



IAEA

International Atomic Energy Agency

Atoms for Peace

September 2008

Producing hydrogel membranes to treat burns patients in Cuba

The challenge...

Cuba's health care system is completely free and extends from primary care to specialized hospital care. Some 25 000 cases of burns are recorded annually among the country's population of 11 million. No materials are produced nationally for covering injuries and burns; these have to be imported from abroad. However, irradiation technology has been used for more than 20 years in Cuba. Cuba also has the trained human resources and the necessary equipment required to produce hydrogels.

The project...

Cuban specialists have taken part in an exercise to obtain, improve and characterize hydrogel membranes with the Nuclear and Energy Research Institute in Brazil, under the guidance of Dr. Rosiak of the Radiation Institute at the University of Lodz in Poland, the original author of the patent for obtaining hydrogel membranes. This exercise enabled Cuba to carry out the preliminary work for a platform of knowledge and achieve results which now allow the production of hydrogel membranes for use in the national health system, particularly for burn patients.



The impact...

As a result of this project, burn patients in Cuba will benefit from the use of hydrogel membranes in treatment, which will reduce the healing time required. Hospitals that use the treatment will be able to cut the length of patient stays. Research and production institutions, by assimilating advanced nuclear technology, will be able to supply a product which will have a positive effect on the national health system.



Quantifiable data...

- 8000 quality controlled membranes produced per year
- 800 burn patients can be treated per year
- The healing time required will be reduced by at least 20%

CUB/8/023: Obtaining Hydrogel Membranes for Biomedical Applications with the Aid of Gamma Radiation