#### The International Journal of Whole Person Care

# From science to adapted patient education in retinal optical coherence tomography

How terminology influences diagnostic understanding

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Volume 9, Number 2, 2022

Learning from one another in medical encounters

URI: https://id.erudit.org/iderudit/1089928ar DOI: https://doi.org/10.26443/ijwpc.v9i2.336

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Publisher(s) McGill University Library

ISSN

2291-918X (digital)

Explore this journal

Cite this article

Galli, F. (2022). From science to adapted patient education in retinal optical coherence tomography: How terminology influences diagnostic understanding. *The International Journal of Whole Person Care*, *9*(2), 3–7. https://doi.org/10.26443/ijwpc.v9i2.336

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Article abstract

Optical Coherence Tomography (OCT) in retinal imaging has evolved rapidly over the last twenty years. Along with these changes in technology, the nomenclature and relationships between healthcare professionals and patients have changed as well. How to translate the complex language of the field such that patients can understand it better is the focus of this paper.

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# WHOLE PERSON CARE

**VOLUME 9 • NUMBER 2 • 2022 • 3-7** 

# FROM SCIENCE TO ADAPTED PATIENT EDUCATION IN RETINAL OPTICAL COHERENCE TOMOGRAPHY

# How terminology influences diagnostic understanding

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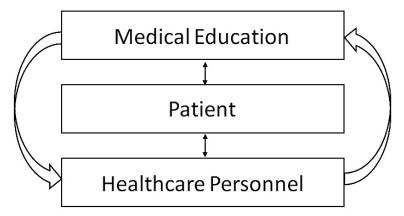
# ABSTRACT

Optical Coherence Tomography (OCT) in retinal imaging has evolved rapidly over the last twenty years. Along with these changes in technology, the nomenclature, and relationships between healthcare professionals and patients have changed as well. How to translate the complex language of the field such that patients can understand it better is the focus of this paper.

KEYWORDS: Patient-centred medicine; Medical education; Communication

## **INTRODUCTION**

ptical Coherence Tomography (OCT) [1, 2], from its inception to today, has become a tool for daily clinical diagnosis, follow-up, and research. In 2020 there were 6,403 results (National Library of Medicine) under the heading OCT compared to only 1 in 1991 from the same source (for a total of 49,847 search results for OCT terminology from 1991 to 2020). The first OCT technology was called Time-Domain (TD-OCT); subsequently, OCTs called Fourier Domains (FD) were better known as OCT Spectral Domain (SD-OCT) and OCT Swept-Source (SS-OCT) [3]. Like OCT retinal imaging technologies, patients have changed too. Currently, patients have a greater access to information, and they are more interested in comprehending it. Patients are increasingly at the centre of clinical activity; thus, a different, simpler education is required. Moreover, with the updating of technologies, the nomenclature has changed - adapting to the new possibilities of observation [4,5,6,7,8]. In patient-centred management, it is important to relate to patients in a clear way such that they can understand what the healthcare staff communicates. It is equally useful in this approach to offer education and health personnel is to increase the patients' comprehension.



**Diagram 1:** The diagram represents the centrality of the patient, the role of the healthcare personnel, and the role of medical education.

# SCIENTIFIC NOMENCLATURE AND PROPOSAL NOMENCLATURE FOR PATIENT EDUCATION [4,8,9]

**Table 1:** Nomenclature of retinal layers, reference points, and proposal of information and education for the patient.

Scientific Nomenclature OCT Layers / Reference points	Definition for Patient Education OCT Layers / Reference points (Educational / Informative Proposal)
Vitreous	Gel inside the eye.
Macula	Central area of the retina.
Fovea	Central area of the macula, hollow in shape. Fovea is the area responsible for sharp central vision.
ONH Optic Nerve Head	Convoy area of Retinal Nerve Fibers in the communication between retina and brain, and vascular convoy.

ILM	Dividing film between retina and vitreous.	
Inner Limitant Membrane		
RNFL	Retinal Nerve Fibers that transmit information to the brain.	
Retinal Nerve Fiber Layer		
GCL		
Ganglion Cell Layer		
IPL		
Inner Plexiform Layer		
INL		
Inner Nuclear Layer	Area of interconnection between Retinal Nerve Fibers and photoreceptors.	
OPL		
Outer Plexiform Layer		
ONL		
Outer Nuclear Layer		
ELM		
External Limiting Membrane	Distance on the second transformation of the light pulses	
IS/OS Junction	Photoreceptor area, transformation of the light pulse.	
Inner-Outer Junction		
IZ		
Interdigitation Zone		
RPE/BM Complex		
Retinal Epithelium Pigment +	Area of absorption of diffused light, processing of photoreceptor waste,	
Bruch's Membrane	division, and interaction with the underlying vascular area.	
СС	Vascular area.	
Choroidal complex		
•	1	

**Table 2:** Nomenclature of the most common signs observable in OCT and proposal of information and education for the patient.

Scientific Nomenclature OCT Signs	Definition for Patient Education Explanation of the Signs (Educational / Informative Proposal)
Myodesopsia	Clots of vitreous.
VMA Vitreomacular Adhesion	The vitreous is normally connected to the retina.
<b>PVD</b> Posterior Vitreous Detachment	The vitreous is detached from the retina.
VMT Vitreomacular Traction	The vitreous in an attempt to detach from the retina exerts traction and changes its shape.
MH Macular Hole	The layers that make up the retina are disrupted.
<b>PMH</b> Pseudo Macular Hole	The layers of the retina are not interrupted, it's a simulation of the interruption of the layers of the retina.

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Drusen (Hard, Soft, Cuticular)	Waste material of the visual cycle not properly eliminated and accumulation of extracellular material.	
<b>RPD</b> Reticular Pseudodrusen		
SRF Subretinal Fluid	Separation between the retina and the retinal pigment epithelium caused by the presence of fluid.	
<b>CME</b> Cystoid Macular Oedema	Liquid accumulated in bubbles under the macula area.	
Type 1 MNV Macular Neovascularization 1		
Type 2 MNV Macular Neovascularization 2	Abnormal vascular growth in the retina and choroid.	
<b>Type 3 MNV</b> Macular Neovascularization 2		
PCV Polypoidal Choroidal Vasculopathy		
IRF Intraretinal Fluid	Rounded bubble-like areas.	
Haemorrhage	Presence of blood, abnormal bleeding.	
<b>RORA</b> Retinal Pigment Epithelial Atrophy and Outer Retinal Atrophy	Complete or partial loss of one or more layers (of the RPE or photoreceptors).	
Lipid (Hard Exudates)	Small, rounded areas in the retinal or sub-retinal area.	

## CONCLUSION

Using the definitions of various terms shown in table 1 and 2 offers the possibility of reaching out to patients in a way they can understand and share decision-making. Explanations must be tailored to the person's level of education such that they remain at the centre of medical encounters and healthcare procedures, as exemplified herein with retinal optic coherence tomography [10,11,12,13].

### **CONFLICTS OF INTEREST**

No conflicts of interest to declare.

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