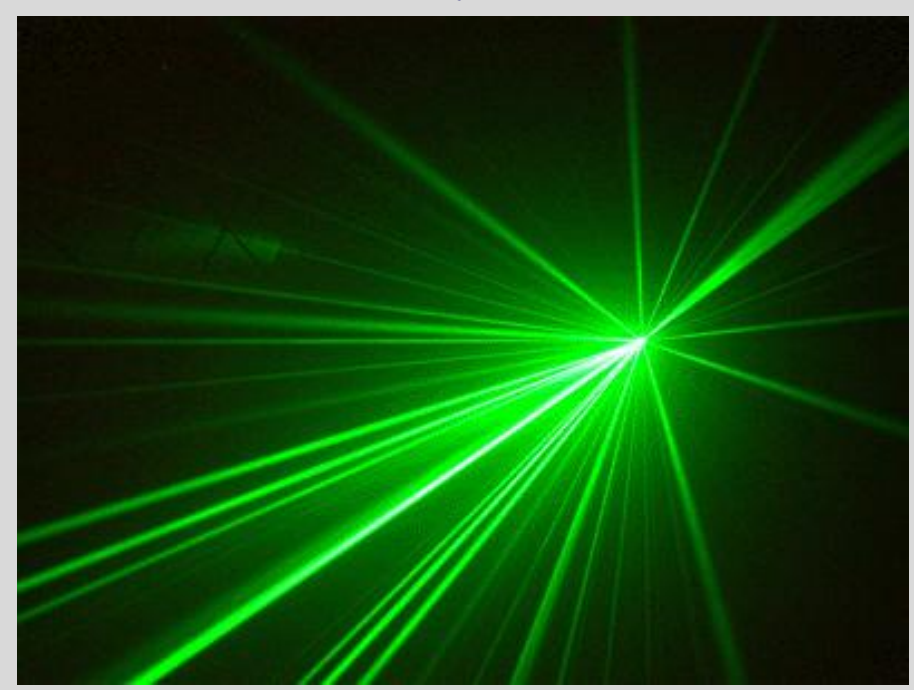
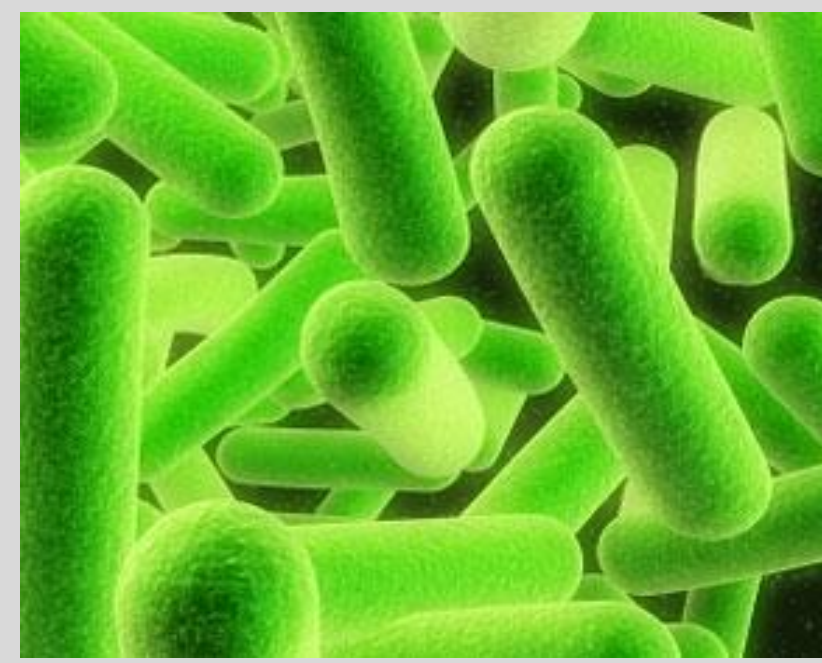


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## What is Bio-photonics?



