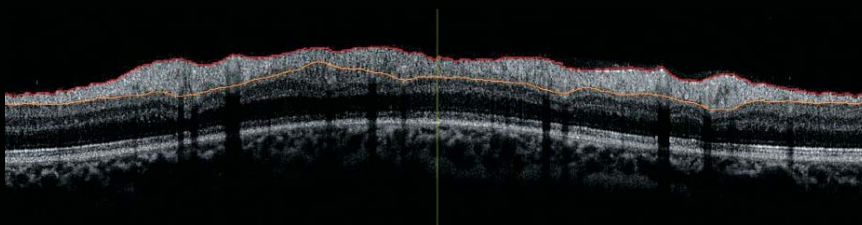
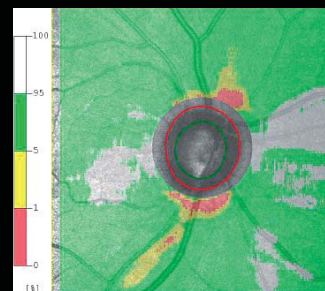
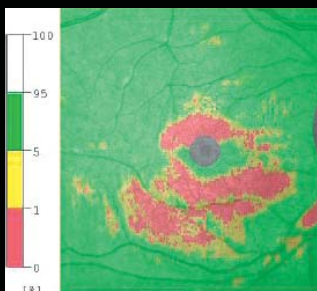
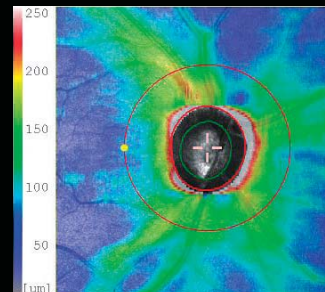
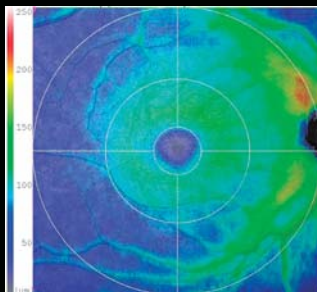




RS-3000
OCT RetinaScan



GLAUCOMA Clinical Data Book



Fernando Gomez Goyeneche, M.D.

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>> RNFL thickness map

SLO image
SLO image showing optic disc

RNFL thickness map
Color-coded thickness map of RNFL layer (ILM to NFL / GCL)

Normative database
Color-coded map indicating distribution range of the patient's RNFL thickness in a population of normative eyes

TSNIT graph
Graph showing thickness from ILM to NFL / GCL on disc circle with comparison to a normative database

TSNIT analysis

Table of each RNFL thickness with color code based on normative database :

- Overall average
- Superior pole average
- Inferior pole average

>> [NFL+GCL+IPL] thickness map

[NFL+GCL+IPL] thickness map
Color-coded thickness map of [NFL+GCL+IPL] layers (ILM to IPL / INL) overlaid on SLO image

Analysis charts (Superior / Inferior pole, GChart)
Analysis charts of average thickness of each sector surrounding the macula with color code based on comparison to a normative database

Normative database
Color-coded map indicating distribution range of the patient's [NFL+GCL+IPL] thickness in a population of normative eyes

- More than 95%
- Between 5 to 95%
- Between 1 to 5%
- 0 to 1%

Deviation map
Map indicating the deviation, including early variation even within normal range, from average thickness in a normative database

What the [NFL+GCL+IPL] are.
The [NFL+GCL+IPL] are layers composed of Nerve Fiber Layer (NFL), Ganglion Cell Layer(GCL), and Inner Plexiform Layer (IPL).

>> Retinal Pathology or Glaucoma?

Glaucoma Screening with Normative DB

Thicker [NFL+GCL+IPL] than normal.

Normal [NFL+GCL+IPL] thickness

Thinner [NFL+GCL+IPL] than normal.
(Glaucoma Suspect)

G Chart

Normal thickness temporally.

Thinner than normal inferiorly.

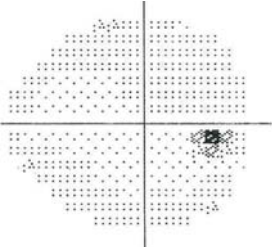
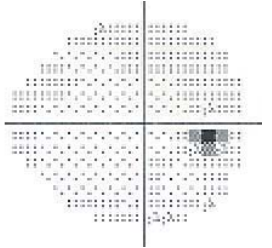
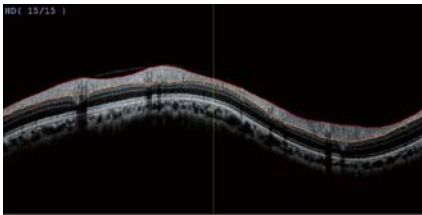
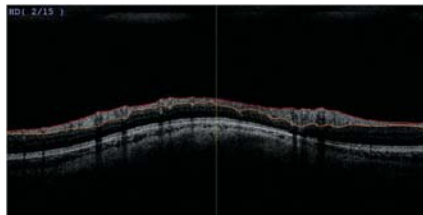
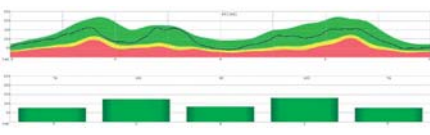
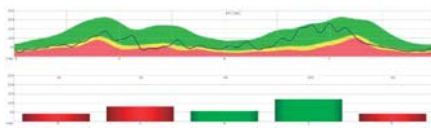
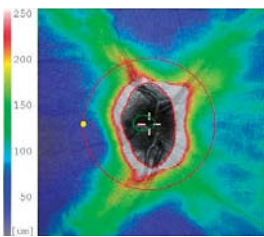
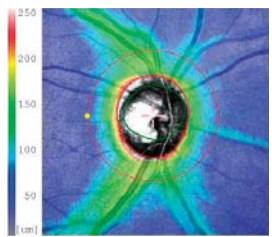
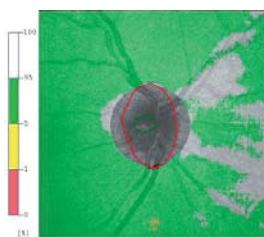
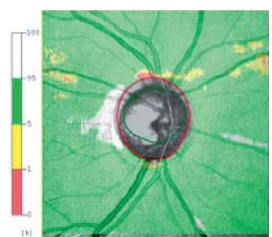
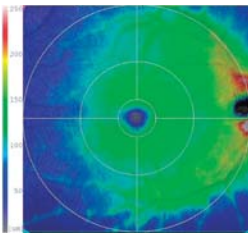
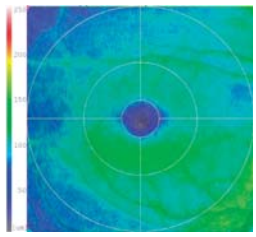
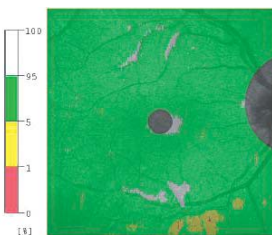
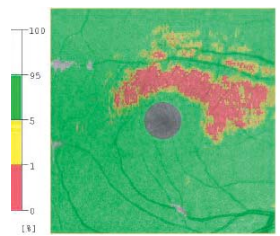
S/I

Normal Eye

→ See p.5

Preperimetric Level

→ See p.6

Visual Field			
TSNIT graph	B-Scan		
	Graph		
RNFL	Thickness Map		
	Normative Database		
[NFL+GCL+IPL]	Thickness Map		
	Normative Database		

