



Issue: January / 2018

Issue number: ASSE INDIA - 47

ASSE India – Newsletter Committee

Sandip Mukherjee

Message from the President's Desk....

January 30, 2018



Happy New Year!

I hope all of us are looking forward to the New Year 2018, which is already rolling, with optimism. Optimism towards better standards of living and working environment – better health and education, social security and a sense fulfillment. Our country has the potential to achieve all these, while rising in the ladder of human development index, garnering economic growth and marching towards all-round excellence, leading to overall wellbeing of all citizens.

In such a promising perspective, we OSH professionals have a lot to contribute. Our proactive efforts must be channelized to guide and support all stakeholders in the society to be able to find innovative ways of integrating OSH in day-to-day life so that it become a part of lifestyle, as we proceed.

As a part of these initiatives, we need to see how the learnings from past, particularly from near-miss incidents could be utilized for prevention. Near-miss incident act as a sort of alarm bells, we should not “snooze” upon. We should see the merit of looking at each and every near-miss incidents in depth and probe them thoroughly. Not at the fault of someone, but the focus being on finding the underlying causes and solutions to prevent the occurrence from systems perspective.

With best wishes and warm regards,

Krishna Nirmalya Sen, Ph.D, P.E., FIE

President

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Editor's Corner:

Dear Reader,

We are presenting the 47th Issue of ASSE India Chapter Newsletter.

Using multi gas detector is now a day common in industry for detecting LEL and PEL flammable or toxic gases. Most of the time we get direct reading through the sensors for gases like Oxygen, H₂S, CO, CO₂ etc. VOCs are organic compounds characterized by their tendency to evaporate easily at room temperature. Many specific toxic substances those are having acute or chronic health effect can be measured by means of substance-specific electrochemical sensors. Some of these sensors are cross sensitive to other substances, there is very little ambiguity when it comes to interpreting readings. To create a better understanding on these VOC concentration measurement, furnishing an article.

Also read 10 health tips for elderly under health section.

The issue is furnished with information on forthcoming important days in SHE calendar and the history or background of those days. Of-course, your favorite quiz contest is also there.

Do keep on sending interesting articles on OH&S for publication. Happy reading.

Warm Regards to all our Readers,

Sandip Mukherjee

Chair – Newsletter (ASSE India Chapter)

Gas Detection for VOC Measurement

PID-equipped instruments are generally the best choice for measuring VOCs at exposure limit concentrations

Bob Henderson

VOLATILE organic compounds (VOCs) are organic compounds characterized by their tendency to evaporate easily at room temperature. Familiar substances containing VOCs include solvents, paint thinner, and nail polish remover, as well as the vapors associated with fuels such as gasoline, diesel, heating oil, kerosene, and jet fuel. The category also includes many specific toxic substances, such as benzene, butadiene, hexane, toluene, xylene, and many others.

Increased awareness of the toxicity of these common contaminants has led to lowered exposure limits and increased requirements for direct measurement of these substances at their exposure limit concentrations. Photoionization detector-equipped instruments are increasingly being used as the detection technique of choice in these applications.

OSHA's permissible exposure limits (PELs) are designed to protect workers against the health effects of exposure to hazardous substances. The PEL is the maximum concentration of an airborne contaminant to which an unprotected worker may be exposed during the course of workplace activities. PELs are listed in 29 CFR 1910.1000, the Air Contaminants Standard, in the Z-1 Table. The table currently lists exposure limits for about 500 substances. These PELs are enforceable. Unprotected workers may not be exposed to a concentration of any substance listed in the Z-1 table that exceeds the permissible limit. It's up to the employer to determine that these exposure limits are not exceeded. In many cases, a direct reading gas detector is the primary means used to ensure the PEL has not been exceeded.

