

## The power of green leafy vegetables



Vitamin E is a fat-soluble vitamin that actually comes in eight different forms.

Alpha-tocopherol, the most active form of vitamin E in people, is a powerful antioxidant. Antioxidants protect body cells against the effects of free radicals, which are potentially damaging byproducts of the body's metabo-

lism. Free radicals can cause cell damage that may contribute to the development of cardiovascular disease and cancer.

Unprocessed vegetable oils, as well as nuts, green leafy vegetables and fortified cereals, are major dietary sources of vitamin E.

## Human stem cells show potential for eye repair

Researchers said they had engineered human stem cells that they believe could be used to repair eyes.

The team at Advanced Cell Technology in Massachusetts worked with stem cells taken from human embryos made by a team at Harvard University, and coaxed them to form retinal cells.

"This is the first derivation of retinal cells from human embryonic stem cells," said Dr. Robert Lanza, Advanced Cell Technology's scientific director.

"We believe these new retinal cells could be used to treat blindness and may, in fact, be the one of the very first applications of embryonic stem-cell technology."

The cells clustered into small globes on their own. "They looked like little eyeballs," Lanza expressed. "These things seem to be trying to assemble into primitive eyes."

The only cells they could clearly define were retinal cells, but Lanza said some also resembled the cells that make rods and cones -- the light receptors of the eyes.

The retina is the coating on the back of the eye that receives a visual image and transmits it to the optic nerve.

"Therefore, we think that millions of patients with retinal degeneration might conceivably benefit from these cells

in the future," Lanza said. Stem cells are master cells that can give rise to various cells and tissues. Unlike fully mature cells, they have a variety of potential futures.

Those taken from very early embryos, just a few days old, seem to have the most potential to become various cells. Not only can they form any tissue or cell type, but they seem to have the ability to live for a very long time, as well.

Embryonic stem cells can come from two sources -- embryos left over from attempts at in vitro fertilisation, also known as test-tube baby pregnancies, and those made using cloning technology.

Lanza said the report, published in the journal Cloning and Stem Cells, also illustrates the need to use cloning technology. In some experiments eye-cell transplants have been rejected by the patient's immune system.

But cells made using a person's own genetic material -- through cloning technology -- would be a perfect match.

"People don't realise there is only a handful of people working with embryonic stem cells," he said. "If there's no money, there is no research that can happen."

Source: Cloning and Stem Cells

## Religious affiliation may lower suicide risk

Depressed men and women who consider themselves affiliated with a religion are less likely to attempt suicide than their non-religious counterparts, according to new study findings.

"If someone acknowledges being religious, all else being equal, they are at lower risk to act on suicidal thoughts than someone who does not acknowledge religious affiliation," study co-author Dr. Maria A. Oquendo expressed.

Further, she added, "it does not appear to make a difference what religion they state their affiliation for."

Previous research has shown that religious countries tend to have lower rates of suicide than secular nations. Studies have also shown that a higher degree of religious commitment is associated with less suicidal behavior.

In the current study, Oquendo and her colleagues at Columbia University in New York City examined the influence of religious affiliation on suicide attempt in a study of 371 depressed inpatients at a psychiatric institute. About half of the study participants had attempted suicide at least once in their lifetime.

Overall, men and women who said they belonged to a religion had a history of less suicide attempts than those who reported no religious affiliation, Oquendo and her team report in the American Journal of Psychiatry.

Specifically, 48 percent of patients affiliated with Catholicism, Protestantism, Judaism or other religion reported having attempted suicide, compared with 66 percent of

those with no religious affiliation.

Religious patients also reported experiencing less suicidal thoughts than did their non-religious peers, despite similar high scores on assessments of depression and hopelessness.

Patients with no religious affiliation were more likely to have had a first-degree relative who committed suicide and to have a history of substance abuse, the study's findings indicate. They also tended to be younger, were less often married or had children and were less often in contact with their family members.

Upon further analysis, Oquendo and her team found that attempted suicide was most common among patients who did not think suicide was immoral and those with less feelings of family responsibility, both of which were most common among men and women with no religious affiliation.

"It appears that people who state they have a religious affiliation are more likely to have moral objections to suicide and may not act on suicidal thoughts because they think it is wrong to do so," Oquendo said.

"These findings suggest that asking patients about such topics and supporting their involvement with their religious group may be protective against suicidal behavior," she added. "Of course that has not been demonstrated, but our study suggests it is a possibility," she said.