Early Level

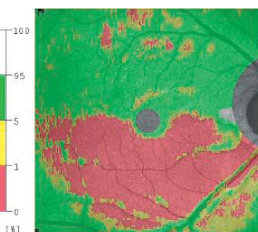
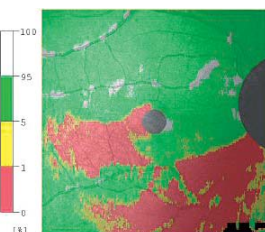
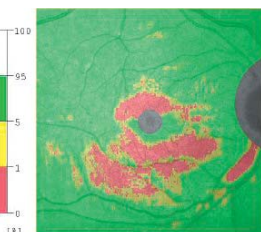
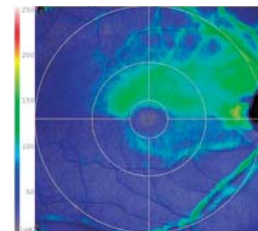
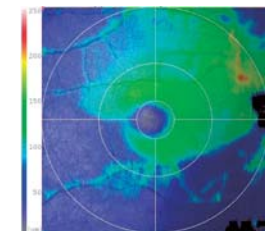
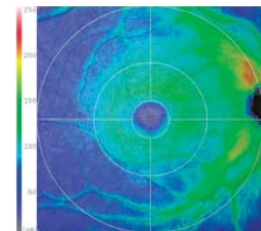
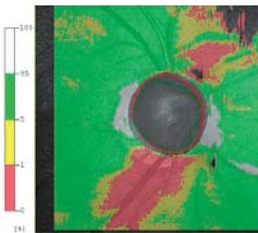
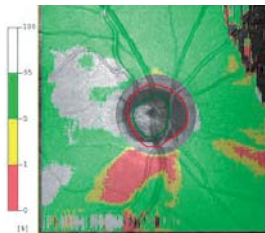
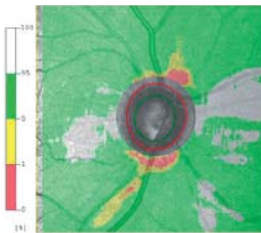
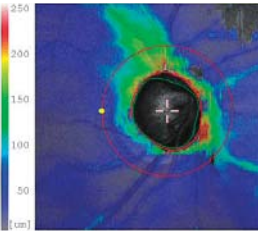
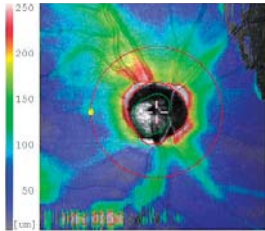
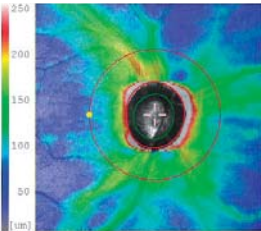
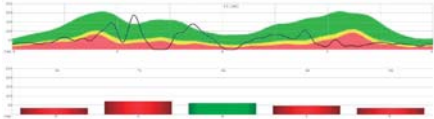
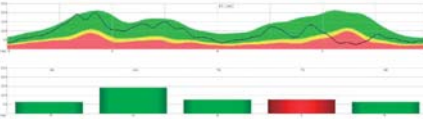
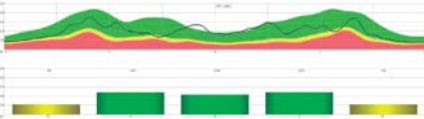
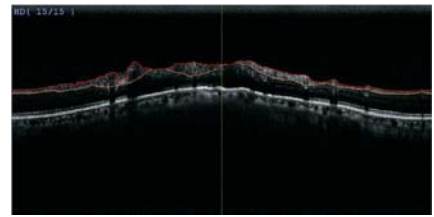
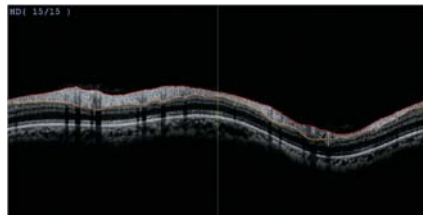
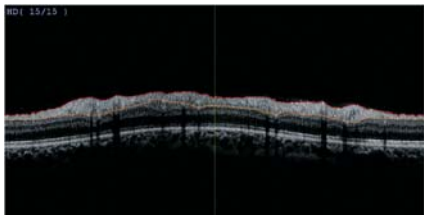
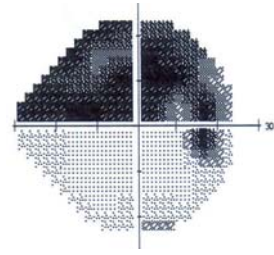
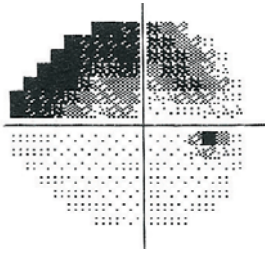
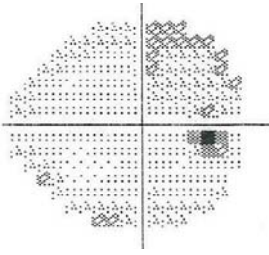
→ See p.8

Moderate Level

→ See p.11

Advanced Level

→ See p.13



Normal Eye

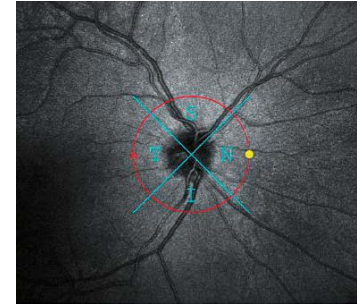
28-year-old male, Right eye, BCVA 20/20

A case of a normal, non-glaucomatous eye. No abnormalities are detected in the **Fundus Photo**, **SLO** (scanning laser ophthalmoscope) image, **TSNIT Graph**, **[NFL+GCL+IPL] thickness map**, **normative data base (NDB/ [NFL+GCL+IPL]) thickness map**, **G Chart** or **visual field**. The green color indicates no deviation in values in comparison to the normative database.

