# Diabetic Retinopathy Clinical Research Network

## Laser Photocoagulation for DME Study Procedures Manual

**Version 4.0**

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## Table of Contents

## Protocol A - Laser Photocoagulation for DME Study Procedures

### A. DME Laser Treatment Techniques

For the initial laser treatment in the study eye, each patient is randomly assigned to receive either (a) modified-ETDRS focal/grid photocoagulation or (b) mild macular grid photocoagulation.

| Burn Characteristic | Focal / Grid Photocoagulation (modified-ETDRS technique) | Mild Macular Grid Photocoagulation Technique |
|---|---|---|
| **Focal Treatment** | Focally treat all leaking MAs in areas of retinal thickening between 500 and 3000 microns from the center of the macula (but not within 500 microns of disk) | Not applicable |
| **Change in MA Color with Focal Treatment** | Not required, but at least a mild gray-white burn should be evident beneath all MAs | Not applicable |
| **Burn Size for Focal Treatment** | 50 microns | Not applicable |
| **Burn Duration for Focal Treatment** | 0.05 to 0.1 sec | Not applicable |
| **Grid Treatment** | Applied to all areas with diffuse leakage or nonperfusion within area described below for treatment | Applied to entire area described below for treatment (including unthickened retina) |
| **Area Considered for Grid Treatment** | 500 to 3000 microns from the center of macula<br><br>500-3500 microns temporally from macular center (or to posterior edge of PRP temporally if that is less than 3500 microns temporally from macular center)<br><br>No burns are placed within 500 microns of disk | 500 to3000 microns superiorly, nasally and inferiorly from center of macula<br><br>500-3500 microns temporally from macular center (or to posterior edge of PRP temporally if that is less than 3500 microns temporally from macular center)<br><br>No burns are placed within 500 microns of the disk |
| **Burn Size for Grid Treatment** | 50 microns | 50 microns |
| **Burn Duration for Grid Treatment** | 0.05 to 0.1 sec | 0.05 to 0.1 sec |
| **Burn Intensity for Grid Treatment*** | Barely visible (light gray) | Barely visible (light gray) |
| **Burn Separation for Grid Treatment*** | 2 visible burn widths apart | 200-300 total burns evenly distributed over the treatment area outlined above (approx. 2-3 burn widths apart) |
| **Wavelength (Grid and Focal Treatment)** | Green to yellow wavelengths | Green to yellow wavelengths |

- see reference photographs at the end of this chapter.

MA = microaneurysm

**Note:**

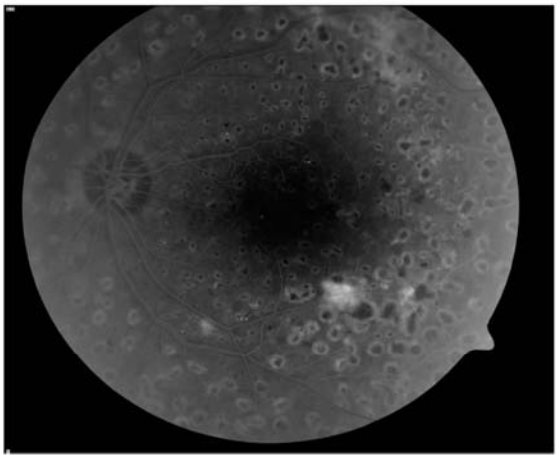
- The investigator may choose any laser wavelength for photocoagulation within the green to yellow spectrum. The wavelength used will be recorded and any retreatment must use the same wavelength.
- Lenses used for the laser treatment cannot increase or reduce the burn size by more than 10%.

## A Pilot Study of Laser Photocoagulation for Diabetic Macular Edema (Protocol #1A)
## Example MMG Treatment Photographs
**(version 1.0, August 5, 2003)**

**A.** Actual fundus photograph with digitally superimposed macular burns simulating burn appearance immediately after placing the burn. Note that the burns will become more prominant over the next several minutes as shown in panel B. The heavier peripheral burns were placed prior to MMG as part of an unrelated PRP treatment.

**B.** Actual fundus photograph taken 40 minutes following MMG treatment. Note the macular burns have become prominant but will fade with time as shown in panel C. The heavier peripheral burns were placed prior to MMG as part of an unrelated PRP treatment.

**C.** Actual fundus photograph taken 6 weeks following the MMG treatment shown in panel B. Note that the macular burns are barely visible now. The heavier peripheral burns were placed prior to MMG as part of an unrelated PRP treatment.



**D.** Actual angiogram performed at same time as the fundus photo in panel C (6 weeks following the MMG treatment shown in panel B). Note that presence of the macular burns which are barely visible in panel C.