Gas detectors can be equipped with a number of different types of sensors. The type of sensor used is a function of the specific substance or class of contaminant being measured. Many toxic contaminants can be measured by means of substance-specific electrochemical sensors. Direct reading sensors are available for hydrogen sulfide, carbon monoxide, chlorine, sulfur dioxide, ammonia, phosphine, hydrogen, hydrogen cyanide, nitrogen dioxide, nitric oxide, chlorine dioxide, ethylene dioxide, ozone, and others. Although some of these sensors are cross sensitive to other substances, there is very little ambiguity when it comes to interpreting readings. When you are interested in hydrogen sulfide, you use a hydrogen sulfide sensor. When you are interested in phosphine, you use a phosphine sensor. In many cases, however, a substance-specific sensor may not be available.

VOCs are quite detectable, but usually only by means of broad-range sensors. Broad-range sensors provide an overall reading for a general class or group of chemically related contaminants. They cannot distinguish between the different contaminants they are able to detect. They provide a single

aggregate reading for all of the detectable substances present at any moment.

The most widely used technique for the measurement of combustible gases and volatile organic contaminants continue to be use of a hot-bead pellistor type combustible gas sensor. Pellistor sensors detect gas by oxidizing the gas on an active bead located within the sensor. Oxidization of the gas causes heating of the active bead. The heating is proportional to the amount of gas present in the atmosphere being monitored and is used as the basis for the instrument reading. Most combustible gas reading instruments display readings in % LEL increments, with a full range of 0-100% LEL. Typically, these sensors are used to provide a hazardous condition threshold alarm set to 5% or 10% of the LEL concentration of the gases or vapors being measured. Readings are usually displayed in increments of $\pm 1\%$ LEL. Hot-bead pellistor combustible gas sensors are unable to differentiate between different combustible gases.

The resolution provided by this sensing technique depends on the LEL concentration of the gas used to calibrate the sensor. As an example, consider an instrument that displays readings in $\pm 1.0\%$ LEL increments that is calibrated to methane. Methane has a lower explosive limit concentration of 5% volume in air. Below 5.0% volume methane, the concentration of methane to air is too low to form an ignitable mixture. Five percent is the same thing as 50,000 parts per million (ppm) methane. Because the instrument can display changes only in $\pm 1\%$ LEL increments, it can display only changes that are at least 1% of 50,000 ppm, or 500 ppm.

Hot-bead pellistor sensors that display readings in $\pm 1.0\%$ LEL increments are excellent for gases and vapors that are primarily or only of interest from the standpoint of their flammability. Many combustible gases, such as methane, do not have a permissible exposure limit. For these gases, using a sensor that expresses readings in percent LEL increments is an excellent approach. But many other combustible vapors fall into a different category. Although VOC vapors may be combustible and easily measured by means of a hot-bead sensor, they also may have a PEL that requires taking action at a much lower concentration.

Hexane provides a good example. The PEL for hexane in states that follow federal OSHA guidelines is an 8-hour time weighted average limit of 500 ppm. The NIOSH Recommended Exposure Limit (REL) followed by many states is an 8-hour TWA of only 50 ppm. The American Conference of Governmental Industrial Hygienists Threshold Limit Value® (TLV®) for hexane is also an 8-hour TWA of only 50 ppm. Many federal, state, and corporate health and safety standards require compliance with TLV® exposure limits. The lower explosive limit concentration for hexane is 1.1%.

Below 1.1% volume hexane, the concentration of hexane vapor to air is too low to form an ignitable mixture. The most commonly cited hazardous condition thresholds for combustible gas are 5% LEL or 10% LEL. Thus, with a properly calibrated combustible gas reading instrument, assuming the

alarm is set at 10% LEL, it would take a concentration of 10% of 1.1%, that is, 0.11% volume hexane, to trigger an alarm. Because 1% volume equals 10,000 ppm, every 1% LEL increment for hexane is equivalent to 110 ppm. It would therefore take a concentration of 1,100 ppm hexane to trigger an alarm set to the standard 10% LEL hazardous condition threshold. Even if instruments are set to alarm at 5% LEL, it still would still require a concentration of 550 ppm to trigger the alarm.