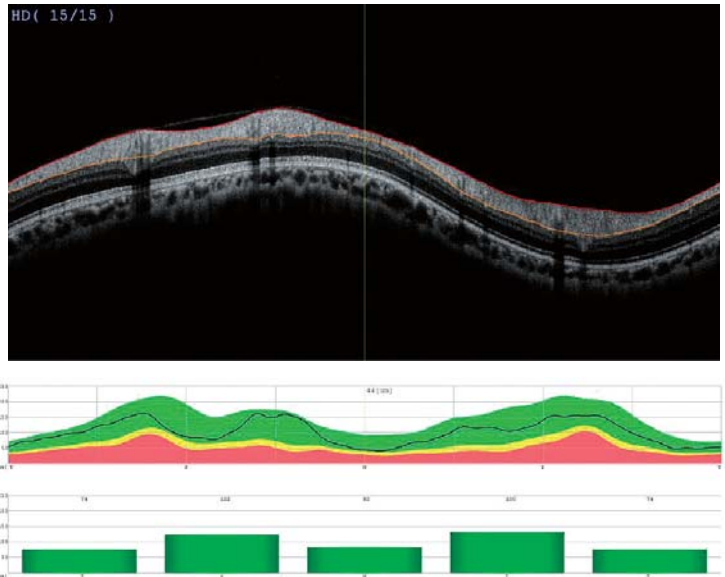
Fundus Photo



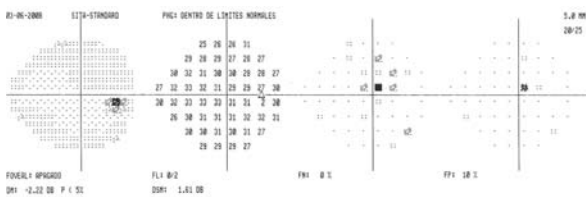
SLO



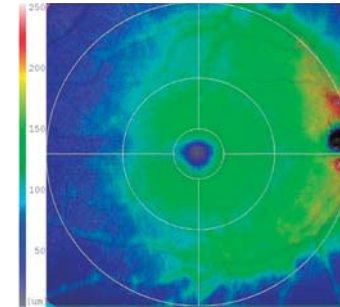
TSNIT Graph



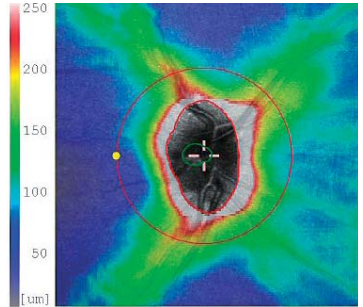
Perimeter
white-white



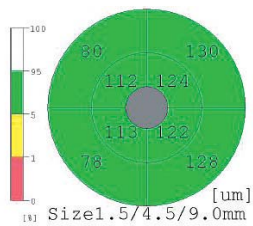
[NFL+GCL+IPL] thickness map



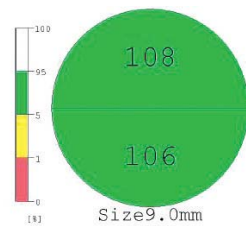
RNFL thickness map



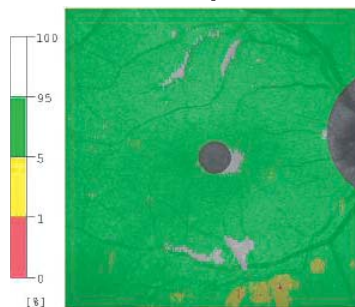
Analysis charts
G Chart



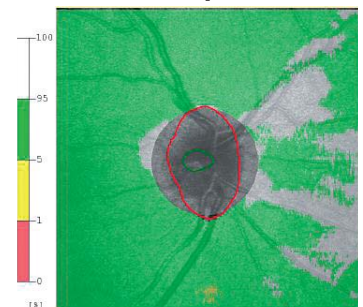
S/I



NDB/ [NFL+GCL+IPL] thickness map



NDB/ RNFL thickness map



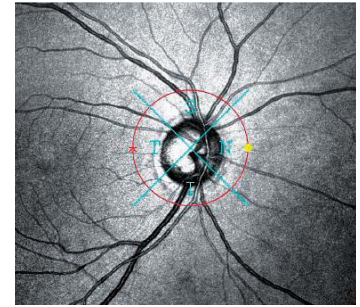
*Average thickness of each sector surrounding macula

A case of ocular hypertension.
 The **Fundus Photo** and the **SLO** image appear normal.
 The **TSNIT Graph** shows thinner than normal superior retinal nerve fiber bundle.
 The **RNFL thickness map** shows that the thinning of the nerve fiber bundle is localized to the superotemporal area.
 On the **NDB/ [NFL+GCL+IPL] thickness map**, the thinnest superior regions are visible.
Perimeter shows normal visual field.
 The **G Chart** shows thinning superiorly that concurs with the location on **[NFL+GCL+IPL] thickness map**.

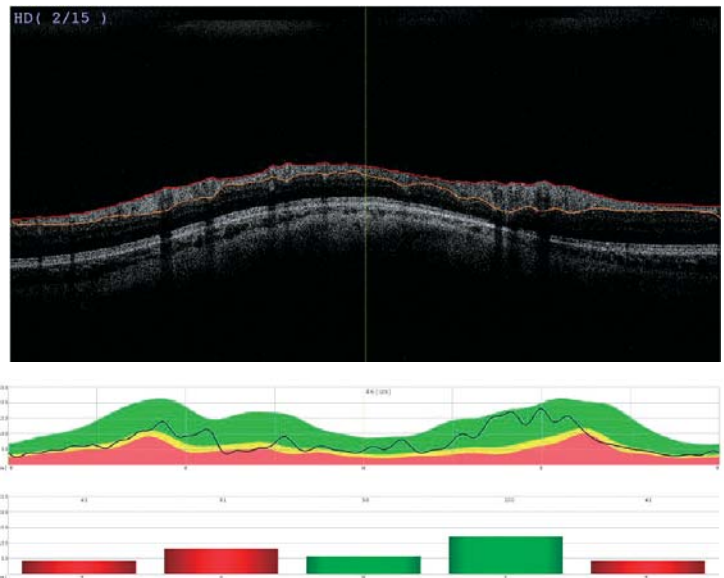
Fundus Photo



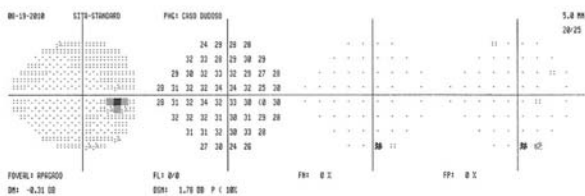
SLO



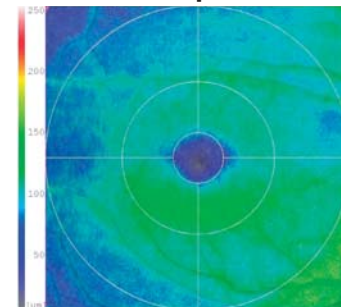
TSNIT Graph



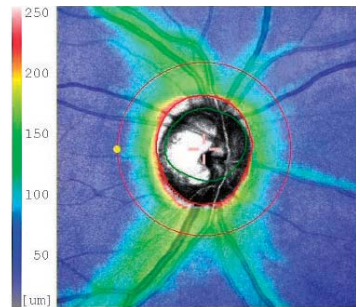
Perimeter
white-white



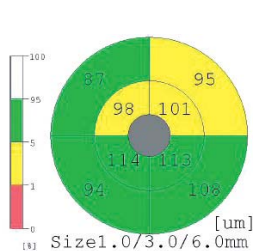
[NFL+GCL+IPL] thickness map



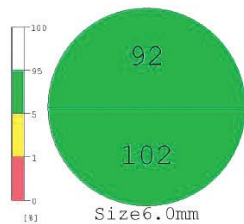
RNFL thickness map



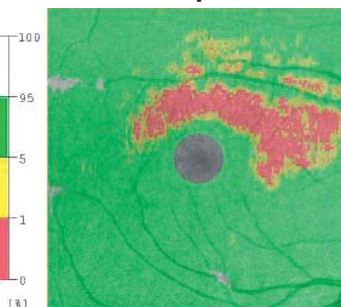
Analysis charts
G Chart



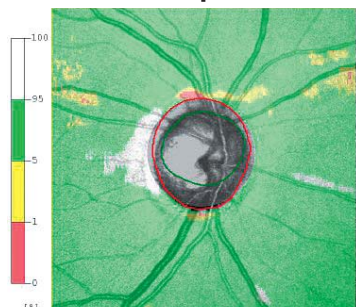
S/I



NDB/ [NFL+GCL+IPL] thickness map



NDB/ RNFL thickness map



*Average thickness of each sector surrounding macula

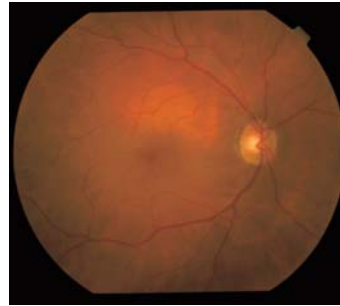
A patient with pigmentary dispersion syndrome and uncontrolled intraocular pressure. The **Fundus Photo** of the right eye and the **SLO** image appear normal.

