

THE FEEDING OF THE MIDDLE-AGED BRAIN

Listen to the buzz about foods and dietary supplements and you'll believe they can do everything from sharpen concentration, to enhance memory, and boost attention span.

So, do ``smart foods'' really exist?

The most expensive real estate in the world is not Monaco, and it's not Cap Ferrat. It's a piece of property roughly the size of two fists, and it's all yours. It's your brain. Your brain takes up just 2% of space in your body, but it comes up to 30% of the calories you ingest. And up to half the oxygen supply available to your body.

But that's really no big deal for an entity of such epic complexity. Quite simply, there is nothing in the Universe as complex as the human brain. Nothing. It's estimated we have a hundred billion nerve cells in our brain and each nerve cell is connected to other nerve cells, not in a 1-to-1 connection, but up to 10,000 individual connections between cells...which means you have more connections in your skull than there are stars in the Universe.

A 100 billion nerve cells.

More connections than the stars. Not even the best super-computer can simulate the complexity of the human brain and its abilities to multi-task, especially its control of various organs at the same time.

With such a magnificent machine operating every single activity of your mind and body, it makes good sense to nurture it lifelong. Yet most of us take our brain for granted, and take less care of it than we do of our teeth. Not a wise strategy because, as we now know, the brain's chemical messengers, which are crucial to memory, concentration, and a whole range of mental functions and skills, are formed from substances catalysed from the foods we eat and the hormones our bodies produce.

Since at least the 1970s, scientists have known that certain nutrients are essential to human brain function, and that serious deficiencies in some of these can lead to impaired cognitive function.

So, could careful attention to diet help protect the aging brain from problems involved in memory and cognition? A clear cut answer could greatly affect the 50 plus population that is predicted to lead the demographic numbers a few decades down the road, nudging full-bodied youth down to second place increasing lifespans are going to get them there, but their independence, quality of life, and even economic status will largely be defined by their ability to traffic information signals as they age.

Yet the science of nutrition and brain function is relatively new and evolving. While we have several insights into the kinds of foods that may help prevent or slow down brain decline and even dementias, we still don't have pivotal proof in many key areas.

Still, certain common denominators are emerging, and here's a look at some of them:

Since at least the 1970s, scientists have known that serious deficiencies in certain nutrients can lead to impaired cognitive function

SHOULD YOU TAKE THIS BAIT?

Fish and the Omega-3 Fatty Acids

Fish has had a reputation as "brain food" as far back as most of our memories go.

Many modern-day scientists are endorsing that belief, elevating it above the status of an old wives' tale. Certain fish the same varieties that have been promoted as heart-healthy choices, in fact – have been claimed, in some research reports, to boost memory function by 15 to 20 per cent and even to cut the risk of Alzheimer's. The fish that are said to make the cut are those rich in omega-3 fatty acids; among them, oily fish like mackerel (*bangda*), salmon (*rawas* – Indian salmon), sardines (*pedvey*), tuna (*chura* or *toona machli*), anchovies (*velli machli*), herring (*bhing*).

Those scientists on the side of the believers recommend, for adults, at least two servings a week of omega-3 rich fish (a serving being roughly the size of a deck of cards).

But is the recommendation premature?

Some studies have in deed suggested a brain-boost link to fish consumption. For instance, a Columbia University study found that people whose diets were high in omega-3 fatty acids

had lower blood levels of beta-amyloid, the tell-tale protein that gums up brains in Alzheimer's patients.

In another study, imaging scans showed that those who reported eating fish regularly were less likely to have brain cells die off in the area of the brain responsible for short-term memory – recalling a phone number that was just heard, for example.

And one of the largest population studies, spanning 15,000 older people in 7 developing countries (including India), found that, as the reported fish consumption increased, dementia rates were progressively lower. That is, there was a gradient effect: So, those who ate fish nearly every day, were almost 20 per cent less likely to develop dementia than those who ate fish just a few days a week; and those who ate fish a few days a week were almost 20 per cent less likely to develop dementia than those who ate no fish at all. The researchers concluded that, “the more fish you eat, the less likely you are to get dementia.” (The results were described as “less convincing for Indian populations.”)

The scientific surmise is that oily fish appear to have a protective effect against dementia because the Omega-3 fatty acids they contain have anti-inflammatory properties. In animal studies, these fatty acids have been shown to reduce the build-up of atherosclerotic plaques and may also prevent the accumulation of amyloid plaques in the brain characteristic of Alzheimer's disease.