Light



Living organism

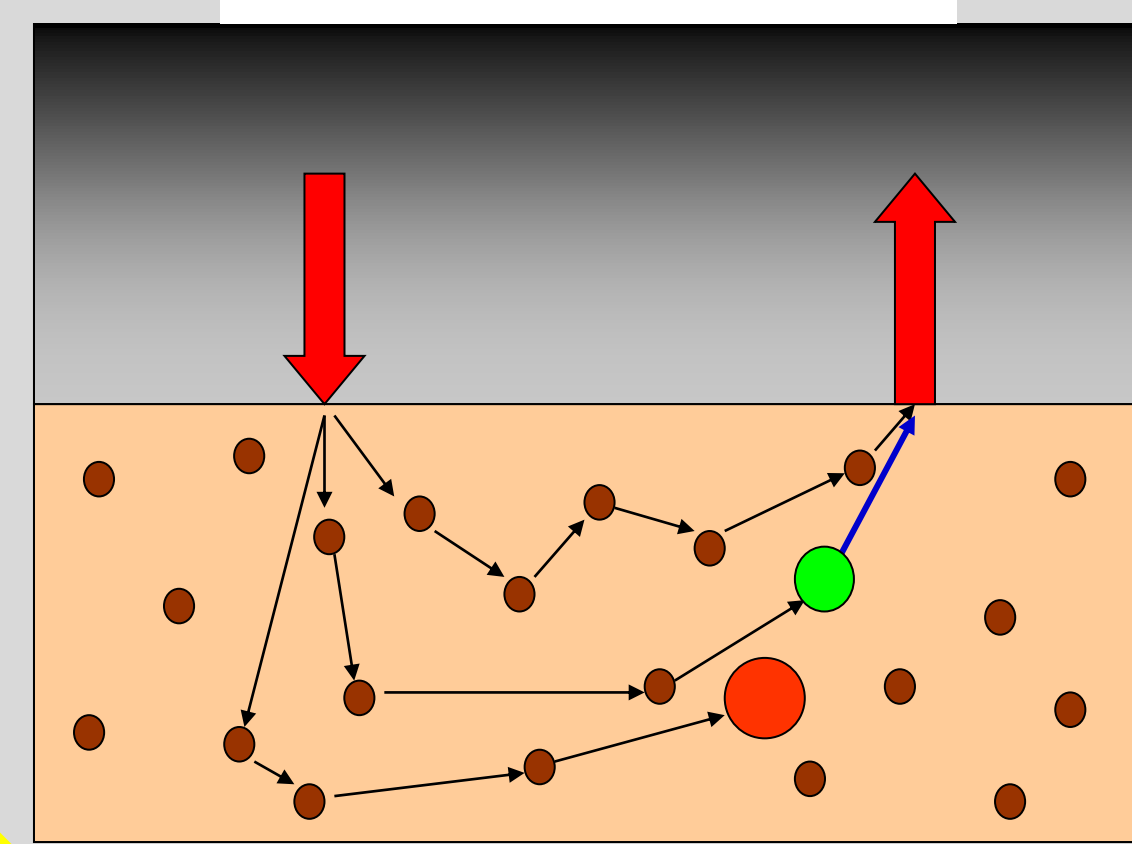
### Bio-photonics in medical science

- Tissue affects light  $\implies$  used for diagnosis
- Light affects tissue  $\implies$  used for treatment

