

# Iran devises plans to control, eradicate hepatitis

Exclusive

By Sadeq Dehqan & Leila Imani

Controlling and eradicating hepatitis B and C diseases is among the most important plans devised by the Health Ministry, said deputy health minister for research and technology.

Reza Malekzadeh told Iran Daily that the effective, simple and cheap treatment for the disease is available in the country, adding full insurance coverage has been provided to patients with such ailments.

He said presently 1.5 million and 350,000 Iranian people are transmitters of Hepatitis B and Hepatitis C viruses respectively, most of whom are unaware that they are living with the virus.

"About 10 percent of the patients have been diagnosed and have undergone treatment," he said.

Malekzadeh said a large number of those transmitting hepatitis virus feel no symptom about 20 to 30 years after catching the disease.

The official said the Hepatitis B vaccination program — implemented nationwide in the year to March 1992 — helped reduce the number of patients suffering from disease from two million to 1.5 million.

Malekzadeh said blood donation is the simplest way to identify the disease, pointing out that Iran Blood Transfusion Organization checks bloods for hepatitis B and C which causes the virus transmitter to become aware of their diseases.

"A simple blood test can be done to help diagnose hepatitis," he noted.

The deputy health minister said that prisoners,



Reza Malekzadeh, deputy health minister for research and technology (L), talking to Iran Daily reporter.

drug addicts, patients suffering from hemophilia and thalassemia, those tattooing or undergoing phlebotomy procedures in unsanitary condition are more vulnerable to the disease.

He recommended those working with tools having sharp ends to be careful not to damage their hands or other parts of their body.

Malekzadeh said patients diagnosed with Hepatitis C, who take a pill for one to six months, will be treated completely.

"Effective medicines are being produced

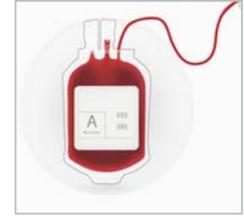
domestically for patients with Hepatitis B which help make the virus inactive and intransmissible," he said, reiterating that the drug should be taken for several years to help control the ailment.

He said more than 5,000 people die from alcoholic liver disease in the country annually, of whom 64 percent and 22 percent are younger than 70 and 50 years respectively.

"It shows that any failure to treat the middle aged patients suffering from the ailment would help increase their risk for death," he concluded.

## Biggest blood bag producing company of Mideast opens in Iran

The largest blood bag manufacturing company of Middle East was inaugurated on Monday in Payam Special Economic Zone, Alborz Province.



The company is one of the results of the JCPOA, ISNA quoted Iranian Health Minister Hassan Qazizadeh Hashemi as saying in the inauguration ceremony.

Describing economy as the necessary tool for reaching independence and freedom, he called for stronger support for attracting investment and domestic production.

This mindset that Iranian goods should only be consumed in the country is totally wrong, since the only way to promote the quality of domestic products is to export them and attain international standards, he added.

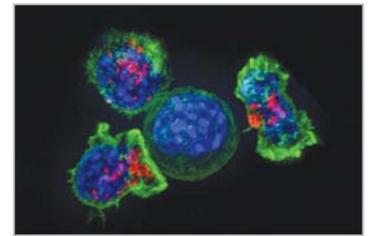
## New computational strategy designed for more personalized cancer treatment

Mathematicians and cancer scientists have found a way to simplify complex biomolecular data about tumors, in principle making it easier to prescribe the appropriate treatment for a specific patient.

The new computational strategy transforms highly complex information into a simplified format that emphasizes patient-to-patient variation in the molecular signatures of cancer cells, the researchers said, sciencedaily.com wrote.

The digital approach from scientists at the Johns Hopkins University was detailed recently in the journal Proceedings of the National Academy of Sciences.

Donald Geman, a professor in the Department of Applied Mathematics and Statistics who was senior author of the PNAS article, said, "The main point of this paper was to introduce this methodology."



"And it also reports on some preliminary experiments using the method to distinguish between closely related cancer phenotypes."

A key challenge for doctors is that each primary form of cancer, such as breast or prostate, may have multiple subtypes, each of which responds differently to a given treatment.

Geman said, "One of the things that people in this field have noticed over the past 10 years — and, in fact, it has been startling — is how much heterogeneity there is even between two patients with the same subtype of cancer."

"By that, I mean that in two patients who were both diagnosed with melanoma, the skin lesions may look quite similar to the naked eye but the cancerous cells may be very different at the molecular level. They may have different forms of dysregulation, including different genetic variants and different gene expression profiles."

Knowing as much as possible about the genetic makeup and impaired biological pathways of a particular patient could help physicians make more informed decisions about the prognosis and treatment, adjusting them to the particular molecular profile.

Geman said, "They want to know if they are looking at a profile of a woman who likely will or will not respond to a particular drug."

"Or does the data indicate the patient will likely relapse within the next five years? Or does a man have a particularly aggressive type of prostate cancer? Or is it necessary to surgically remove the lymph nodes to determine the presence or absence of metastases in a patient with some form of head and neck cancer?"

To help provide answers, Geman and his team envisioned something similar to the bloodwork summaries commonly produced when a patient visits a doctor for an annual physical exam.

These generally report whether blood sugar, cholesterol and other results are within or are outside of healthy levels. Taking a cue from these tests, Geman's team found a way to greatly simplify the data on tens of thousands of molecular states by converting these data to binary labels, indicating whether a measurement falls within or beyond healthy levels.

