

Retinal Imaging on the Topcon Maestro 3D

Color fundus • OCT • OCT-A — what each captures and why the study collects it

The Topcon Maestro 3D acquires all three modalities below in a single, automated, non-contact session. Use this sheet to understand what each scan shows and to answer patient questions. Reminder: **only imaging acquired as part of routine clinical care is included — nothing is captured solely for research.**

Color Fundus Photography

CFP

WHAT IT CAPTURES

A wide, true-color photograph of the surface of the retina — the optic nerve head, macula, and the retinal blood vessels — in a single non-mydratic (typically no-dilation) shot.

WHY THE STUDY COLLECTS IT

The retinal vessels are the only blood vessels in the body that can be photographed directly and non-invasively. Their caliber, branching, and appearance carry signals linked to **cardiovascular and systemic vascular health**, making the color photo a foundational input for the AI analysis.

Optical Coherence Tomography

OCT • STRUCTURAL

WHAT IT CAPTURES

A high-resolution cross-sectional (“optical biopsy”) scan that images the individual layers of the retina in depth, including the nerve fiber and ganglion cell layers and the macula, at micron-level detail.

WHY THE STUDY COLLECTS IT

Retinal layer thickness reflects **neural tissue** — a direct extension of the central nervous system. Structural OCT provides quantitative measures relevant to **brain aging, neurodegeneration, and stroke risk**, complementing what the surface photo cannot show.

OCT Angiography

OCT-A • IF AVAILABLE

WHAT IT CAPTURES

A dye-free map of blood flow through the fine capillary networks of the retina and choroid, imaging the microvasculature layer by layer without any injection.

WHY THE STUDY COLLECTS IT

OCT-A visualizes the smallest vessels — the microcirculation — where early damage from **diabetes, kidney disease, and vascular disease** often first appears. When clinically acquired, it adds a rich microvascular signal to the analysis. *Collected only when clinically indicated and available on the device.*

At export

Include color fundus, structural OCT, and OCT-A (when available) in the raw export — DICOM when supported, otherwise the most complete vendor-supported raw format. Do not alter files inside the exported package, and never copy or synchronize the live Topcon database.

⚠ Clinical care comes first

These modalities are part of routine care. Research use does not change acquisition, and AI outputs are investigational — they do not guide care and are not communicated to patients.