One of the most important applications of the laser in the medical fields is photothermal therapy. The objective of this study was to monitor the laser effects on biochemical, haematological and immunological tests. After photothermal effect of frequency doubled Nd-YAG laser (532nm) for the diabetic retinopathy.

The samples include patients who have diabetic retinopathy. They were divided into two groups according to the time in which blood samples were taken, the blood samples were taken for six patients (first group), a day after radiation, the (second group), blood samples were taken from four patients, a week after radiation.

Both groups were treated by frequency doubled Nd-YAG laser, in each group investigations were done by using special kits for each type of test. That is include (RID) kit for immunological test, Ca^{+2}, total protein, albumin, triglycerides, glucose, cholesterol kits for biological test and PT, PTT and fibrinogen kits for hematological tests. Other type of tests can be investigate by classical methods.

The results of the biochemical and hematological tests were negative (i.e.) no change from normal level for both group because there was no direct effect of the laser radiation on the main organs that effecting these test or elements, but the results of immunological test was positive that include increase of immunoglobulin levels for both group in the blood serum of the patients because that the laser light irradiation may play important two principle role in immunological changes. One is stimulation of cellular differentiation that is responsible for different types of immunoglobulin, the other is stimulation of cellular differentiation that is responsible for different types of immunoglobulin.