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It is International Day of Medical Physics!

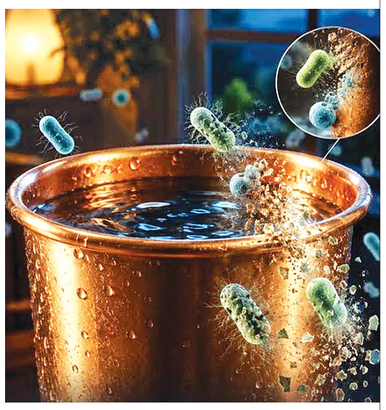
International Day of Medical Physics celebrates the vital role medical physicists play in modern healthcare. Their expertise connects physics, technology, and medicine to improve the diagnosis and treatment of diseases. From advanced medical imaging and radiation therapy to nuclear medicine and radiation safety, medical physicists help ensure that healthcare technologies are used accurately, safely, and effectively. The day also highlights their contributions to innovation, research, and patient care. It recognizes the scientists and professionals working behind the scenes to make medical procedures more precise and reliable. Ultimately, medical physics helps transform scientific discoveries into life-saving healthcare solutions.

राष्ट्रदूत
SATURDAY
07 November 2026
A-B

#TRADITION

Copper Pots Get Scientific Validation

Water stored in the copper vessel showed no bacterial growth. In contrast, the samples stored in ordinary, non-copper containers showed substantial bacterial colonies



For generations, Indian households have followed the tradition of storing drinking water in copper vessels. What was once considered an age-old Ayurvedic practice has now attracted scientific attention, with laboratory experiments demonstrating copper's ability to eliminate several harmful bacteria from stored water.

Ancient Indian texts, including Ayurvedic literature, describe the use of copper vessels for storing water. The practice was traditionally associated with water purification and maintaining its quality. While people continued the custom for generations, modern researchers decided to investigate whether there was a scientific explanation behind it.

The findings were remarkable. A 2018 study published in the journal *Biomedicine* examined the antibacterial properties of water stored in copper vessels. Researchers introduced three diarrhoea-causing bacteria into drinking water: Escherichia coli (E. coli), Vibrio cholerae, which causes cholera, and Shigella flexneri, which causes shigellosis.

The contaminated water was kept separately in copper and non-copper vessels for 12 hours. The samples were then examined in laboratory conditions to measure bacterial growth.

The results showed a striking difference between the two containers. Water stored in the copper vessel showed no bacterial growth on the selective culture media. In contrast, the samples stored in ordinary, non-copper containers showed substantial bacterial colonies.

The researchers recorded:

- E. coli: 624 colonies in the non-copper container.
- Vibrio cholerae: 328 colonies.
- Shigella flexneri: 483 colonies.

No bacterial growth was detected in the corresponding copper-stored samples. The study had initially introduced approximately 500 colony-forming units per millilitre of each bacterial strain.

Science behind the traditional practice

Scientists describe this phenomenon as the oligodynamic effect. It refers to the ability of small amounts of certain metals, including copper, to exert an antimicrobial effect.

When water remains in contact with copper, small quantities of copper ions can enter the water. These ions interact with bacterial cell walls and membranes, damaging their structure. They can also interfere with essential cellular processes, including protein function and genetic material, ultimately preventing bacteria from surviving and multiplying.

The phenomenon is not merely theoretical. An earlier study published in 2012 in the *Journal of Health, Population and Nutrition* also found that storing contaminated drinking water in copper pots for 16 hours eliminated detectable growth of several diarrhoea-causing bacteria, including E. coli, cholera-causing bacteria and Shigella.

What makes these findings particularly interesting is the connection between traditional Indian knowledge and contemporary laboratory research. A practice followed in Indian households for centuries now has an identifiable scientific explanation.

However, researchers also caution against treating copper vessels as a complete substitute for safe drinking-water treatment. The experiments were conducted under controlled laboratory conditions, and copper storage alone cannot guarantee that every contaminated water supply is safe.

The lesson is fascinating: sometimes, traditions that appear to be simple household habits have a scientific basis waiting to be understood. The copper pot sitting in an Indian kitchen may have been doing considerably more than simply keeping drinking water ready for the next meal.





There is also the question of conversation. Distinguished guests are not invited merely to eat. They are invited to interact, exchange ideas and build relationships. If the host and the guests spend the entire evening discussing the next course, the central purpose of the gathering may be lost.

