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Author: Mr. Akhsanto Anandito
Royal Institute of Technology (KTH), Sweden, akhsanto@kth.se

“CLEON” MECHANICAL, CLEANSING AND NON-INVASIVE CANCER THERAPY MEDICATION
DEVICE, A PRELIMINARY DESIGN AND PROSPECTIVE TO MAINTAIN ASTRONAUT’S
HEALTH AND PERFORMANCE

Abstract

A prospective of a cleansing method by circulating cold water and nano-bubble are introduced for the first time in human spaceflight. Cold water therapy has been known to increase a significant amount of leukocytes after intense training in sporting society and nano-bubble generated by ultrasonic through cavitation gives a therapeutic effect and may kill cancer without harming the healthy cell. Based on research evidence to date from health studies, astronaut analogs, and simulation, three problem statements were identified (1) common complaints among astronauts about disrupted sleep in the third phenomenon, (2) high stress situation encountered unprecedentedly due to behavioral changes and extreme environment, (3) a low hygiene level due to a significant number of hazardous microorganism reported in International Space Station and MIR. Therefore, the device, CLEON, is focused to understand a semantic relation in between and to investigate the resilience of the human body against these problems with different features provided. The proposed measurement includes sleep pattern, blood-pressure, dietary change, and hormone secretion. The device has a size of 180 x 50 x 50 cm and dry-mass of 8.7 kg. The device is intended to overcome these three problem statements and to replace a drug usage in maintaining astronaut’s health and performance for the long duration of a manned space mission. Keywords: cleansing, cold water, nano-bubble, disrupted sleep, behavioral changes, hygiene