Supplementary Movie and Figure Legends

Supplementary Movie S1. The adaptive optics scanning laser ophthalmoscopy movie for a healthy 33-year-old man.

Erythrocyte aggregates were described as dark regions (darker than the vessel shadow) that occurred closely behind leukocytes. The movie was acquired at a location 0.25 mm temporal to the fovea on the left eye. Average velocity in the movie was 1.15 mm/s (red arrow). The field size was 1.4 × 2.8°, and the frame rate was 64 frames/s.

Supplementary Movie S2. The adaptive optics scanning laser ophthalmoscopy movie of a 51-year-old man with type 2 diabetic mellitus with no diabetic retinopathy.

The movie showed the fluctuation of velocity in a vessel free of bifurcations (red arrow). The movie was acquired at a location 0.25 mm temporal to the fovea in the left eye. The velocity changed from 0.30 mm/s to 0.64 mm/s, which represented a type 4 vessel. The field size was 1.4 × 2.8°, and the frame rate was 64 frames/s. The patient’s hemoglobin A1c level was 8.4%.

Supplementary Movie S3. The adaptive optics scanning laser ophthalmoscopy movie for a 50-year-old man with type 2 diabetic mellitus and mild non-proliferative diabetic retinopathy.

The movie showed an increased velocity of 2.40 mm/s (red arrows). Capillary tortuosity (green arrowheads) and the appearance of a microaneurysm (yellow arrow) were detected. The movie was acquired at a location 0.25 mm temporal to the fovea in the left
eye. The field size was $1.4 \times 2.8^\circ$, and the frame rate was 64 frames/s. The patient’s hemoglobin A1c level was 10.5%.

**Supplementary Figure S1. Reproducibility of the measurement of velocity and erythrocyte aggregate elongation rate on 3 different days.**

No significant difference was observed among the 3 velocity and erythrocyte aggregate elongation rate measurements.