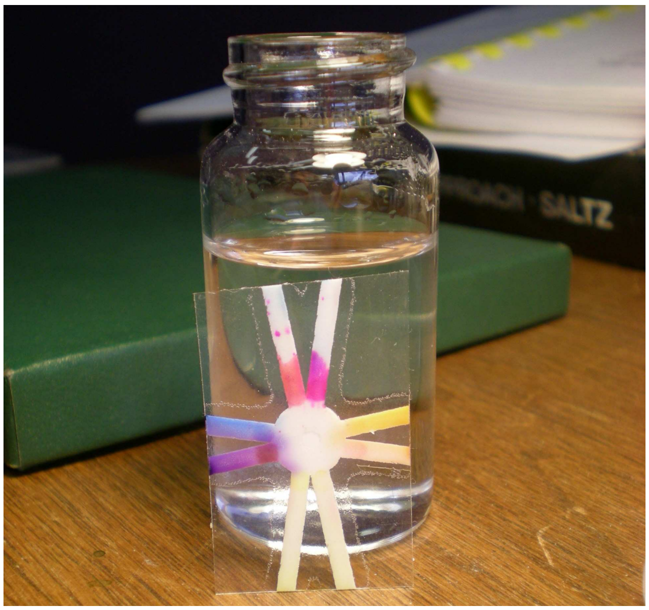
Supporting Information.

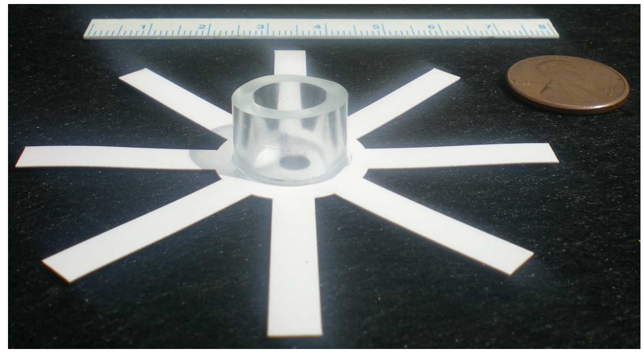
Videos.

Video 1: fluidic flow of aqueous dye in a Type 1 device.
Video 2: fluidic flow of aqueous dye in a Type 2 device.
Video 3: fluidic flow of aqueous dye in a Type 3 device.

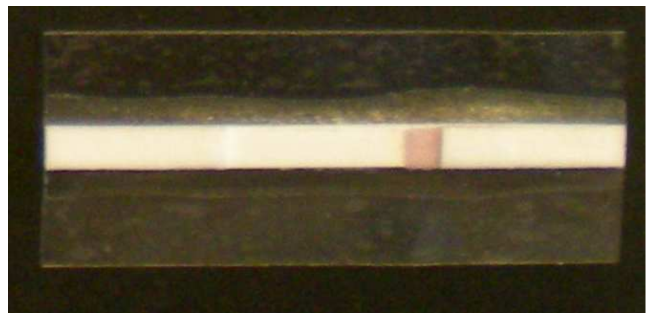
Photos.



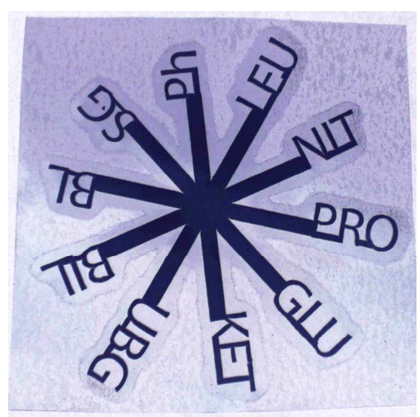
Supplementary photo 1. An 8-arm Type 3 device comprising a porous thin film of nitrocellulose sandwiched between vinyl and polyester thin films. Device shown abive is comparable to Device *2p* of Figure 2. Prior to mating with cover tape, granules of solid dye were manually deposited on the arms, each arm receiving a different dye. Fluidic access is provided by a small hole in the cover tape at the center of the star. The addition of water to this pre-cut circular access hole results in the imbibition of fluidic into the device, and lateral migration of a fluid front in each arm. Subsequent solubilization of the solid dye results in the development of color on the arms. The rate of advancement of the visible dye front was observed to vary from arm to arm, and in some cases, laterally across an arm. We interpret this to indicate that granules of dye deposited atop nitrocellulose are not uniformly wetted and solubilized, as might be expected for different dyes, and/or when flow occurs primarily within, not atop, the nitrocellulose.



Supplementary photo 2. A small cylinder of Tygon tubing has been glued to the vinyl cover tape surface of a Type 2 device, thereby creating a macroscale reservoir. We find the glue bond between Tygon and vinyl is mechanically robust.



Supplementary photo 3. The photo shows a conventional lateral flow strip that has been sealed with cover tape, to create a cassette-less format. Nitrocellulose is exposed at the left and right edges of the strip, thereby providing controlled fludic access.



Supplementary photo 4. Color-inverted image of Figure 4b, intended to show the true square edge of the device.