

Treatment of AF

Pacemaker & AV node ablation

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Why treat?

- Symptoms - what you feel, limitations
- Prognosis - future health and life span

What are we treating?

- **The disease** - what went wrong
- The illness - how it effects you

The disease

- Electrically unstable cells (esp. LA / PV)
- Scarring and enlargement of the left atrium

The causes

- Genes
- Blood pressure
- Alcohol
- Virus (?)
- Thyroid
- Slow heart (SND)
- Heart attack
- Valve disease
- Heart surgery
- Unknown (idiopathic)

Treating the causes

- Genes **X**
- Blood pressure **✓**
- Alcohol **✓**
- Virus (?) **X**
- Thyroid **✓**
- Slow heart (SND) **✓**
- Heart attack **X** **✓**
- Valve disease **✓**
- Heart surgery **X**
- Unknown **X**

The disease

- Electrically unstable cells (esp. LA / PV)
- Scarring and enlargement of the left atrium

Treating the disease

- Electrically unstable cells (esp. LA / PV)
 - Stabilise them
 - Kill them
 - Disconnect them

Treating the disease

- Electrically unstable cells (esp. LA / PV)
 - Stabilise them ✓? (remove cause / drugs)
 - Kill them ✗
 - Disconnect them ✓? (pulm. vein isolation)

Treating the disease

- Scarring and enlargement of the left atrium
 - Remove cause
 - Repair atrium
 - Stop re-entry (electrical loops)

Treating the disease

- Scarring and enlargement of the left atrium
 - Remove cause ✓? (sometimes works)
 - Repair atrium ✗
 - Stop re-entry ✓? (LA ablation)

AF - the illness

- Palpitations
- Fatigue
- Breathlessness
- Poor sleeping
- Chest pain
- Worry
- STROKE

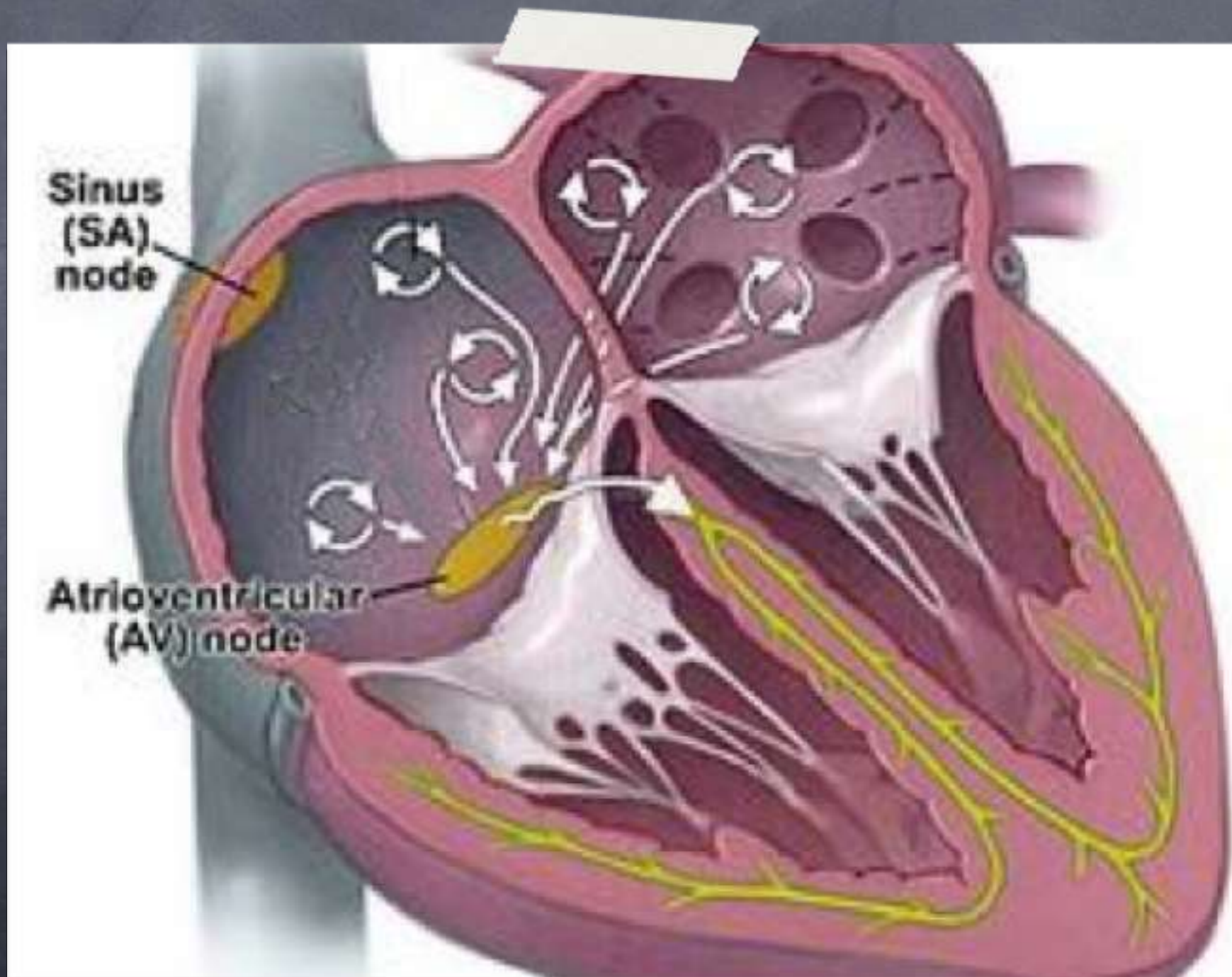
What are we treating?

