Background Evaluation of a new method for cyclofusion measurement. Patients and Methods The maximal incyclofusion and excyclofusion tolerated of 20 normal subjects (15 females, mean age 36 ± 9.9 years) were measured by computer-generated dynamic random-dot stereograms (DRDS). Subjects had to detect the orientation of only binocularly visible Landolt C stimuli randomly presented with a 3-D monitor. Both eyes were separately stimulated with shutter glasses. The DRDS-pattern projected to the left and right eye were rotated in the opposite direction in 0.5° steps. In 10 subjects, cyclofusion measurements were repeated. Results Incyclofusional amplitudes were between 2.5° and 6°, excyclofusional amplitudes measured between 3° and 5.5°. Mean incyclofusion was 3.71° (SD 0.82) and mean excyclofusion measured 4.24° (SD 0.73). Repeated measurements of incyclofusion and excyclofusion in the same subject demonstrated a difference of about 0.5° (0.55° for incyclofusion, 0.45° for excyclofusion). Conclusions The DRDS Landolt C method provided a reliable assessment with good reproducibility of cyclofusion in healthy subjects with only binocularly perceivable objects. Our cyclofusional capabilities were slightly higher than those received with dissociating 2D measurements.