But all the studies cited above were so-called “observational” studies. That is, the researchers simply observed behavior in a systematic manner without attempting to influence or modify the behavior. In these studies, therefore, the findings on the fish-brain connection are based on people's self-reports of how much fish they consumed; the scientists did not attempt to modify their subjects' diets to see, for example, whether increasing intake of fatty fish translated into better mental function.

In contrast to these “observational” studies are the so-called “gold standard” studies, those that have randomly assigned people to take either omega-3 supplements or a placebo (a dummy pill) and then tracked the participants' brain function over time. In the last few years or so, we have had some of these gold-standard studies, too. Disappointingly, however, the results have been mixed.

In one study in New Zealand, 176 young adults in good health but with a low intake of fish were put on a 6-month course of a supplement containing DHA, an Omega-3 fatty acid found in fatty fish. DHA is one of the most highly concentrated fats in the brain. It is critical to memory and working memory, which are among the most important brain functions for numerous everyday activities such as working, driving, shopping, studying or playing sports.

But, as the body cannot effectively make this fatty acid, it must be consumed as part of the diet.

Over the 6-month period that the study group stayed on the DHA supplements, their mental functioning was assessed and compared to that of a placebo group. Both, memory and working memory showed significant improvements in the study group. There was a gender difference, however. Male participants who took a DHA supplement demonstrated 15 per cent faster working memory, while women had a seven per cent improvement in the speed of episodic memory (i.e., remembering events that have been experienced, along with the feelings associated with the event.)

The study leader was quoted as saying, "This is the first robust study to show that a DHA-rich supplement can improve some aspects of memory functioning in young healthy adults."

On the other hand a number of studies have produced disappointing results with omega-3 supplementation in people who already have Alzheimer's.

And, most recently, a review by the *Cochrane library* raised doubts over whether even those in sound mental health could derive cognitive benefits from a diet rich in omega-3. Cochrane reviews have won acclaim as an excellent way of pulling together high-quality scientific evidence. The omega-3 review looked specifically at three "gold-standard" studies which together covered over 3,500 people, age 60 plus, who took omega-3 supplements for periods ranging from 6 to 40 months.

In two of the studies, researchers compared the effects of omega-3 (fish oil) capsules versus placebo capsules containing olive or sunflower oil. In the third study, participants used either omega-3s performed no better on standard tests of mental abilities, memory or verbal fluency than those who took placebos.

While concluding that their analysis suggests there is currently no evidence that omega-3 fatty acid supplements provide a benefit for mental function in later life, the researchers did however add these caveats:

One, it's possible that the cognitive benefits of omega-3s may take longer than a few years – longer than the studies included in the review lasted – to show up. Cognitive decline and dementia may take several years to develop, and these studies found very little mental decline in any of the participants, so further research is needed to suss out the longer-term effects of omega-3 supplementation.

Two, it's also possible that taking omega-3 supplements

When the brain doesn't get enough glucose, a process is launched that ultimately produces the sticky clumps of protein that appear to be a cause of Alzheimer's

May help only those who are low in the fatty acid to start with, while offering less benefit for those who already get enough in their regular diets.

There is also the question of whether omega-3s from supplements are as bio-available as those coming in from natural foods like oily fish. "Bio-availability" essentially refers to how much of an ingested substance actually ends up being absorbed by our bodies.

The scientific consensus, for the present time, is that longer-term studies need to be carried out for more conclusive results.

You might decide there's no harm done-and may be some very real benefits to be derived – from starting (or continuing) to include oily fish in your diet. And you would be right, if only for this reason: omega-3s have already won their spurs in lowering heart-disease risk as well as high blood pressure, and your heart health very directly impacts the health of your brain.

How and why?

Research in both, mice and humans, has found that when the brain doesn't get enough glucose – as might occur when heart disease restricts the blood flow to the brain – a process is launched that ultimately produces the sticky clumps of protein that appear to be a cause of Alzheimer's. The findings suggest that this is a slow and insidious process which happens over many years. But over time it produces a chronic reduction in the blood flow. And then starts the rolling off the cliff.

This research finding is significant because it suggests that improving blood flow to the brain might be an effective approach to prevent or treat Alzheimer's. The hope is that, if people start early enough, maybe they can dodge the bullet.