Geman, who previously devoted many years to improving computer vision technology, is encouraged by the cancer-related project and hopes it will serve as a model for other fruitful collaborations involving advanced math and medicine.

He said, "The goal is taking classification problems of genuine clinical interest and producing an algorithm that is accurate, interpretable and makes sense biologically."

## High levels of workplace exercise linked to early death

Men with highly physical jobs appear to have a significantly higher risk of early death compared with men who have largely inactive jobs, suggested a study published in the British Journal of Sports Medicine.

Physical activity is generally considered to be an important preventive behavior for non-communicable diseases while physical inactivity has been estimated to account for around seven percent of the global health burden, medicalxpress.com reported.

Accordingly, international guidelines encourage people to engage in up to 30 minutes of at least moderate intensity physical activity daily, but such guidelines do not distinguish between occupational, leisure time and transportation related activity.

Recent research has suggested that there is evidence of a physical activity paradox, with beneficial health outcomes associated with leisure time physical activity, but detrimental health outcomes for people engaging in high level occupational physical activity.

An international team of researchers led by Dr. Pieter Coenen from the VU University Medical Center in



Amsterdam, the Netherlands, decided to carry out a systematic review of evidence regarding the association between occupational physical activity and all-cause mortality.

They searched existing studies that had assessed the association of occupational physical activity with all-cause mortality and identified 17 studies from which pooled data on 193,696 participants were used in a meta-analysis.

The various studies collectively covered the period

from 1960 to 2010.

This analysis showed that men with high level occupational physical activity had an 18-percent higher risk of early death compared with men engaging in low level occupational physical activity. This was still the case even when levels of leisure time physical activity were taken into account.

No such association was observed among women. Indeed, the opposite seemed to be the case for females.

The authors described the new study as the first to find evidence consistent with the physical activity paradox in this systematic review with meta-analysis of studies with a large number of participants.

The researchers concluded, "The results of this review indicate detrimental health consequences associated with high level occupational physical activity in men, even when adjusting for relevant factors (such as leisure time physical activity)."

"This evidence indicates that physical activity guidelines should differentiate between occupational and leisure time physical activity."

## Dirty air in pregnancy may raise kid's blood pressure risk

Breathing polluted air is never wise for anyone, but pregnant women may pay an especially unwanted price.

According to UPI, senior study author Noel Mueller, an assistant professor of epidemiology at Johns Hopkins University Bloomberg School of Public Health in Baltimore, said, "The findings from our study are another piece of evidence that air pollution exposure can affect your health and could affect your baby's health as well."

Mueller's team found that children exposed to the highest levels of "fine-particulate air pollution" in late pregnancy were 61 percent more likely to have high blood pressure than those exposed to the least pollution.

He cautioned that this study cannot prove that air pollution is responsible for higher blood pressure in childhood, only that the two are associated.

Mueller said, "Pregnant women, however, should think about avoiding heavily trafficked areas as a way to avoid more air pollution exposures."

Combustion from cars, oil, coal or wood can create tiny particles — 2.5 microns or less —

called PM2.5. These can only be seen under a microscope.

When inhaled, these particles can enter the circulatory system and lead to health problems, the researchers said in background notes.

Mueller said, "In prior studies, direct exposure to PM2.5 has been tied to high blood pressure in children and adults. This type of air pollution also contributes to illness and premature death worldwide."

He said, "The new findings lend support for maintaining, if not strengthening, air pollution standards set under the US Clean Air Act."

"We need regulations to keep our air clean, not only for the health of our planet, but also for the health of our children."

"The report was published online in the journal Hypertension."

Based on these findings, a Harvard University expert also said strict air pollution rules are essential.

Dr. Diane Gold, a pulmonologist and professor of medicine, said, "If maternal and early life pollution exposures increase the long-term risk of high blood

pressure, then reducing early life pollution exposure through regulation and through local and regional efforts may help protect children from having high blood pressure in childhood."

This might then 'improve



their long-term cardiovascular and cerebrovascular health", she added, referring to the link between high blood pressure and stroke.

There are often no symptoms of high blood pressure in children or adults. Early diagnosis and treatment are key, according to the American Heart Association.

Lifestyle changes, such as a healthy diet, weight management and exercise, are usually

recommended. Medication may also be prescribed.

Gold, coauthor of an editorial accompanying the study, said the dangers of air pollution may be worse for the poor.

She said, "Exposures to pol-

lution may be higher in disadvantaged communities, and may ultimately contribute to health disparities."

"Even pollution levels below the US Environmental Protection Agency's National Ambient Air Quality Standards may affect health in adults, increasing risk for strokes."

For the study, Mueller and colleagues collected data on nearly 1,300 mother-child pairs who took part in the Boston

Birth Cohort study.

Children's blood pressure was measured at "well child" visits when they were three to nine years old.

Systolic blood pressure (top number in a blood pressure reading) in the highest 10 percent was considered elevated.

To gauge exposure to air pollution, Mueller's group matched EPA data to each woman's home address.

Specifically, the researchers looked for concentrations of PM2.5.

Exposure to high levels of fine particulate matter in the third trimester was associated with a sharp rise in odds for high blood pressure in childhood, according to the study.

The researchers said they accounted for other factors that influence child blood pressure, such as birth weight and whether the mother smoked.

Mueller said, "They also determined that women's exposure to PM2.5 before pregnancy was not associated with blood pressure in their children. This is evidence that exposure in the womb is linked to childhood blood pressure."