Supplemental text: video captions

Supplemental Video S1. Stick and Roll Adhesion of streptococci at Moderate Flow. GspB+ bacteria are washed over a surface with immobilized ecGPIBα at 1.4 dyn/cm^2. The gray and white pattern is the plastic dish. Streptococci appear as dark singlets or chains of varying length that are stationary or roll on the surface. Bacteria in the fluid phase move too quickly to be seen (except as a blur) at this shear stress. Flow direction is from left to right.

Supplemental Video S2. Ability of streptococci to Remain Bound at Increasing Flow. GspB+ bacteria were first bound to a surface with immobilized ecGPIBα at 2 dyn/cm^2, and the inflowing fluid was then switched to a wash buffer with no bacteria. The shear stress is stepped up as indicated in the video. The gray and white pattern is the plastic dish, and streptococci appear as dark singlets or chains of varying length. Bacteria in the fluid phase move too quickly to be seen (except as a blur) at these shear stresses. Flow direction is from right to left.

Supplemental Video S3. Detachment of streptococci with Decreasing Flow. GspB+ bacteria were first bound to immobilized ecGPIBα at 2 dyn/cm^2, and the inflowing fluid was switched to a wash buffer with no bacteria, at 5 dyn/cm2. The shear stress was stepped down as indicated in the video. The gray and white pattern is the plastic dish, and streptococci appear as dark singlets or chains of varying length. At the first few shear stresses, the bacteria in the fluid phase move too quickly to be seen (except as a blur), so the moving bacteria are still adherent, while those that disappear have detached. At the later, lower shear stresses, the bacteria in the fluid phase near the surface are visible, so the majority of moving bacteria are actually detached. The velocity of moving bacteria is compared to the fluid velocity one bacterial radius from the surface to determine which are detached versus moving, to obtain the quantitative data in figure 3.