Innovative Device Treats ‘Glue Ear’

NUS engineers have heard the cry for help of more than 700 million people worldwide threatened by impaired hearing annually, by inventing a device that quickly and effectively treats “glue ear” or Otitis Media with Effusion (OME).

The leading cause of hearing loss in children, OME is a condition where the middle ear becomes filled with fluid instead of air, due to causes such as genetics, allergies or a bout of flu.

Headed by Associate Professor Tan Kok Kiong, a team from NUS Electrical and Computer Engineering designed CLiKX, in collaboration with Adjunct Associate Professor Lynne Lim from NUS Yong Loo Lin School of Medicine, to improve current surgical treatment of OME.

The simple handheld device uses a sensor to safely insert almost any commercially available grommet into the patient’s ear with a single click in less than a second, minimising contact with the eardrum and reducing discomfort. The procedure requires only moderate sedation or local anaesthesia.

At a light 185g, the battery-powered gadget could also make grommet-placing surgeries more accessible for patients in underdeveloped regions.

The team plans to conduct the first clinical trial in Singapore in 2018.

Adjunct Assoc Prof Lim (left) and Assoc Prof Tan with CLiKX

Butterfly Colours Decoded

NUS scientists discovered that a butterfly has added red to its palette of wing colours in a bid to stave off possible enemies.

A team from NUS Biological Sciences has determined that the warning hue, potentially more effective in keeping predators at bay, is a new addition to the vibrant colours of the Painted Jezebel butterfly. Red originated within this group of butterflies.

Jocelyn Wee, a PhD candidate, and Associate Professor Antónia Monteiro conducted field experiments of the Painted Jezebel in Singapore.

Jocelyn created more than 300 artificial paper models depicting the Painted Jezebel with its wings held vertically over its body. She designed five variants of the paper models: a faithful colour replica of the butterfly, a greyscale model, as well as three more highlighting the red, yellow and black, respectively. These paper models were then placed at three sites and observed for signs of attacks from predators like birds.

The Painted Jezebel butterfly is known for its vibrant red and yellow markings on the ventral wings

The researchers noted that paper models emulating the real colours of the Painted Jezebel suffered the least number of attacks, followed by models with unaltered red patches, and models with unaltered yellow patches.

Jocelyn explained that red and yellow on the ventral wings of the Painted Jezebel serve as warning signals to predators, and “demonstrated how predators can play a critical role in affecting the evolution of warning colours within this particular butterfly genus”.