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Commentary

# A Note on Optical Coherence Tomography (OCT)

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## DESCRIPTION

Optical Coherence Tomography (OCT) is an imaging procedure that use low-coherence light to catch micrometer-resolution, two- and three-layered pictures within the range of optical scattering media (e.g., organic tissue). It is used for clinical imaging and industrial Nondestructive Testing (NDT). Optical coherence tomography depends on low-intelligence interferometry, regularly utilizing near infrared light. The application of moderate light with long frequency permits to enter into the scattering medium. Confocal microscopy (optical procedure) normally enters less into the sample yet with greater resolution. Contingent upon the properties of the light source (super-luminescent diodes, ultrashort beat lasers, and supercontinuum lasers have been utilized); optical coherence tomography has accomplished sub-micrometer resolution (with extremely wide-range sources transmitting over a 100 nm frequency range). OCT is one of a class of optical tomographic techniques which is commercially accessible with frameworks that are utilized in different applications, including diagnostic medicine, art conservation, most importantly in optometry and ophthalmology where it will be utilized to acquire definite pictures from inner areas of retina. Recently, it has likewise started to be utilized in interventional cardiology to assist with diagnosing coronary artery infection, and in dermatology to further develop determination. A recent execution of optical coherence tomography, frequency domain OCT, benefits in the sign to-noise proportion requirement, hence allowing quick signal detection. Optical Coherence Tomography is a noninvasive imaging procedure used to acquire high resolution cross-sectional pictures of the retina. The inner retinal layers can be separated and the retinal thickness can be estimated to support the prognosis of retinal disease(s) and conditions. OCT testing has turned into a standard of care for the appraisal and treatment of most retinal conditions. OCT utilizes beams of light to quantify retinal thickness. No radiation or X-rays are used in this test, an OCT check does not harm. Optical Coherence Tomography utilizes a technology that is best contrasted with ultrasound; it utilizes light as source rather than sound which thereby accomplish clear and sharp resolution. Various developments in OCT innovation have likewise been made. High speed OCT imaging has been shown with obtaining rates of a many frames each second. High and ultrahigh resolution OCT imaging exhibited novel laser light sources and pivotal resolution as high as 1 μm have been accomplished. OCT imaging at cellular level has as of late been exhibited in developmental specimens. OCT has been interfaced with catheters, endoscopes, and laparoscopes which grant interior body imaging. Catheter and endoscope OCT imaging of the gastrointestinal, pneumonic, and urinary tracts just as arterial imaging has been shown in *vivo* in a biological model. Fundamental endoscopic OCT studies in human subjects have been accounted. Initial clinical trials are now being performed by many research groups.

## CONCLUSION

Generally, there are three sorts of clinical situations where we accept that OCT could have significant applications: 1) where ordinary excisional biopsy is hazardous, 2) where conventional biopsy has an unacceptably pseudo negative rate as a result of inspecting errors, and 3) For directing surgical interventional systems. OCT is an on a very basic level new kind of optical imaging methodology. OCT images are two-layered informational collections which address the optical backscattering in a cross-sectional plane through the tissue. An image resolution of 1-15 μm can be accomplished one to two significant degrees higher than traditional ultrasound. Imaging can be performed in situ and continuously. The unique elements of this technology empower a wide scope of exploration and clinical applications.

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