

A blue stethoscope is positioned on the right side of the image, with its chest piece and tubing visible. The background is a light blue gradient. The text "Aeromedical Factors & Certification" is overlaid on the left side of the image in a white, sans-serif font.

Aeromedical Factors & Certification

Medical Certificates: Who Needs One?

PRIVATE PILOT:

Must hold at least a
third class medical
certificate
or
have a BasicMed
endorsement from a
doctor

SPORT PILOT:

Medical not required.
Current valid driver's
license suffices as a
'medical certificate.'
You are self-certifying
your medical fitness to
act as PIC

Medical Certificates: Who Needs One?

PRIVATE PILOT:

Must hold at least a 3rd Class medical certificate

or

complete the BasicMed process and abide by its restrictions

SPORT PILOT:

Medical not required. Current valid driver's license suffices as a 'medical certificate.'

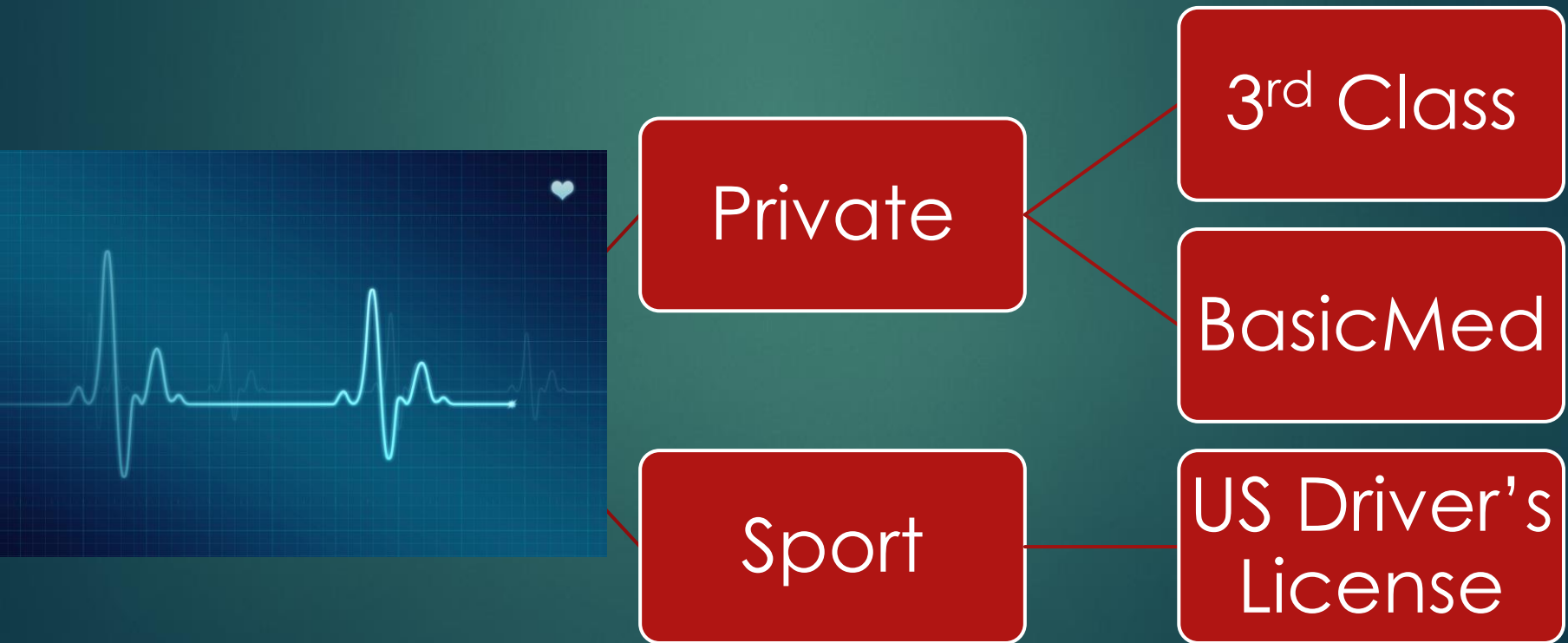
You are self-certifying your medical fitness to act as PIC.