## What Bio-photonics tools can do?

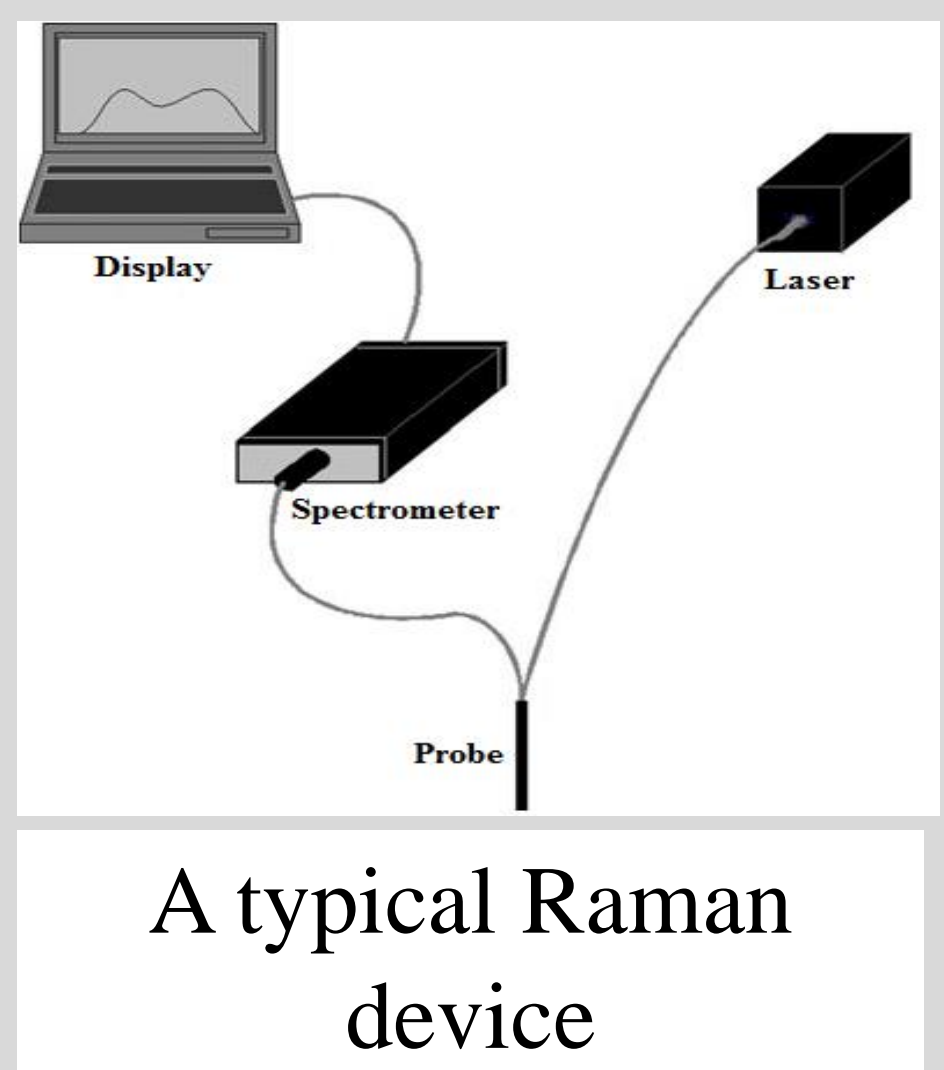
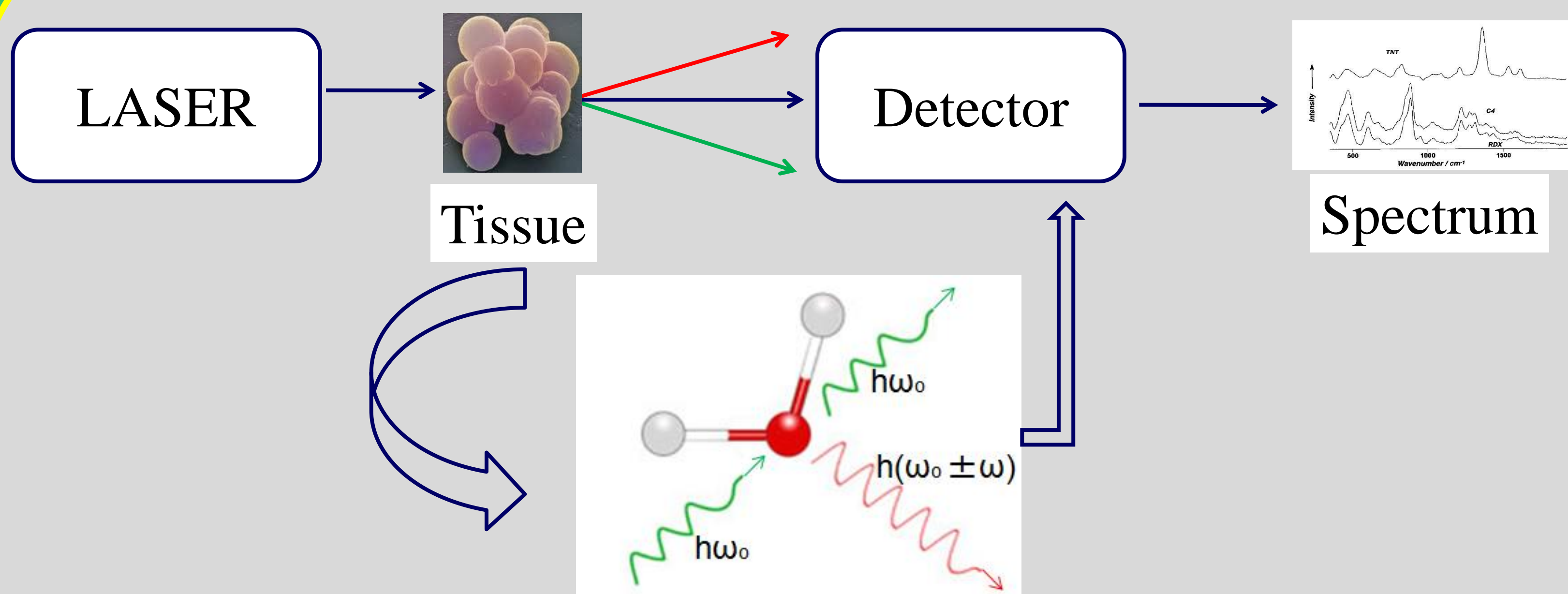
### From diagnosis to surgery to therapy

