Movie S1. **Serial block face scanning EM of a glomerulus from a female B6 mouse.** This magnification allows visualization of the entire glomerulus and assembly of serial sections into a movie provides a 3D reconstruction.

Movie S2. **Serial block face scanning EM of a glomerulus from a female FVB mouse.** Increased magnification view of capillary loops in a FVB female mouse. Arrows indicate regions of expanded BM.

Movie S3. **Serial block face scanning EM of a glomerulus from a male FVB mouse.** Increased magnification view of capillary loops in a FVB male mouse. Arrows indicate regions of expanded BM.

Movie S4. **Serial block face scanning EM of a glomerulus from a female B6 mouse.** Increased magnification view of capillary loops in a B6 female mouse. Arrows indicate regions of expanded BM.

Movie S5. **Serial block face scanning EM of a glomerulus from a male B6 mouse.** Increased magnification view of capillary loops in a B6 male mouse. Arrows indicate regions of expanded BM.

Movie S6. **3Dmod of female B6 mouse GBM.** Representative 3D model of B6 female GBM (blue). Model was generated through manual contouring (segmenting) of SBF-SEMs data. B6 female GBMs were smooth and regular without spilts.

Movie S7. **3Dmod of male B6 mouse GBM.** Representative 3D model of B6 male GBM (blue). Model was generated through manual contouring (segmenting) of SBF-SEMs data. B6 male GBMs were smooth and regular without spilts.

Movie S8. **3Dmod of female FVB mouse GBM.** Representative 3D model of FVB female GBM (blue). Model was generated through manual contouring (segmenting) of SBF-SEMs data. FVB female GBMs contain frequent expanded regions of GBM, associated with the expanded regions, there was splitting of the GBM (red).

Movie S9. **3Dmod of male FVB mouse GBM.** Representative 3D model of FVB male GBM (blue). Model was generated through manual contouring (segmenting) of SBF-SEMs data. FVB male GBMs contain frequent expanded regions of GBM, associated with the expanded regions, there was splitting of the GBM (red).