

BOLLYWOOD BUZZ

'I am neither macho nor metrosexual'

You are the DJ of your own fate - Bollywood hunk Arjun Rampal lives by this mantra. Sreya Basu in conversation with the actor in Mumbai as he reveals secrets of his hot looks

These days men have become more inclined towards skincare, haircare, etc. Your comment.

I don't know why it took us so long to realize that we too have skin. It is the organ that covers our entire body and receives the maximum beating - the sun, the pollution, the germs. But we used to think we are too macho to use a cleansing tonic or face scrub or moisturizer. Now you can say we have evolved and I don't mind using beauty products provided they don't smell that feminine like raspberry and peaches. It's all about feeling good about yourself.

Was there a beauty product that you used as a child?

I used Nivea (cream) as a child. We used to have a large blue tin of Nivea and we applied it for every problem - when I had chapped lips or rashes or my mother putting a painful of cream on my face to ensure I have soft skin.

What is grooming for you?

Grooming is that one step that you take towards getting more confident, hygienic and healthy.

Tell us about your grooming regime.

I start with a good face wash as it is very important to keep your face clean. I use a good deodorant as I don't want to be the smelly one out there. I use a light moisturizer. If I am going outdoors, I use a sun block (sunscreens lotion).

You are regarded as one of the most fashionable men in Bollywood. So what fashion tips will you give to youngsters who want to be like you?

I think everyone has his/her own style. People talk a lot on these things. But for me style is being original yet different. Men should just feel confident about themselves and not wear clothes just because somebody else is wearing them. Don't let your clothes wear you,

wear your clothes.

What's your style statement?

I don't have one. I just wear that I am comfortable in.

How much do you consider yourself as a metrosexual man?

I am not at all metrosexual. I am a man and I think every man is just a man. It is us who coin these terms like metrosexual and macho. A macho man cries like any man and a metrosexual man is not necessarily gay. I am neither macho nor metrosexual. I am just a normal man.

You were chosen among Times 50 Most Desirable Men in India of 2012. How does it feel to get complimented time and again for your good looks?

These titles are all perceptions and I take them in good humour; though I am grateful to my fans who voted for me. It is great to be acknowledged and appreciated. But I think all men can become desirable if they take good care of themselves.

Do you think it's difficult for models to get acknowledged as good actors?

When I entered Bollywood (in 2001) models were not taken seriously as actors. But now the perceptions have changed. It had to be as our business is based on perceptions. At present, it does not matter where you came from; you are as good or as bad as your last film in this industry. (TWF)



SCIENCE-TECHNOLOGY

Today's Science - Tomorrow's application

G V Joshi

In the 1840s, the well-known scientist Michael Faraday, (1791 to 1867), in one of his science lectures, demonstrated a strange observation. He pushed a magnet into the hollow centre of a spiral coil of metallic wire connected to a galvanometer that would record the presence of an electric current.

There was no current in the wire to begin with, but as the magnet was inserted, the galvanometer's needle moved to one side of the scale, showing that an electric current was flowing.

As the magnet was withdrawn, the needle swung in the other direction, showing that the current was now flowing the other way. When the magnet was held motionless within the coil, no current flowed at all.

After the lecture, a listener came to Faraday and asked, "But of what practical use can this be?" Faraday replied, "Sir, of what use is a newborn baby?" Faraday made use of this observation to develop the electric generator (dynamo), which, for the first time, made it possible to produce electricity cheaply and in quantity.

Today after nearly 150 years Faraday's newborn baby has grown into a giant without which we can't live, and is still growing.

Whenever you want to heat water for tea or coffee or starting cooking, you take a gas lighter and light the gas. How does the gas lighter work?

A little spring-loaded hammer hits a crystal and generates a spark which carries a few thousand volts of minute amount of electricity across the lighter tip. This spark, which lights the gas, is created by piezoelectric effect.

What is Piezoelectric Effect? In 1880 Pierre Curie, well-known for discovery of radium (along with Marie Curie, his wife) and his brother Jacques Curie discovered that there are certain crystals that become electrically charged when mechanical force is applied on them.

But the first patent application for a piezoelectric lighter for lighting cooking gas was submitted in 1962 only... Piezoelectric crystals have found many more uses now.

Quartz crystals have piezoelectric properties, meaning that they are capable of changing a mechanical force into electricity, or an electric current into a mechanical force.

A slice, or wafer, of quartz crystal will generate an electric current when it is subjected to pressure. Conversely, a wafer connected in an alternating electric circuit will expand and contract, or vibrate at a fixed frequency.

The frequency of the quartz crystal oscillator is determined by its cut and shape. This frequency depends on the thickness of the wafer. Thin wafers oscillate at higher frequencies than thick ones.

Quartz crystal wafers could be used to control the frequencies of oscillating electric circuits in radio transmit-



ters. They could also be used to convert electric signals into sound waves in devices such as sonar and ultrasonic generators. In such devices as hearing aids and submarine detectors, quartz crystals convert weak sound waves into electric current, which is then amplified and reconverted into sound waves.

These properties of quartz crystals are known for over a century.

