

HEALTH IN THE UNION BUDGET

In his Budget speech, Arun Jaitley, the Finance Minister of India, has emphasized 2 key areas the Government will focus on in health – Free Drug Service and Free Diagnosis Service. For the first time, the Central Government will provide central assistance to strengthen the States' Drug Regulatory and Food Regulatory Systems by creating new drug testing laboratories and strengthening the 31 existing State laboratories. Fifteen Model Rural Health Research Centers shall be set up in the states to take up research on local health issues concerning rural population. It is proposed to increase assistance to disabled persons for purchase/fitting of Aids and Appliances to include contemporary aids and assistive devices. It is also proposed to establish National level institutes for Universal Inclusive Design and Mental Health Rehabilitation, and also a Center for Disability Sports. The Government also intends to cover every household by total sanitation by the year 2019 – the 150th year of the birth anniversary of Mahatma Gandhi – through *Swatchh Bharat Abhiyan*. A national program to control malnutrition is being planned in Mission mode to urgently halt the deteriorating malnutrition situation in India. A comprehensive strategy, including detailed methodology, costing, time lines and monitorable targets is to be put in place within six months. (http://zeenews.india.com/business/indian-budget-2014/union-budget-2014-15-full-text_103644.html)

BIOPRINTING OF ORGANS

Human organs for transplant are always in short supply. The dream is to be able to bioprint organs in the laboratory. A major requirement of artificial organs is to have an efficient vascular supply around which cells can be made to multiply. Researchers from the University of Sydney, Harvard, Stanford and MIT have come one step closer to the dream of artificial organs by bioprinting a vascular network. Using a high tech bioprinter, scientists produced a complex network of fibers simulating a vascular network. Atop this, they applied a cell rich proteinaceous material which was hardened by the application of light, and the fine bioprinted fibers were removed. The human endothelial cells organized themselves into a capillary network. Organs being developed in the laboratory with these bioprinted capillaries had better cell survival and differentiation. This breakthrough is being much feted in the scientific world as a critical step towards artificial organs. (*Lab on a Chip*. 2014;14:2202; *The Hindu* 2 July 2014)

THE RESILIENCE PROJECT

One of the biggest mysteries is that in the world there are hundreds of people who possess two copies of genes which are known to cause major diseases, but are clinically unaffected. A retrospective analysis of over 600,000 genomes by various genetic companies found that about 1 in 15000 people are living healthy lives with mutations which normally cause severe illness. Now scientists want to study these people and understand how they have remained unaffected despite their grim genetic loading. Stephen Friend from Seattle and Eric Schadt from New York have announced 'The Resilience Project' in which more than 1 million adults will be studied. Their genetic material will be analyzed for 162 catastrophic diseases. They expect to find between 50-100 people with abnormal genes. They will be invited for further study to tease out reasons for their immunity. If associated protective mutations are detected, these can be exploited for treatment of these disorders. Environmental factors like diet and toxin exposure which affect the clinical phenotype of the disease will be more difficult to define. Resilience Project is an unorthodox way of looking at disease and therapy of genetic disorders. (*Scientific American* 30 May 2014)

WHAT IS BEHIND THE OBESITY EPIDEMIC?

A study from the Stanford University School of Medicine has found that increasing inactivity – and not diet – is responsible for the surge in obesity in the USA. They analyzed data from the National Health Survey between 1988 and 2010. It included data of 17430 participants from 1988 through 1994, and from approximately 5000 participants each year from 1995 through 2010. The frequency, duration and intensity of their exercise within the previous month was noted. 'Ideal' exercise was defined as more than 150 minutes a week of moderate exercise or more than 75 minutes/week of vigorous exercise. In 1988, 19% of women and 11% of men reported no physical exercise. In 2010, the numbers jumped to 52% women and 43% in men. Obesity simultaneously rose from 25 to 35 % in women and 20 to 35% in men. Interestingly, the daily energy consumption did not change significantly in the same period. The data is a clarion call to all health workers to include advice for regular exercise in their prescription for a healthy life style. (<http://med.stanford.edu/news/all-news/2014/07/lack-of-exercise—not-diet—linked-to-rise-in-obesity—stanford-.html>)

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