A Dawat And The Guest





Dr. Goutam Sen
CT'VS Surgeon
Traveller
Storyteller

#THE DAWAT

Recently, India had the opportunity to invite distinguished leaders from various nations. Besides the deliberation on important matters and trade issues, it was an opportunity for India to host a gala dinner. I am sure many heads were put together and good chefs were consulted. The menu was supposed to display the huge variety of cuisine of our country. Nearly every state has some dish to be proud of. Although many guests were meat eaters, it was decided to offer an exotic vegetarian meal with little options of anything familiar. The reports said that the menu failed because of lack of the familiar food. Some of the leaders even opted out!

When distinguished visitors come to our home, the occasion is more than an opportunity to serve food. It is a moment to express our hospitality, culture, refinement and consideration for the guests. The dining table becomes a meeting place where food communicates what words sometimes cannot. The host faces an interesting question: Should one serve an elaborate presentation of exotic dishes representing one's country, or offer a balanced meal combining local specialities with universally appreciated food? Further, in an Indian gathering, should liquor be served at all?

The ideal choice depends on the cultural background of those attending, the nature of the occasion and, above all, the host's ability to make everyone feel comfortable.

The first principle of entertaining distinguished guests should be to make them feel welcome rather than overwhelmed. A host may be tempted to demonstrate his culinary knowledge by preparing twenty different dishes, importing unusual ingredients or arranging an elaborate buffet. However, hospitality is not a competition in extravagance.

A meal that leaves guests confused, uncomfortable or hesitant to try the food has failed in one of its primary purposes.

The best host does not merely ask, "What can I serve?" but also, "What will my guests enjoy?"

This distinction separates hospitality from self-display.

Food is among the most effective ways of introducing visitors to a country's culture. A distinguished guest visiting India may have read about its history, architecture and traditions, but tasting its food offers a more intimate experience.

A meal could begin with delicate vegetable samosas, followed by a selection of regional specialities such as Kashmiri rogan josh, Bengali fish curry, South Indian appam or Rajasthani dal baati. Desserts might include ras malai, jalebi or a carefully presented traditional sweet.

Such a menu tells a story. It demonstrates that Indian cuisine is not a single tradition but a collection of regional cultures shaped by geography, history and local ingredients.

Consider a visiting Japanese delegation that is timid in experimenting different food. Serving a thoughtfully prepared Indian meal with explanations about the dishes could create a memorable cultural exchange. The host might explain how spices are combined, why certain dishes are traditionally served together and how regional cooking differs across India.

Similarly, a French visitor might appreciate the craftsmanship of Indian sweets, while an American guest might be intrigued by the variety of vegetarian preparations.

The presentation of exotic food, therefore, can be an expression of national pride. But it must not become a culinary extravaganza in which guests are expected to appreciate every unfamiliar flavour.

There is also a danger in confusing exoticism with authenticity. A host may select dishes simply because they sound unusual or impressive. Yet, the most authentic meal is not necessarily the most elaborate. A perfectly prepared bowl of simple khichdi, served with suitable accompaniments, may reveal more about the warmth of Indian home cooking than a complicated dish assembled solely for display.

Cultural hospitality is not about proving that our food is superior; it is about allowing others to discover its richness.

A second approach is to combine local specialities with dishes that are widely familiar. This is particularly useful when the guests come from different countries or have varied dietary preferences.

Suppose an Indian family is hosting an international group. The menu might include a mild soup, fresh bread, a salad, a rice preparation, a regional Indian curry, grilled vegetables and a dessert. Alongside these, the host could offer a signature local dish such as laal maas, malai kofta or dal baati, depending on the occasion and the guests' preferences.

This arrangement offers choice without sacrificing identity.

A visitor who is unfamiliar with Indian spices can enjoy the bread, rice, vegetables or soup, while the more adventurous guest can explore the regional dishes. Those who prefer vegetarian food can be accommodated without making them feel like an afterthought.

Indian hospitality has historically valued abundance and variety. A traditional 'thali' illustrates this philosophy, bringing together different flavours, textures and preparations in a single meal. However, modern entertaining requires an additional element: sensitivity to individual choice.

This approach allows the host to introduce culture while ensuring that guests do not feel obliged to experiment beyond their comfort.

An elaborate meal does not necessarily require a large number of dishes. Imagine a formal dinner where the table is crowded with numerous curries, several varieties of bread, multiple rice dishes and a succession of desserts. The host may have spent hours preparing the meal, but the guests might struggle to appreciate any individual dish.



A carefully planned menu of five or six well-prepared courses may create a stronger impression than an overwhelming buffet.

There is also the question of conversation. Distinguished guests are not invited merely to eat. They are invited to interact, exchange ideas and build relationships. If the host and the guests spend the entire evening discussing the next course, the central purpose of the gathering may be lost.

A meal should support conversation rather than compete with it.

Good hospitality is measured not by how much the host provides, but by how thoughtfully everything is arranged.

The question of serving liquor is more complicated because alcohol carries different meanings across Indian households, communities and social settings.

