



# PMCare Capsule

*We Manage Because We Care*

THE QUARTERLY CAPSULE

FOR INTERNAL CIRCULATION ONLY

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**Make The World A Better Place  
For Our Children**

## **PM CARE SDN BHD**

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**PMCare** would like to thank all our members for your continuous support. We look forward to serve you better.

Check our **PMCare** Health Bulletin for the latest health news and information at [www.pmcare4u.com.my](http://www.pmcare4u.com.my)





# RADIATION

## What is Radiation?

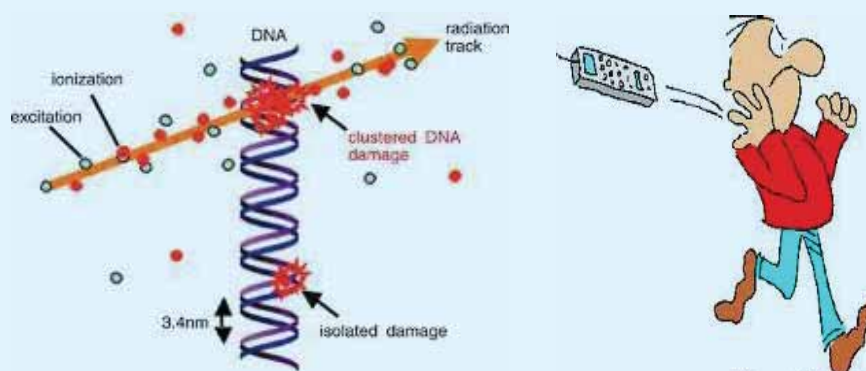
When people talk about dangerous radiation they mean ionizing radiation at levels far above the 'background radiation' levels we experience every day. Radiation is energy traveling in the form of particles or waves. Radioactivity is a natural and spontaneous process by which the unstable atoms of an element emit or radiate excess energy.

Non-ionising radiation such as visible light, radar, microwaves and radio waves is largely harmless. Ionising radiation, however, has the power to break molecular bonds in living tissue, causing damage and in extreme cases death.

Ionising radiation is the excess energy or mass produced by unstable atoms. It comes in two forms; waves such x-rays and gamma rays and particles such as alpha and beta particles. When these pass through living tissue, or are ingested, they can remove electrons from atoms turning them into positively charged particles, or ions which may damage the body's cells.

## What damage does excess radiation do?

It depends on multiple factors: the type of radiation, the level and duration of exposure, the age of the exposed. Radioactive particles generally do more damage than radioactive waves because they may be ingested directly into the body. A dose of radiation over a short period of time will generally do more damage than the same dose over a long period of time.



## How dangerous is radiation to human health?

How dangerous to human health is radiation from the crippled nuclear power plant in Japan? How does it compare with other nuclear accidents and our everyday radiation exposure?

Not all radiation is the same, scientists use the 'sievert' to measure the health risks of radiation. A one-sievert dose of radiation would cause immediate radiation sickness. But most radiation doses are much smaller, so you will see them measured in millisieverts or even smaller microsieverts.

1 sievert = 1000 millisieverts  
1 millisievert = 1000 microsieverts



Radiation dose: 0.1 microsieverts  
Exposure: Eating One Banana

Eating a banana has more radiation than the air we inhale. Banana is radioactive. It's true. They contain tiny quantities of naturally occurring potassium 40.



Radiation dose: 50-100 microsieverts  
Exposure: One chest x-ray

Radioactive X-rays are passed through the patient to produce an image that is used for diagnosis. For some diseases, gamma rays emitted by radioactive materials are introduced into the patient by injection or by swallowing or by inhalation.

Cancers may be treated through radiotherapy, in which x-rays or gamma rays from cobalt-60 or similar sources are aimed at diseased cells. Medical radiation makes up the vast majority of man-made radiation doses, about 14 percent of the average person's annual dose of background radiation.



