

SCIENCE/HEALTH

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Greek-Filipino scientist urges public to forego meat, walk daily

By Tessa R. Salazar

THE INVENTOR OF THE portable machine that can detect early signs of atherosclerosis (plaque buildup in the arterial wall) and in the process help save many lives from coronary artery disease can think of only two perfect complement to her machine: exercise and a diet filled with fruits and vegetables.

Dr. Helen Marcocoyanopoulou-Fojas, a dual Greek and Filipino citizen who invented the BPULS, a modem-sized device that can non-invasively detect the elasticity of a patient's arteries, shared with INQUIRER Science and Health that her next objective for her invention was to have it replicated and distributed to underdeveloped countries.

More than just advocating the promise of early detection of atherosclerosis, Fojas, a cardiologist, who is in the Philippines as part of the Department of Science and Technology's Balik Scientist program, urged Filipinos to eat as much fruits and vegetables as they could daily, cut consumption of meat into just once weekly, cut down on fish paste (bagoong), fish sauce (patis), salty eggs and engage in daily 45-minute brisk walks or dancing (which Fojas herself engages in regularly).

Physically active

In fact, Fojas urged Filipinos to be physically active every waking hour of their lives.

She has been named one of the top 67 outstanding world experts on the Metabolic syndrome with her introduction of the method and the device.

Fojas shares her views on a plant-based diet with scientist Rajendra Pachauri, chair of Intergovernmental Panel on Climate Change, who appealed to the world to cut meat consumption. Pachauri, a vegetarian,



FOJAS spends much of her time in slum areas. She also served for two years with her husband in the Kinshasa General Hospital in the Democratic Republic of Congo, Central Africa.

appealed to the public to cut meat at least once a week—this time to maintain the health of the planet (minimize global warming).

In the early 1960s, Fojas was a lecturer and consultant of the UP College of Medicine and the Philippine General Hospital.

She also had a stint with the community health project of her husband (Filipino ophthalmic surgeon and research scientist Dr. Marcos Fojas) where she was the consultant cardiologist treating patients in rural and slum areas in the Philippines.

Salt-free 'lugaw'

Fojas, who returned to the country in November 2008, has screened people mostly from depressed areas and asked hypertensive patients to consume only salt-free *lugaw* (rice porridge) mixed with ginger for an entire 24-hour period before she saw them again to help improve their blood pressure. After thorough evaluation, she prescribes antihypertensive medicine sparingly.

Each screening, which takes two minutes, would include attaching her device's sensors to the skin. The apparatus, connected to a laptop, would "read" the pulse wave velocity time using the left external carotid artery (relating to either of the two major arteries supplying blood to the head and neck) as the central point and the left dorsalis pedis artery (is a blood vessel of the

lower limb that carries oxygenated blood to the dorsal surface of the foot) as the peripheral point.

Pulses are recorded from an electronic sensor simultaneously with a single lead ECG (electrocardiogram). The time delay between the two pulses is computed. Shorter time indicates decreased arterial wall elasticity, a sign of an increased risk for atherosclerosis.

The height and waist circumference of patients are also measured (The waist area, Fojas says, is where majority of fat deposits converge). A waist circumference of 80 cm and below is recommended for women; 90 cm and below, for men. Family histories of heart disease and hypertension are also taken into account.

The device, Fojas notes, is particularly useful for individuals who have a high risk of developing CVD and for those who are overweight or obese.

Loves the poor

"(Fojas) loves Filipinos, particularly the poor. Her device is simple, handy, very portable and can easily screen several patients," said Lourdes P. Oriola, director of the Balik Scientist Program of the DOST.

Fojas had also conducted a comparison study of the arterial wall elasticities between two ethnic groups (using her device). That study indicated that a diet high in meat predisposed the subjects to stiffened arteries, increasing their risk of developing CVDs. On the other hand, a Mediterranean diet rich in fruits, grains and vegetables, and more fish than meat, lessened the predisposition to CVDs.

Fojas' study was published in the *Journal of Clinical Lipidology* in 2007 that was distributed during an international symposium in New York.

In this study, Fojas examined 115 clinically asymptomatic female South African Caucasians and 54 female Greeks. The shorter pulse wave velocity time indicated stiffer arterial walls among the Caucasian South Africans who have high daily intake of meat. Greek females on Mediterranean diet showed more elastic arteries as shown by longer PWV time.

Fojas is scheduled to present her studies at the 15th international symposium on atherosclerosis in Boston, Massachusetts this year.

"This machine is not intended to make money but to help humanity," Fojas emphasized.



FOJAS, named outstanding scientist and practitioner by the Greek Cardiological Society, treats many Greece-based Filipino patients.