In some Indian urban circles, serving wine or spirits at a formal dinner is considered perfectly acceptable. In other families, alcohol is avoided for religious, cultural, personal or health-related reasons. Certain guests may not drink at all, while others may prefer to have a drink as part of a social occasion.

There is no universal Indian position that applies to every gathering.

The decision should begin with the nature of the event and the preferences of the guests. A formal business dinner involving international visitors may have different expectations from a family gathering or a religious celebration. Even then, the presence of distinguished guests does not create an obligation to serve alcohol.

Hospitality should never be measured by the quantity of liquor offered.

If the host decides to serve alcohol, it should be done discreetly and responsibly. Guests should not be pressured to drink and non-alcoholic alternatives should be equally attractive and readily available.

A well-organised dinner might offer a selection of Indian-inspired non-alcoholic drinks, such as aam panna, jal jeera or a carefully prepared nimbu soda sparkling water, fresh juices, mocktails, lassi or other beverages alongside wine or spirits. This ensures that those who do not drink are not treated as secondary participants.

The manner of serving matters as much as the decision to serve. Alcohol should not dominate the evening, encourage excessive consumption or become a source of embarrassment. The host has a responsibility to consider safety, including arrangements for guests who may need to travel home.

One of the most delicate aspects of hosting international guests is the relationship between cultural pride and cultural pressure.

Every host naturally wants visitors to appreciate the traditions of their country. An Indian host may feel particularly eager to demonstrate the richness of Indian cuisine, given its extraordinary variety. But appreciation cannot be demanded.

A guest who does not enjoy a particular curry is not necessarily rejecting Indian culture. A visitor who avoids alcohol is not being impolite. A person who prefers familiar food may simply have different tastes or dietary needs.

The host must avoid interpreting personal preferences as judgments about the country.

Likewise, guests should show courtesy by approaching unfamiliar food with an open mind, where possible. A respectful exchange requires consideration from both sides.

The dining table can become a place of mutual learning. The host might explain the origin of a dish, while the guest shares an experience from their own culinary tradition. A conversation about Indian spices could lead to a discussion of Mediterranean herbs, Japanese seasonings or European baking.

This is the true cultural value of a shared meal. It encourages curiosity without demanding conformity.

The visual appearance of food plays an important role in formal entertaining. A beautifully arranged plate can create anticipation, while a cluttered or careless presentation may undermine the quality of the meal.

However, presentation should be appropriate to the type of food being served. Traditional Indian cuisine need not be transformed into an imitation of Western fine dining to appear sophisticated. A well-arranged thali, attractive serving bowls and thoughtfully chosen tableware can create an elegant experience while preserving the character of the cuisine.

For instance, a Rajasthani meal could be served in traditional metal utensils, with small portions of different preparations arranged neatly. A Bengali meal might highlight the sequence of dishes and the importance of rice and fish. A South Indian meal served on a banana leaf could present its specialities with an appreciation for regional serving traditions.

The objective is to combine visual appeal with authenticity.

The host should remember, however, that decoration cannot compensate for poor taste or inadequate preparation.

At the conclusion of an elaborate meal, what will the distinguished guests remember?

They may recall an unusual dessert, a beautifully presented dish or a fine bottle of wine. But they are more likely to remember the warmth of the welcome, the ease of conversation and the feeling that their preferences were respected.

A host who spends a fortune on ingredients but ignores the comfort of guests may create an impressive spectacle without creating genuine hospitality. Conversely, a host who offers a carefully prepared local meal, provides suitable alternatives and ensures that everyone feels included may leave a lasting impression without excessive expense.

The most successful dinner is one in which food, culture and companionship complement one another.

When hosting distinguished visitors, the choice between exotic national food and a combination of local and universally accepted dishes should be guided by balance and consideration. A meal that introduces guests to local cuisine can express cultural pride, while familiar dishes ensure accessibility and comfort. The ideal arrangement often combines both.

Ultimately, the finest meal is not the one that displays the greatest wealth, the rarest ingredients or the most elaborate menu. It is the one in which guests feel valued, comfortable and genuinely welcomed.

A memorable host understands that food is only one part of hospitality. The other ingredients are generosity, sensitivity, moderation and the ability to make every guest feel at home. When these qualities come together, even a simple meal can become an extraordinary occasion.

Let us show ingenuity with equal measure of food preferences the next time a Gala Dinner is hosted!

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#THE PHILOSOPHY

Hukkus Bukkus Telyi Wan Tsch Kus

The destination is not simply to find God. It is to realise that God was never truly separate from the self...



