healthy, well-bal-

anced diet in an affordable single meal portion.

The objective: address the "hidden hunger" and achieve nutrient repletteness. Today the price of e'Pap varies between R1 and R2 per meal portion, depending on the area and mechanism to market.

Prices are kept at the low end for outreach organisations and NGOs working in the poorest communities. In South Africa, the United Sisterhood is using the product in its community outreach programmes, as is Sandringham Gardens Medical Centre and Our Parents Home.

e'Pap, is a pre-cooked, whole-grain maize, fortified with whole grain soya and 28 minerals and vitamins in a form chosen for its ready absorption. Flavour options and line extensions include e'Soup, e'Drink and e'Spread. e'Pap is gluten and lactose free and carries a Beth Din hechsher.

It is best eaten with cold or hot (but not boiling) water, milk, or maas, fermented milk.

Kransdorff and his family eat it every day for breakfast; it can be made into a "nutrition smoothy" or into bread, crumpets and muffins.

"In the past 12 years we have distributed over 120 million food portions to 15 African countries. The product is used in different programmes which include TB/HIV patients, early child development, old age, corporate wellness, and sport. We have just sent 110 tons to Kenya for Somali refugees."

In response to international demand for e'Pap, Kransdorff is now creating the technology to manufacture it in countries that have different taste preferences.

Gaining support from the medical fraternity has been difficult since the "waters were muddied" by the dysfunctional nutrition debate around pronouncements by late Health Minister Manto Tshabalala-Msimang.

"In our view, she could have been lauded for having the guts to raise the nutrition agenda, but the dunce for defining it as only 'garlic and beetroot'. The media frenzy around the Minister's pronouncements on nutrition polarised the medical and nutrition industries. It resulted in doctors refusing to engage and investigate effective nutrition as a support tool for fear of giving Tshabalala-Msimang any credence.

Attitudes, however, are changing, with recognition at an international level of the importance of nutrient repletteness as part of a holistic medical treatment versus a drug-only approach for malnourished people.

Kransdorff, ever the change-maker, has his eye on the whole food chain. It is acknowledged that over the past 40 years, up to 75 per cent of nutrients have been lost in many vegetables and fruits. The fault lies with modern agriculture approaches and food processing that is focused only on yield/taste and ignores the nutrient content of food.