How it works?



- In situ, early and safe diagnosis of Cancer
- In Ophthalmology: from diagnosis to surgery
- From dermatology to targeted drug release
- Light activated therapy : PDT
- Integration with endoscopy and surgery & many more.....!!

## Raman effect : Optical fingerprint

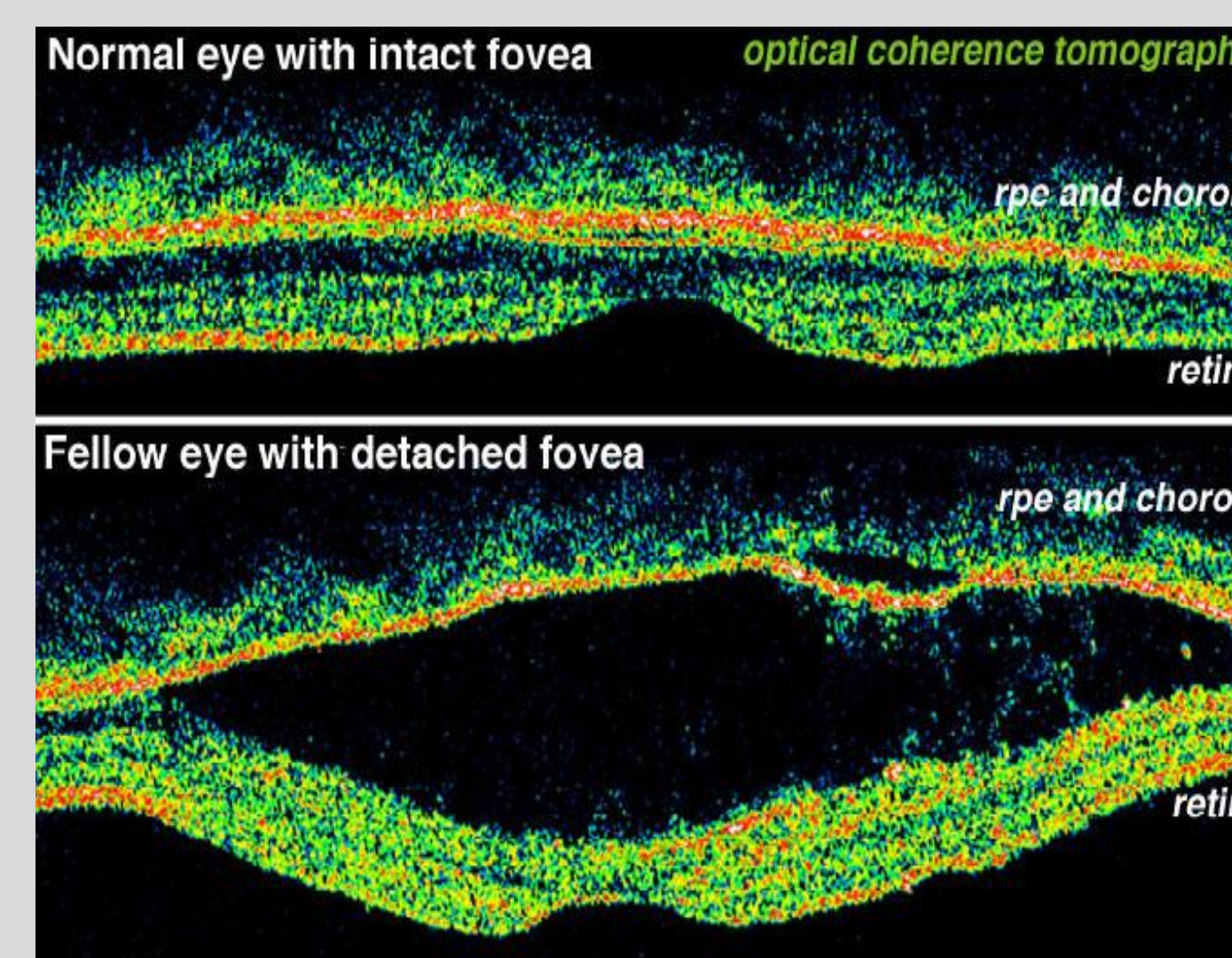
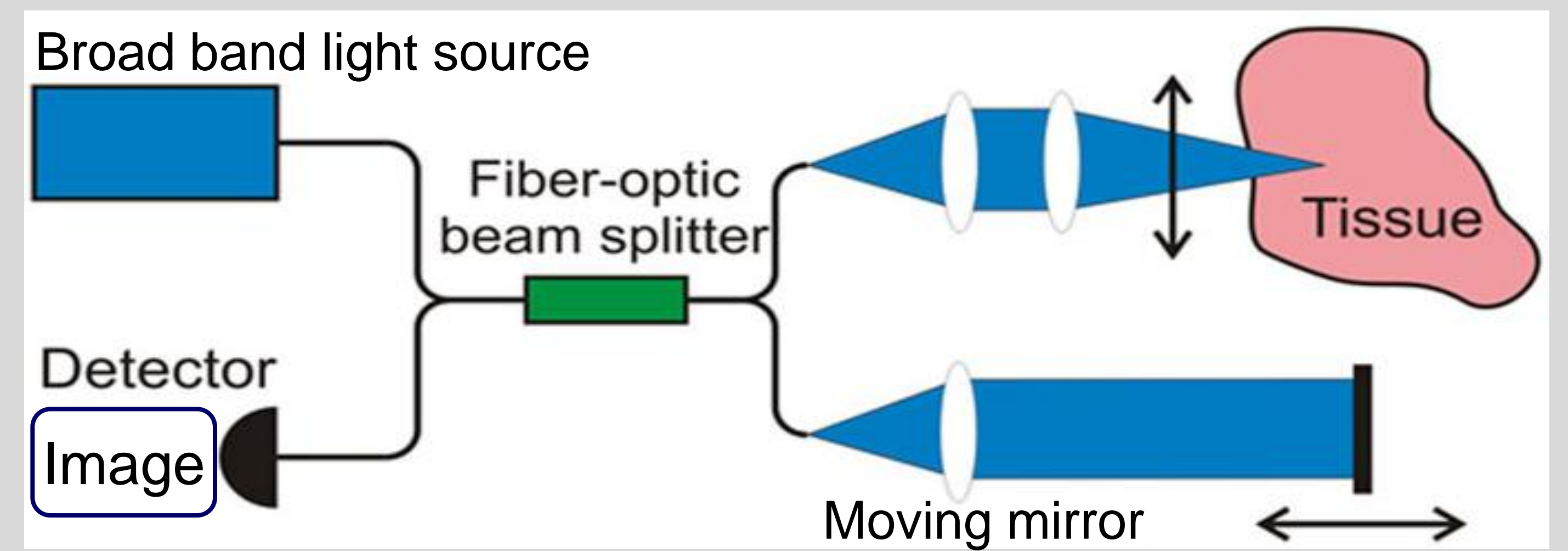


