

# 2009

## Cynaptix Technologies

Digital imaging  
division

### **CyOptique – Diabetic Retinopathy**

Growing concerns of blindness due to diabetic retinopathy need to be addressed. Detecting the diseases early is of paramount importance to take corrective measures to prevent further loss of vision. Out of the global population of 6 billion, nearly 200 million are affected by diabetes (based on 2002 statistics). Consequently hundreds of millions of people are affected by diabetic retinopathy. An automated tool to detect the incidence of the disease is of immense help in fighting the diseases and to mitigate sufferings of millions of people world over. Monitoring disease progression and efficacy of the treatment are equally important in fighting vision deterioration. CyOptique – DR was designed to provide cost effective and efficient retinal image analysis and diabetic retinopathy screening.

## Features of CyOptique – DR

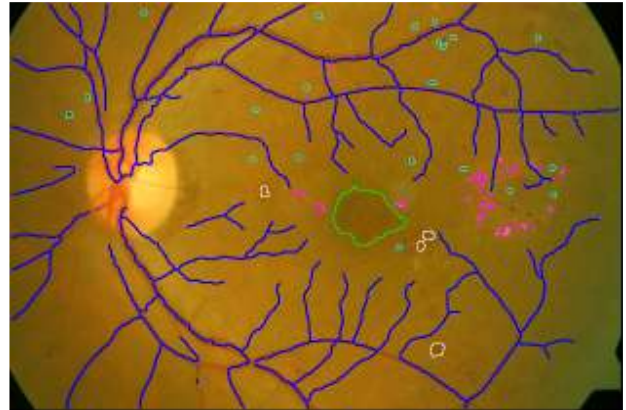
1. Reduces the time consumed in DR grading.
2. Improves the productivity of the grader.
3. Image Pre-processing includes – assessment of micro aneurysms, new vessel , Haemorrhage , cotton wool spots and Hard Exudates
4. Complete patient information such as demographics, patient history, care data, Retinal images, visits, grading and any user-notes pertaining to the patient available in single window
5. Manual marking of micro aneurysms, soft & hard exudates, hemorrhage, and cotton wool spots using mouse click.
6. Ability to track any information / treatments from ophthalmology referrals
7. Detailed scheduling of patients and other resources
8. Allocation of Appointments made simple using drag and drop function and block-booking processes.
9. Flexible grading structure, pathways fully support international standards.
10. User level rights to perform disease grading.
11. Ability to review and compare images from previous patient episodes.
12. Automatic conflict reporting process to ensure quality assurance while grading.
13. Customized statistics based on institutional requirements.
14. Supports multiple Image formats (including DICOM, BMP,JPG,TIFF )
15. User customisable reports can be generated and exported to a selection of electronic formats and styles – including lists and graphs.
16. Supports compression formats – JPEG2000, JBIG2, LZW, ZIPLIB etc.
17. Some of the advanced Image viewer features are:
  - a. Ability to sort and display images based on Laterality (OD, OS & OU)
  - b. Display images based on reset Window Level, Position, Rotation, Zoom
  - c. display overlay information on the images
  - d. Stacking or moving from one image to another in a series of images with a single mouse or button click.
  - e. Load and save the annotation information separated from the image
  - f. Built-in ruler that adjusts based on the DPI of the image and the zoom or scale factor.
  - g. Interpolated image display for higher quality.
  - h. Support to adjust the screen layout (2X2, 4X4)

## Retinal Image Analysis and detection

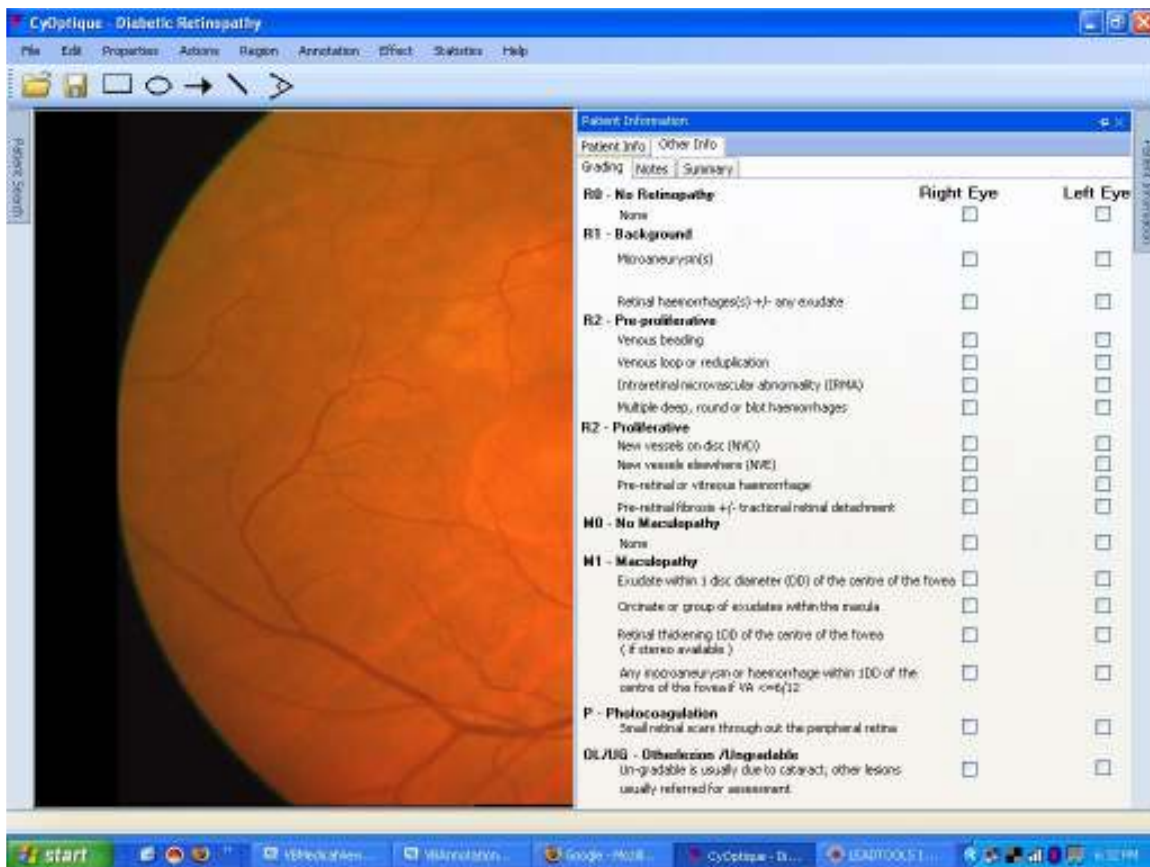
Before



After



## Disease Grading



### Benefits

CyOptique – DR can be used not only for Diabetic Retinopathy Screening and grading but also for tracking disease progression. Early warning and consequent clinical treatment to prevent further vision loss is an important benefit of the system. Disease screening is an important aspect of community vision health.

CyOptique-DR retinal image analysis and diabetic retinopathy screening system seamlessly connects to **CyPACS Ophthalmology** to manage patient related studies.

## System Requirements

- ❖ Operating System: Windows XP Professional SP2 or above
- ❖ Processor: Intel Pentium 4 @ 3.0 Ghz or above
- ❖ RAM: 1 GB DDR2 or above
- ❖ Hard Disk space: 80 GB or above

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