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**NYSTAGMUS DEMONSTRATION:
A VISUAL REFLEX MEDIATED BY SEMICIRCULAR CANALS**

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Tracking objects is a complex activity under normal circumstances, but the complexity is markedly increased during movement of the head. There is a system within the brain located in the superior colliculi which receives information on rotation of the head from the semicircular canals. The superior colliculi then directs eye movements via the extrinsic muscles of the eye to compensate for these head movements.

The effects of this system can be seen when it over compensates from prolonged rotation of the body. The semicircular canals become accommodated to the rotation, and when the rotation is halted, the endolymph continues to move, triggering impulses interpreted in the superior colliculi as strong rotational acceleration signals. It therefore directs the compensating jerking of the eyes called nystagmus (from the Greek, meaning to nod). Nystagmus may also be a sign of malfunction in one of the stages of the system responsible for this reflex.

NYSTAGMUS DEMONSTRATION

CAUTION:

Protect subject by performing away from all furniture, sharp corners, etc

1. Place student on rotating stool, away from all furniture, sharp corners, etc.
2. Rotate student a determined number of times (5, 10, 15, etc) Take care to stop *before* nausea is induced...
3. Stop rotation abruptly with subject's eyes facing observers so that the eyes may be observed at close range (about a foot away).
4. Observe the following:
 - a) Is the movement large or small
 - b) How frequent is the movement (jerks/second or second between jerks)
 - c) How long do the movements persist.

Additional questions you could ask:

Does the strength or persistence relate to the length of time rotation was performed?

Is there a minimum length of time in order to accommodate to the rotation?

Use of a video camera with slow motion playback may allow this reflex to be quantified.