Radiation dose: 200 microsieverts  
Exposure: Round trip flight from New York to Tokyo

The earth is continuously bombarded by cosmic radiation from the sun and other energy sources in space. The atmosphere acts as a shield, but the higher you go, the less the protection you get. Someone flying from New York to Tokyo on 18 March 2011 would have received a dose of 10 or 20 times more radiation than some people living within 60km of the Fukushima nuclear power plant.



Radiation dose: 1.2 millisieverts  
Exposure: Highest daily dose within 30-60km of the Fukushima nuclear plant.

The Japanese science ministry measured radiation at 18 locations in areas 30 to 60 kilometres from the crippled nuclear power plant.



Radiation dose: 5-6 millisieverts  
Exposure: One chest CT scan

Computed tomography (CT) scanning uses much higher doses of radioactive x-rays than normal scans in order to create more detailed images of both soft and hard tissues. There are concerns that CT scans raise the risk of cancer, especially in women and children.



Radiation dose: 13 millisieverts  
Exposure: Smoking 1.5 packs of cigarettes a day for one year

Naturally occurring radium accumulates on tobacco leaves as the plant grows. Added to this are more radium, lead-210, polonium-210 contained within phosphate fertilizers. The radium emits alpha and gamma radiation. The lead 210 and polonium 210 particles lodge in the smokers lungs, where they accumulate for decades. The tar from tobacco traps even more of these particles and so over time, these particles can cause lung cancer.



## What are the benefits of radiation?

### Nuclear Power

The nuclear energy process takes place inside a reactor.



### Agriculture

Increase in the volume and quality of grains improved by selectively growing superior strains labeled by radioactive isotopes.



### Environmental Measurements

The movement of pollutants through the environment can be accurately measured by the use of radioactive.



### Eradication of Pests

A number of pest flies are no longer the problem since their numbers have been cut drastically following the release of sterile male.



### Food

Food that has been sterilized by irradiation has a longer shelf life and is free of e coli.



### Medical Dianogstics

X-Rays, MRI, to the use of radioactive tracers to diagnose such varied conditions as faulty thyroid glands or bone.



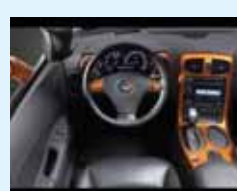
### Oil Drilling

Isotopes are used to measure the quality of steam before it is injected into almost defunct oil wells to force out residual supplies.



### Polymerization of Plastics

Plastic polymerized by radiation used as car dashboards, which withstands heat of the sun.



### QC of Metal Parts

Integrity of metal parts e.g. aircraft engine turbine blades can be verified by radiophotography to ensure that they are intact.



### Research in Biology

Radioactive tracers allows the non-invasive tracking of elements and drugs through the body for metabolic studies and medicine.



### Space Power

When power needed in space, in area where solar power is inefficient plutonium batteries are ideal producers of compact energy.



### Treatment of Cancers

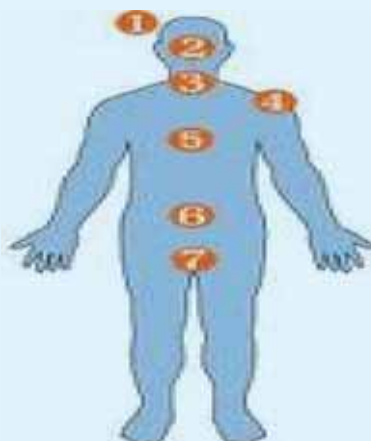
Cancerous cells can be killed by radioactivity.



And the list of beneficial uses of radiation goes on and on.  
Our society depends on its assistance in so many aspects of our daily life.

## The downside to Radiation

The functions of living tissues are carried out by molecules that are combinations of different types of atoms united by chemical bonds. Ionising radiation is powerful enough to alter the chemical bonds that may change composition or structure of the molecule.