Sensitivity Concerns

Using a combustible gas monitor to measure VOCs presents a number of other potential problems, as well. To begin with, most combustible sensors have poor sensitivity to the large molecules found in VOCs, fuels, and solvents with flashpoint temperatures higher than 100 degrees F. But even when the span sensitivity of a properly calibrated instrument has been increased sufficiently to make up for this inherent loss of sensitivity, an instrument that provides readings incremented in 1.0 percent LEL steps cannot resolve changes in concentration smaller than $\pm 1.0\%$ of the LEL concentration of the substance being measured. Because percent LEL detectors are poor indicators for the presence of many VOCs, lack of a reading is not necessarily proof of the absence of hazard.

Reliance on hot-bead type LEL range pellistor sensors for measurement of VOC vapors means in many cases that the PEL, REL, or TLV[®] is exceeded long before the concentration of vapor is sufficient to trigger the combustible hazardous condition threshold alarm. When toxic VOCs are potentially present, it is necessary to use additional or different detection techniques that are better suited for direct measurement of VOCs at ppm toxic exposure limit concentrations. Photoionization detectors are becoming increasingly popular for this application.

It should be noted that other combustible gases and vapors may be present at the same time as toxic VOCs. Although catalytic bead sensors may have limitations with respect to the measurement of toxic VOCs at exposure limit concentrations, they are by far the most widely used and dependable method for measuring methane and other combustible gases and vapors with smaller, lighter molecules.

Recently Updated TLVs

Increasing concern with the toxicity of VOCs has led to a number of newly revised TLVs[®], including those for diesel vapor, kerosene, and gasoline. Several others are currently under review. The TLV[®] for diesel vapor adopted in 2002 has proven to be particularly problematic and has led to the revision of numerous oil industry, maritime, and military health and safety monitoring programs. The ACGIH TLV[®] specifies an 8-hour time weighted average for total diesel hydrocarbons (vapor and aerosol) of 100 mg/m³. This is equivalent to approximately 15 ppm diesel vapor.

Diesel vapor always has been regarded as a potential fire hazard but largely ignored as a potential toxic vapor hazard. Diesel fuel is an NFPA Class II Combustible Liquid with a typical lower explosive limit of 0.6 percent (6,000 ppm). For diesel

vapor, 1.0% LEL is equivalent to 60 ppm. Even if the instrument is properly calibrated for the detection of diesel--which is not possible for many designs--a reading of only 1.0% LEL would exceed the TLV[®] for diesel by 600 percent!

Because ACGIH recommendations are frequently more conservative than the OSHA PELs or NIOSH RELs, many corporate health and safety programs, especially those of multinational or prominent corporations, use the ACGIH TLVs®. It goes beyond the scope of this article to argue how long it might be permissible to remain at 5% or 10% LEL without actually exceeding the 8-hour TWA or STEL. What is most striking about the list is how few of these common VOCs have 8-hour TWA exposure limits higher than 5% LEL. None of the VOCs on the list has exposure limits higher than 10% LEL.

Using Photoionization Detectors to Measure VOCs

Photoionization detectors use high-energy ultraviolet light from a lamp housed within the detector as a source of energy to remove an electron from neutrally charged VOC molecules. The electrically charged fragments are called ions. PIDs collect the charged particles on charged plates. This produces a flow of electrical current proportional to the concentration of contaminant.

The amount of energy needed to remove an electron from the target molecule is called the ionization potential (IP) for that substance. The larger the molecule, or the more double or triple bonds the molecule contains, the lower the IP. Thus, in general, the larger the molecule, the easier it is to detect! This is exactly the opposite of the performance characteristics of the catalytic hot-bead type combustible sensor.

Photoionization detectors are easily able to provide readings at or below the TLV[®] for all of the VOCs listed in Table 1, including diesel.