It was only in 1926 only that a radio transmitter in New York City (US) used a quartz crystal unit to control its frequency. Within a few years all radio stations went to crystal control.

Quartz crystals were first used as a time standard by Warren Marrison, who invented the first quartz clock in 1927. A method for mass-producing quartz crystals for watches was invented only in the early 1970s by Juergen Staudte.

Marrison's clock proved to be more accurate than previous time keepers. Marrison and others demonstrated that the quartz oscillator used in this way was more accurate than the best existing mechanical clocks used in astronomical observatories as time keepers.

During the 1940s, time standard laboratories throughout the world switched from mechanical clocks to quartz. The fundamental standard of time remained the rotation of the earth relative to the stars, but quartz clocks confirmed that the earth was an unreliable timekeeper. However, quartz clocks have now been replaced by atomic clocks.

The application of the vibration of quartz crystal to wrist watches was new. And going from a huge quartz clock occupying a small room to a wrist watch, required some giant leaps in technology.

In 1962, a number of Swiss watchmakers put aside their own differences and pooled nearly 6 million dollars to develop an accurate and reliable electronic wrist watch based on quartz.

In December 1967, they produced a quartz wrist watch that proved to be the most accurate ever made. However,

shortly afterwards, the Japanese firm of Seiko came out with its own electronic quartz wrist watch. Since then the Japanese, moving up from nowhere in the watchmaking field, have come close to the top.

The idea of using atoms to measure time was first suggested by Lord Kelvin in 1879. Magnetic resonance,

developed in the 1930s by Dr I.I. Rabi, became the practical method for doing this. In 1945, Rabi first publicly suggested that atoms might be used as the basis of a clock.

The first atomic clock was an ammonia based device built in 1949 in the US. It was less accurate than the then available quartz clocks, but served to demonstrate the concept. The first accurate atomic clock, based caesium atom, was built by Louis Essen in 1955 in the UK. Since then atomic clocks are becoming better and better every year. As of 2011, the latest atomic clock is expected to neither gain nor lose a second in more than 138 million years.

The development of atomic clocks has led to Global Positioning System, and applications in the Internet, which depend critically on accurate time measurement. Atomic clocks are used in many scientific disciplines, such as for long-baseline interferometry in radio-astronomy.

Today, all of us use computers which depend upon binary arithmetic, Boolean Algebra and transistors.

The Indian mathematician Pingala who lived a few centuries before Christ presented the first known description of a binary number system. The modern binary number system was developed by the German mathematician Gottfried Leibniz, the inventor of differential calculus, in 1679. The system only uses 0 and 1, like the modern binary numeral system.

In 1854, British mathematician George Boole developed an algebraic system of logic that became known as Boolean algebra, which was to become instrumental in the design of digital computers.

The research work which led to the invention and development of transistors followed by their use in integrated circuits (ICs) used in computers was carried out by the physicists working at the Bell Labs in the US in 1950s. They could not foresee their million applications within the next 50 years.

There are many more similar examples where scientists could not foresee the future applications which came up much later. In fact, unless scientists study fundamental sciences and gather knowledge, people will continue to have new problems but no solutions. For today's science is tomorrow's application — and, most of all; it is humanity's greatest adventure. (PTI)

NATURE

Summer care tips for dogs

Dr. Ankur Sharma

Summers can be a great time for you and your pet to spend time outdoors exercising and having fun. However, it is important to understand that increasing temperatures can be very dangerous too and you must keep your dog cool. Following these simple tips through the hot, scorching summer time can make a big difference in the health of your dog as the temperatures soar.

As you enjoy the warm weather, keep your pet leashed. It will keep them from getting lost, fighting with other animals and drinking things that could make them sick. Whether you are indoors or out, make sure your dog has access to fresh water all the time. Dogs can also become dehydrated due to lack of fluid intake and loss of saliva when panting, so check their water bowl several times a day and make sure it is full.

Dogs should not be left unsupervised on long hot days, even in the shade as shade can move throughout the afternoon and pets can become ill quickly if they overheat. Give your pet a cool, shady, tick and flea free place to sleep. Consider a cooling dog bed or a cooling jacket, provide a wading pool if they love to lie down in the water, keeping in mind that shade is a priority.

Never leave your dog alone in direct sunlight in a closed vehicle, since even with the windows open, it can quickly become a furnace in a matter of minutes, even on a mild summer day. If your pet cannot come with you when you get out of the car, leave him at home. Cars tend to overheat during the summers and leak a green tempting liquid from them known as antifreeze, which is sweet and delicious to dogs but extremely toxic even in small doses, so be cautious that they do not sneak a drink from it.

Elderly, very young and sick animals have a hard time regulating their body temperatures, so be extra sensitive to their needs. Dogs with dark coloured hair, obese dogs and dogs with snub noses like bull dogs, pugs, pekingses cannot pant efficiently so make sure they stay cool and out of the sun on steamy summer days.