Short term exposure to high levels of radiation, such as nuclear explosion can cause immediate radiation sickness:-

1. *Hair* – Losing of hair quickly and in clumps occurs with radiation exposure at 200 Rem or higher.
2. *Brain* – Since brain cells do not reproduce, they will not be damaged directly unless the exposure is 5,000 rems or greater. Like the heart, radiation kills nerve cells and small blood vessels and can cause seizures and immediate death.
3. *Thyroid* – Thyroid gland is susceptible to radioactive iodine. In sufficient amount radioactive iodine can destroy all or part of the thyroid. By taking potassium iodide one can reduce the effect of exposure.
4. *Blood system* – When a person is exposed to 100 rems, the blood's lymphocyte counts are reduced, leaving the victim more susceptible to infection. This is referred to as mild radiation sickness. Early symptoms of radiation sickness mimic those of flu and may go unnoticed unless blood counts are done.
5. *Heart* – Intense exposure to radioactive material at 1000 – 5000 rem would cause damage of the small vessels and probably cause heart failure and death directly.
6. *Gastrointestinal tract* – Radiation causes nausea, vomiting and diarrhea when exposure is 200 rem or more.
7. *Reproductive tract* – Because reproductive tract cells divide rapidly, these areas of the body can be damaged at rem levels as low as 200. Long term, some radiation sickness victims will become sterile.

*Chronic exposure to radiation can cause cancer and genetic mutation. Cancer is produced if radiation does not kill the cell but creates an error in the DNA blueprint that contributes to eventual loss of control of cell division and the cell begins dividing uncontrollably.*

## What Can We Do To Play Our Part In Saving The Environment?



### At home

1. Use compact fluorescent light to save money and energy.
2. Turn off unneeded lights even when leaving a room for short time.
3. Unplug seldom used appliances.
4. Wash clothes with warm or cold water instead of hot water.
5. Plant trees to shade your home.
6. Use cold water instead of warm or hot water when possible.
7. Connect your outdoor lights to a timer.
8. Use traps instead of rat and mouse poisons and insect killer.
9. Use cedar chips or aromatic herbs instead of mothballs.
10. Learn about alternatives to household cleaning items that do not use hazardous chemicals.



### At work

11. Copy and print on both sides of paper.
12. Re-use items like envelopes, folders and paper clips.
13. Use email instead of paper correspondence.
14. Use re-cycle paper.
15. Use a ceramic coffee mug instead of a disposable cup.
16. Shut off electrical equipment in the evening when you leave work.
17. Join a carpool to get to work.



### Ways to use less water

18. Check and fix any water leaks.
19. Do not wash dishes with water running continuously.
20. Wash and dry only full loads of laundry and dishes.
21. Replace old toilets with new ones that use a lot less water.



22. Buy products that you can reuse.
23. Maintain and repair durable products instead of buying new ones.
24. Reuse items like bags and containers when possible.
25. Use cloth napkins instead of paper ones.
26. Use reusable plates and utensils instead of disposable ones.
27. Shop with a canvas bag instead of using paper and plastic bags.
28. Buy rechargeable batteries for devices used frequently.
29. Compost your vegetable scraps.
30. Buy used furniture – there is a surplus of it, and it is much cheaper than new furniture.





Do you do any of these actions already?  
Can you suggest any more?

- S** Start believing that your small and simple changes will make a difference.
- T** Try to adopt one green change a week into your usual routine.
- A** Ask your children or grandchildren what they know about composting; you might be pleasantly surprised.
- R** Rise the challenge of being a green leader in your office and tackle one simple task a month.
- T** Talk to three of your neighbours and set up a weekly recycling rota for a Sunday morning trip to the civic amenity site and take all the rubbish in one car.
- N** Never underestimate your own potential for positive change.
- O** Only throw away what is absolutely unnecessary, landfill is one step away from landfill.
- W** When you start feeling the buzz from going extra green mile, spread the word and get a friend on board too!

## PMCARE WELLNESS PROGRAMS

"Prevention is better than Cure" is always heard and quoted. We at PMCare take it much further by bringing it closer to PMCare Members.