Multi-Sensor Detectors with PIDs

Catalytic hot-bead combustible sensors and photoionization detectors represent complementary, not competing detection techniques. Catalytic hot-bead sensors are excellent for the measurement of methane, propane, and other common combustible gases that are not detectable by means of a PID. On the other hand, PIDs can detect large VOC and hydrocarbon molecules that are effectively undetectable by hot-bead sensors, even when they are operable in ppm measurement ranges.

The best approach to VOC measurement in many cases is to use a multi-sensor instrument capable of measuring all of the atmospheric hazards that may be present. Having a single instrument equipped with multiple sensors means no condition is accidentally overlooked.

In the past, photoionization detectors have tended to be bulky, temperamental, and expensive. This has changed dramatically during the past few years. Today, compact multi-sensor designs that include LEL, O₂, and electrochemical toxic sensors, as well as a miniaturized photoionization detector, have allowed this very useful detection technique to be

included in many confined space, hazmat, and environmental monitoring programs.

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This article originally appeared in the [October 2004](#) issue of Occupational Health & Safety.

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Source: <https://ohsonline.com>

Important days in Safety, Health and Environmental Calendar of February, 2018

World Wetlands Day 02nd February 2018

World wetlands day is celebrated every year all across the world to commemorate the Convention on Wetlands means the Ramsar Convention which was held on 2nd of February in 1971 in the city of Ramsar, Iran at the Caspian Sea coasts. It was started celebrating for the first time in the year 1997.

Why World Wetlands Day is Celebrated

The Ramsar Convention offers an international structure in order to globally support the conservation and sustainable management of the wetlands. It is celebrated to make aware the public, discuss the value of wetlands, its beneficial aspects as well as to promote its conservation and use for enhancing the overall level of the human health, growth and development. The event celebration plays a great role in making the healthy wetlands in order to deliver the worth ecosystem service to benefit the common people. The demands of water required for growing crops, energy supply and various needs of the industry are also focused during the celebration. It is celebrated to promote the proper use of wetlands and their resources.

World Wetlands Day Celebration in India

World Wetlands Day is celebrated every year in Ahmedabad, India by organizing several activities involving both children and adults.

It is also celebrated at the WWF-India Secretariat, New Delhi to promote the common people understandings about the importance of link between wetlands and water as “without water there will be no wetlands – and without wetlands there will be no water!”.

It is also celebrated in the Jammu and Kashmir, at Mansar Wetland (a Ramsar site) with the involvement of the Department of Wildlife Protection and Department of Environment and Remote Sensing. The event is celebrated by organizing a symposium (related to event) in the presence of Honorable Minister of State for Forests, Environment and Ecology. The event is celebrated by the participation of school students, conservationists, members of panchayat, academicians, scientists and common masses.

WWF-India organizes a full day program at Asan Barrage, Dehradun, run by school students, in association with the Samvedi and Chakrata Forest Division and Uttarakhand Forest Department.

WWF-India organizes program for school students (quiz and painting competitions) in Himachal Pradesh in association with the State Council for Environment Science and Technology and Wildlife Wing, Himachal Pradesh Forest Department.

It is also celebrated at various places in India such as Harike (a bird sanctuary in Punjab and a Ramsar site), Surajpur wetland (Gautam Budh Nagar, Uttar Pradesh), Bharatpur (Keoladeo National Park), Hastinapur Wildlife Sanctuary (U.P.) and etc.

World Wetlands Day 2018 Theme – **"Wetlands for a Sustainable Urban Future"**

Source: <http://www.indiacelebrating.com>

World Cancer Day 04th February 2018

World Cancer Day is celebrated every year on 4th of February all over the world to commemorate all the efforts done by the WHO, United Nations, governmental and nongovernmental health organizations towards making the strategy to fight against cancer as well as distributing the real message about this epidemic disease and its treatments including its precautionary measures by uniting all the people a day on global basis. It is celebrated to plan some new strategies as well as implement some new programs which help to aware more people about this disease. This event is organized on annual basis under the supervision of Union for International Cancer Control (UICC) and other leading health organizations involved for cancer fighting.