Please note:

You may not act as PIC if you held an FAA medical which is currently in a status of deferral, denial, suspension, or revocation. Such a status must be rectified with the FAA before either option can be exercised.

Two interlocking options:

- ▶ Sport pilot vs private pilot
- ▶ Traditional 3rd class medical vs BasicMED



The Third Class Medical Certificate

Must be issued by an FAA certified Aeromedical Examiner (AME).

Comprehensive physical exam
Close attention paid to medications taken
List of disqualifying conditions & medications is available

Under 40 at time of exam:

Good until the last day of the month in
which the medical was issued

Five years later.

40 and older at time of exam:

Good until the last day of the month in
which the medical was issued

Two years later.

What is allowed under BasicMed?

- ▶ PIC of any compliant aircraft
- ▶ VFR and IFR under 18,000 feet
- ▶ Flight instruction
- ▶ Safety Pilot

BasicMed: How It's Changed

Before PL 118-63	After PL 118-63
Aircraft authorized with no more than six occupants	Aircraft authorized with no more than seven occupants
Maximum takeoff weight no more than 6000 lbs	Maximum takeoff weight no more than 12,500 lbs
Flight altitude no more than 18,000 MSL	No change
Airspeed no more than 250 knots	No change
Within the United States (or with permission of foreign country)	Mandated to expand list via diplomacy

Who is eligible for BasicMed?

- ▶ **Have held a valid medical on or after July 15, 2006**
 - ▶ In 2006 a 3rd class for a pilot under 40 was good for three years, not five (this was changed in 2008)
 - ▶ If you were younger than 40 at the time of your last medical, it could have been issued as early as July 1, 2003
 - ▶ If you were 40 or over, it could have been issued as early as July 1, 2004

Who is eligible for BasicMed?

- ▶ That medical must still be 'in good standing'
 - ▶ Expired is OK
 - ▶ Cannot have been denied, suspended, or revoked
 - ▶ If currently deferred, must wait for OK City's ruling