PMCare works closely with our Panel of Healthcare Providers – Hospital and Clinics and orchestrates a program specifically aimed for our individual corporate client usually right where the Members are. This army of doctors, nurses, laboratory technicians and health educators put a showpiece in an area provided by our clients to bring various screening offerings, ranging from pulse and blood pressure with BMI and body fat to intricate eye and ear assessments in air of fiesta. There are also talks given by various experts on general and specific medical conditions in a concerted effort to arm our Members with meaningful and reliable information towards better management of their overall health as well as specific health problems.

The pictures below showcase some of what we have been doing over the last four months of 2011. We have been to various TNB (Tenaga Nasional Berhad) stations and offices, Menara Telekom and even Menara CIMB right in the heart of Kuala Lumpur.

These programs have been well attended and we take this opportunity to thank our ever gracious Panel Hospitals and Clinics. PMCare is able to coordinate these events because we live to our tagline, "We Manage Because We are".



## 10 small ways to make the world a better place

1. **Tip generously** – As often as you can afford, leave a tip of 25%, 50%, 100% or even more.
2. **Compliment someone** – Tell someone how much you like the job they are doing, their outfit or new haircut, their singing voice – whatever. Be honest and sincere. Do not expect anything in return, just let someone that something they are doing works and move on.
3. **Be totally open with someone** – Let someone know exactly how you feel about something on your mind (though not something negative about them). We often keep too much to ourselves; letting someone know into your confidence can be a great way to show your trust and appreciation of them.
4. **Give someone a book you have read** – Making a gift of something you have read and enjoyed is more than just a nice gesture, it is a way of showing someone that you think of them, you understand them and you want to share something with them.
5. **Making something for someone** – Bake an extra batch of cookies, draw a picture and give it to someone for no good reason. Give without expectations, whether they return the favour, whether they like it or not, whether they are nice to you or not, these are all irrelevant.
6. **Send a letter, email, tweet or text message out of the blue** – Email someone you have not spoken with for a while, or text someone you see every day just to be nice. Maybe they will respond, maybe not – it is beside the point. They just need to know that they are important to you.
7. **Commend an employee to their manager** – It is one thing to tip or compliment or someone for their service, it is another to contact their manager and tell them what a great job they have done. If you do not have time at the time of service, note the employees name and call, email or write a letter later.
8. **Teach someone to do something** – Share your skill or talent with someone by showing them how to do something. Not so they would not bother you with it, but so they can move a little bit towards improved mastery of the world around them. Have patience and respect for the person you are helping – you are giving them a gift, not compensating for some lack in their character.
9. **Let someone shine** – Put a spotlight on someone else's talent by letting them take over a presentation, deferring to their wisdom, asking them advice. Especially if they are junior to you, giving them a chance to strut their stuff shows that you trust them and appreciate them, as well as allowing them to get the attention they deserve.
10. **Connect like minds** – Introduce two friends or colleague who you feel have something to gain from each other. You will be letting them know that you value them and maybe creating a partnership that will make everyone better off.

You have probably heard the saying *“Practice random acts of kindness”*. Anything that shows people you care about them something we can be mighty stingy about most of the time has the potential to make the world, or your small corner of it, a better place.





5 JUNE

## WORLD ENVIRONMENT DAY

### Get Involved!

World Environment Day is celebrated worldwide on 5 June. This year would be the 39<sup>th</sup> year celebration since the day it was established by the United Nation in 1972. The purpose of this celebration was to stimulate awareness of the environment and enhance political attention and public action. Since then every year a different country was chosen to host this event with different theme ear year.

'Forest: Nature At Your Service' the topic chosen this year underscores the variety of life-sustaining services that forests provide and calls us all to take action to protect these resources and move forwards a green economy. The celebration would be hosted in India, a country in which forest constitutes 20% of the geographical land mass. A week long activities are lined up in its 2 major cities Mumbai and Delhi. These activities are to inspire Indians and people around the world to take action for the environment.

World Environment Day this year will help to raise awareness on the serious impact of deforestation and forest degradation. This will serve to protect the habitat for species such as the Golden Langur and Bengal Tigers. Through engaging governments in action and spreading the word on the importance of forests, this collective effort will preserve ecosystems and encourage sustainable use of forests.