A typical Raman device

### What it gives : Chemical fingerprint

- Optical Biopsy: Immediate pathological assessment
- Medical diagnosis with very high specificity

## Optical Coherence Tomography(OCT)



Ref: [webvision.umh.es](http://webvision.umh.es)

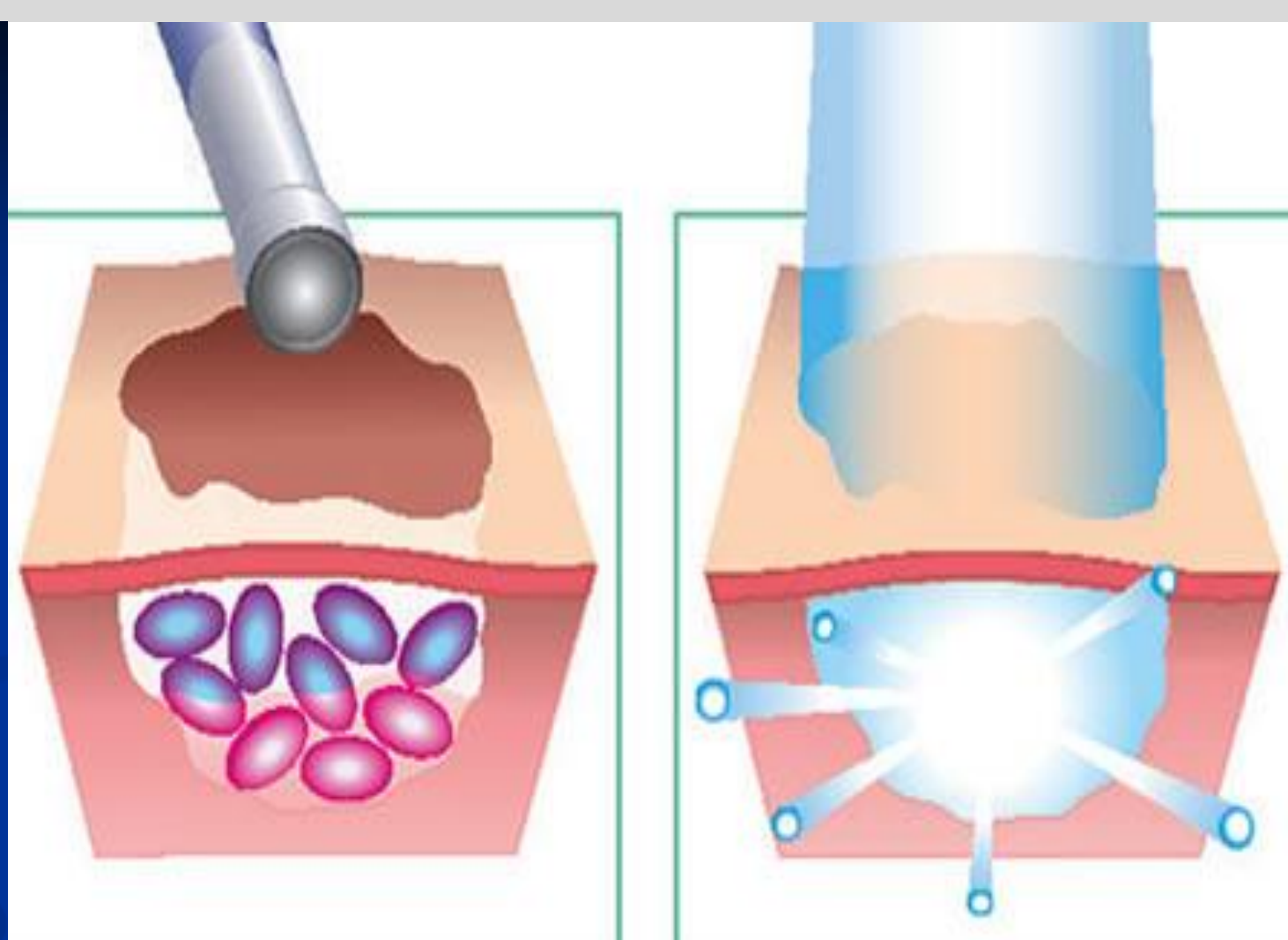