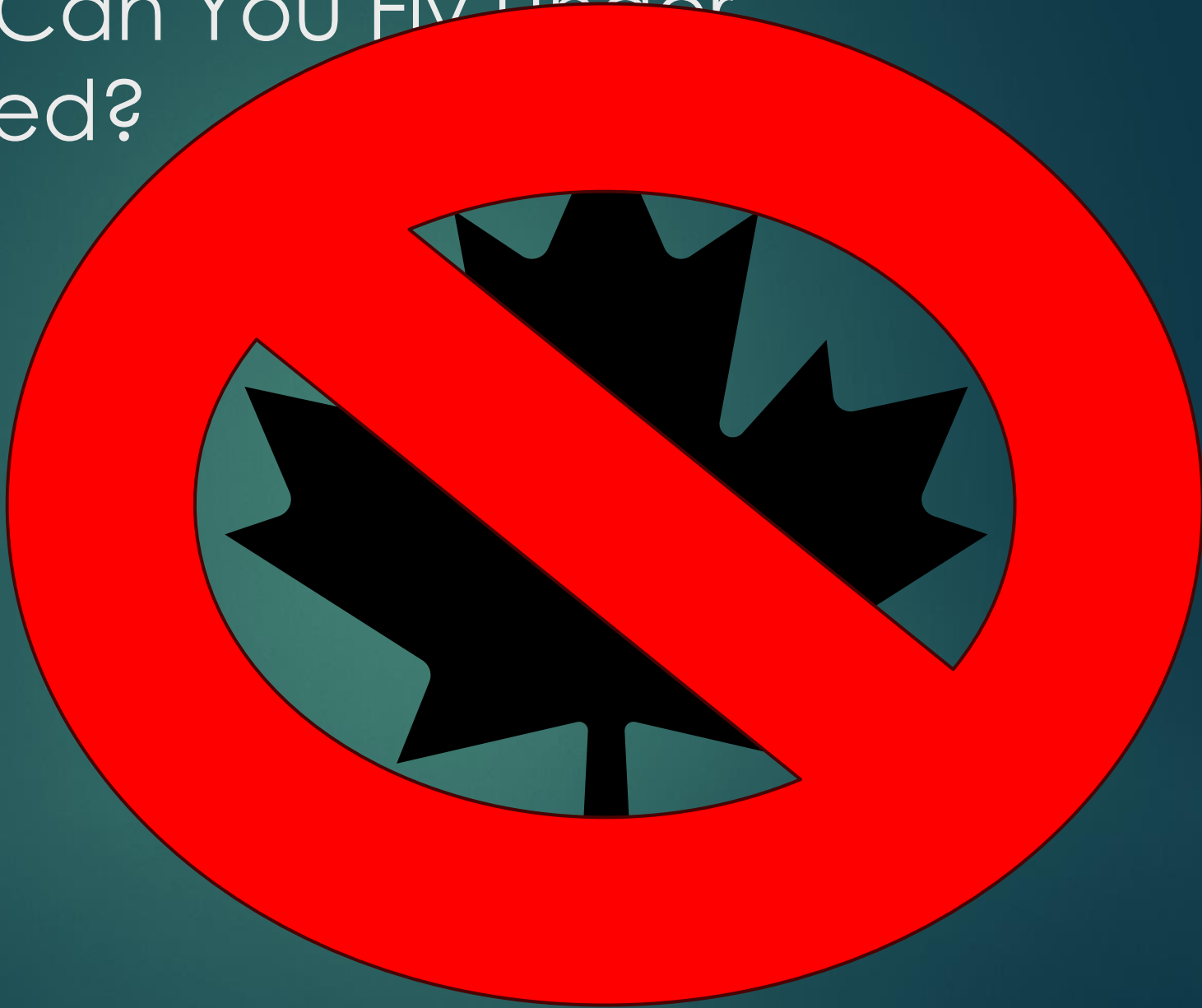
Who is eligible for BasicMed?

- ▶ **Have not developed in the meantime any of the conditions listed by the FAA (14 CFR 68.9):**
- ▶ Mental health disorder:
 - ▶ Severe personality disorder, psychosis, bipolar disorder; substance dependence
- ▶ Neurological disorder:
 - ▶ Epilepsy, unexplained loss of consciousness, unexplained loss of nervous system control
- ▶ Cardiovascular condition:
 - ▶ Myocardial infarction, coronary heart disease requiring treatment, cardiac valve replacement, heart replacement.

Where Can You Fly Under BasicMed?

- ▶ United States
- ▶ Mexico
- ▶ The Bahamas
- ▶ The Dominican Republic
- ▶ Puerto Rico
- ▶ U.S. Virgin Islands
- ▶ American Samoa
- ▶ Commonwealth of the Northern Mariana Islands
- ▶ Federated States of Micronesia
- ▶ Guam
- ▶ Republic of the Marshall Islands
- ▶ Republic of Palau

Where Can You Fly Under
BasicMed?



Sport Pilot Privileges

- ▶ United States drivers license
- ▶ **Not necessary** to have ever held an FAA medical certificate
 - ▶ If a medical certificate *has* ever been issued, it must not have been suspended or revoked
- ▶ If a medical has ever been applied for, the application must not have been denied or still in a deferral status.
- ▶ Pilot must self-certify before every flight that there is no medical issue compromising safety

What changed with MOSAIC?

