



PILL CAMERA

Vrushali S.
Patil

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Method and
its drawbacks

and It's
drawbacks

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Applications

PILL CAMERA

Vrushali S. Patil

SSBT C.O.E.T

Guided by: Mrs.Jitendra Patil

April 5,2016



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- 1 Pill-sized camera is the camera that could travel through your body taking pictures.
- 2 The pill camera is sized at 26*11 mm and is capable of transmitting 50,000 color images during its traversal through the digestive system of patient.



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- Pill camera was developed in the late 20th century.
- Pill camera was approved by FDA(food and drug administration) in 2001.
- The Israeli company Given Imaging Ltd. has received official approval to market the video capsule to physicians within European Union countries in 2001. Then later on it was used in other countries.



Conventional Method and its drawbacks

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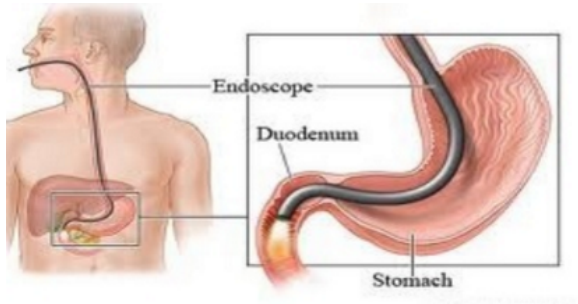
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- The conventional method that Doctor would have preferred earlier was Endoscopy procedure. By which doctor able to see the inside lining of digestive tract. This examination is performed using an Endoscopy-a flexible fibre optic tube with intiny TV camera at the end.



and It's drawbacks

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- Drugs Effect
- Complex Procedure
- Infection
- Painful



Components of Pill Camera

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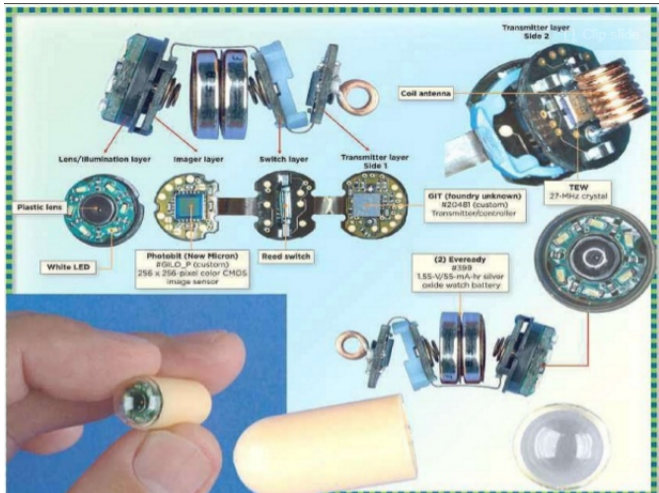


Figure:



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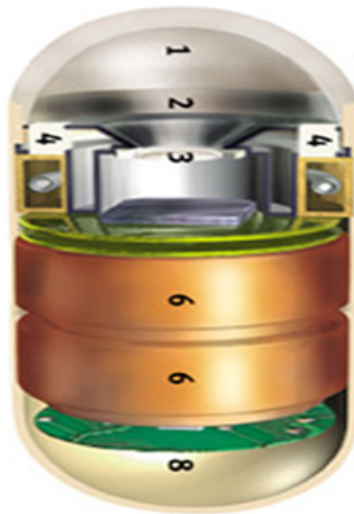
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optical dome

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- Front part and Bullet shaped
- Non-conductor
- Easy orientation of the capsule along the intestine and helps propel the capsule forward easily.
- Light receiveindescriptionvng window

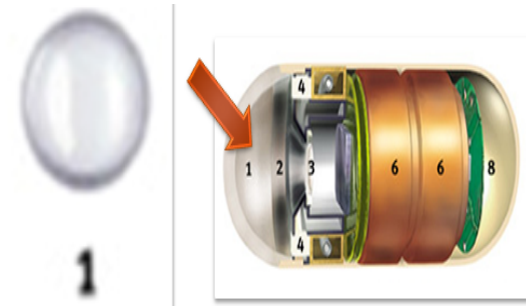


Figure:



Lens Holder

- It is that part of the capsule which accommodates the lens. The lens is tightly fixed to the holder so that it doesn't get dislocated anytime



Figure:



Lens

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- It is an integral component of the capsule.
- It is arranged behind the optical dome.