And that's where omega-3s re-assert their role, because of their proven positive effect on heart health.

But don't expect results overnight. It takes six months for the body's tissues to get saturated with omega-3s. So you can't just eat fatty fish or take a supplement and think it's going to have immediate effects.

While fatty fish are the very best source of omega-3 acids, these fats are found (in much smaller quantities) in a variety of other sources, too, including walnuts, spinach, pumpkin seeds, soybeans and soybean oil, canola oil, wheat germ, mustard greens (think sarson ka saag).

HURRAHS FOR HALDI

The Anti-oxidants

The maturing brain tends to become vulnerable to two partners in crime: oxidative stress and inflammation.

Oxidative stress is thought to be brought on by the so-called free radicals. Free rads are not political rebels released from their prison cells. They are rogue molecules formed as a result of physical exertion, digestion and other activities of daily living and which result in oxidation. Unless neutralized, free radicals can cause cellular damage (or “oxidative stress”). Our bodies have defense systems that keep these rogue molecules in check, but they’re not 100 per cent effective-

Chronic inflammation can pre-dispose the brain to develop Alzheimer’s disease

Particularly as the body and brain mature. And the brain’s cells are thought to be especially vulnerable to oxidative stress.

A second threat to the aging brain comes from inflammation. Chronic inflammation can pre-dispose the brain to develop Alzheimer’s disease. Whenever there is any brain injury (e.g., from concussion, contusion, hematoma or other causes) the brain’s unique immune cells (called microglia) rush to the site to repair tissue and prevent further damage. But chronic activation of the microglia causes them to secrete substances that hasten the progression of Alzheimer’s.

Oxidative stress and inflammation: two powerful foes that undermine brain function into the twilight years. What do we have to bolster the body’s own defenses against these threats?

Well, we have *haldi*. And we have cloves and cinnamon, cumin seed and nutmeg, mustard seed and red chillis, nuts and berries – in fact, a whole range of plant foods with a significant protective effect against both, free rads and inflammation.

Who hasn't, by now, heard of the anti-oxidants? Their most distinctive ID is the rainbow hues they flaunt: the deep red of tomatoes and of cherries; the orange of carrots; the yellow of corn, mangoes and saffron; and the blue-purple of Indian blackberries (*jambul*), blueberries and grapes. Among nutrients, those with the highest anti-oxidant values are vitamins A, C and E; and beta-carotene.

Anti-oxidants have been studied for their effects on various bodily processes, including healthy brain function. Here's a look at a few of the findings:

One of the pioneering studies carried out at the Human Nutrition Research Center on Aging at Tufts University in Boston showed a protective effect of anti-oxidants on mental function in rats. The study rats were fed – from adulthood to middle age – vitamin E, strawberry extracts or spinach extracts, all with similar anti-oxidant values. Animals receiving these high-antioxidant diets did not experience the age-related cognitive performance losses seen in control rats fed standard chow.

In another Tufts study, a group of mice had their genes tweaked to produce a mutation that would cause an increase in amyloid beta, a prime culprit in Alzheimer's. Beginning at 4 months – early adulthood – half of these brain-plaquet mice were fed a diet high in blueberry extract for 8 months. The other half of the group was fed standard rat chow, and so was a control group of mice that didn't carry the amyloid-plaque mutation.

At 12 months – early middle age – all three groups were tested for their performance in a maze (which involves spatial memory). The brain-plaquet mice that were fed the blueberry extract performed as well as the healthy control mice and performed as well as the healthy control mice and performed much better than their brain-plaquet peers fed standard chow.

Another finding was that the brain-plaquet rats fed on blueberry extracts also had increased growth of new brain cells (called 'neurogenesis'). Neurogenesis plays a role in the formation of new memories. The brain's capacity to produce new cells is thought to be greatly diminished during aging. But this study showed that anti-oxidants can give the brain a heave-ho that spurs the process.