Source: American Journal of Psychiatry, December 2004.

# Screening for syphilis in pregnancy is more needed

In Bangladesh, the prevalence of syphilis in groups vulnerable to HIV infection is high, but insufficient information exists on the prevalence of syphilis infections in pregnant women in the general population. The effects of untreated syphilis on pregnancy include spontaneous abortion, stillbirth, pre-maturity and congenital syphilis. Congenital syphilis has a wide array of serious manifestations, including meningitis and meningovascular syphilis. To effectively prevent foetal wastage and congenital anomalies, appropriate treatment must be given by first or early second trimester (12-28 weeks) of pregnancy.

In a study carried out in rural Bangladesh, the prevalence of syphilis was about 1 per cent in women with symptoms related to the genital tract. In contrast, a study among Dhaka slum dwellers revealed that more than 11 per cent of men and 5 per cent of women had syphilis. Another

study estimated the prevalence of syphilis among female clients attending a basic healthcare clinic to be about 3 per cent.

### The picture of syphilis sufferers

Most women with syphilis neglect to seek medical care, probably because the primary lesions are often painless and not seen, since they are located inside the vagina or cervix (neck of the womb). The secondary stage of syphilis is characterised by nonspecific signs and symptoms. Only serological tests (tests revealed from testing serum) for screening can assure detection of syphilis in women. Screening and treating pregnant women for syphilis was shown to be inexpensive and cost-effective, in a demonstration project in Lusaka, Zambia.

### Findings of a study in Bangladesh

Screening for syphilis was carried out among 1,103 women; 80 per cent were screened in their sec-

## The effects of untreated syphilis on pregnancy include spontaneous abortion, stillbirth, pre-maturity and congenital syphilis

ond trimester (one of the three months period of pregnancy) or during the third trimester. The prevalence of syphilis was 1.5 per cent. A comparison of results of testing done by paramedics with those from a reference laboratory, showed that the sensitivity of the test when carried out by para-

medics was only 13 per cent. Screening for syphilis as currently carried out by paramedics is unreliable. Simpler diagnostic tests that could more easily be carried out by paramedics are needed for ante-natal screening using paramedics to be effective.

There is lack of information on the prevalence of syphilis among pregnant women in Bangladesh.

### Comment

The occurrence of syphilis in pregnant women, given the severity of its consequences, was found to be high (1.5 per cent). Most started ANC at a point in their pregnancy too late to prevent congenital syphilis with conventional treatment. Treatment during the late second and in the third trimester (one of the three months periods of a pregnancy) greatly increases the risk of treatment failure. Alternative strategies that will result in earlier entry into ANC are needed and must be tested.

The majority of women

accepted testing and appeared to understand what syphilis was. However, screening carried out by paramedics was found to be unreliable. Thus, the findings of this report suggest deficiencies in the antenatal syphilis-screening programme when carried out by paramedics at primary level healthcare clinics. Syphilis-screening is ongoing at 23 NSDP urban clinics. One potential solution would be to provide more extensive training for paramedics, and to monitor for quality assurance closely by periodically sending out a panel of sera to each of the clinics for assessment; such an approach would be expensive, unwieldy and difficult to carry out and sustain. Centralized testing at qualified reference laboratories would seem to be the preferred strategy.

It is essential to design strategies to implement improved syphilis screening. One option would be to use simpler treponemal specific-rapid diag-

nostic testing that would be more easily performed by paramedics. Over twenty companies now manufacture rapid simple treponema-specific tests that can be used on whole blood, serum, or plasma. The tests can be used in primary healthcare settings as they are stable at room temperature for months, require no equipment, and give visual readout in 8-15 minutes. Limited evaluation suggests that some have comparable performance to laboratory-based tests. Such a programme would also require counselling programmes and educational campaigns to promote earlier antenatal clinic attendance so that timely screening and management would be possible. Cost-benefit analyses through direct measurement of the effect of screening on the prevention of adverse pregnancy outcomes are needed.

Source: ICDDR,B

# Crunch! Carrots may cut cancer risk

## Natural pesticide appears to prevent tumor development

There is more good news from the garden. A compound in carrots may be a potent cancer fighter, reducing malignancies in rats by a third, a European study claims.

"One of the natural pesticides in carrots is responsible for the cancer-preventing effect of carrots," said lead researcher Kirsten Brandt, a senior lecturer at the University of Newcastle upon Tyne, in England. "We now have identified a compound which seems to have an effect that can explain this benefit."