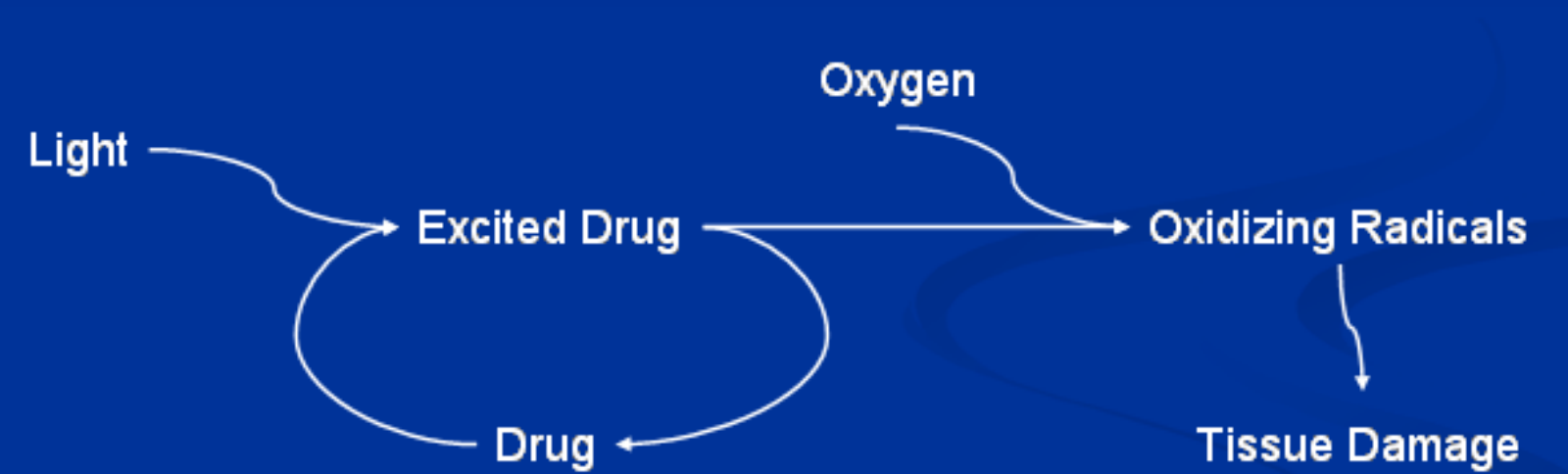
### What it gives : In situ tissue morphology

- Optical cross sectional image
- High resolution image
- Compatible with endoscopy

## Photodynamic therapy

### What is Photodynamic Therapy?

- Increased toxic reaction to light due to an added photo-sensitizer.