History of World Cancer Day

World Cancer Day celebration was planned in the Geneva, Switzerland in 1933 under the direction of UICC (Union for International Cancer Control) and with the support various other well-known cancer societies, research institutes, treatment centers and patient groups. The World Cancer Day event was founded to fulfill all the needs to fight and control this deadly disease.

According to the report it has been noted that Report people more than 12.7 million are diagnosed with cancer as well as people more than 7 million are dying of cancer every year. The day was planned to start its annual celebration in order to save millions lives from the cancer as well as instruct people to check its symptoms, follow its preventive measures and gets saved from the risk of this epidemic disease. The day, 4th of February was established specially for raising the cancer awareness among people, teaching them about healthy diet, regular and proper physical activity and a lesson on how to get prevented from the environmental carcinogens.

Why World Cancer Day is Celebrated

World cancer day is celebrated to make aware the normal people about the risk factors and preventive measures of the cancer to get prevented or its early detection. Generally, people suffering from the cancer are hated by the normal people in the society and behaved like an untouched person. There are various other social myths related to the cancer that normal people think that they would get cancer if they would touch or live with the person having cancer. The day is celebrated as well to remove such type of the social myths related to the cancer. It is celebrated to make the normal aware about all the reality of the cancer like its symptoms, causing factors, treatment, and etc.

Variety of events are organized at this day to show people that the person with cancer should not be treated separately, they should have equal rights to live like a normal person in the society and any relation should not be changed for them. They should be fulfilled their wishes by their relatives even if they have less chances of survival. It is very necessary to make them feel better like a normal person and should not make them feel that they are given some treatment for survival as they are dying. They must feel self-respect and find a normal environment in their home and society.

Normal person should avoid being over-sympathetic to them or sharing their unsuccessful stories as it may make their pain and fear intolerable. They should be shared some positive stories to get boost their morale and make them feel energetic and self-confidence in order to defeat cancer or make their journey easy and happy.

According to the statistics, it has been noted that most of the cancer cases and cancer deaths (47% and 55% respectively) occur in less developed areas of the world. If it is not controlled, this condition may get worse by 2030. So, it is very necessary to get control over such situation at all the corners of the world.

During this event celebration people are promoted well about their healthy lifestyles, balanced diet, regular physical activity and weight management in order to reduce the risk of occurrence of cancers. They are promoted to get rid of their alcohol habits, unhealthy diet and physical immobility.

Common Myths and Facts about Cancer

Below are listed some common myths and facts about the cancer among people which are necessary to be removed and well understand the reality about the cancer to get control over it.

- Generally people think that cancer tissues are just health issue however it is not.
- Common people think that cancer is a disease for wealthy and old age people however it is a global and epidemic disease which can affect all age group.
- Common people think that suffering from the cancer is just like a punishment however most type of the cancer are now well treatable.
- Common people think that having cancer is their fate however approximately 30% of the cases can be cured and prevented for whole life.

World Cancer Day 2018 Theme – "We can. I can."

Source: <http://www.indiacelebrating.com>

World Day of Social Justice 20 February 2018

Social justice is an underlying principle for peaceful and prosperous coexistence within and among nations. We uphold the principles of social justice when we promote gender equality or the rights of indigenous peoples and migrants. We advance social justice when we remove barriers that people face because of gender, age, race, ethnicity, religion, culture or disability.

For the United Nations, the pursuit of social justice for all is at the core of our global mission to promote development and human dignity. The adoption by the International Labor Organization of the Declaration on Social Justice for a Fair Globalization is just one recent example of the UN system's commitment to social justice. The Declaration focuses on guaranteeing fair outcomes for all through employment, social protection, social dialogue, and fundamental principles and rights at work.

The General Assembly proclaimed 20 February as World Day of Social Justice in 2007, inviting Member States to devote the day to promoting national activities in accordance with the objectives and goals of the World Summit for Social Development and the twenty-fourth session of the General Assembly. Observance of World Day of Social Justice should support efforts of the international community in poverty eradication, the promotion of full employment and decent work, gender equity and access to social well-being and justice for all.