The anti-oxidant values of a range of plant foods are now available in the form of ORAC values. (ORAC is the abbreviation for Oxygen Radical Absorbance Capacity; it is a unit of measurement developed by the National institutes of Health in the US). Here's a partial listing:

ORC Database Foods ranked per 100 gm basis	ORAC Value	ORC Database Foods ranked per typical serving size	Serving size	ORAC Value
Cloves, ground	314446	Baking chocolate, unsweetened	1 square	14479
Cinnamon, ground	267536	Red kidney beans, dried	½ cup	13259
Turmeric (<i>haldi</i>), ground	159277	Pomegranate juice, 100%	1 cup	5923
Cumin seed (<i>jeera</i>)	76800	Plums, dried (prunes), uncooked	½ cup	5700
Ginger, ground	28811	Alcoholic beverage, wine, table, red	150 ml	5693
Pepper, black	27618	Apple, raw, with skin	1 medium	5609
Chili powder	23636	Pear, raw	1 medium	5235

ORAC scores are an easy way to compare the relative anti-oxidant content of various foods. But they should be regarded as a useful pointer rather than as numbers set in stone. Because they come with several caveats.

Interestingly, studies have found that curcumin has its beneficial effects on the brain only at low doses

For instance:

- ORAC values can lower by as much as 90% when foods are cooked or processed.

- ORAC scores can be illusory since they can change depending on the density of a food. Thus, a food with high water content (say, a grape) can show a lower antioxidant score than a raisin which comes from exactly the same food source but has a lower water content.
- It is important to consider serving size when comparing ORAC values. Thus, 100 gm of cloves has a very high ORAC value of 3,14446. But how many meals would it take before your intake of cloves totals up 100 grams? By contrast, you could get the same total ORAC value over a shorter period of time by eating fruits like apples, pears, pomegranates, dried fruits, and an occasional chocolate bar.
- ORAC scores are based on lab tests, and all too often, what happens in a test-tube has no correlation to what happens in your body.

All of which brings us back to the spice that is steadily forging ahead as a potent weapon in our arsenal against Alzheimer's. Can we think of an Indian meal where turmeric (*haldi*) does not assert its distinctive bright yellow presence? And could this staple consumption of turmeric have something to do with India's current (if not future) status as the country with the lowest incidence of AD among countries studied? (See *the box*). In its anti-AD avatar, turmeric seems to work more like a Swiss army knife. Its active compound, curcumin, is not only a powerful anti-oxidant, it's also a powerful anti-inflammatory, and it helps to clear away the beta-amyloid plaques that are AD's thumbprint. More? Curcumin also decreases the level of toxic metal build-up, another suspect in AD. And inhibits the formation of cholesterol in the blood, attacking yet another culprit linked to beta-amyloid plaque.

Over 1000 scientific studies have been so far conducted on the powerful health benefits of curcumin – in test-tubes, in rats and in humans. An UCLA study found that levels of beta-amyloid in AD mice that were given low doses of curcumin decreased by around 40%, compared to those mice that were not treated with curcumin. Another study found that curcumin curbed the growth of the microglia (the brain's immune cells, whose over-activation speeds up the AD process). A third study showed that curcumin exerted a strong anti-oxidant action, curbing the formation of free radicals. A fourth has established that curcumin, by its interaction with heavy metals such as cadmium and lead, prevents the neuro-toxicity caused by these metals.

So, what are we waiting for? Specifically, large-scale human studies that are required to identify the therapeutic effects of curcumin. Also, several unanswered questions remain: What is the chief chemical property of curcumin that can be exploited in treating AD? What is the role of curcumin in other brain disorders such as Parkinson's and Huntington's? Would it be more effective when used alone or with other anti-inflammatory drugs?

Interestingly, studies have found that curcumin has its beneficial effects on the brain only at low doses. This is good news since it suggests that curcumin is most effective at doses well below pharmaceutical strength. May be pill-popping won't be called for; just the regular Indian (and other Asian) cuisine, starring turmeric – as it has done for thousands of years.

My Miracles of advance Numerology

Sandhiya Mehhta the ACE numerologist and vastu consultant has tremendous knowledge and experience that no one can match. In her own words ``to the most unsuccessful people my system of numerological calculations will bring success, happiness and prosperity. And those who are already successful it will bring further success prosperity and all it will bring a new interest in life and higher conception in lifestyle.”

Sandhiya Mehhta

Numerologist and Vastu Consultant

Activated Third eye Power to see all about your life

How to calculate your d-o-b for e.g. 17-3-1982 and up $8+3+2=4$ (ruling no is 8 and controlling no is 4) Both the ruling and controlling number is connected with planet and energy, most of the time controlling no, (destiny is playing negative role in your life like if 4,9,7,6 creates lots of problem in your life. Your d.o.b 17-3-1982 does not carry some no. From 1 to 9; you are missing that power in your luck or energy in your life. IT is completely research by Sandhiya Mehta this numeric graph.

