Significance of MediPix Technology

Why in news?

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Scientists has recently used accelerated particles to produce first three-dimensional colour images of the human body.

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What are the concerns with traditional radiological practices?

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- **X -Ray Techniques -** X-ray based technology suffer from the deficit that they can sharply visualise only hard tissues.
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- The shadows of soft tissues are less precise, Blood vessels and other conduits are imaged with invasive dyes.
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- **Magnetic resonance imaging (MRI) -** It provides a slightly different picture, based on the difference in water and fat content in tissues.
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- **Positron emission tomography (PET)** - It finds widest use in oncology, all but MRIs use radiation and dyes and chemical markers
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What is the recent discovery about?

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- A chip of the Medipix family developed by CERN, the European Organisation for Nuclear Research, has been used by MARS Bioimaging to take colour see-through images of body parts.
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- The hybrid pixel detector technology which the Large Hadron Collider used to track accelerated particles, to produce the first three-dimensional colour images of the human body.

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- The chip family has been in production for 20 years, and CERN’s Knowledge Transfer Group had expected it to contribute to areas outside quantum physics.
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What is the significance of MediPix Technology?

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- Researchers have already used Medipix to image cancerous tissue, bones and joints and the blood supply to the heart.
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- The Medipix3, which MARS Bioimaging intends to commercialise, promises a single solution superior to its predecessors.
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- Using algorithms to model very accurate spectroscopic data in three dimensions, it shows all tissues with equal clarity, in colour.
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- In the case of a fracture, it show physical damage to a bone and also reveal trauma to surrounding tissue and reveal if blood and nerve supply is compromised.
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- It would depict structures exactly as they are, and not all of us are built exactly the same.
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- In the near future, when medical care will be customised to the individual, this exactitude would make a difference to the efficacy of care.
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- Thus the technology is scaling up rapidly, and holds incredible promise.
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Source: The Indian Express

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