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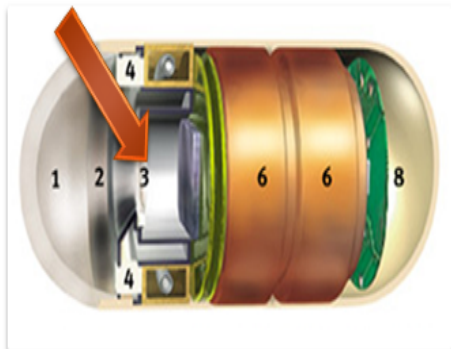


Figure:



Illuminating LEDs

- Light from the LED pass through the light receiving window.

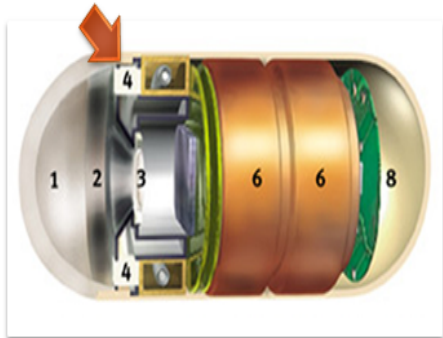


Figure:



CMOS Image Sensor

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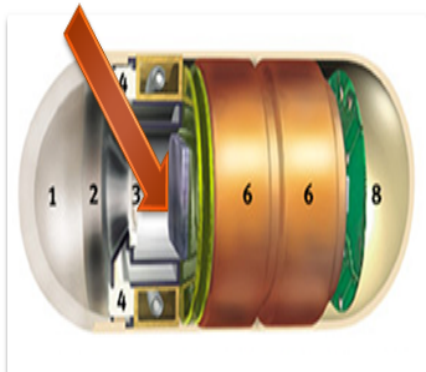
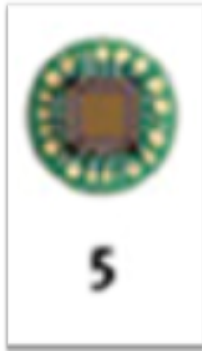
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- CMOS(Complementary Metal Oxide Semiconductor) Image Sensor.
- It is highly sensitive and produces high quality images.
- It can detect objects as small as possible.





Battery

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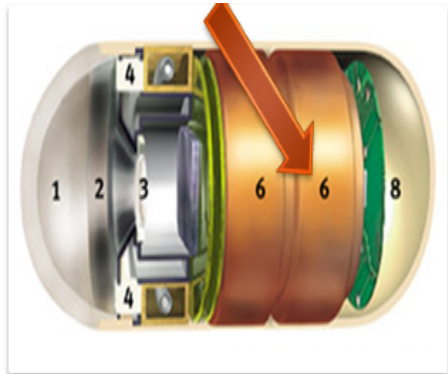
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Applications

- Button shaped and are two in number. The batteries are arranged together just behind the CMOS Image Sensor.
- Silver Oxide primary batteries are used. Disposable and does not cause harm to the body.





ASIC Transmitter

- The ASIC (Application Specific Integrated Circuit) Transmitter is arranged behind the Batteries.

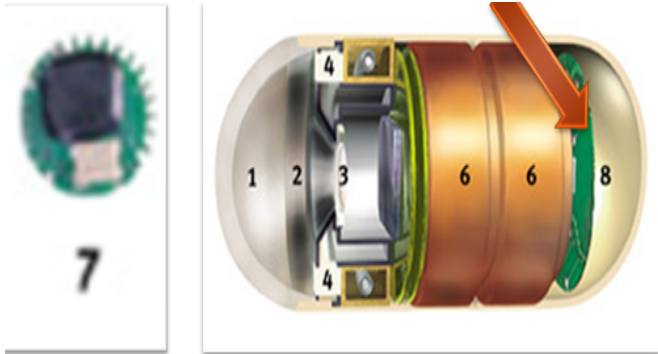


Figure:



Antenna

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- Antennae is arranged at the end of the capsule. It is enclosed in a dome shaped chamber. Antenna received data from transmitter.