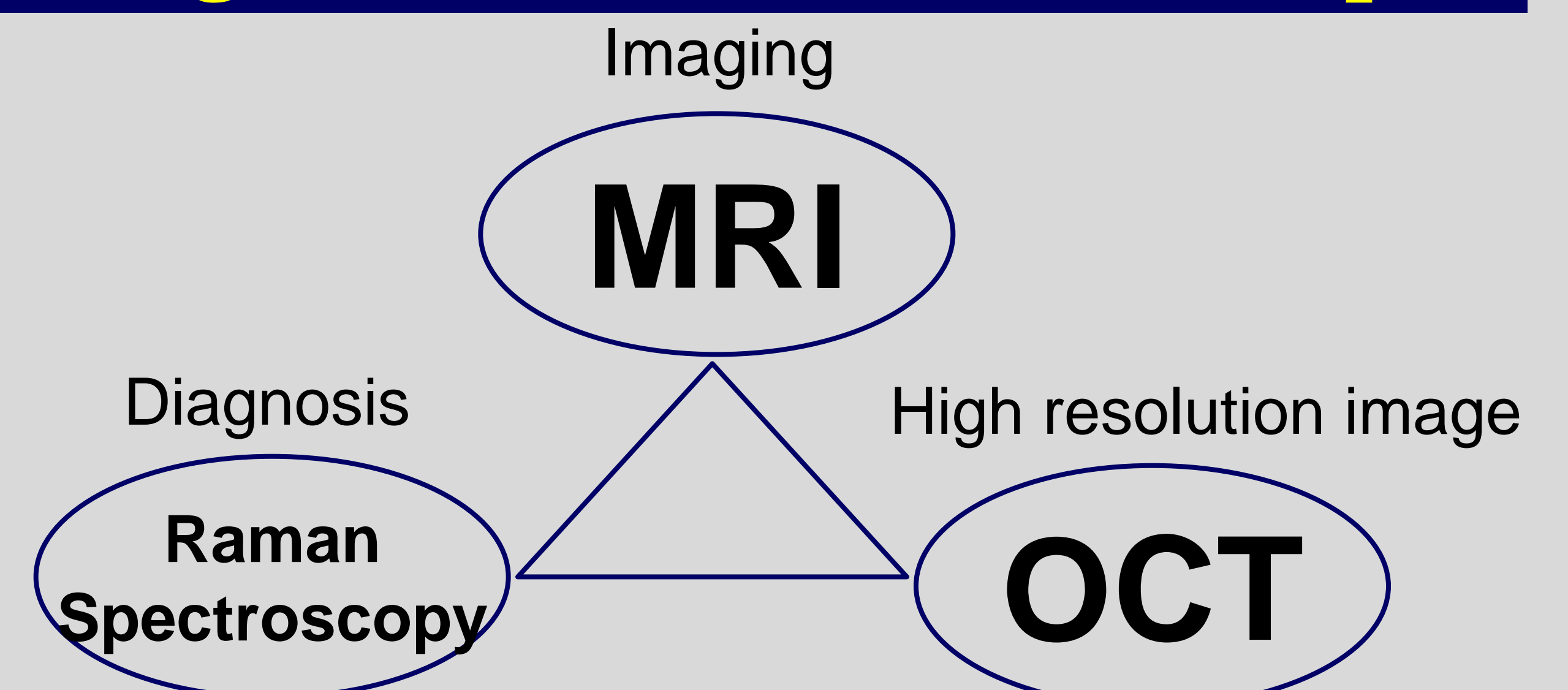


Ref: [omlc.ogi.edu](http://omlc.ogi.edu)

### Advantages

- Recovery is quick
- Outpatient procedure
- Better option than radiotherapy surgical operation

## Integration of different techniques



The combined system will provide a useful means of planning, guiding and monitoring of various interventional procedures, thus leading to an improved workflow in diagnosis and treatment of disease.

**Objective: accurate diagnosis & better treatment**