Inferior and superior thinning can be seen on the **TSNIT Graph** and **[NFL+GCL+IPL] thickness maps**.

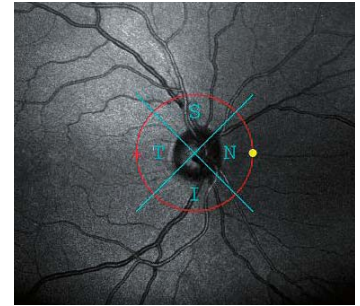
A normative database of the **RNFL thickness map** shows superior and inferior wedge-shaped defects in yellow/red.

White-white and **SWAP** perimetry are normal. The **Analysis charts** show thinning inferiorly. The **TSNIT Graph** shows decreased thickness in the nasal and inferior quadrants.

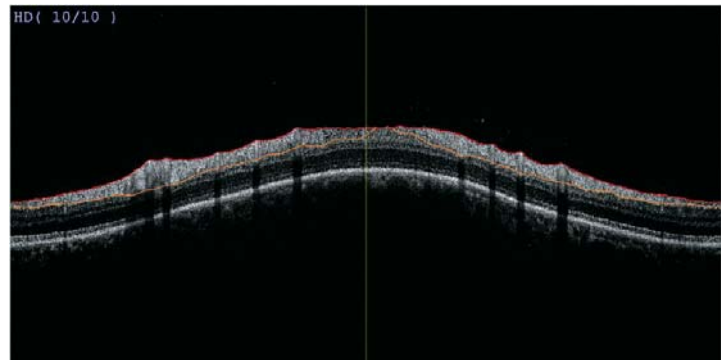
Fundus Photo



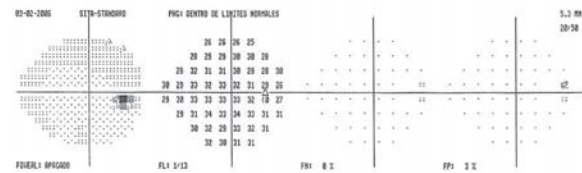
SLO



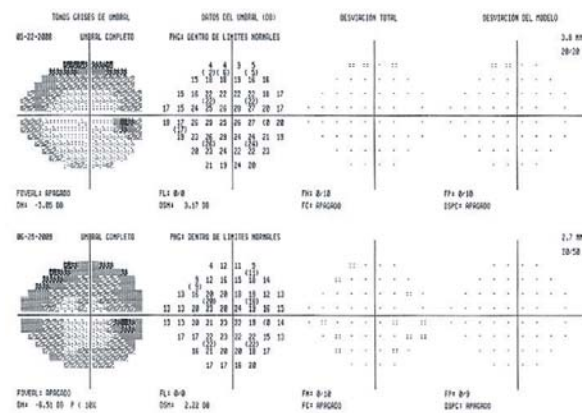
TSNIT Graph



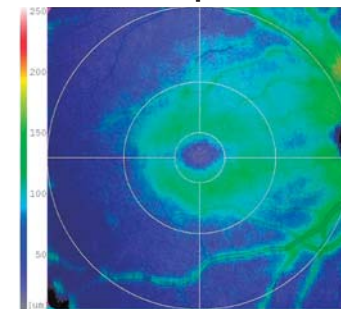
Perimeter white-white



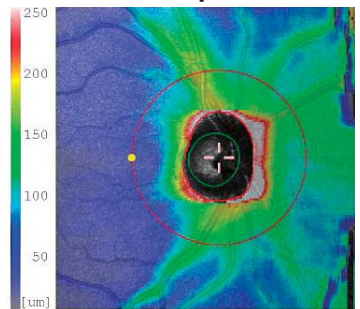
SWAP



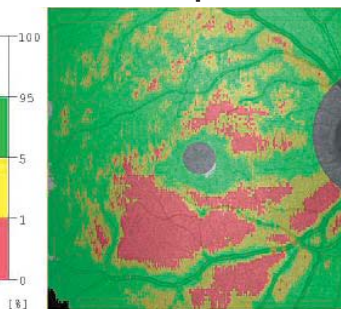
[NFL+GCL+IPL] thickness map



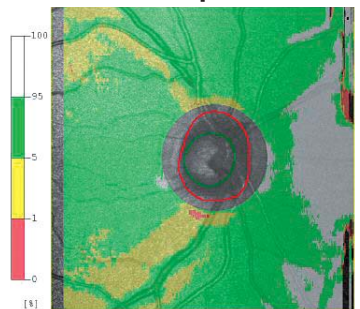
RNFL thickness map



NDB/ [NFL+GCL+IPL] thickness map

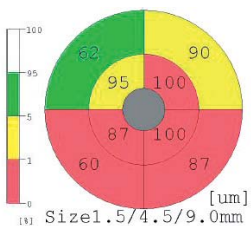


NDB/ RNFL thickness map



Analysis charts

G Chart



SI



*Average thickness of each sector surrounding macula

The right eye of an Ocular Hypertension (OHT) patient.

Suspicious temporal thinning is present on the **TSNIT Graph** and **[NFL+GCL+IPL] thickness map**.

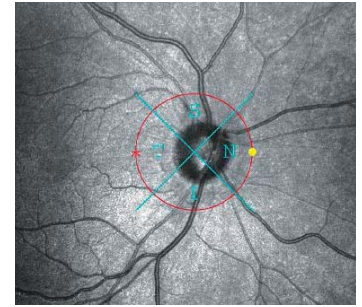
Thinning of the nerve fiber bundle that is localized inferiorly and temporally in the **[NFL+GCL+IPL] thickness map**, is represented in red in the **NDB/ [NFL+GCL+IPL] thickness map** and is quantified in red on the **G Chart**.

Both **white-white** and **SWAP** visual fields have mild changes, generalized depression of sensitivity and enlargement of the blind-spot.

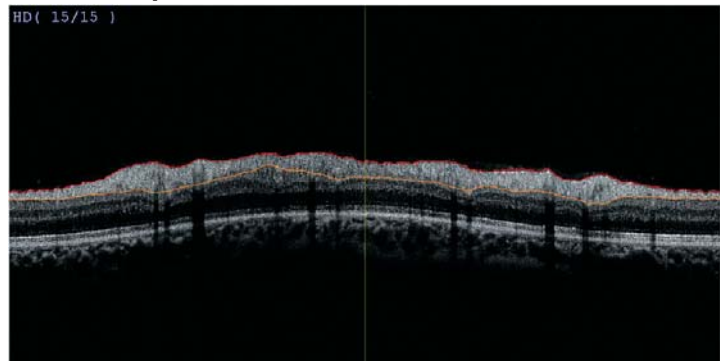
Fundus Photo



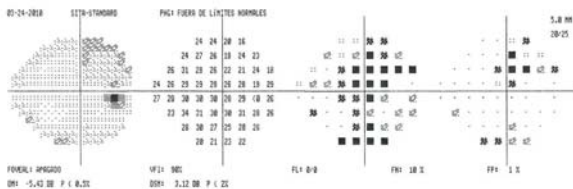
SLO



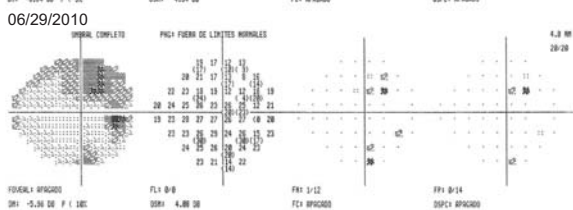
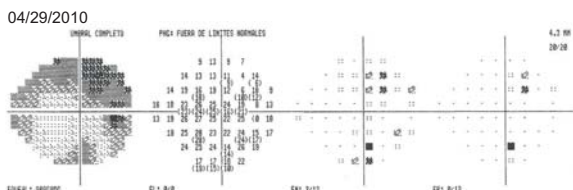
TSNIT Graph