Due to your past birth karma this birth graph.

3	1	
7		
2		8

← Your Character / Yourself

← Your Field / Career

← How much you get?

In this chart you are imbalance through you are hardworking, intelligent but not getting power of missing nos. energies, we have to balance this graph that is what Sandhiya Mehta does with her godly power and making people live life with all success and power in balance way.

IMP-only stone, name spelling, mantra, or fasting cannot change your destiny; you can come to follow the scientific successful method to live complete balance life

Her finding show that nearly **70% People** in this world are **born with number 4 & 8** and it is world known fact that these numbers can give you a lot of sorrows, disappointments, hurdles, postponements, and make your life unbalanced as compared to other numbers.

Her talent is tremendously vast and to top it up her presence is having a charisma of saint and her efforts have made her the most successful business tycoons, the Royal families of past Kings and Queens, The powerful politicians, The entertaining stars, The healing doctors, The hard working sportsmen, so does the common man!!!!!! ``I don't ask you to change your life, I ask you to live it with all you that you want''

SANDHIYA MEHTA research in numerology and her god gifted power says that numerology is 100% is connected with your business and career, as per your d-o-b your ruling and destiny number also your missing number (in d-o-b) and your carrier line decide about your business and career whether your flourish or doing moderate or not to get success, your number that is connected with planet and energy instead of giving you rising will pull you back and all your efforts and knowledge can go in vain, particularly year as per your d-o-b is deciding about your career change, promotion, new venture alone or with

partnership can guide you (like what 2012 says about your specialty for career and business) name number of your own company, organization is very important to generate good energy.

As per my experience and calculation no, 4 and 8 or and 8 are the best couple in marriage life as they understand each other very well particularly in bad time or when things are not going smooth in some life span. No. 2 and 2 again have the same problem of disturb marriage life, either they go for breakage or have each other free to live and adjust well with each other when no. 3 or 9 or 1, 2 appears. Numerology calculation will be good guide to help the two individuals to understand each other in a better way and each other's approach towards life and abilities, capacities, likes and dislikes. If this is not there is hardly any possibility the two can stay together happily.

Q. What about no, D.O.B.. 1,9,5,3, But not getting successes.

A) All these are also powerful numbers but if they don't get the support of fortune No. or some number which is connected with particular planet. If energy numbers are missing then having all Nos. like 1,9,5,3 in their DOB also won't give the best result in person's life.

This numbers are supposed to get full success, name fame in there life. But why they also have problems & not success in there life? You can also have this problem in your life. Take guidance to rectify & get success.

Q) What about birthdates 4 and 8 in which you are specialized?

A) Yes they are more liable to troubles, hardships. I guide how they alter their ill luck or delays, disappointments and sorrows and take full force of advantages of their number by choosing proper numbers and some numeric values engraved pendants of specific metal.

Q) How far you have got success in numerological advice and remedies that you give?

A) 99% success is their in my cliental list. The rest is in the hands of universal energy. People like builders, corporate, scientists, doctors, industrialist, top politicians, hoteliers, artists, businessmen, bankers and also the least common man are taking my advice & remedies & getting the success in their life.

Q. What age people can use my knowledge & remedies:

A) All age people from new born child to any age specially children to create confidence select right carrier, & to empower there energy in a right direction.

Q. When do you see result after your remedies?

A) With in few days it start and it work for life long.

- **There is nothing wrong to know about you in scientific way weather you are successful or not. And no religion or myth connected. Open your mind to get universal energy**

The Bottom line in Alzheimer's

Will India stay on the happy side of the statistics?

For 5126 Indian senior citizens, their 15 minutes of fame came at the dawn of this century. An Indo-U.S study in 2001 concluded that the villages they hailed from (in Ballabgarh in Haryana) boasted the lowest incidence of Alzheimer's disease among all areas studied in the world.

What did this small rural community

- Hindi-speaking, largely illiterate
- Have that the rest of the global community does not?

Did they possess "unique protective factors"? Well, they had low rates of the APOE e4 gene which pre-disposes people to Alzheimer's. But then, a group of farmers in Pennsylvania, who were being concurrently studied by the research team, were found to have similarly low rates of this gene. But, the incidence of Alzheimer's in the Ballabgarh group was less than one-third of that found in the Pennsylvania group.