Nutrition experts have long recommended that people eat carrots because of their apparent ability to prevent cancer, but, until now, the particular compound driving this effect was not known. Epidemiological studies have shown that individuals with the highest carrot consumption can lower their risk of cancer by up to 40 per cent.

Now, Brandt's team says that falcarninol, a compound that protects the vegetable from fungal diseases, may be the prime reason carrots are so unfriendly to cancers. One previous study had suggested that might be the case, but results were inconclusive.

To find out if falcarninol really does prevent cancer, Brandt's

**We have now tested carrots, but there are a lot of other vegetables that we have not tested, which might have the same properties. There are lots of other similar compounds in other vegetables**



team studied 24 rats with precancerous tumors that mimicked human colorectal cancer. The rats were assigned to three groups, and each group was given a different diet.

After 18 weeks, Brandt's group found that rats that ate carrots along with their ordinary feed, as well as a second group that had falcarninol added to their feed, were one-third less likely to

develop cancerous tumors compared with rats that were not given either, according to the report in the February issue of the Journal of Agricultural and Food Chemistry.

Brandt said the exact mechanism behind falcarninol's anticancer activity remains unknown. The researchers also do not know if the results seen in rats would be seen in humans. "But, it

is encouraging that the data fits with what we have seen in humans," Brandt said.

These findings reinforce the message that people should eat five servings of fruit and vegetables everyday, she said.

"We have now tested carrots," she added. "But there are a lot of other vegetables that we have not tested, which might have the same properties. There are lots of

other similar compounds in other vegetables."

However, whether the beneficial effect of falcarninol is diluted or eliminated when carrots are cooked or juiced is unknown. That needs to be tested, Brandt said.

The researchers were intrigued that the vegetable's natural pesticides may be the real cancer-fighters, not vitamins or other nutrients. According to Brandt, the discovery may answer the longstanding question, "Why is it that eating vegetables is so much better for your health than just taking a vitamin pill with the same amount of vitamins and minerals?"

In addition, the finding might be important in developing new cancer treatments, she said. However, Brandt believes the quickest benefit can be achieved by simply developing carrots that have more falcarninol. "We might be able to double the intake of falcarninol, and that might have large benefits for public health," she said.

Another expert, Vicky Stevens, a research scientist at the American Cancer Society, remains cautious. "It is a little difficult to know where this is going to go in relation to humans," she said. "It is worthy of further research."

Stevens believes falcarninol might be just one weapon in the vegetable anti-cancer armamentarium. "We don't expect that there is going to be one single magic bullet. It is still important to consider the rest of the carrot, and other vegetables," she said.

"Perhaps the single most significant implication of this study is that it reaffirms dietary common sense in our era of dietary silliness," said Dr. David L. Katz, an associate clinical professor of public health and director of the Prevention Research Center at Yale University School of Medicine.

Katz noted that some of the popular "low-carb" diets actually banish carrots because they have a high glycemic (sugar) index. "Brandt helps reveal the folly of this oversimplified and rigid interpretation of what constitutes good food," he said.

"We may have to wait to know for sure that falcarninol can help prevent cancer in humans," Katz said. "But we needn't wait to derive likely health benefits from eating carrots often -- and I, for one, don't intend to."

Source: MSN health

## ERADICATION OF THALASSAEMIA: GENETIC COUNSELLING IS THE ONLY WAY

Thalassaemia is an inherited disorder of the haemoglobin, (the substance in the blood that carries oxygen to the tissues) that causes early destruction of red blood corpuscles that lead to many complications. It is caused by an abnormal gene inherited from one or both your parents.

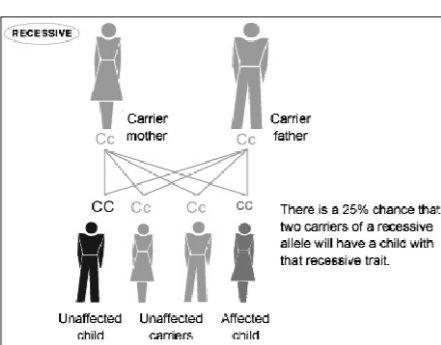
### Transmission

Thalassaemia is not a contagious disease; rather it is a genetic disorder. The disease comes to the child inheritably from the parents bearing the thalassaemia gene. When husband and wife both possess the thalassaemia gene i.e. they both are the carrier of thalassaemia their each children is in 25 per cent of risk to be a thalassaemic. If there is a thalassaemia patient in a family then the other relatives of that family is in risk to be the carrier of thalassaemia.