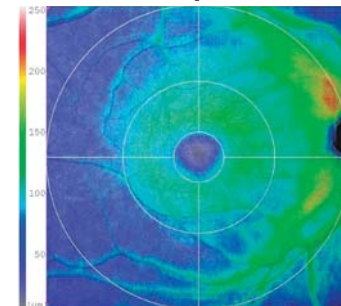
Perimeter white-white



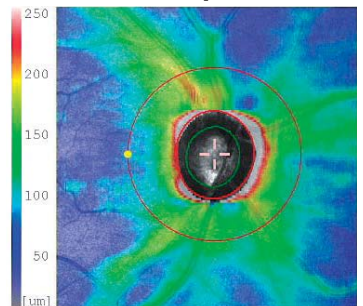
SWAP



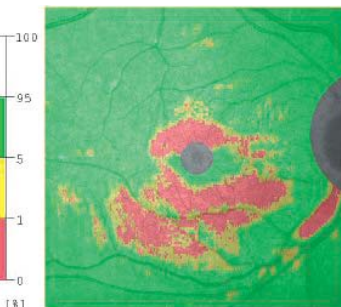
[NFL+GCL+IPL] thickness map



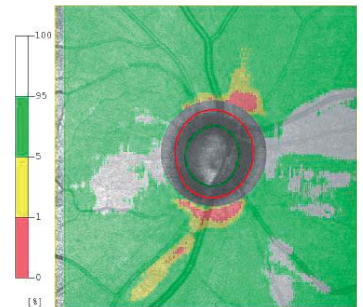
RNFL thickness map



NDB/ [NFL+GCL+IPL] thickness map

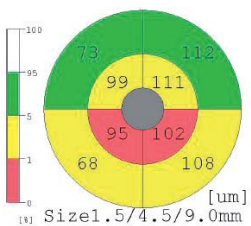


NDB/ RNFL thickness map

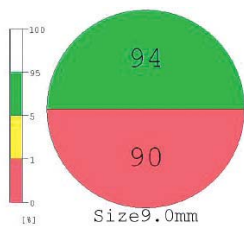


Analysis charts

G Chart



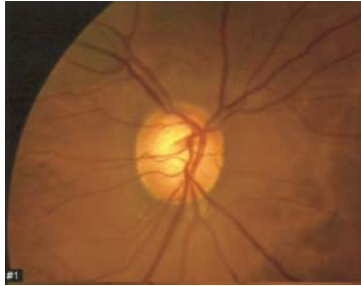
SI



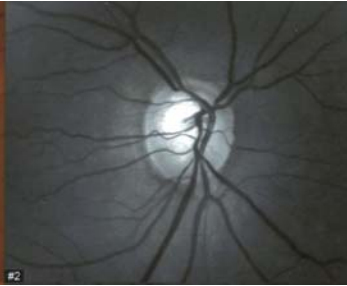
*Average thickness of each sector surrounding macula

Right Eye

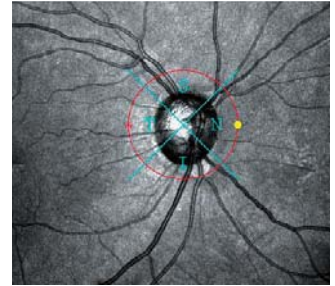
Fundus Photo



(Red-free)

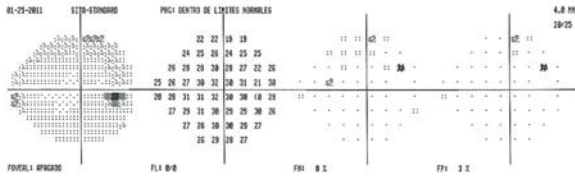


SLO

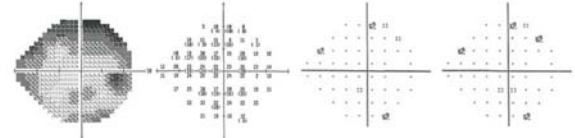


Perimeter

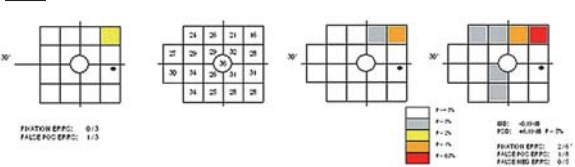
white-white



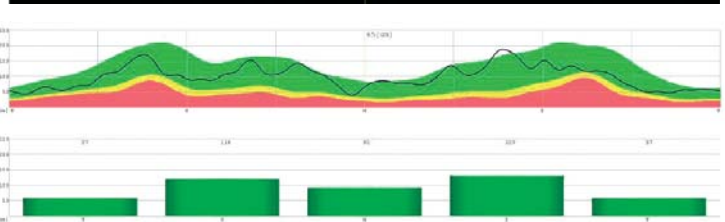
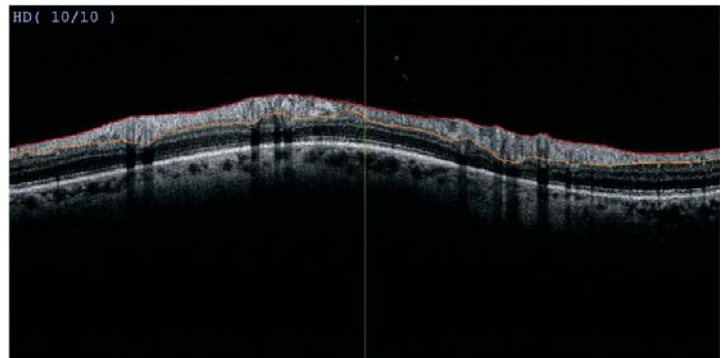
SWAP



FDT



TSNIT Graph

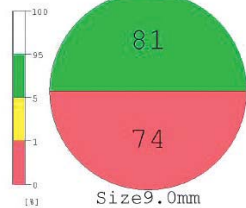


Analysis charts

G Chart

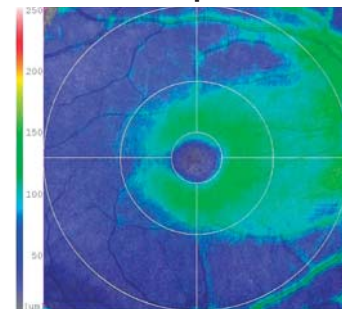


S/I

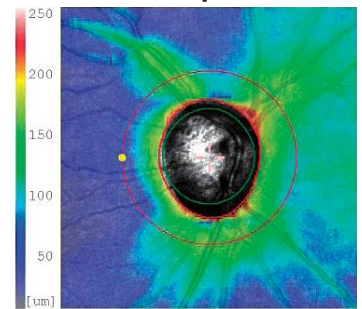


*Average thickness of each sector surrounding macula

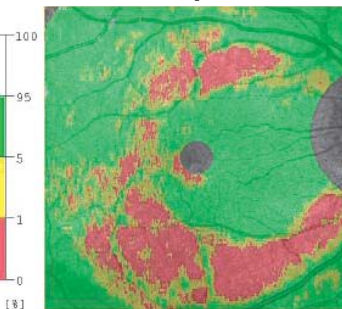
[NFL+GCL+IPL] thickness map



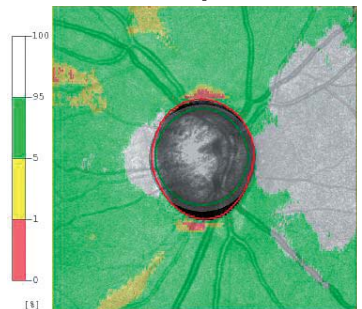
RNFL thickness map



NDB/ [NFL+GCL+IPL] thickness map



NDB/ RNFL thickness map



Fundus Photos and SLO images show abnormal optic disc changes despite a normal TSNIT Graph.