"We had a hunch that rates here would be lower." Said physician Vijay Chandra, one of the study authors. But that hunch was based on a number of solid observations. For one thing, the researchers found that cholesterol levels in Ballabgarh were much lower than among the Pennsylvania farmers, and since heart disease is a prime risk in Alzheimer's, the researchers believed this was a protective factor.

They also pointed to other environmental factors that may have a similarly protective effect:

Obesity is virtually unheard of in Ballabgarh. Most of its inhabitants eat a low-fat, vegetarian diet. (Vegetables and fruits boast high levels of anti-oxidants).

It is a farming community and so most people are also physically very active.

This is in contrast to the diet and the overall health status of the farmers of Pennsylvania.

Family support was found to be very strong in Ballabgarh, compared to urban communities in India.

Turmeric, the staple spice in Indian cooking, has powerful anti-oxidant and anti-inflammatory properties, which are currently being studied for their possible protective role in Alzheimer's.

All the same, the researchers advised caution in interpreting their findings because of several potentially confounding cultural and other factors.

For instance:

The daily functional demands on older adults in rural India are limited by their living with, and being cared for, by their family members. For this reason, the researchers note, problems in daily activities that would suggest the beginnings of dementia may have been missed by family members.

Even when they recognized functional limitations among older family members, they may have under-reported them out of traditional respect or low expectations of the elderly, or dismissed them (e.g., forgetfulness) as reflective of normal aging.

Above all, the researchers cautioned that their findings should not be generalized to the heterogeneous Indian population in which substantial regional differences might be expected.

THAT WAS THEN

Their cautions were well-founded. By 2005, trouble was already brewing in Paradise. In that year, a century after Alzheimer's Disease was first described as a medical condition, Alzheimer's Disease international (ADI) constituted a 12-member panel of international experts to estimate the prevalence of Alzheimer's in every WHO region, as well as to provide projections of how many people would be affected by the disease by 2020 and by 2040.

The panel estimated that there were 24.3 million people with Alzheimer's, worldwide, at the time; in India, the estimate was that 1.8 million people aged 60+ were affected. Using 2001 as the baseline year, the panel forecast that, by 2040, the number of people with Alzheimer's in developed countries would increase by 100% but that in developing countries – India, China, and neighbouring countries in South-East Asia – the numbers would swell by a whopping 300% over the same period.

What explains these startling predictions? One word: `progress'. Ironically, improvements in healthcare translate into longer life expectancy, and since Alzheimer risk increases exponentially with age, increasing longevity will itself be the primary reason that the Alzheimer numbers will soar in coming years.

Advanced age remains the main risk factor for most forms of dementia. Alzheimer's occurs very rarely among those 40-50 years old, increases between 60 and 65 years, and after 65, prevalence doubles with every 5 years of age;

Alzheimer's is very common over 80 years. Traditionally, it was the developed countries that had large proportions of elderly people because of better healthcare; but the developing countries are now undergoing a demographic transition so that more and more of their people are surviving to an old age.

As far back as 2001, the developing countries already accounted for the majority of Alzheimer cases – up to 60% By 2040, it is estimated these countries will account for 71% of the cases.

In India, better medical care and lower fertility have made the elderly population the fastest growing section of society. In fact, it has been predicted by demographers that, by 2030, India will have the world.

Concomitantly, there will be a steady – and alarming – rise in the incidence of Alzheimer's in India.

Increased life expectancy apart, there are other lifestyle factors that are expected to fuel the rise in Alzheimer's in India. Thus, those with high cardiovascular risk scores (which includes hypertension, diabetes, high blood cholesterol and smoking) have an increased risk for dementia, and the incidence of both, diabetes and heart disease, is rising in India.

Government policy and action initiatives in this field are few and sluggish.

But you don't have to wait for the government to act. As this month's column and the two preceding ones show, there is much that you can do pro-actively to cut your risk for a disease for which there's no cure, and which just makes most people feel anxious and helpless.

You're not as helpless as you might believe.

WHEN LESS IS NOT MORE

Vitamin & Mineral Deficiencies

Scientists know that certain nutrients are essential to human brain function. The ageing brain is particularly vulnerable to deficiencies in two B vitamins: B12 and folate. When there is a shortfall of these B vitamins, there is a build-up in the levels of homocysteine, a prime suspect in the processes leading to the onset of dementia.