- AF-related risk of blood clots ✓ anticoagulation
- Irregular heart beat if uncomfortable
- Wrong heart rate - often too slow at times
- Other heart problems: don't make them worse

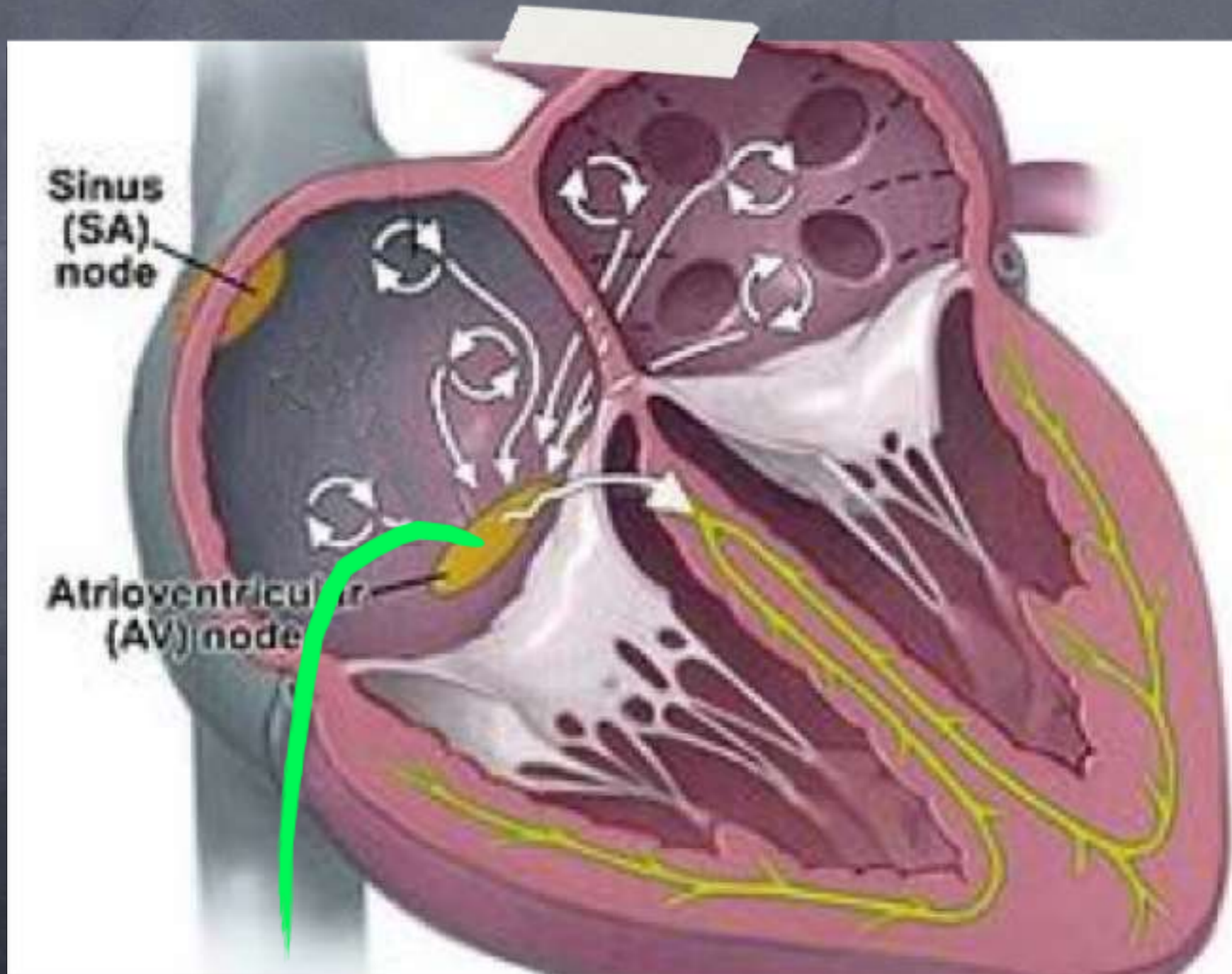
Pacing + AV node ablation

- Fibrillation in the atria causes palpitations because of irregular conduction through the atrioventricular node.
- AV node ablation is a fairly simple catheter procedure to block conduction through the node completely.
- A pacemaker is implanted beforehand to maintain the ventricular beat.