A mild superotemporal defect is evident in blue while a wide localized defect is evident inferotemporally in the [NFL+GCL+IPL] thickness map.

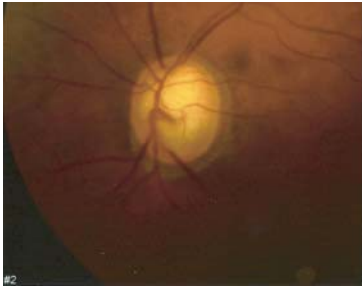
The red color highlights the affected areas in the NDB/ [NFL+GCL+IPL] thickness map. Single field analysis of white-white printout appears normal, and SWAP shows depression of superior sensitivity.

Frequency doubling technology (FDT) shows mild superior defects.

G Chart shows abnormal values inferiorly.

Left Eye

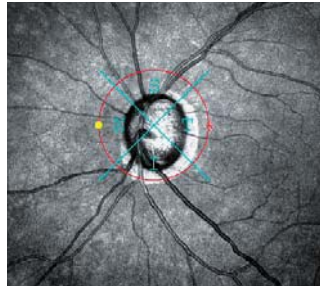
Fundus Photo



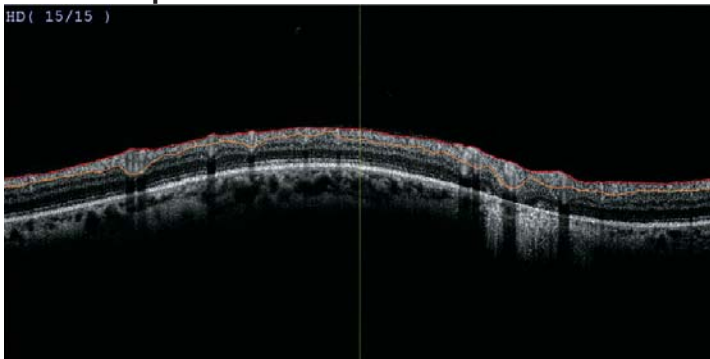
(Red-free)



SLO

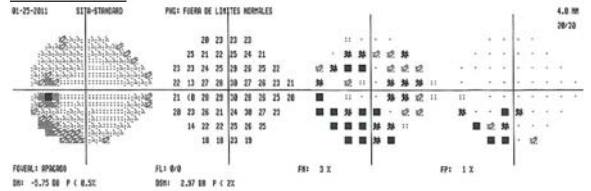


TSNIT Graph

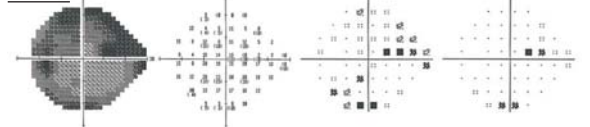


Perimeter

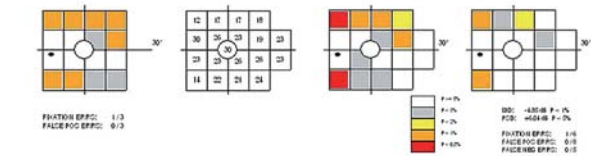
white-white



SWAP

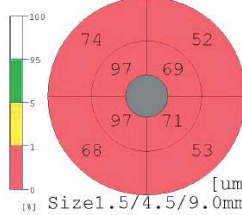


FDT

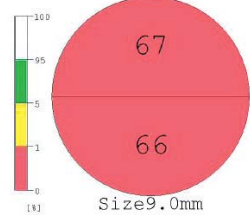


Analysis charts

G Chart

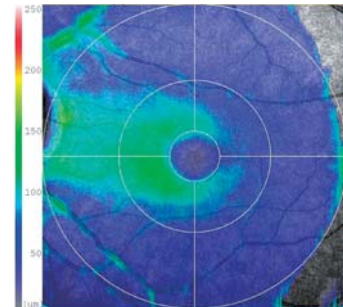


S/I

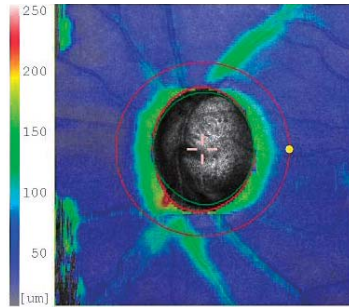


*Average thickness of each sector surrounding macula

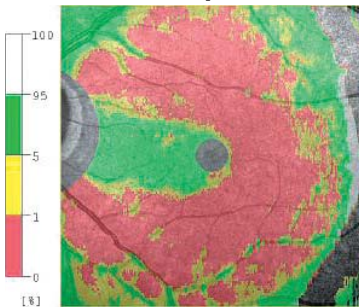
[NFL+GCL+IPL] thickness map



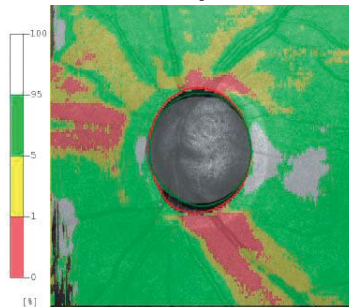
RNFL thickness map



NDB/ [NFL+GCL+IPL] thickness map



NDB/ RNFL thickness map



The optic disc of both eyes show mild asymmetry.

The **TSNIT Graph** is abnormal in the superior and inferior quadrants.

The large area in blue on the **[NFL+GCL+IPL] thickness map** indicates the effect on the superior and inferior bundles.

The areas are highlighted in red in the **NDB/ [NFL+GCL+IPL] thickness map**.

The visual field demonstrates diffuse loss of sensitivity and an inferior increase in the size of the blind-spot.

SWAP shows depression of superior sensitivity. Frequency doubling technology (**FDT**) shows superior mild defects.

The entire **G Chart** shows abnormal values (red color).

Primary open angle glaucoma (POAG) of the right eye with an inferior localized notch at 6 o'clock and a wide localized wedge-shaped defect in the inferior temporal nerve fiber layer bundle (Hoyt's sign).

The thinner inferior thickness corresponds well with the red bar in the inferior quadrant in the **TSNIT Graph**.

The localized nerve fiber layer defect is blue on the **[NFL+GCL+IPL] thickness map** and red when compared to the normative database (**NDB/ [NFL+GCL+IPL] thickness map**).

The corresponding superior arcuate defect is evident in **white-white** perimetry.

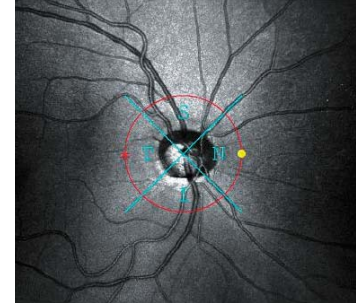
G Chart is abnormal inferiorly.