Seniors are especially vulnerable to a gut disorder (atrophic gastritis) in which there is a thinning of the stomach lining, leading to poor absorption of B12 by the small intestine. That is why the recommendation is for those aged 50 plus to take vitamin B12 as a supplement.

Research also finds that people who eat foods high in folate (or folic acid) have better memory and thinking skills as they age. On the other hand, several studies point to a link between low blood folate and depression – and depression is already known to affect brain function. Sources for folate include leafy green vegetables, ladies' fingers, citrus fruits like melons, oranges and lemons, legumes (dried beans and peas), cereals, mushrooms, organ meats (e.g., liver, kidney). Also: foods fortified with this vitamin, and supplements. (Folic acid is the synthetic form of folate.)

“We found that healthy brain wiring in adults depended on having good iron levels in your teenage years” - UCLA researchers

Iron. Earlier studies have already linked a shortfall in iron intake to poor cognitive ability in children, whereas iron overload was shown to cause brain damage in adults. But fresh research this year from UCLA gives a new and unexpected twist to the iron deficiency-brain function link. Scientists there found that teenagers who show iron deficiency tend to be at higher risk of suffering conditions that negatively affect brain function later in life. The risk, they found, was mostly in dementias such as Alzheimer's. In fact, iron deficiency in the teen

years led to an actual change in brain structure by early adulthood, the study found. This link has been hinted at for some time now, but this is one of the first studies to actually demonstrate it.

The mechanism by which this happens is not well understood, but the researchers stressed that the link was stronger than anyone expected to see. Especially because all the participants were young and healthy, and none of them, said the team, “would have been catalogued as iron-deficient”.

They concluded: “This is one of the deep secrets of the brain. You wouldn’t think the iron in our diet would affect the brain so much in our teen years. But it turns out that it matters very much. We found that healthy brain wiring in adults depended on having good iron levels in your teenage years.”

Brain function therefore seems to be more dependent on iron than has been so far believed. When this is correlated with the fact that iron-deficiency is one of the most widespread health problems around the world, this research assumes new meaning.

PUTTING IT ALL TOGETHER

Evidence on the brain-nutrition link is mounting, although the big picture has not yet snapped into sharp resolution. But brain nutrition is not about one food or supplement. It’s much more complex than that. It’s about your overall diet. This was underlined in a recent study, in which the researchers looked not at the participants’ intake of a particular food, but at the nutrient bio-markers that showed up in their blood. These markers reflect not what is consumed, but what is actually absorbed, an important issue in the elderly. What the study found was that those people with high markers for vitamins B,C,D, and E, and for omega-3 fatty acids, had more brain volume and scored higher on thinking and memory tests than those with low markers for these nutrients. For brain volume, the nutrient bio-markers accounted for 37 per cent of the variation among people. For thinking and memory scores,

the markers accounted for 17 per cent of the variation. Other factors such as age, number of years of education, and high blood pressure accounted for 46 per cent of the variation.

These findings need to be confirmed by many more studies, but it is exciting to think that what you eat – and other lifestyle factors – can make such a significant difference to your mental acuity.

On a field of battle where our medical armoury is still so obviously inadequate, the best we can do is cull the most up-to-date and meaningful information on lifestyle choices and then make our own decisions. And once in a while, have a piece of chocolate cake. It's not just comfort food, it's also actually a good anti-oxidant.

How to Retire Early...

You're tired of the home-office-home treadmill. You want to break free, strike out on your own, follow your dreams. Before you take the big step of giving up a steady monthly pay check, find out the things you need to put in place for a gainful and productive "retirement" that allows you to nurture your passions and taps into your creativity.

First, the big, bad news: In order to retire at age 58, you'll need to have assets in the high six figures. Then you might be able to quit your job but may have to work for another 10 years in a second career to avoid dipping into your retirement accounts. If you think that money for retirement will just be there when you need it, you're living in a fool's paradise. You have to begin creating your future lifestyle now.

Okay, pick yourself up and hear the good news: There are several steps you can take in your twenties, thirties and forties to make an early-retirement dream come true.

1. Make a budget now. Maintain a diary to see where your money is going. List your monthly costs, track additional expenses and take a hard look at what you can do without.

2. Scrimp and save. Even if you wait to retire until age 65, counting on your pension alone is a recipe for thin gruel. Retirement peace of mind starts with savings. You should consider setting aside at least one-fifth of your salary every month. This is actually not as farfetched as it may seem if you take into account the non-essential expenses and impulse purchases

you incur – clothes, shoes, movie tickets, the new flat, screen TV, if you want to go further, drive your old car instead of springing for a new one.

