**Working instruction for practical realization of manual lesion grading by use of the image editor GIMP.**

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For the realization of manual grading, we used the open-source image editor GIMP, version 2.10. (gimp.org, accessed July 11, 2024). The following steps should be pursued. Steps marked with an asterisk\* only apply if the grading form under consideration contains a follow-up scan assessed together with its related baseline scan.

**Preparatory step.** If OCT data at baseline and follow-up are simultaneously graded then first identify the offset beween related B-scans, e.g. by examination of ILM shape and positions of vessel shadows. Note that corresponding scans not necessarily bear identical numbers even if automated tracking functions of the OCT devices have been enabled. Moreover, the offset may vary throughout a given OCT volume scan.

**Step 1.** Open the GIMP editor. Ensure that the foreground colour is neither white nor black nor a greyscale tone and the background colour is white.

**Step 2.** Open the grading form ("EarlyAMDGrad") for the scan under consideration (File  Open). Ensure that for this image, RGB mode is activated (Image Mode RGB).

**Step 3.** Open a new layer (Layer New Layer) and choose the options Mode: Normal, Opacity: 100.0 and Fill with: Transparency. All subsequent steps should be performed only within this new layer.

**Step 4.** Tick the fields GEN-01 -- GEN-05 for the general properties in the grading form. Use standard pencil and foreground colour.

**Step 5\*.** Tick the fields OFF-01 -- OFF-05 for the offset between baseline and follow-up in the grading form. Use standard pencil and the same colour as in Step 4.

**Step 6.** Zoom in to the first lesion to be masked (View Zoom Zoom In).

**Step 7.** Use the path tool (Tools Paths) to mark the contour of the lesion by consecutive clicks. The marks should be placed on the border between the lesion and the (possibly deformed) retinal layers bounding it. Close the path by clicking again to the first mark and pressing the CTRL key at the same time.

**Step 8.** Change the foreground colour after opening the colour dialogue by clicking to the respective icon, cf. Figure 7. Ensure that the new colour is neither white nor black nor a greyscale tone, and that this colour has not been used before in masking of this scan.



**Figure.** Icon for opening the colour dialogue in GIMP. Current foreground color is red.

**Step 9.** Fill the path with the foreground colour (Edit Fill Path). Choose the option Solid colour only. Then click again to the path tool (Tools Path) in order to remove the marks.

**Step 10.** For the lesion under consideration, choose an empty grading chart ("EarlyAMDChart") and tick its fields according to the working instruction below. Use standard pencil and the same colour as in Step 9.

**Step 11.** Repeat Steps 6 -- 10 for all other lesions visible in the scan.

**Step 12\*.** Open the grading form ("EarlyAMDGrad") for the follow-up scan related to the baseline scan under consideration. GIMP will open a new window for it. Repeat Steps 3 -- 5 for the Follow-up grading form.

**Step 13\*.** Zoom in to the first lesion to be masked in the Follow-up scan (View Zoom Zoom In). If this lesion already occurs in the baseline scan then repeat Steps 7 -- 10 using the same colour as in baseline for masking and filling the chart. In particular, assess the state of progression. Otherwise, repeat Steps 7 -- 10 using a new colour not appearing at all in the grading of the baseline scan, and tick field PRO-01 in the chart.

**Step 14\*.** Repeat Step 13 for all other lesions visible in the follow-up scan.

**Step 15\*.** Check whether there are lesions from the baseline scan which disappear completely in follow-up. If so then mark in the follow-up scan its former positions each with a single pixel in the respective baseline color.

**Step 16.** Merge the layers (Image Merge Visible Layers).

**Step 17.** Export the processed grading mask as .png file (File Export As) without compression and appropriate filename and close the current image (File Close View).

**Step 18\*.** Repeat Steps 16 -- 17 for the grading form for the follow-up scan.