ABSTRACT

Alzheimer's is a chronic neurodegenerative disease. It is found that an accumulation of a protein called Amyloid Beta peptide (ABP), between the "synapses of nerve cells" is a hallmark of Alzheimer's disease.

Once ABP starts accumulating, it takes at least 20 years to observe clinical symptoms of Alzheimer's. Since most of the scans in this field only detects the presence of this protein in the late stages, we have come up with a device named IDAD (Innovative Device for Alzheimer Detection) which can detect Alzheimer's at the earliest stage. It uses nuclear technology.

This device comprises of 2 parts: an Emitter and a Detector.

The Emitter consists of a boro silicate glass tube which is filled with radioactive materials.

The Cerebrospinal fluid in the brain naturally reflects this radiation. ABP in the CSF affects the reflection of the radiation produced by radioactive materials. The reflected waves are brought to the wave reader in the emitter. Red light appearing on the detector indicates high levels of ABP while green light indicates sufficient levels of the protein.

The radioactive substance to be used in our device is the debris of reactions that take place in nuclear reactors. They are less radioactive and are not harmful to our neurons. This device provides us a sustainable method to reuse hazardous nuclear waste. This device can be completely trust worthy due to quality controls panel.

Through IDAD, we look forward to assisting the international community achieve Sustainable Development Goals 3 and 12.