Take care not to overburden your pet with exercises in the hot and humid summer day. Remember, what might be normal exercise in winters might be stressful in summers. Do not muzzle your dog as it prevents him from opening his mouth to pant to remain cool. Your dog may also burn its paws while walking on the hot pavement, so regularly check their pads for sores, cracks or burns. Avoid walking your dog in areas which you suspect have been sprayed with insecticides/chemicals and poisons which increase during summers when gardens/lawns/trees are sprayed.

Keep your pet well groomed, tick free and flea free. Trim longer hair on your dog but never shave him as layers of dog coat protect him from overheating and sunburns especially in animals with light skin and hair. So keep your pet out of the sun, and when you go out, rub a bit of sun block on unprotected areas, which is fragrance free and non-staining. Although the sunscreen available for dogs is not ideal, the best thing is to offer shelter in an insulated well-ventilated dog house. But of course, the most perfect would be in your home.

Have your dogs vaccinations updated. Diseases such as rabies, distemper and parvo-virus are ever present dangers and necessary precautions should be taken. Beware of insect bites. If your dog is bitten or stung,

watch the site for an allergic reaction or if there have been multiple wasp/bee/mosquito bites, take the animal to the vet. Watch for signs of heat exhaustion or heat stroke which includes: Heavy panting, staggering, glazed eyes, vomiting, bluish tongue, weakness and confusion.



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Even with emergency treatment, heatstroke can be fatal. The best cure is prevention and your pets depend on you entirely. No matter how careful and responsible you may be, accidents can happen, so make sure your vets phone number is close at hand. If you are not specifically careful, you might land up into a lot of trouble for your dog. Be cautious and familiar with the risks, and then it will be much easier for you and your dog to enjoy the summer season.

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HEALTHLINES

Do you cough out blood?

Dr. K.K. Pandey

Why does blood come out during coughing?

There are multiple reasons for passing out blood during coughing. In our country the most important cause is the tubercular infection. When a tubercular infection due to lack of proper care and treatment reaches a fulminant stage, a sufferer starts coughing out blood. Sometimes, bleeding happens to be so severe that a tubercular infected person dies instantaneously within hours, due to exsanguinations and flooding of opposite normal lung with blood.

Quite frequently it has been observed that even after successful treatment of tuberculosis, though tubercular infection is brought under control, but the victim continues to pass blood during coughing. The reasons is simple, although tubercular infection leaves the lung after successful treatment, but before leaving, it leaves behind residual wound in the form of big cavities inside the lung. In these

of this, the remaining healthy part of lung too becomes diseased and then there remains no way out except death.

Avoid recurrent infections of lung

The second important reason of cough with bloody phlegm is the disease of bronchiectasis. In this disease the wall of the wind pipe get severely damaged due to persistent swelling and inflammation brought on by repeated infections of wind pipe. This results into either constriction of branches of windpipes situated inside the lung, or over-inflation of them like a balloon. This condition of windpipes totally obstructs the mechanism of forcing out phlegm from the chest. On account of this, the sputum instead of going normally out of windpipe and then chest, on contrary gets thickened and stays there inside the windpipe permanently. The blood pipes adjacent to branches of windpipes get thinned-out and become dilated. Because of all these changes, these blood pipes burst out due to increased internal pressure brought on by coughing and the sufferer starts passing bloody sputum from his mouth. A patient suffering from bronchiectasis should consult a thoracic or a chest surgeon and get the damaged part of lung removed as early as possible; otherwise the remaining healthy part of lung too will get diseased. Such patients pass blood during coughing in such a significant amount, that the patients is forced to go to emergency wing of the hospital for urgent blood transfusions, to replenish the lost blood, otherwise the patient may die.

Avoid smoking - it invites lung cancer, the cause of cough with blood

In our country, the third important cause of passage of bloody sputum during coughing is the cancer of lung. In small as well as big cities, due to increasing trend of smoking among youths, the number of patients suffering from lung cancer is steadily rising. Even in villages, the daily group activity of 'Hukka' (Hubble-Bubble) smoking in the evening is adding greatly to the number of lung cancer patients. The prevalence of smoking habits among peasants and labourers working in village fields, play a great role in the increased incidence of lung cancer.

Lung abscess too causes bloody phlegm

The fourth important reason in our country of coughing with bloody sputum is the collection of pus inside the lung, which is called commonly as lung abscess. On account of severe infection, the blood pipes become weak and burst open due to sudden and temporary rise in pressure and this results into spitting of blood during coughing.

If you have been coughing out blood, where to go?

If you suffer from chronic cough and at the same time you pass bloody phlegm, please do not sit idle and consult without delay a thoracic surgeon instead of a general surgeon. It is very essential to investigate the cause of chronic cough and bloody phlegm, because only after treating the cause of it, one can get rid of this problem. A patient suffering from this problem should go to a hospital where a full-time thoracic surgeon is available and the surgery of lung as well as heart is done routinely.

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hollow spaces of lung, other types of germs especially fungi make their entry and stay there permanently. This condition is called in medical term an 'aspergilloma' or 'aspergilliosis' that is responsible for passage of blood during coughing. Sometimes, the amount of blood coughed-out is so much so that a life-threatening dangerous situation may arise. In our country, millions of patients suffer from the disease of aspergilloma and they due to ignorance keep on trying various types of wrong treatment. On account