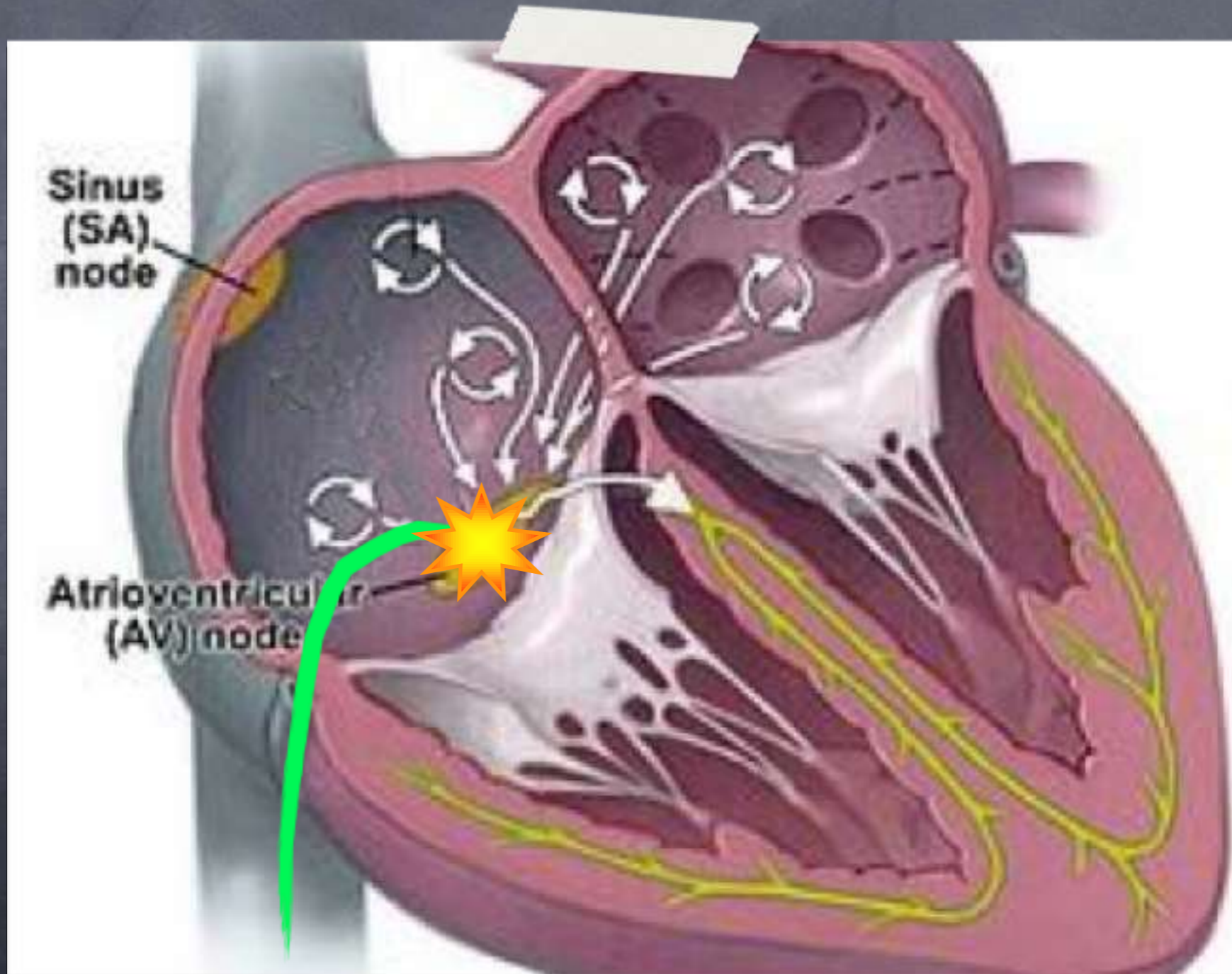
AV node ablation



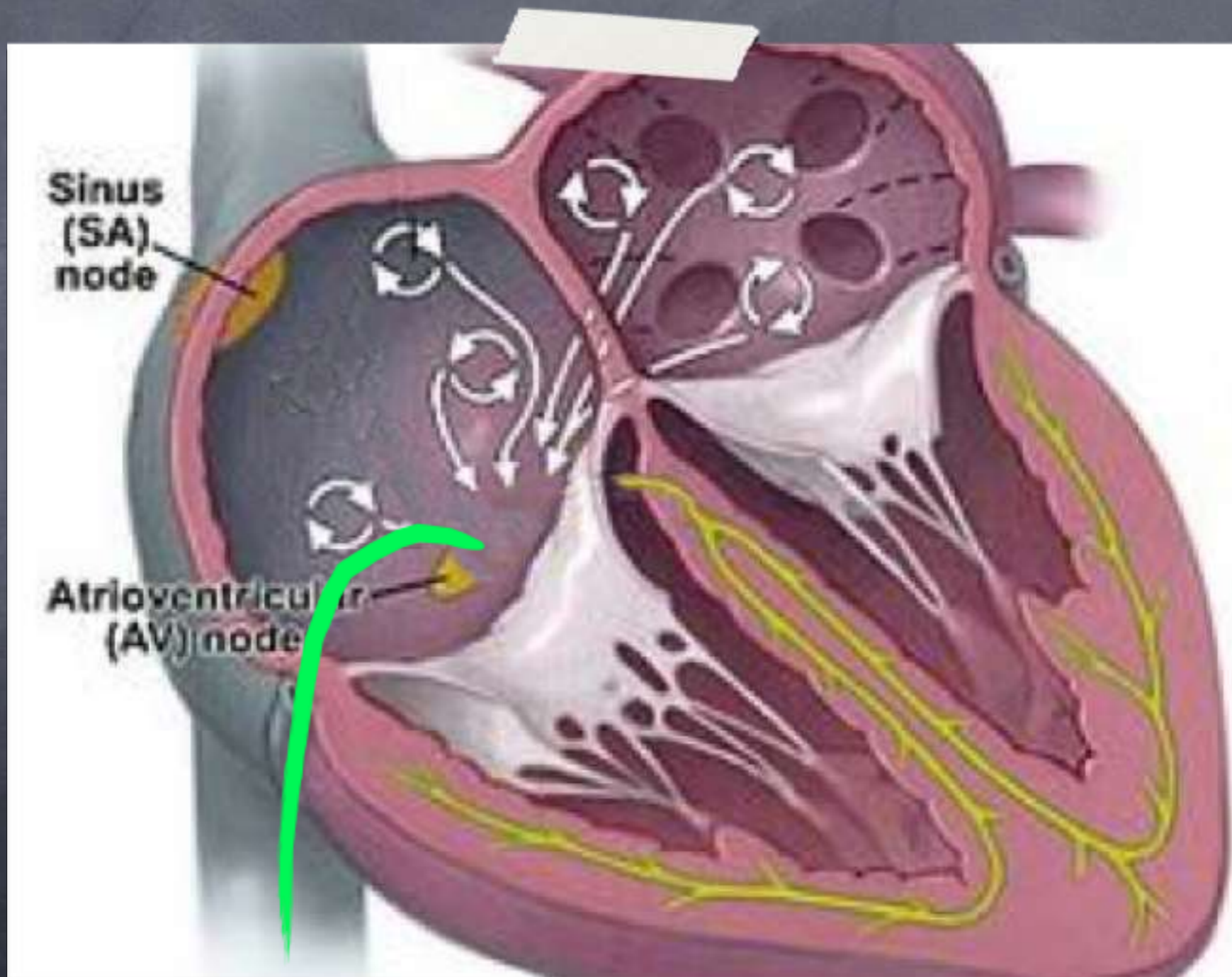
AV node ablation



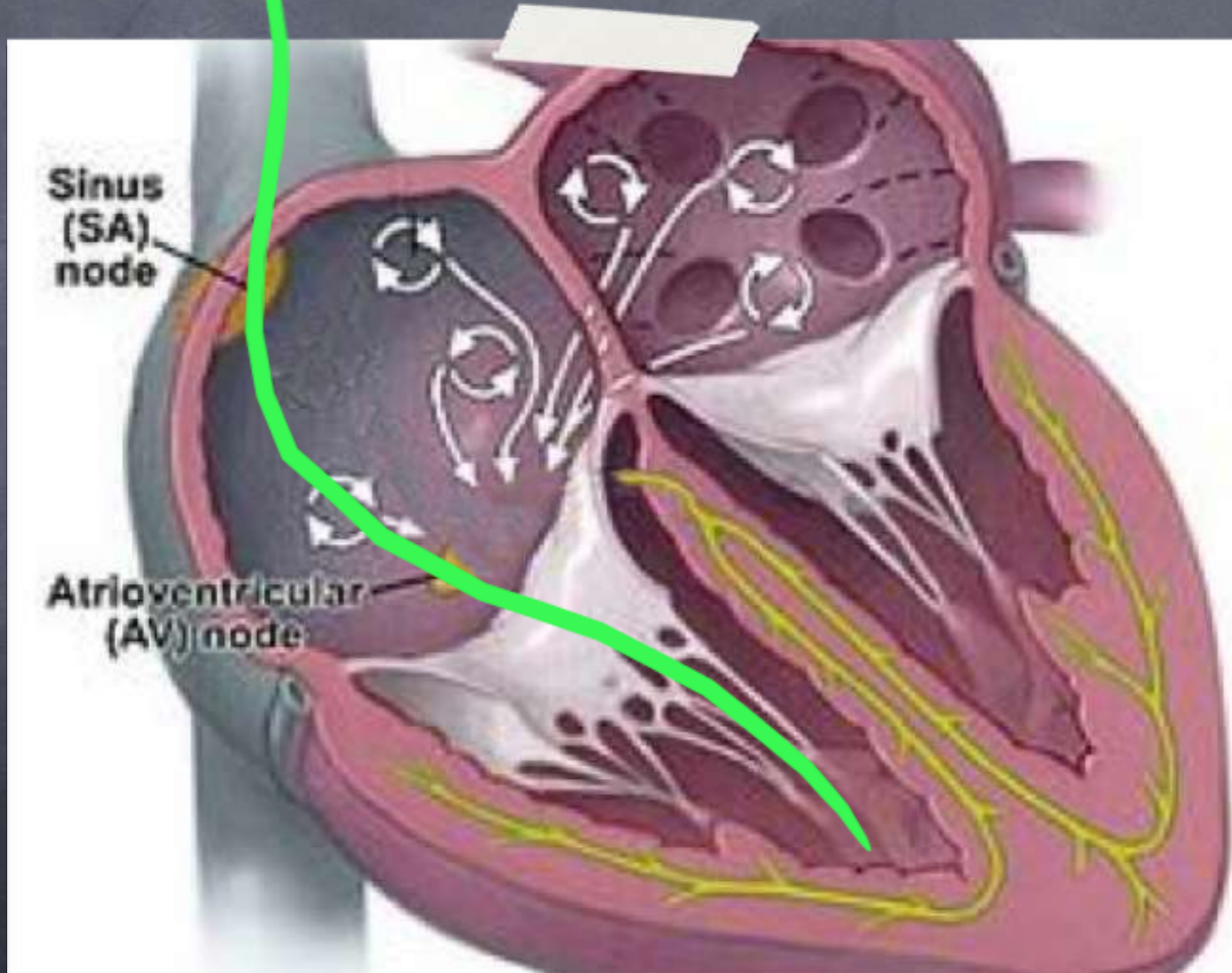
AV node ablation



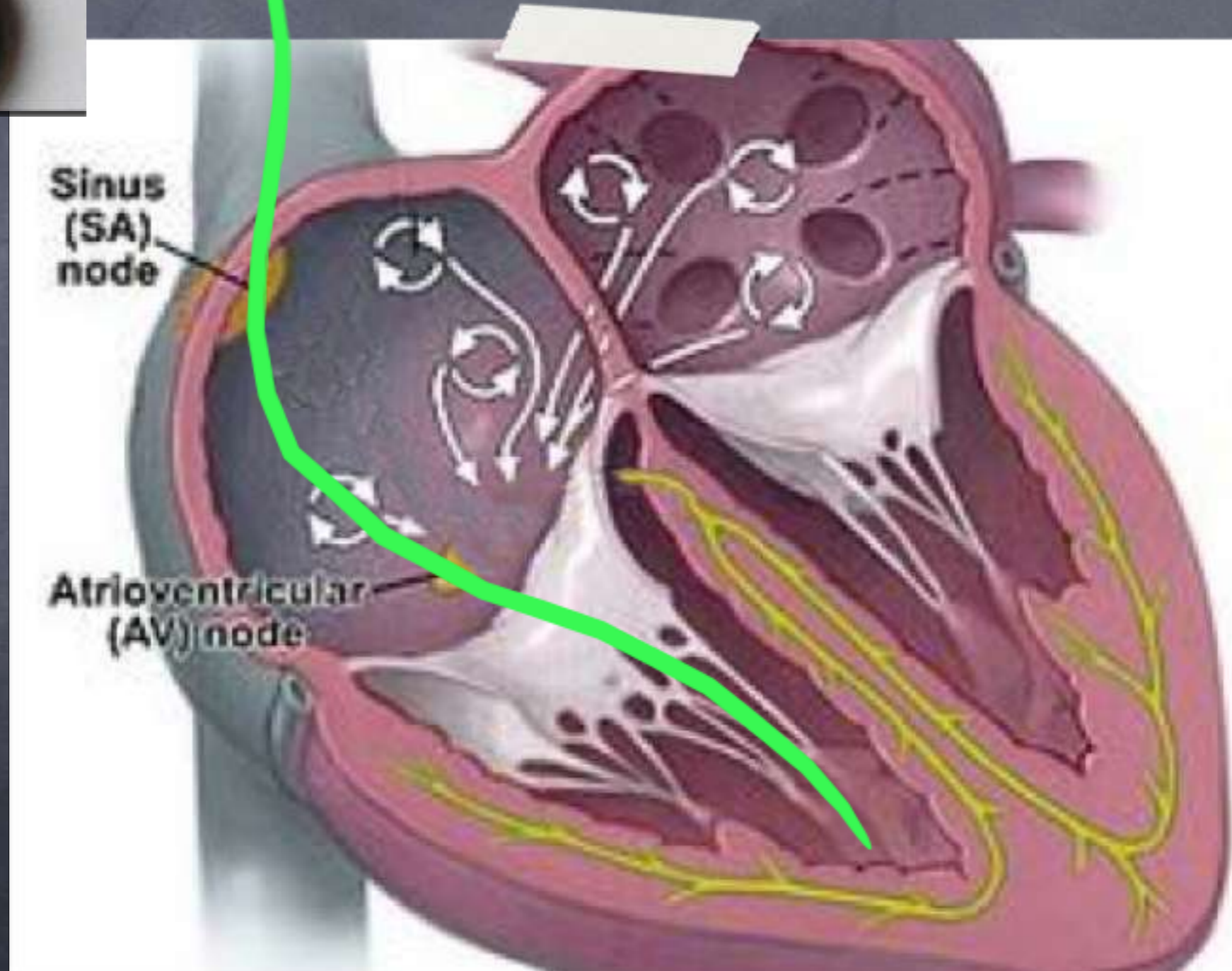
AV node ablation



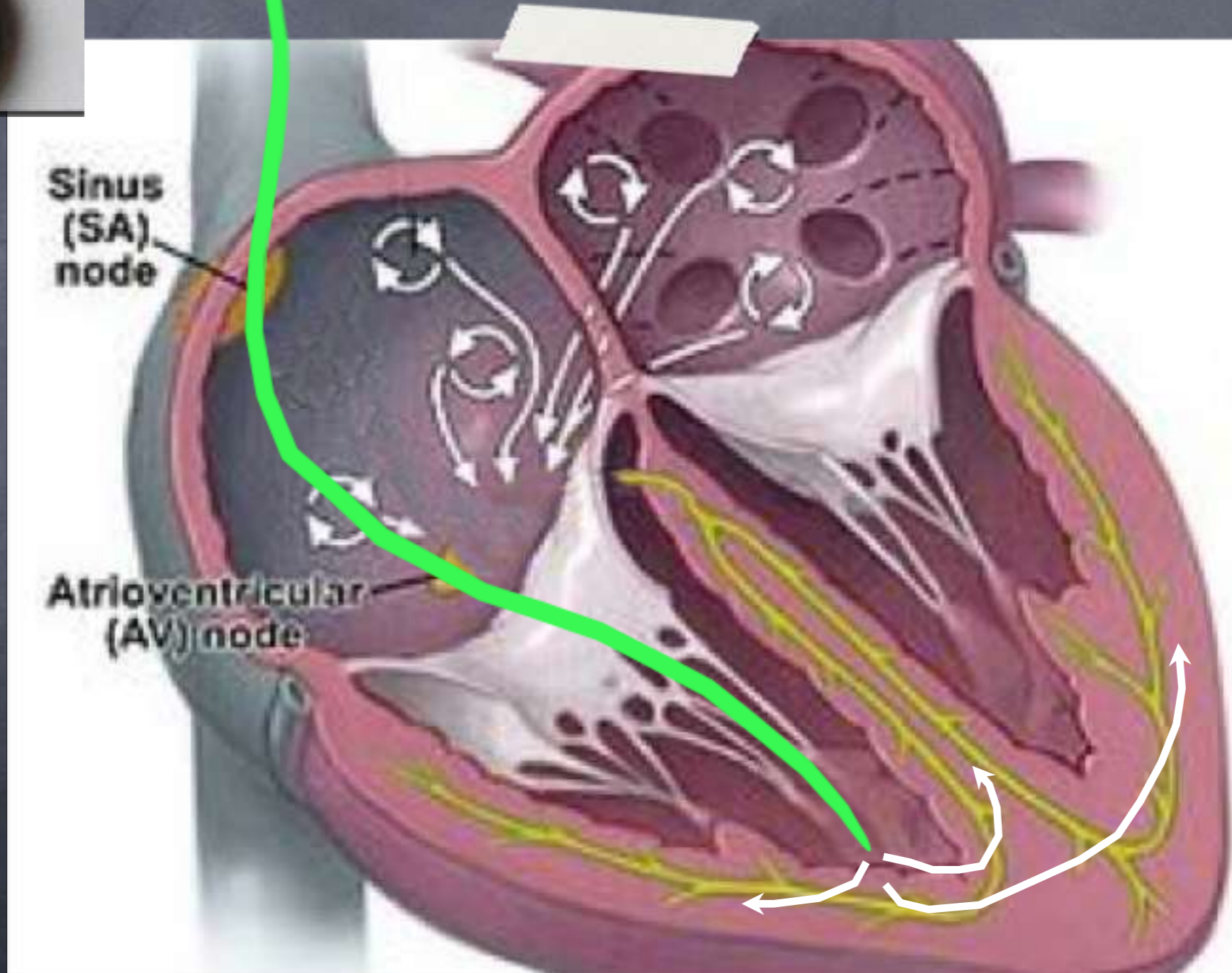
Pacemaker



Pacemaker



Pacemaker



Pacemaker

- Prevents slow rate (esp. at night) ✓
