

Assessing childhood obesity using stable isotope techniques in Kuwait

The challenge...

Obesity is a major public health problem in Kuwait. Being a significant risk factor for chronic non-communicable diseases, obesity poses serious threats to the health of the general population and to the national economy. The nationwide nutrition surveillance system set up by Kuwait's Ministry of Health shows a continuous increase in rates of obesity, starting in early childhood and in pre-school children, and expanding into various segments of the population. Traditional methods used to determine obesity rely on anthropometric measurements, such as height, weight and body mass index. However, these methods don't measure several essential body elements, such as the muscle, bone, fat and water contents of the body. To support Kuwait's efforts to control and reduce obesity, nuclear techniques can be used to assess body composition, providing a more accurate estimation of human health.

The project...

In support of Kuwait's National Programme for the Prevention of Obesity and Overweight, an IAEA technical cooperation (TC) project is assisting the country in the utilization of stable isotope techniques. Through the project, the IAEA has provided training to nutrition professionals on the use of stable isotopes to assess body composition and body size. The techniques offer a more sensitive, precise way of assessing and characterizing the problem of childhood obesity. The project has also supported the implementation of the National Nutrition Survey of Kuwait, which has established a comprehensive database on dietary patterns and nutritional status in the country.

Support is provided through expert missions, training courses, scientific visits and the provision of a range of reference materials. The project also assists in the enhancement of laboratory infrastructure and facilities.

The impact...

Through the project, the Kuwait Institute for Scientific Research (KISR) now has a highly trained staff and a laboratory fully equipped with an isotope ratio mass spectrometer and the ability to perform dual energy X ray-Absorptiometry. The laboratory is the only one in the Gulf Cooperation Council region with the capability to use stable isotope techniques, and the only one in the country that can perform related analyses. Overall, the TC project enhanced the capabilities of the laboratory to evaluate the effectiveness of national intervention programmes aimed at reducing childhood obesity.

Under the project, stable isotope analyses were conducted to assess the body composition of 176 healthy Kuwaiti children. On the basis of the information from the analyses, a national programme in Kuwait was launched to reduce childhood obesity by raising awareness about nutrition and providing healthy snacks at schools. A physical activity component was also included in the educational curriculum.



Reception area at the KISR health clinic.