



## **Nu- Eye tracking explained**

**What is a Saccade?** A saccade is a fast movement of an eye, fast jumps from one fixation to the other. Saccades are quick, simultaneous movements of both eyes in the same direction. Regressive saccades and saccade pattern can reveal confusion and problems in understanding

**What is a Fixation?** Fixations occur when the eye is resting on a target. Typical duration of fixations are 100 – 600 milliseconds. Information from scene is gathered during this period the brain starts processing data during this stop period and the length of fixation often indicates information processing and/or cognitive activities.

**Smoothing:** The frequency at which the eye data is calculated to determine where the cursor (or pointer) should be drawn. The value can range from 2 to 45. The higher the number, the slower the cursor responds. The lower the number, the faster the cursor responds.

The calculation can be conducted in 3 ways:

- “Stream” [DEFAULT]: Works well for most users and at all ranges of smoothing. This setting moves with the eye wherever the user looks on the screen.
- “Snap”: Works well for users who have dramatic shifts in gaze (poor visual attention, frequent and constant head movement, severe nystagmus). Very robust and makes the cursor feel “sticky”.
- “Group”: Works well for users who have frequent shifts in gaze (mild to moderate nystagmus) around a central point.

**Filter Method:** Filter Method can be adjusted to separate an individual's saccades and fixations. The saccadic movements can be calculated as they are fast and usually have short durations. Fixations require stability over a longer period of time. NuEye can determine the difference between a saccade and fixation and therefore apply separate methods to each eye event. [DEFAULT is to apply Stream to both the saccade and fixation.]

Other options include:

- Stream + Snap
- Stream + Group

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