▶ Old paradigm:

- ▶ Weight limit
- ▶ Two place
- ▶ Activities such as night flight forbidden
- ▶ A/C characteristics either allowed or forbidden
- ▶ Speed limit 120 kts

▶ New paradigm:

- ▶ Performance based: clean stall speed
- ▶ Four place OK but only one passenger
- ▶ Add-ons like night flight/RG/complex obtainable via separate endorsement
- ▶ Speed limit 250 Kts

Part 61: Sport Pilots

Sport Pilot Privileges as of Oct 22, 2025

Seats	4 (airplane) 2 (other)
Occupants	2
Stall speed clean (V_{s1})*	59 kts CAS (airplane) 45 kts CAS (other)
Max level flight speed (V_h)	250 kts CAS
Powerplant	N/A
Constant speed propeller	With endorsement
Retractable landing gear	With endorsement
Night flight	With endorsement and 3 rd Class/BasicMed
Ratings in additional category/class	Clarified in advisory circular dated 11/14/2025

** Maximum stall speed/minimum steady flight speed without the use of lift-enhancing devices, at maximum certificated takeoff weight and most critical center of gravity.*

Medical and Self-Certification Resources

- ▶ FAA MedExpress
- ▶ AOPA Medication Checklist
- ▶ When self-certifying, consider these medications in the same light – do they have the potential, or have they in the past, affected you in a manner that may be unsuited for the safe operation of an aircraft?

Health & Medical Factors Affecting Pilot Performance



Hypoxia: too little oxygen

- ▶ O₂ deficiency in the tissue.
- ▶ Symptoms are difficult to detect before pilot's functions are affected.

Types of Hypoxia

Name	Definition	Causes
Hypoxic	Drop of blood oxygen levels because of lack of absorbable oxygen in breathing air	<ul style="list-style-type: none">• increased altitude• pressurization loss
Hypemic	Blood is unable to absorb the required oxygen even at normal pressure	<ul style="list-style-type: none">• reduced blood volume• anemic diseases• carbon monoxide poisoning• smoking• recent blood donation
Stagnant	Loss of blood motion through parts of the body	Pulling excessive Gs
Histotoxic	Toxic matter in the body prevents cellular absorption of oxygen	<ul style="list-style-type: none">• alcohol (1 oz = 2K' of alt.)• narcotics• poisons

Hyperventilation

- ▶ Excessive rate and depth of ventilation leading to excessive loss of carbon dioxide from the blood.
- ▶ Can be an unrecognized reaction to stress
- ▶ Can lead to unconsciousness -- respiratory system overrides breathing to renormalize CO₂ fraction

Hyperventilation

- ▶ Other hyperventilation symptoms:
 - ▶ visual impairment
 - ▶ lightheaded/ dizziness
 - ▶ hot/cold sensations
 - ▶ muscle spasms
 - ▶ tingling sensations

- ▶ Consciously slowing the breathing rate, breathing into a paper bag or talking aloud can help combat or prevent hyperventilation.

Carbon Monoxide

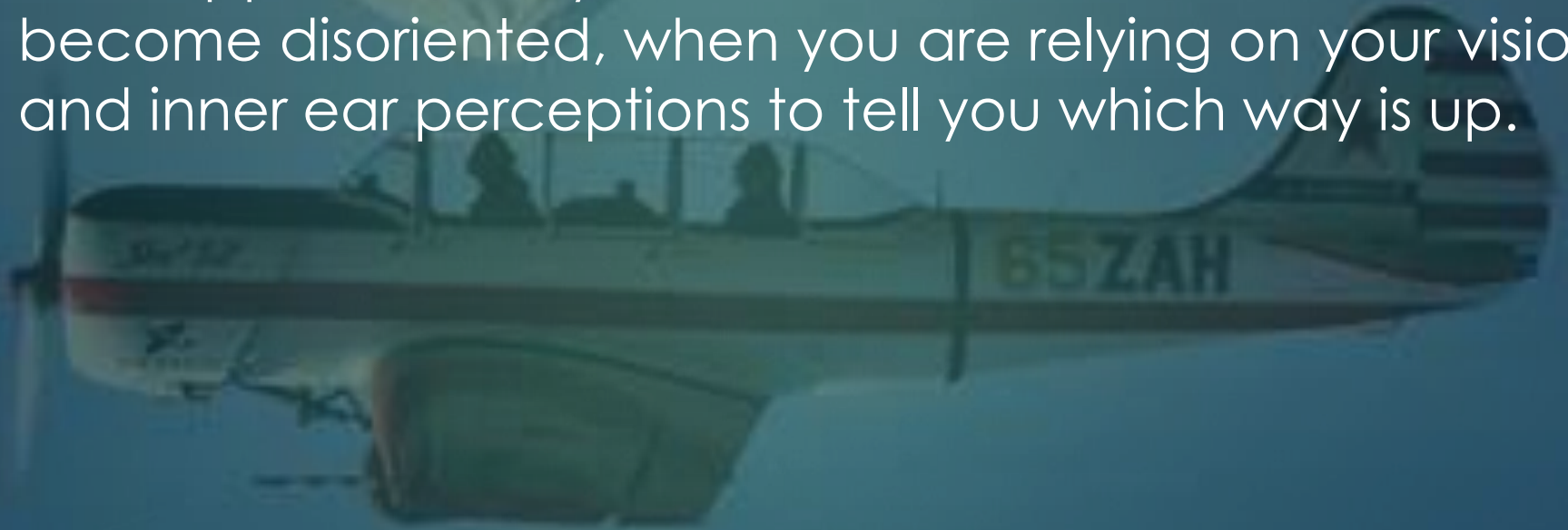
- ▶ CO is a colorless, tasteless, odorless gas produced during combustion.
- ▶ CO can enter the cockpit through heating and defrosting ports.
- ▶ Increase in altitude exaggerates the effects of CO poisoning because of the reduction of oxygen availability.

