

20th WORLD CONGRESS

World Society of Cardio Thoracic Surgeons
INDIA 20th - 23rd Oct 2010

&

6th GLOBAL FORUM

Humanitarian Medicine in
Cardiology & Cardiac Surgery

“Doctors have a vital role to play in arresting Climate Change!”

A Speech by Al Gore, 45th Vice President of USA at the 20th World Congress of World Society of Cardio thoracic Surgeons

Mr. Al Gore, 45th US Vice President recently spoke to a select audience of cardiac experts at the 20th World Congress conducted by Dr KM Cherian's Frontier Lifeline Hospital being held in Chennai. Talking on the impact human activities have on the environment, Mr. Al Gore gave to the audience a picture of what the world's environment is facing today and what we as human beings can do to help better our world. Below is a brief summary of his presentation:

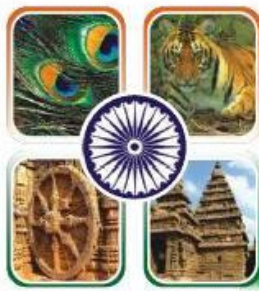
Human beings play a vital role at radically changing the climate today. Together, we put out another 90 million tons of global warming pollution in the atmosphere. Continued increase of CO₂ also increases the temperatures of our atmosphere and oceans due to the green house effect. This year, more than 90 countries have recorded the highest temperatures in years. 2010 is to be the hottest or one of the hottest years when compared to other years. ***Russia has recorded the highest temperature in 1000 years this year.*** Global warming signs have been seen across the globe as extreme drought, flood and fire ravaged land and lives!

This May, in Nashville, USA - Mr. Al Gore's home town, citizens experienced the highest volume of rainfall causing flooding in an area that had no history of such floods. What occurred was once in a 1000 year event. Australia experienced a once in a 1000 year drought and the worst fires that they have ever known this year. There have been many other countries globally which have experienced this phenomenon.

Pakistan experienced severe floods this year, as a cause of several factors, such as deforestation, siltation of the river bed and of course the amount of rainfall was far in excess of what had ever been recorded in the past. Scientists have observed that the amount of rainfall globally has increased compared to anything in the past.

Mr. Gore drew an analogy between environmental & cardiac conditions:

Heart diseases have built up over a period of time due to various factors. The role of the heart in the body, beating regularly and distributing blood is similar to the hydrological cycle of the earth; essentially a water planet like our body! The regular tilt of the earth as it moves around the sun is also accompanied by a pulse of the ice caps wherein the water is embodied in ice, and then released, evaporated, and comes down as rain in various regions and then flows back to the oceans and is frozen again.



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Humans have lost connect with our ecology. This has caused an ecological imbalance. There are 3 factors that are responsible for the imbalance in the planet.

1. **Population:** It took 10,000 generations of human beings before we reached a population of 2 billion by 1950. The next 60 years saw a jump in population to 6 billion and in a few years it will go to 9 billion. This is a dramatic change. The way we have dealt with the dramatic increase in population is actually a success story. Globally family sizes are reducing and the population is beginning to stabilize. When global population levels reach 9 billion, it will almost certainly have leveled off. Demographers are relatively certain that it will stabilize. Why? Because our global civilization has been successful in addressing the four elements that bring about a shift from one equilibrium population state to another:

- ❑ **The first equilibrium:** High birth, high death and large families.
- ❑ **The second equilibrium:** Low birth, low death and small families.

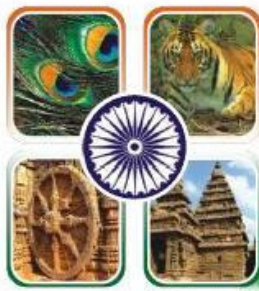
What brings about the shift from one equilibrium state to another?

1. **Education revolution**
2. **Empowerment of women**
3. **Fertility management for proper family planning**
4. **Higher child survival rates** - The linkage is, when parents have more confidence that their child will survive they have smaller families.

When these four are met then the population issue will stabilize. This creates a linkage between the health care providers and environmentalists who are seeking to stop the climate crisis. The fight against extreme poverty, disease and ignorance is intimately connected to the changes that are necessary to change the climatic balance of the earth. This dramatic increase in population is the reason why we human beings have such an impact on environment.

2. **Advances in Technology and Science:** Technology and science has now reached every human being. We have the ability to exercise more power without the wisdom to use this wisely. Our dependence on carbon based fossil fuel as primary resource of energy for our civilization has caused an increase in CO₂ in the environment which in turn has increased the amount of heat captured in the atmosphere.

152 yrs ago, there were 280 parts per million of CO₂ in the atmosphere. Today there are 390 parts per million in the atmosphere. The single most vulnerable part of the earth is its atmosphere because it is so thin and its volume is so small.



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Because it is so thin, we are capable of dramatically changing the chemical composition of the atmosphere by vastly increasing the volume of heat trapped in the atmosphere.

In the last 30 years we have seen an increase in the average humidity of the earth by 4%. This is a large number. Scientists have predicted not only an increase in flooding and storms but also in droughts due to global warming.

Another effect is the melting of ice in the mountains and seas - it is one of the single most available sources of natural drinking water on earth. India and all of the nations that receive water from the Himalayas are facing a crisis due to the melting of the glaciers. Ice glaciers are melting so rapidly that we now face a grave risk of significant increase in the sea level this century. So far it has been a couple of centimeters due to mountain glaciers and thermal expansion of the seas. But the accelerated melting rate of the ice glaciers of Greenland and other land based ice caps are increasing the sea levels over the past few years. Each meter of sea level increase produces 1 million climate refugees!

Maldives now have a new line in their budget that reads 'Fund to purchase a new land outside the country!' There are many low lying cities in the world that are threatened by increasing sea levels.

In some parts of the world, doctors have begun to speak up regarding global warming due to the spread of diseases. Disease carrying vectors can now travel further because of the increase in temperature and humidity. Doctors throughout the world must look at the effects of global warming and the increase and spread of disease due to increased temperature and humidity.

We have an obligation to look at the risks of global warming and find a suitable solution. We as human beings must be able to rely on the scientists for knowledge to identify the problems of the globe that is not visible easily.

How can we help?

- ❑ We need to shift from heavy reliance on carbon based energy to renewable sources of energy, more so heavily on renewable resources. Solar power, wind power, geo thermal power etc. are good resources that are becoming popular.
- ❑ A halt to the destruction of forest land is very important to the climate crisis as it diminishes the earth's capacity to capture CO₂. There is more carbon in the top soil and trees of the earth and industries strip this from the earth and add them to the atmosphere.
- ❑ We need smarter energy grids to enable us to become much more efficient in the ways we use energy.

Youngsters are excited about these challenges and can see the opportunity for change. But it will be too late to wait for them to act. We are responsible for the world today, a world that we will leave for our coming generations. It is our responsibility to give them a world that will have a lot of



opportunities and jobs created through the creation and use of alternative renewable energy, through the creation of a greener and better planet.

This is a race against time and we have an obligation to our coming generation to act now to stop the effects of global warming!