

## A new approach to treating resistant hypertension



Many patients have resistant hypertension, which is uncontrolled by available drugs and behavioural interventions. Hence, new treatment approaches are needed. The endothelin pathway (an antihypertensive mechanism) is thought to contribute to hypertension, and currently no medications target this pathway. On the heels of positive preliminary evidence, investigators conducted an industry-supported, randomised, phase 3 trial of apocritentan, an oral medication that blocks endothelin A and B receptors.

The primary endpoint was a 4-week change in unattended office systolic blood pressure (a systolic blood pressure equal to or above 140 mmHg and/or diastolic blood pressure equal to or above 90 mmHg). Despite taking three antihypertensive including a diuretic, participants had high systolic blood pressure above 140 mmHg.

At 4 weeks, placebo lowered systolic blood pressure by 11.5 mm Hg. The intervention arms had greater declines than the placebo arm.. The main adverse effect was fluid retention.

This phase 3 trial shows that adding this medicine to a hefty regimen could reduce blood pressure further. This blood pressure drop is significant, but not game-changing. The authors claim that this would translate into a 10% relative reduction in risk; that claim would have to be validated in an outcomes trial.



# Eating and staying healthy in old age

DR ZUBAIR KHALED HUQ

Nutrition deserves special attention as people reach an older age and is essential for good health. Healthy ageing is associated with physiological, cognitive, social, and lifestyle changes that influence dietary intakes and nutritional status. The process of ageing involves changes in every tissue and all vital organs.

**Simple dietary guidelines to help you stay well into old age:**

**Balance your food intake with physical activity:** The more active you are, the more food you need. Keep an eye on your meal portions, if you are less active choose smaller serving sizes and add plenty of vegetables, salad and fruit. Include a carbohydrate food (bread, rice, pasta, potato, or cereal) at each meal. Choose high fiber options whenever you can.

**Protein foods help to make new cells and keep your muscles healthy:** Stay fit and strong by eating a variety of protein-rich foods each day. Great sources include lean meat, poultry and fish. Trout and fresh tuna are packed with heart-healthy omega-3 fats. Eating beans, eggs and nuts is a simple way to boost the protein in your diet.

**Aim for five servings of fruits and vegetables each day:** These are packed with important nutrients to help you stay healthy. Colour is important; have a mixture of different coloured fruits and vegetables each day such as apples, oranges, bananas, spinach, cabbage, carrots, sweet potato, broccoli, cauliflower, peppers, sweet corn.

**Keep your bones healthy by having three servings of low:** Fat dairy foods (milk, yoghurt, or cheese) each day. Dairy foods with added calcium and vitamin D are even better.

**Use less salt:** Too much salt in the diet can contribute to high blood pressure, which in turn can lead to

stroke or heart disease.

**Stay hydrated:** Get plenty of fluids (water, juice, milk) each day. As a general guideline, about 8 glasses a day should be adequate.

**Some important nutrients to consider as we get older, our bodies have different needs, so certain nutrients become especially important for good health:**

**Fiber:** Eating fiber-rich foods helps bowels move regularly, lowering the risk of constipation and also lowering

**Iron and Vitamin B<sub>12</sub>:** Iron is responsible for carrying oxygen around the body, while vitamin B<sub>12</sub> keeps your brain and nervous system healthy. The best sources of iron include red meats such as beef, liver, kidney, lamb, while fortified cereals, lean meat and some fish and seafood are sources of both iron and vitamin B<sub>12</sub>. Taking vitamin C-rich food like orange juice at mealtime can help your body absorb iron. Ask your doctor or dietitian whether you would benefit from an iron or a vitamin B<sub>12</sub> supplement.



the risk of many chronic conditions, including heart disease, obesity, and some cancers. Good sources of fiber include 100% whole meal or wholegrain bread Breakfast cereals such as porridge, wheat. Other cereals, such as brown rice, brown pasta. Pulse vegetables such as beans, peas and lentils.

**Calcium and Vitamin D:** Older adults need extra calcium and vitamin D to help maintain bone health. Take three servings of vitamin D-fortified milk, cheese, or yoghurt each day. Other calcium-rich foods include fortified cereals, dark green leafy vegetables and canned fish with soft bones.

**Physical activity:** Balancing physical activity and a healthy diet is the best recipe for health and fitness. Set a goal to be physically active for at least 30 minutes every day, this can even be broken into three 10-minute sessions throughout the day. For someone who is currently inactive, starting with a few minutes of activity, such as walking, and gradually increase this time as they gain strength is a good idea. And always check with a health-care provider before beginning a new physical activity program. Combining an active lifestyle with a healthy diet is your best recipe for healthy ageing.

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HAVE A NICE DAY

## Helplessness is deeper than sadness

DR RUBAUL MURSHED

Feeling helpless is like 'pearls are of no value in a desert'. Trying to hide pain increases powerlessness. Helplessness can sometimes feel psychologically paralyzing. It creates a sense of being unable to act or react to a negative situation. It may be associated with anxiety, phobias, and loneliness. It is easier to say, 'My head is spinning' than to say, 'My heart is broken.' People often feel helpless.