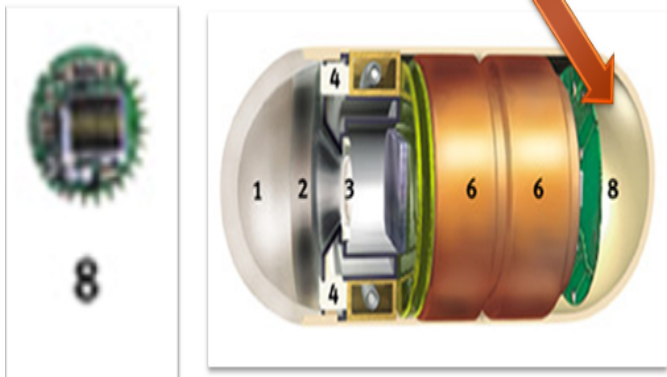


Figure:



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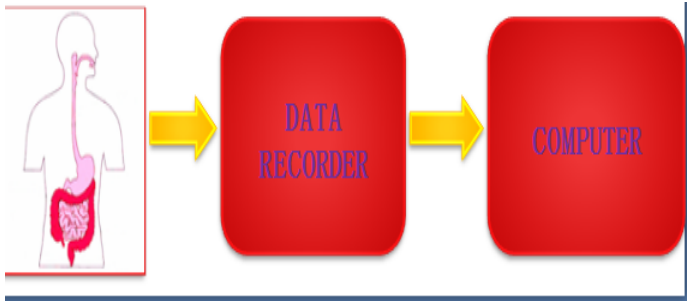
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Applications

- Capsule is swallowed by the patient like a conventional pill.
- takes image as it is propelled forward by peristalsis.
- A wireless recorder worn on a belt, receives the image transmitted by the pill.
- A computer workstation processes the data produce a continuous still images.





IMAGES OBTAINED FROM PILL CAMERA

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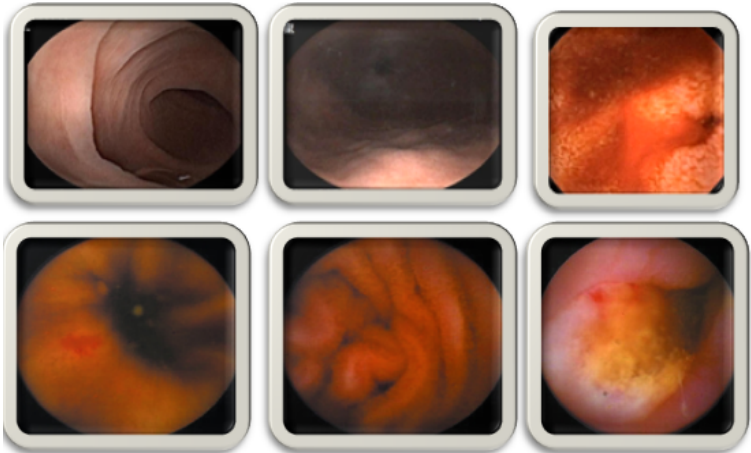


Figure:



Applications

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- Tumors of the intestine
- Vascular Disorders
- Small Bowel Injury
- Ulcer



Advantages

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- Small size
- Painless, no side affects or complications
- Precise and effective
- High quality images
- Simple procedure
- Efficient than endoscopy



Disadvantages

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- Patient pregnant women face difficulties
- It is very expensive
- It is not reusable
- It cannot be controlled once it has been ingested



Future Scope

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Applications

- Zooming and auto focus
- Reduction in size
- Cost effective
- Longer battery life



Conclusion

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- The Capsule Endoscopy is a pioneering concept for medical technology in 21st century.
- The endoscopy system is the first of its kind to be able to provide non-invasive imaging of the entire small intestine.



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Thank You...