Source: <http://www.un.org>

International Mother Language Day 21 February 2018

Languages, with their complex implications for identity, communication, social integration, education and development, are of strategic importance for people and planet. Yet, due to globalization processes, they are increasingly under threat, or disappearing altogether. When languages fade, so does the world's rich tapestry of cultural diversity. Opportunities, traditions, memory, unique modes of thinking and expression — valuable resources for ensuring a better future — are also lost.

More than 50 per cent of the approximately 7,000 languages spoken in the world are likely to die out within a few generations, and 96 per cent of these languages are spoken by a mere 4 per cent of the world's population. Only a few hundred languages have genuinely been given pride of place in education systems and the public domain, and less than a hundred are used in the digital world.

International Mother Language Day has been observed every year since February 2000 to promote linguistic and cultural diversity and multilingualism.

Languages are the most powerful instruments of preserving and developing our tangible and intangible heritage. All moves to promote the dissemination of mother tongues will serve not only to encourage linguistic diversity and multilingual education but also to develop fuller awareness of linguistic and cultural traditions throughout the world and to inspire solidarity based on understanding, tolerance and dialogue.

To foster sustainable development, learners must have access to education in their mother tongue and in other languages. It is through the mastery of the first language or mother tongue that the basic skills of reading, writing and numeracy are acquired. Local languages, especially minority and indigenous,

transmit cultures, values and traditional knowledge, thus playing an important role in promoting sustainable futures.

International Mother Language Day also supports target 6 of Goal 4 of the Sustainable Development Goals (SDGs): "Ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.

2018 Theme: Preserving linguistic diversity and promoting multilingualism to support the SDGs

Source: <http://www.un.org>

National Science Day 28 February 2018

National Science Day is celebrated all over India with great enthusiasm on 28th of February every year in order to commemorate the invention of the Raman Effect in India by the Indian physicist, Sir Chandrasekhara Venkata Raman on the same day in the year 1928. For his great success in the field of science in India, Chandrasekhara Venkata Raman was awarded and honored with the Nobel Prize in the Physics in the year 1930.

History of national Science Day celebration in India

28th of February, 1928 was the great day in India when an invention in the field of Indian science was completed by the famous Indian physicist, Sir Chandrasekhara Venkata Raman. He was a Tamil Brahmin and first one in the science, who had researched such invention in India. To commemorate and honor this event always in the future, 28th of February was asked to the Indian Government to designate as a National Science Day in India by the National Council for Science and Technology Communication (NCSTC) in the year 1986.

From then, the national science day was started celebrating all across the India as a great event in the field of Indian science. It is celebrated every year by students, teachers, scientists and researchers in all the schools, colleges, universities, educational institution including scientific, academic, medical, technical and research institutions of India. On the first celebration ceremony of the National Science Day in India, the National Council for Science and Technology Communication had declared the institution of the National Science Popularization awards in order to recognize an excellent and wonderful endeavor in the field of science communication and popularization.

Sir Chandrasekhar Venkata Raman had worked from 1907 to 1933 at the Indian Association for the Cultivation of Science, Kolkata, West Bengal in India during which he had researched on many topics of the Physics from which the Raman Effect (effect on scattering of light when passing through different materials) became his great success and discovery which has been marked in the Indian history. For his big invention he was honored through the various Indian awards including the Nobel Prize in the year 1930. From the year 2013, the "Raman Effect" has been designated as an International Historic Chemical Landmark by The American Chemical Society.

During the national science day celebration of the year 2009, the Indian Department of Science and Technology has awarded the five Indian institutions through the National

Award for Science Communication in order to recognize the big efforts and achievements of the Indian scientists of the government and non-government organizations for popularizing and leading the modern science in the country. The Vikram Sarabhai Community Science Centre was given the highest award in the year 2009 to recognize its big contribution to the science.