Carbon Monoxide

- ▶ If leak is detected, or there is an odor of exhaust fumes, immediate corrective action should be taken, such as turning off heaters, opening air vents / windows, or using supplemental oxygen.
- ▶ Symptoms of CO poisoning include blurred thinking and vision, uneasiness, dizziness, tightening of the forehead, headache and loss of muscle power (later stages).

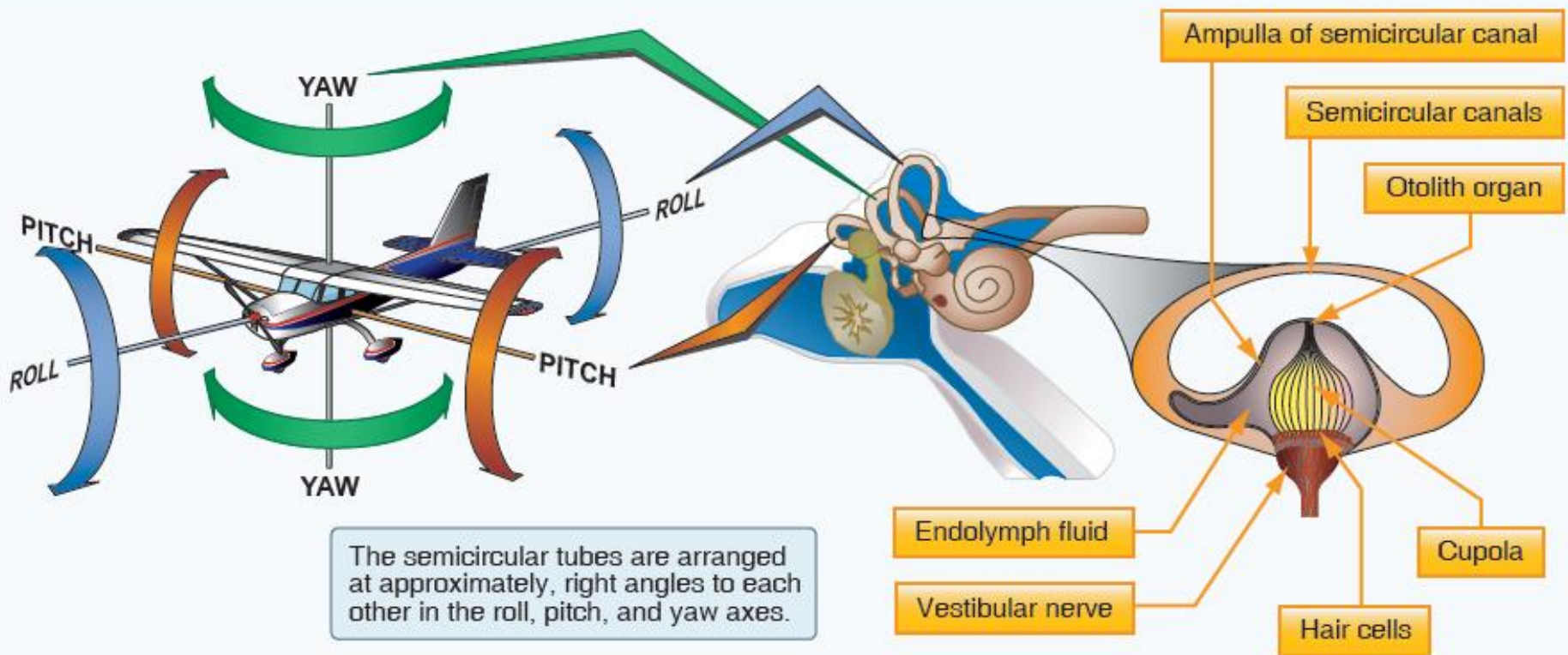
Spatial Disorientation

- ▶ State of temporary confusion resulting from misleading information sent to the brain by various sensory organs.
