

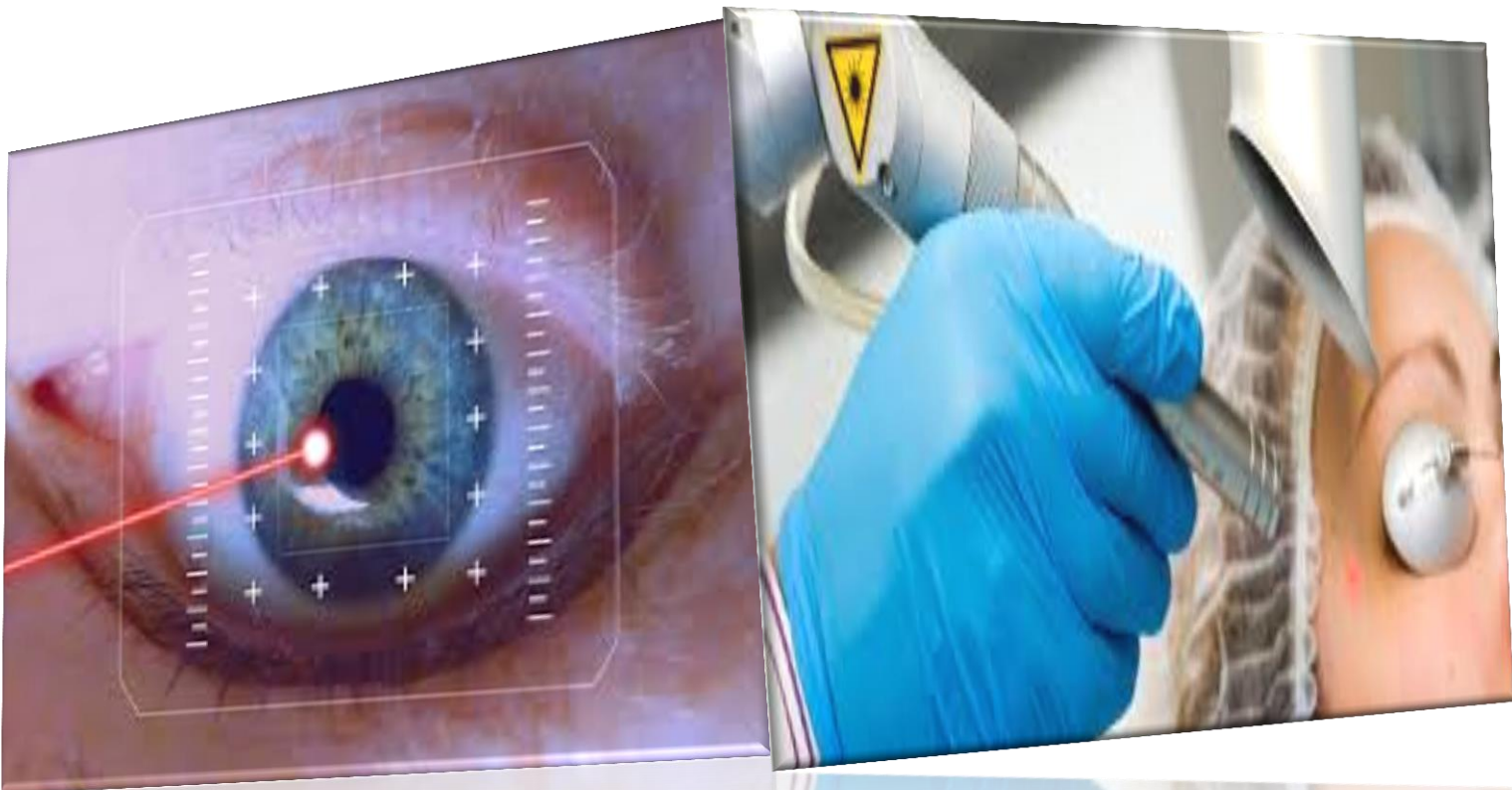
AL MUSTAQBAL UNIVERCITY

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جامعة المستقبل  
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## Medical Laser Applications



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*five lecture*

## Using laser to treat cancer

### Laser therapy to destroy abnormal or cancerous cells

Doctors can use laser beams to burn away abnormal or cancerous cells. This is called laser ablation. It can:

- destroy small areas of precancerous cells
- shrink or destroy cancers
- relieve some cancer symptoms such as bleeding or blockage

### Combining laser with a light sensitive drug (photodynamic therapy)

Photodynamic therapy (PDT) combines a drug that makes cells sensitive to light with exposure to a type of light. The drug is called a photosensitiser or photosensitising agent.

### Who can have laser treatment?

Laser therapy is a treatment for:

- abnormal cells that might become cancerous (precancerous cells) - including abnormal cells on the cervix, vulva or vagina
- early stage penile cancer
- basal cell skin cancer, combined with a light sensitive drug (photodynamic therapy)
- some advanced cancers inside the body - for example the food pipe (oesophagus), stomach or the windpipe (trachea)

For very early cancers, the laser cuts or burns away the cancerous tissue.

For more advanced cancers, laser therapy can shrink or destroy tumours. This can help to relieve blockages in the body.

## **How you have laser treatment ?**

the patient can have laser treatment in different ways. How he have it depends on where the cancer or abnormal cells are in your body.

You might have laser treatment:

- directly to skin
- using a speculum
- through a flexible tube (a scope) - to treat cancers inside your body such as lung or stomach cancer

Might have a local anaesthetic for treatment to cervix, vulva or vagina. But some people have this treatment under a general anaesthetic.

For other cancers types might have an injection to make sleepy (sedation). Or have a general anaesthetic which means are asleep during the treatment.

Before some treatments the patient shouldn't eat or drink anything beforehand. Appointment letter will tell you more about this.

## **Having laser treatment for cancers inside your body (internal cancers)**

Laser therapy can treat cancers in the:

- windpipe (trachea) or lung airway (bronchus)
- food pipe (oesophagus)

- stomach
- voice box (larynx)
- head and neck area, such as the tonsil, mouth, and nasal sinuses

To reach internal tumours doctors use a tube with a light at one end, and an eyepiece at the other end.

For lung or windpipe cancers, have a bronchoscopy using a tube called a bronchoscope.

For cancers inside food pipe or stomach have an endoscopy using a tube called an endoscope.

### **Having a bronchoscopy**

Usually have a general anaesthetic.

Doctor uses a long, thin, flexible tube called a bronchoscope. They put this down throat and into the airway. The doctor passes a small laser down the bronchoscope tube.

The doctor burns away as much of the tumour as possible with the laser. They then take out the bronchoscopy tube.

### **Having an endoscopy**

Usually have medicine to make you sleepy. Or might have a general anaesthetic which means are asleep during the treatment.

Doctor gently puts a long flexible tube called an endoscope into mouth. It goes down into food pipe. The tube has a light and a small camera on the end so doctor can see inside food pipe and stomach.

### **To relieve symptoms of a blockage (laser ablation)**

The doctors position the end of the tube close to the tumour and direct the laser at it. This heats up the cancer cells and burns them away. This reduces the blockage or gets rid of it completely.

### **To remove early stage cancers (endoscopic resection)**

The surgeons use the laser to cut away the areas of cancer. This type of laser therapy might be called endoscopic resection.