The national science day has been started getting celebrated as the Science Carnival to recognize scientific activities and programs by the participation of students from school and college, scientists from the state and national faculties. This event celebration has provided a real platform for various new comer scientists to fix their feet and bright their career in the science profession.

Objectives of Celebrating National Science Day

- National Science Day is being celebrated every year to widely spread a message about the significance of scientific applications in the daily life of the people.
- To display the all the activities, efforts and achievements in the field of science for human welfare.
- To discuss all the issues and implement new technologies for the development of the science.
- To give an opportunity to the scientific minded citizens in the country.
- To encourage the people as well as popularize the Science and Technology.

Source: <http://www.indiacelebrating.com>

Health Tips



10 Essential Health Tip for Elderly

In 2017 those 65+, accounted for 6.09% of the population in India of which 36,549,003 are men and 40,598,872 are women. Happily, aging is different now than it was for our parents and grandparents. Today, there are more people living longer than at any other time in history. Hence we need to become activists in promoting healthful behaviors and try our best to remain active and healthy the rest of our lives.

How to do it? Doctors recommend these 10 easy health tips for seniors to help live longer and thrive:

1. **Quit smoking.** Take this critical step to improve your health and combat aging. Smoking kills by causing cancer, strokes and heart failure. Smoking leads to erectile dysfunction in men due to atherosclerosis and to excessive wrinkling by attacking skin elasticity. Many resources are available to help you quit.
2. **Keep active.** Do something each day to keep yourself fit. Something you enjoy that maintains strength, balance and flexibility and promotes cardiovascular health. Physical activity helps you stay at a healthy weight, prevent or control illness, sleep better, reduce stress, avoid falls and look and feel better, too.

3. **Eat well.** Combined with physical activity, eating nutritious foods in the right amounts can help keep you healthy. Many illnesses, such as heart disease, obesity, high blood pressure, type 2 diabetes, and osteoporosis, can be prevented or controlled with dietary changes and exercise. Calcium and vitamin D supplements can help women prevent osteoporosis.
4. **Maintain a healthy weight.** Extra weight increases your risk for heart disease, diabetes and high blood pressure. Use the Kaiser Permanente BMI (body mass index) calculator to find out what you should weigh for your height. Get to your healthy weight and stay there by eating right and keeping active. Replace sugary drinks with water. Water is calorie free!
5. **Prevent falls:** We become vulnerable to falls as we age. Prevent falls and injury by removing loose carpet or throw rugs. Keep paths clear of electrical cords and clutter, and use night-lights in hallways and bathrooms. Did you know that people who walk barefoot fall more frequently? Wear shoes with good support to reduce the risk of falling.
6. **Stay up-to-date on immunizations and other health screenings.** By age 50, women should begin mammography screening for breast cancer. Men can be checked for prostate cancer. Many preventive screenings are available.
7. **Prevent skin cancer.** As we age, our skin grows thinner; it becomes drier and less elastic. Wrinkles appear, and cuts and bruises take longer to heal. Be sure to protect your skin from the sun. Too much sun and ultraviolet rays can cause skin cancer.
8. **Get regular dental, vision and hearing checkups.** Your teeth and gums will last a lifetime if you care for them properly. That means daily brushing and flossing and getting regular dental checkups. By age 50, most people notice changes to their vision, including a gradual decline in the ability to see small print or focus on close objects. Common eye problems that can impair vision include cataracts and glaucoma. Hearing loss occurs commonly with aging, often due to exposure to loud noise.
9. **Manage stress.** Try exercise or relaxation techniques perhaps meditation or yoga as a means of coping. Make time for friends and social contacts and fun. Successful coping can affect our health and how we feel. Learn the role of positive thinking.
10. **Fan the flame.** When it comes to sexual intimacy and aging, age is no reason to limit your sexual enjoyment. Learn about physical changes that come with aging and get suggestions to help you adjust to them, if necessary.

Source: This article first published in the Journal "The Good Old Days" of Vol 1 Issue No. 21st November 2017; Published by Hari K Taneja. E-mail: haritaneja16@gmail.com