There are songs that are remembered because they are beautiful. And then, there are songs that survive because an entire culture has carried them from one generation to another. "Hukus Bukus Teli Wan Tsch Kus" is one such Kashmiri song, which goes like:

Hukkus Bukkus Telyi
wan tsch kus
Onum Battoukh
loddoum deygye
Shwaas Kichh
Kichh Waamgano
Bramman Zaaran
poyein chhokum
Teykes tyakkha
banyi kyohow

For many people, it is simply a familiar childhood rhyme. Its words can sound playful, almost nonsensical. Locals sometimes say that the song has no literal meaning at all. But beneath its seemingly mysterious phrases lies a philosophical tradition deeply connected to Kashmiri spiritual thought.

The song is traditionally attributed to the fourteenth-century Kashmiri mystic poetess Lal Ded, also known as Lalleshwari. Her poetry, composed in the form of vaakhs, explored the relationship between the individual self, the divine and the material world.

Read through this philosophical lens, "Hukus Bukus" becomes far more than a children's song.

Its opening is often interpreted as a profound question about identity: Who are you? Who am I? And who is the Creator within us?

The question immediately turns inward.

Instead of locating God somewhere distant, outside the individual, the poem directs the seeker towards the self. This resonates strongly with the philosophical idea of *Advaita Vedanta*, the understanding that the individual self and ultimate reality are not fundamentally separate.

The question, therefore, is not simply Who are you? It is also: What is the self beneath everything that we think we are? The song then moves towards the problem of attachment.

Human beings become absorbed in material life, our senses, desires, possessions and relationships. We become attached to what can be seen, touched and possessed. But in many Indian philosophical traditions, such attachment prevents the individual from recognising a deeper spiritual reality.

The song can be read as describing the movement away from this sensory and material existence towards purification.

Breath becomes particularly significant.

The idea of the breath reaching a state of purification evokes meditation and spiritual discipline. As the restless mind becomes still, the separation between the individual and the divine begins to dissolve. The destination is not simply to find God. It is to realise that God was never truly separate from the self. This is where the poem's imagery becomes especially beautiful.



The speaker reaches a point where the ultimate power seems to have become one with them. The individual self is no longer experienced as something isolated. Instead, the divine becomes an inseparable part of one's being.

One can think of the imagery of sandalwood and fragrance. You can separate the piece of sandalwood from other objects, but you cannot meaningfully separate the sandalwood from its fragrance. The fragrance is not something external that has been placed upon it. It is intrinsic to what the sandalwood is.

In the same way, the divine cannot be separated from the self. God is not merely somewhere outside us. The divine is within us.

This makes the song remarkable. What appears to be a children's rhyme can be read as a condensed meditation on identity, attachment, breath, purification, union and the nature of the divine.

And yet, perhaps, the most poignant part of the story is what happened to the song itself. For generations, "Hukus Bukus" belonged to the everyday cultural landscape of Kashmir. It could be sung to children, used as a lullaby or passed down orally within families. Its philosophical depth could remain hidden beneath the familiarity of childhood.

That is how culture often survives, not only through books and monuments, but through songs that parents teach their children without necessarily explaining every word. But when communities are displaced, traditions can become fragmented.

The loss is not limited to homes, land or physical spaces. Language, songs, stories, rituals and artistic traditions can also become casualties of displacement. A song can survive while its context disappears. The words may continue to be remembered, but the cultural world that once gave those words meaning can become increasingly distant.

That is what makes "Hukus Bukus" more than a song. It is also a reminder of how fragile cultural memory can be.

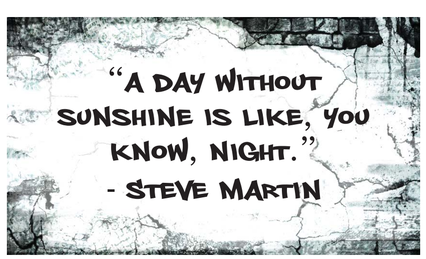
A lullaby can contain philosophy. A children's rhyme can preserve centuries of spiritual thought.

A few seemingly meaningless words can carry the memory of a civilisation's way of understanding the self and the divine. And when the community that carried that tradition is fractured or displaced, what is lost is not merely a song.

What risks disappearing is the context in which the song lived, the language, the memories, the rituals, the stories, the families and the everyday cultural practices that transformed words into living tradition. "Hukus Bukus" therefore exists at two levels.

On the surface, it is a children's song, familiar and playful. Beneath it lies a philosophical journey: from questioning the self, through the shedding of worldly attachment, towards purification, meditation and finally the realisation that the individual and the divine are not separate. And perhaps, that is why its apparent meaninglessness is itself so intriguing.

THE WALL



BABY BLUES By Rick Kirkman & Jerry Scott



ZITS By Jerry Scott & Jim Borgman