In times of crisis, they expect cooperation from at least close ones. But helplessness can turn into hopelessness. These feelings can be difficult to manage and may indicate a mental health condition. Because it can be hard to stay motivated after stress or failure. Nevertheless, there is another term known as 'learned helplessness' by

American psychologists. This is a slightly different psychological concept. Once a person realises that they cannot control the events around them, they lose motivation. Learned helplessness hinders decision making. It's not technically a mental health condition. It's more than likely a thought disorder.

In contrast, sadness is a human emotion that everyone feels at some point in their lives. Sadness is a natural reaction. Although most sadness is temporary and fade with time.

Thinking about others' needs can help us lift our spirits and change our perspective. The impact of a small act of kindness on someone's life can be timeless and priceless. This can also change community power.

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## DNA vaccination: A challenging cancer therapeutic strategy

DR MUHAMMAD TOREQUL ISLAM

Immunotherapies have gained much attention nowadays in the treatment of cancer. Among them, therapeutic DNA cancer vaccines are now considered a very promising strategy to activate the immune system against cancer tumour.

DNA-mediated immunisation began in the 1990s. DNA vaccines have been developed to treat a variety of pathologies, including allergies, infectious diseases, and autoimmune diseases. To date, several preclinical and clinical studies have adopted strategies to better exploit the potential of DNA vaccination. The success in therapeutic vaccination is still limited even in preclinical models. It is due to the different mechanisms of resistance during tumour development.

DNA vaccines alone are not able to overcome the tumour immune escape. Therefore, we prefer combination therapy (e.g., radiotherapy, endocrine therapy, chemotherapy, surgical removal) with this strategy.

**The current challenges of cancer DNA vaccination strategy**

**Encoded antigen(s) selection:** The antigen type, i.e., tumour-associated antigens (TAAs) or neoantigens. TAAs have been identified for most tumours, but immune tolerance can limit their efficiency. On the other hand, neoantigen identification is time consuming and expensive, and these antigens do not reflect the tumour heterogeneity in the individual patient (e.g., in metastasis).

**Combination therapy and treatment schedule selection:** Depending on the tumour type and patient-specific biomarkers, selection of an appropriate combination therapy and treatment schedule are challenging facts. We need to consider the time for the immune system to generate a specific immune response against the delivered antigen, the need for multiple doses of administration and the interaction with the combined therapy.

**Availability of reliable preclinical model:** Generally preclinical data serve the directions for the clinical settings. Humans and other experimental animals (e.g., mice, rats, rabbits, guinea pigs) have different immune system and tumour characteristics. Furthermore, housing, ethical regulation, and breeding difficulties limit the use of big animal models.

**Personalisation of therapy:** Immunotherapies have a variable response rates and side effects. In this case, identifying appropriate biomarkers is difficult because preclinical and clinical strategies are quite different. Recently, we have been using bioinformatics tools and new genomic and proteomic technologies have been used to predict specific tumour signatures, generating complex data sets that give rise to analytical challenges.

DNA vaccine therapy is unlikely to impact cancer outcomes as a single agent. Combinations with other strategies improve clinical outcomes compared to the single therapy. In the future, personalisation in the DNA vaccine design will be coupled with personalisation in the choice of the most appropriate combined therapy, following the analysis of single patient specificity and biomarkers that can predict the response to a specific agent.

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## Bangladesh launch of the Lancet countdown report on health and climate

Climate change is threatening the health of people in Bangladesh. It is no longer a future problem; it is a problem of now. To present this problem with data and create a platform for discussion with leading experts, the first in-person Bangladesh launch of the 2022 report of the Lancet Countdown on Health and Climate Change took place on Thursday, 22 December 2022 at the Child Health Research Foundation (CHRF).

The event provided an opportunity to acknowledge and examine the impacts climate change has had on Bangladesh across timeframes covering the past, present, and future. The imminent and necessary steps towards alleviating some of the predicaments were also discussed.

During the event, findings of the 2022 Lancet Countdown Report in the context of Bangladesh were highlighted. Some key points included:

- There was 0.49°C summer temperature increase in 2021 in Bangladesh compared to 1986-2005 baseline, significantly higher than the 0.09°C increase in 2000

- There was 12 additional person-days of heatwave exposure experienced by infants in 2021 compared to 1986-2005 baseline

- Bangladesh experienced 17 months of droughts during 2012-2021, considerably higher than the 1951-1960 average of 0.3 months

- 15,970 million potential hours lost in the agriculture sector in Bangladesh

- There was 148% increase in heat-related mortality among 65+ in Bangladesh between 2000-2004 and 2017-2021

- Compared to 1981-2010 baseline, crop yield potential for maize declined by 3.1% and 0.3% decline for rice in 2021

- Compared with 1981-2010, increases in the number of heatwave days resulted in an increase of 6.0 percentage-points (increased from 24.2% to 30.2%) in moderate or severe food insecurity in 2020 in Bangladesh. It was much higher than the overall increase of 3.7 percentage-points.

- Low share (25%) of population primarily relies on clean fuels and technology for cooking at home

- Deaths attributable to ambient air pollution – one of the highest in the world

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