### Prevention

Prevention of Thalassaemia is possible with community education and genetic counselling.

If both father and mother are carriers of thalassaemia or one is carrier and the another is patient - it is likely that they can give birth a thalassaemic child. If a patient/carrier marries a normal person

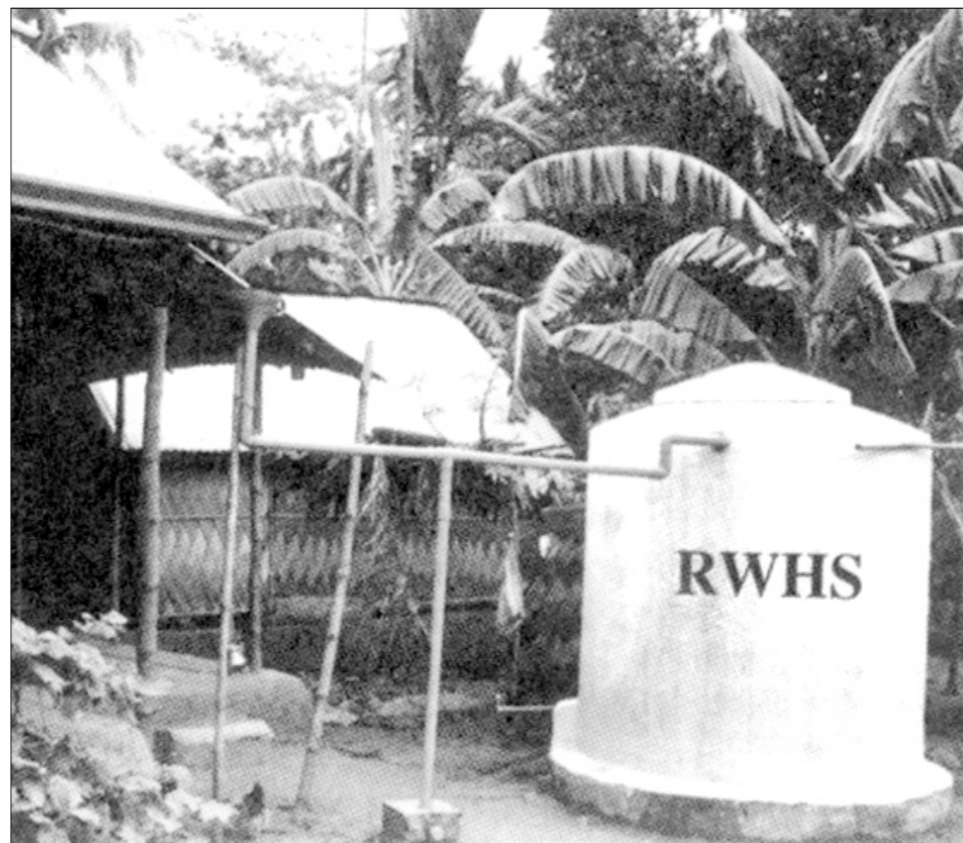


the child will be safe; at best it may be a carrier. We can easily prevent thalassaemia by our consciousness. So we must take the following steps -

(i) Know whether you are a thalassaemia carrier or not.  
(ii) If you are a thalassaemia carrier/patient, be sure that your partner is not a thalassaemia carrier/patient before your marriage.

(iii) If husband and wife both are carriers of thalassaemia then they should take some precautions. A thalassaemia carrier pregnant woman can be sure whether her child will be normal or thalassaemic by special test (pre-natal diagnosis). If this test determines that the coming baby will be a thalassaemic then they can take the chance of therapeutic abortion of the coming baby considering of the miserable life of the baby.

(iv) We should remember if thalassaemia carriers/patients get married with other thalassaemia carrier then their child is in risk to be a thalassaemic. So they should get married with normal people. This is the only precondition to prevent thalassaemia.



COURTESY: ARSENIC TEAM, ICDDR,B

Chronic ingestion of arsenic contaminated drinking water has multiple adverse long-term health effects including painful, potentially debilitating skin lesions, malignancy, diabetes and cardiovascular disease. Household rainwater harvest system can be used to reduce exposure to arsenic and bacteria-contaminated water sources.