*Hoyt's sign = Wedge-shaped defect of RNFL, which can be seen in eyes with glaucoma.

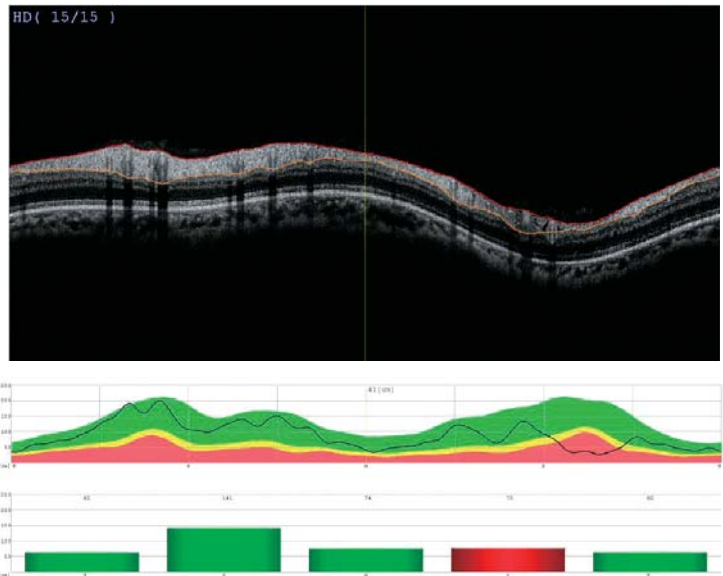
Fundus Photo



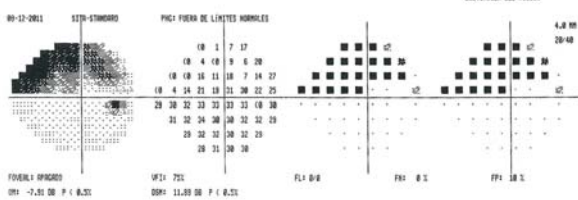
SLO



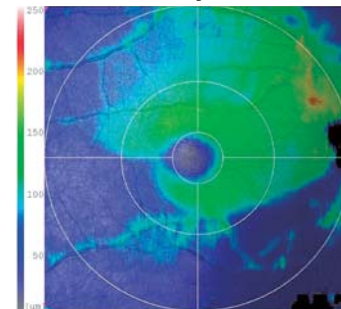
TSNIT Graph



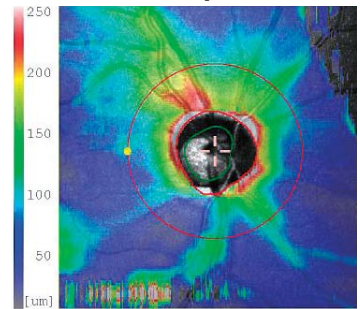
Perimeter
white-white



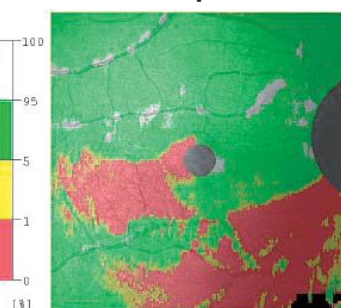
[NFL+GCL+IPL] thickness map



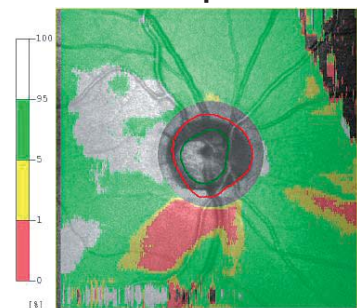
RNFL thickness map



NDB/ [NFL+GCL+IPL] thickness map

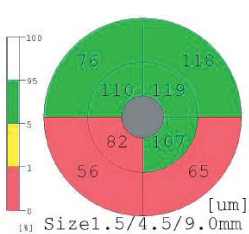


NDB/ RNFL thickness map

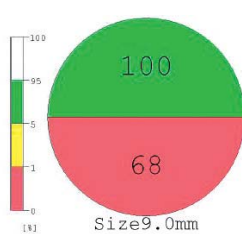


Analysis charts

G Chart



S/I



*Average thickness of each sector surrounding macula

This left eye has been followed as a case of primary open-angle glaucoma (POAG). The **Fundus Photo** shows an slightly tilted disc and the **SLO** image shows small temporal peripapillary atrophy.

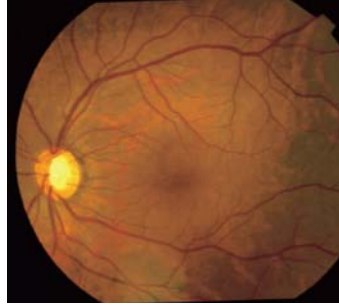
The thickness of the temporal region in the **TSNIT Graph** is abnormal.

A thin area on the **[NFL+GCL+IPL] thickness map** is evident in blue and red color in the superior temporal nerve fiber bundle in **NDB/ [NFL+GCL+IPL] thickness map**.

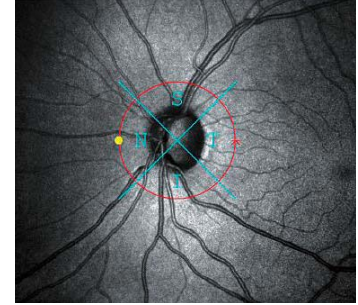
The visual field shows an inferior enlargement of the blind spot.

G Chart is also largely abnormal.

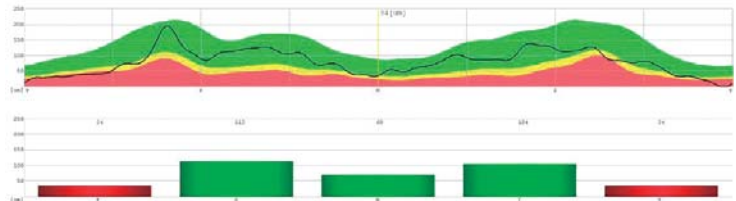
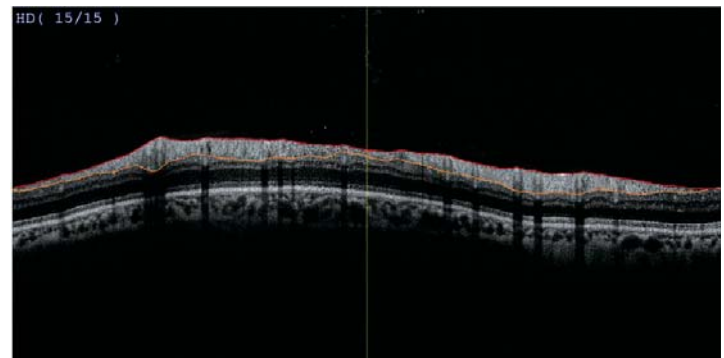
Fundus Photo



