Prelims bits 01-10-2017

Zinc supplements

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- Recently researchers found that Zinc supplements may halt the rapid growth of oesophageal cancer cells.
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- Zinc selectively halts the growth of cancer cells but not normal oesophageal epithelial cells
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- Zinc is an important element in many proteins and many enzymes and its absence makes it impossible for cells to function.
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- An insufficient amount of zinc can lead to the development of cancers and other diseases.
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Oesophageal cancer

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- It is a Cancer of the tube that runs from the throat to the stomach, which affects people who are more than 40 years of age.
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- Smoking and poorly controlled acid reflux are significant risk factors for oesophageal cancer.
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- Treatment focuses on removing the cancer through surgery.
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- Chemotherapy and radiation may also be used.
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Parkinson’s drug

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- There is a low incidence of many cancers (with the exception of melanoma) in patients with Parkinson’s disease.
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- This is due to Carbidopa a Parkinson’s disease drug, displays significant anticancer effects in human cell when given at normal patient dosage levels.
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Parkinson’s disease

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- It is a disorder of the central nervous system that affects movement, often including tremors.
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- Dopamine is a chemical that sends behavioural signals from the brain to the body.
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- Nerve cell damage in the brain causes dopamine levels to drop, leading to the symptoms of Parkinson's
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- Parkinson's often starts with a tremor in one hand, other symptoms are slow movement, stiffness and loss of balance.
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- Medication can help control the symptoms of Parkinson's.
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- It affects the age group from 6 to 60, treatment can help but this condition can't be cured.
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Congenital Cardiomyopathies

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- Recently researches found ways to preserve heart function after heart attacks or for people withinherited heart defects known as congenital

cardiomyopathies.
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- They have stopped or slowed cardiac fibrosis (thickening of heart valves) organ enlargement and preserved heart function by blocking a well-known molecular pathway.
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- The Wnt/ß-catenin signalling pathway is involved in several of the body's fundamental biological processes.
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- After heart attack, Wnt/ß-catenin signalling ramps up in cardiac fibroblast cells to cause fibrosis, scarring and harmful enlargement of the heart muscle.
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- This condition makes it hard for the heart to deliver blood to the body, and can lead to heart failure.
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Perovskite solar cells

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- A Perovskite structure solar cell is one that includes a compound which can build solar cells that are inexpensive and highly efficient.
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- Perovskite is a material that has the same crystal structure as the mineral calcium titanium oxide.
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- Due to their unique crystal make-up, they often display a number of interesting properties, including superconductivity, giant magneto resistance, and Ferro electricity.
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- Within the last several years, perovskite solar cells have outpaced all other third-generation solar technologies in terms of efficiency.
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Source: The Hindu

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