- ▶ This happens when you lose outside visual reference and become disoriented, when you are relying on your vision and inner ear perceptions to tell you which way is up.



Spatial Disorientation

- ▶ Semi-circular canal corresponds to sensations of roll, pitch, and yaw
- ▶ These signals can mislead when disconnected from visual confirmation



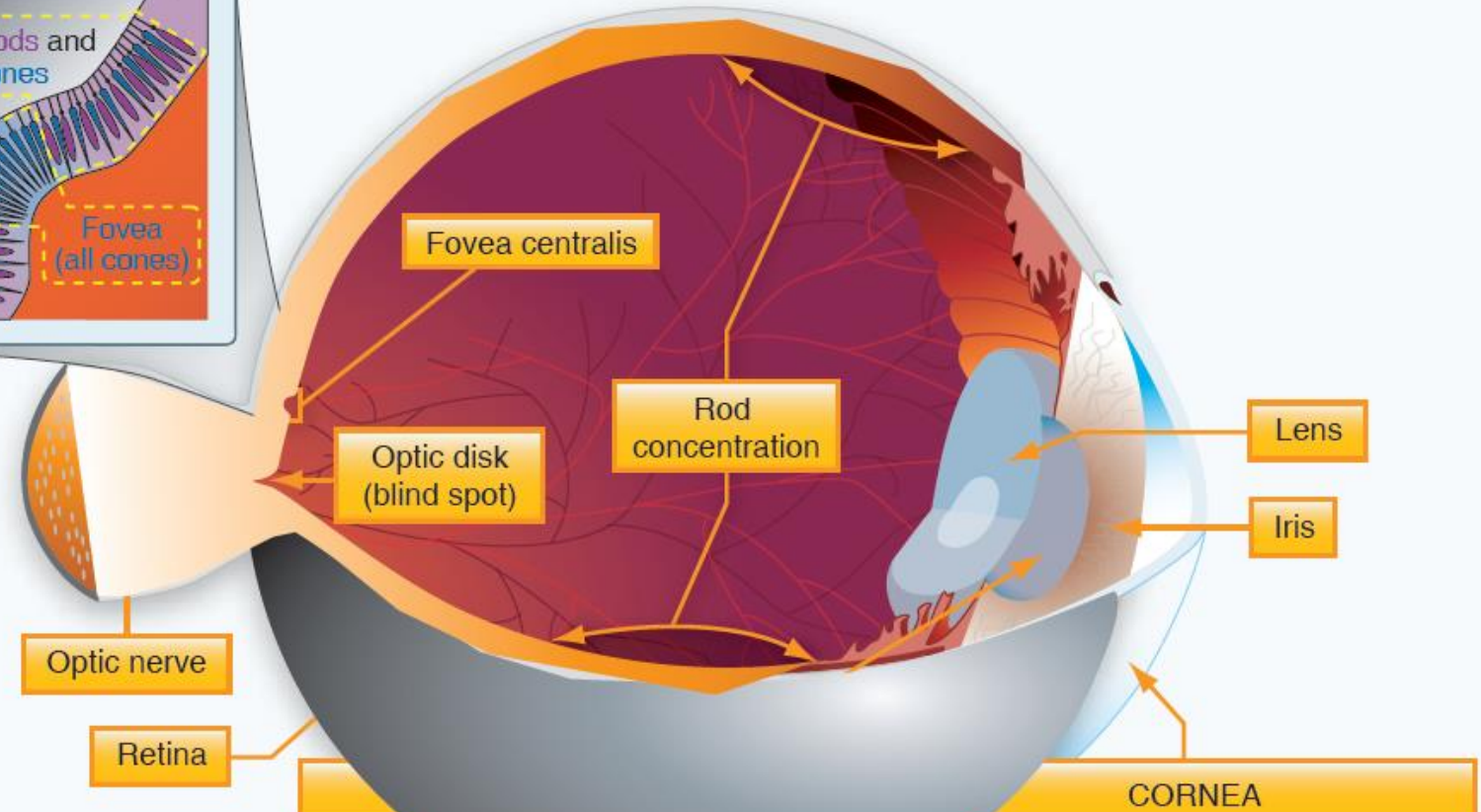
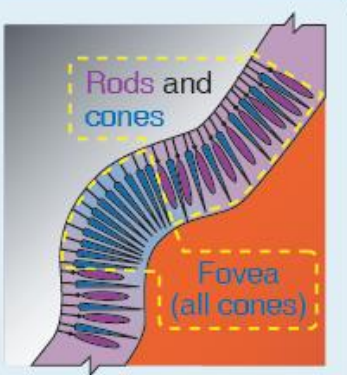
Preventing Visual and Vestibular Illusions