3. Pay off and put down the credit cards. Saving money in a bank at 6 per cent accomplishes little if you're coughing up 16 to 21 per cent in interest on your credit card balances. Stop charging routine supplies; use cash whenever you can.

To meet goals, you should save 10 per cent of your gross annual income each year, starting in your twenties. If you plan to retire early, double that amount. If you're in your forties, you must save 15 to 30 per cent of your gross income. Take advantage of the PF, PPF and other retirement savings plans.

4. Invest aggressively. Forget pursuing a life of leisure if you're keeping your savings in a regular FD that earns a meager?? Successful retirement planning means investing in stocks, bonds and mutual funds and averaging a 10-per cent return on your money year in and year out.

5. Move. Life in the urban fast lane is exhilarating – and expensive. Investigate smaller cities and regions, that have job potential but a lower cost of living.

6. Pay your dues and pay yourself. Higher- stress jobs such as sales usually yield bigger bucks. Bite the bullet and take a money making job for five years, investing every extra rupee.

7. Start a business. Identify a market that needs serving and launch a business (see *How to Work Forever*). Work like a dog for 10 years, then turn the business over to your employees, keeping a percentage for yourself.

8. If you want to retire young, plan to work forever. The traditional formula for retirement is a three-legged stool: one leg is income from pensions, another is savings and the third is earnings from a part-time job or business. This radically changes the picture of what retirement can and will be – an opportunity to do the things you really want to do and get paid for them. And that takes planning, too.

...How to work forever

It's hard to imagine life at any age without some kind of satisfying work. Given that the average retirement age is 58 years, can you picture 20 satisfying years of puttering around at home or selling insurance policies on the phone. We don't think so. The trick is to make the right career transitions at the right times. After all, if we'll be working forever, we might as well be doing something that adds meaning and pleasure to our lives.

1. Take a sabbatical. If your company offers leave time, use it – to kick back, recharge and take a hard look at what you want to be doing in the future. If you can't manage a few months off, then set some time aside (a vacation, a long weekend) to seriously evaluate where you are and where you are headed. This will help you

2. Figure out what you do well. You're a whiz at computers, know how to manage an office, always give the official toast at company functions. Many of the skills you already have can translate into a new line of work or a different take on your current job. Examine those skills, then reframe what you have to offer. Look at all the things you like about your work. It's easiest to launch a second career that's connected to your job experience; for example, a nurse becoming a medical investigator for an insurance company.

3. Investigate your dreams. If you spend your days in the office but your nights making ceramic dishes, perhaps you can break into the pottery business. If you're the one in the office who knows which play is put up where and what the critics are saying about them, a job raising funds for community cultural endeavors may be the ticket. Read the want ads and dream about the jobs that appeal to you. Then figure out what you need to do to get one of them.

4. Invent a job. The new India is going through some exciting times, creating an entirely new economy in which people are designing their own occupations. In other words, if your dream retirement job doesn't yet exist, invent it. Find a need and fill it.

5. Get up to warp speed. Working from home part- or full-time means less stress and more variety, but requires a battery of skills to make it profitable. Take college courses or get an advanced degree at night school.

6. You say adversity; we say opportunity. Downsizing is an enforced chance to evaluate your next career step – and maybe to work on your own terms. As more corporations fill vacancies with temporary workers, you can enjoy flexible hours, less stress and sometimes better pay. Say you were downsized from a large advertising agency. Try working directly with the agency's clients. You may end up earning more than you did on staff.

7. Network, network. Expand your list of contacts and talk often and assertively about what you'd like to do. Whether you're looking for an old job in a new field, starting business or changing professions, the wider your network, the more opportunities you'll discover. Facebook is the perfect place to get the word out.

8. Go tentatively into a second career. Experts counsel that impulse switching can lead to job-changer's remorse. Use holidays to sample other fields and jobs. Use days off to work for an agency that serves your dream industry. Volunteer.

9. Retire early; retire often. If you're ready to trade off money and prestige, you can reinvent yourself as many times as you wish. The benefits of second, third or fourth careers – more leisure, less pressure, the chance to explore your enthusiasms – are unlimited and yours for the taking if you plan well and listen to your heart. Don't think of it as retirement; think of it as *retitlement*.