

them to take advantage of these. This is not only their loss, society also loosing their potentiality. Because, in general, disability of some part of body normally strengthen the rest part. Let we all take the initiative to make atleast our own locality a wheel chair friendly area so that most of these people can smile like Bruno", and India will become a place where people with disabilities will be on the same platform as the non-disabled, all we smile together.

Acknowledgments

We would like to acknowledge and express our heartfelt gratitude to Prof. Bruno Käallebring for sharing his

words with us and for his constant support to complete this article.

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A Unique Medicine Laboratory for Astronauts

A unique medicine laboratory for astronauts' has been commissioned by the German Centre for Air and Space travel (DLR) in the third week of July 2013 in Cologne. The experimental body fastens in the centrifuge with six fold gravitational force and has endured the acceleration as the starting of a racket. In the sustained immediate vicinity of pressure chamber it has set up conditions as if it climbs up to the highest peak of the Himalayas. And in psychology laboratory as against it must under the stress, accomplish the mission in order to dock in exactly at the international space station – a simulated shuttle.

So manifold also are the tasks, they serve all together the goal to investigate the health and performance capacity of the astronauts at the task. In the Envilab which was opened in the 3rd week of July 2013 in the German centre for air and space travel in Cologne, the researchers can control in future how the extreme conditions in case with a flight to Mars act upon the human beings and develop the possible counter measures.

We will carry on research for the astronauts and for the future of space journey. But we want also to concentrate the fixed goals on the connection to the perishable medicine – clarifies Rupert Gerzer, the manager of DLR Institute for Air Space Journey medicines. Thus supports the ability of the astronauts, also helps the pa-

tients on board.

In the centre of 3500 sq.meter big research hall the shorthand human – centrifuge rotates and generates an artificial force of gravity for the experimental persons. In course of astronauts' swimming in space their joints and muscles disintegrate. Without gravity the performing ability of rotation reduces and the immune system weakens. The gravity under a centrifuged journey could counteract. In which sphere that could function, we want to find out of the centrifuge with the students – clarified Jochem-Zange, Manager of the working group integrative muscle physiology.

Under the artificial force of gravity the experimental persons can accomplish further tasks: can kick a training wheel or can make practice on a springing slab which can still strengthen the function of centrifuge travel. Instantly several cameras also observe the movement cessations.

There is worldwide only once the possibility to regulate one ultrasound apparatus on the experimenter and to observe his heart with a robotic arm during the travel.

The goal of the researchers of Cologne is to bring standard made centrifuge for the training of astronauts in cosmos. The counter measures so developed could indeed work against the joints and muscle disintegration

which generates on earth among others after long bed-riddenness or in ageing. For that the DLR researchers have established a kind of sleeping laboratory in which the experimenter are confined to bed for months regularly. We want to understand that “a long bed rest of the type changes in the body and how one can prevent these changes” says Gem Gerzer, the manager of the institute. Atmospheric humidity, oxygen, nitrogen and carbon dioxide content surrounding light or also temperature can be exactly put in with that special ceiling illuminates the experimenter with different wavelengths.

“Astronauts are just like shift workers as hospital personnel or assembly line worker” says the Chief Re-

searcher. Which light wave works upon favourably on the rhythm of shift workers is therefore interesting for the worker in space as also on earth? Further studies are devoted to the joints and muscle disintegration or different nutritional forms.

Anil Kumar Ghosh
Indian Science Cruiser

Source: *Betruhe im Dicuste der Wissenschaft*, VDI Nachrichten, 19 July 2013, Nr 29/30 Seite 18, Technik & Wissenschaft.

Japanese Encephalitis

Many places in South and North 24-Parganas bordering Calcutta have paddy fields and pigs. Areas within 4-5 km of these are vulnerable to Japanese Encephalitis. The symptoms are rapid onset of high fever, headache, stiffness of neck, disorientation, seizures.

How the virus is transmitted? Each fresh outbreak involves a complex chain: wild water birds (hosts) to mosquitoes (vectors) to pigs (amplifying hosts, where the virus reproduces heavily) to mosquitoes to humans who don't infect other humans. The mosquitoes can fly 4-5 km. The infection is diagnosed from blood samples or cerebrospinal fluid, CSF. For patients there is no antiviral treatment. Doctors try to relieve symptoms and stabilize the patient. How can the disease be prevented?

By controlling the mosquito population, isolating pigs and avoiding mosquito bites through the use of repellants, nets, long sleeved clothes, coils and vaporizers.

By getting vaccinated for both children and adults. Two types of vaccines are available in India, costing about Rs.70/- per dose. Two doses should be administered a month apart. It takes two more months to gain immunity. Since the disease strikes in summer, the safest bet is to take the doses in late winter and early spring. The initial immunity lasts two years. A booster dose after two years gives lifelong immunity.

Source: The Telegraph

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