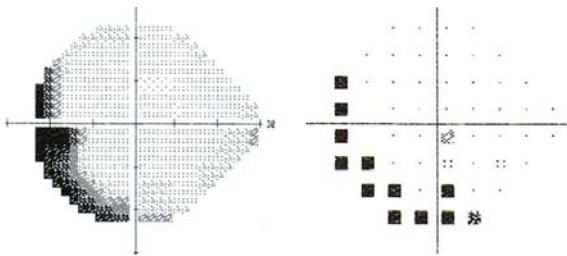
SLO



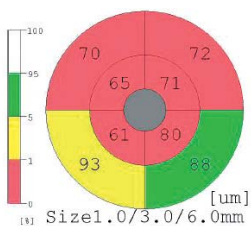
TSNIT Graph



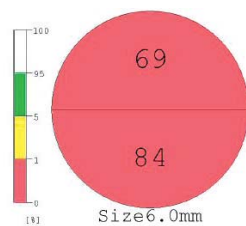
Perimeter
white-white



Analysis charts
G Chart

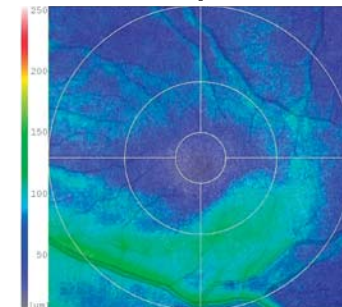


S/I

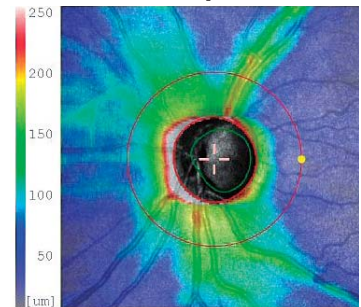


*Average thickness of each sector surrounding macula

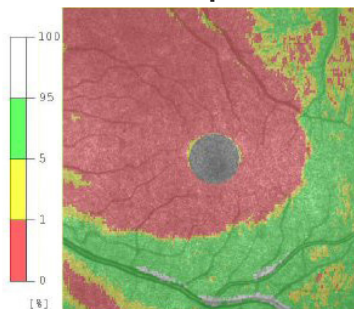
[NFL+GCL+IPL] thickness map



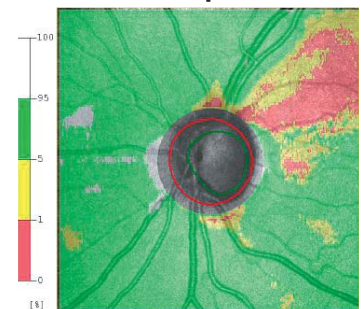
RNFL thickness map



NDB/ [NFL+GCL+IPL] thickness map



NDB/ RNFL thickness map



This patient has advanced primary open-angle glaucoma (POAG) in the right eye. Glaucomatous optic disc with localized inferior notch and a vascular loop can be seen in the **Fundus Photo**.

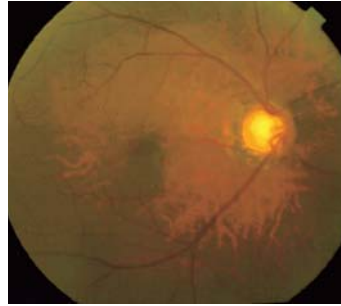
SLO image shows peripapillary atrophy. The **TSNIT Graph** shows a generalized thinning of the RNFL.

Thinning is shown in blue on the **[NFL+GCL+IPL] thickness map** and in red on the **NDB/ [NFL+GCL+IPL] thickness map**.

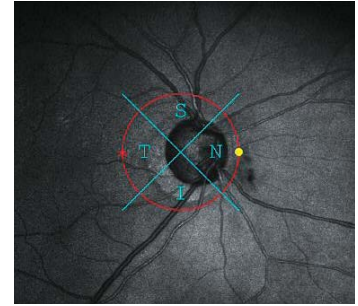
A severe superior bundle defect is shown in the right eye visual field.

The **G Chart** shows an upper normal complex in green and is abnormal inferiorly (red).

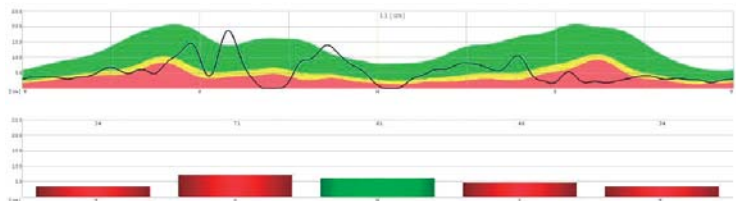
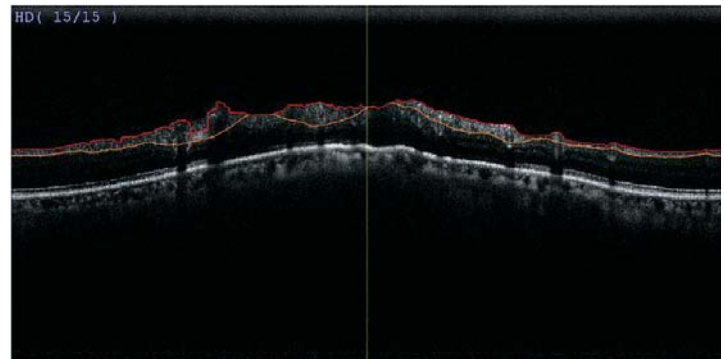
Fundus Photo



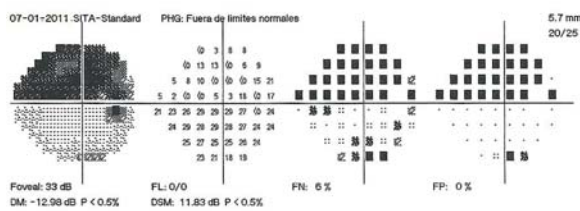
SLO



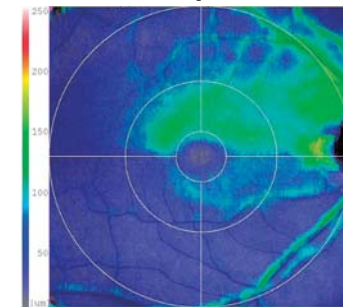
TSNIT Graph



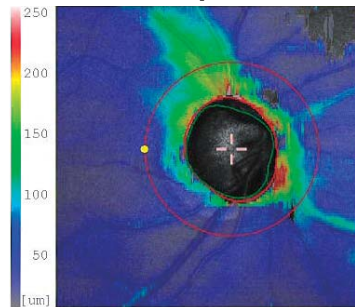
Perimeter white-white



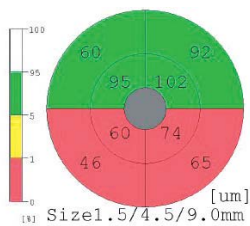
[NFL+GCL+IPL] thickness map



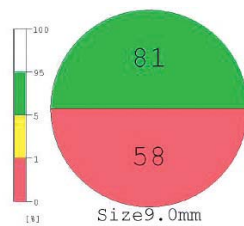
RNFL thickness map



Analysis charts G Chart

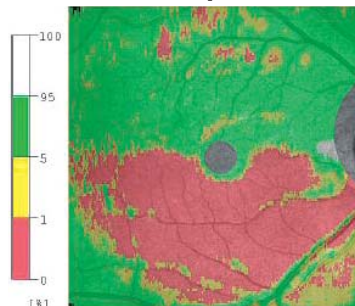


S/I

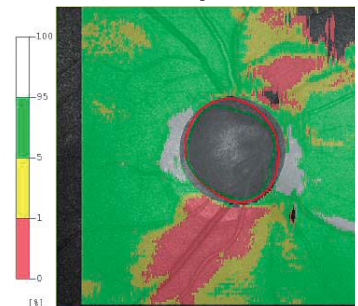


*Average thickness of each sector surrounding macula

NDB/ [NFL+GCL+IPL] thickness map



NDB/ RNFL thickness map



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Awarded special recognition for various investigational projects.



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