- ▶ Rely on your flight instruments, rather than your sensory perceptions.
- ▶ Avoid sudden head movements.
- ▶ If using external visual points, ensure that they are actually fixed points on the ground.
- ▶ Strobes off in areas of haze / clouds to prevent optical illusions



Flight Sight

The rods and cones (film) of the retina are the receptors which record the image and transmit it through the optic nerve to the brain for interpretation.



The **pupil** is the center of the eye. The pupil is adjusted to control the amount of light entering the eye.

Light passes through the **cornea** (the transparent window on the front of the eye) and then through the **lens** to focus on the retina.

Flight Sight

- ▶ Pilots should adapt their eyes for night flight by avoiding bright white lights for 30 minutes prior to the flight.
- ▶ Off-center viewing is better for spotting traffic at night.
- ▶ Scanning for traffic in general is best accomplished by bringing small portions of the sky into the central field of vision slowly.
- ▶ Haze can create the illusion of terrain being farther away than it really is

Alcohol

Even in small amounts, alcohol impairs

- ▶ judgement
 - ▶ sense of responsibility
 - ▶ coordination
 - ▶ vision
 - ▶ reasoning
 - ▶ attention span
-
- ▶ Alcohol also affects the ability of the blood to absorb oxygen - histotoxic hypoxia.

Alcohol

- ▶ Body requires about 3 hours to rid itself of all alcohol contained in one mixed drink or beer
- ▶ To act as pilot in command or required crew:
 - ▶ No less than eight hours “bottle to throttle”
 - ▶ Blood alcohol concentration less than .04%

Drugs' Effects on Pilot Physiology

Class	Examples	Potential Effects
Stimulants	Caffeine Amphetamines Nicotine	Anxiety Mood swings Raised blood pressure
Depressants	Motion sickness meds Antihistamines Decongestants Alcohol	Lowers blood pressure Slows motor response Slows reaction time
Miscellaneous OTC/Common Rx	Pain Relief Cough Suppression Muscle Relaxants Sedatives	Judgement Memory Coordination Vision Impaired alertness