- May prevent onset of AF ✓?
- Prevents pauses during AF ✓
- Allows use of rate-controlling drugs ✓?
- Ensures rate response to exercise ✓

Pacemaker problems

- Requires surgery (local anaesthetic)
- Small risk of complications
- Battery needs replacement (8-12 years)
- Less efficient heart contraction (slightly)
- Discomfort & cosmetic effect (?)

AV node ablation

- Prevents too rapid heart rate ✓
- Prevents irregular heart rhythm ✓
- Avoids side effects of beta blockers etc. ✓
- Simple - near 100% success ✓
- **But** can make you pacing-dependent

PM + AV node ablation

- Restores a regular pulse ✓
- Maintains a normal heart rate ✓
- Generally removes all symptoms ✓
- Allows a return to a fully active life ✓

Pace and ablate

– the risks and benefits

- Why doesn't everyone who is symptomatic have this?
- What follow up and monitoring should be available?
- Do I still have to take drugs?
- What care do I need in subsequent years?
- Can I still drive?
- What are my options if it doesn't work?

Why doesn't everyone with symptomatic AF have a pacemaker + AV node ablation?

- Prevention (treating the causes) is best
- The AF may get better by itself (esp. viral)
- Simple drugs (esp. flecainide) may work
- Treating the disease is a nice idea (LA/PV abl.)
- Concern that RV pacing may worsen HF

What monitoring should be available?

What care do I need in subsequent years?

- “Tune up” pacemaker - optimise with exercise
- Regular pacing checks, once or twice a year
- Remember: the underlying condition is still there
- Important to treat the causes, esp. BP, alcohol
- Monitor heart function - echocardiogram

Do I still have to take drugs?

- Remember: the underlying condition is still there
- Anticoagulation **must** be considered (CHADS2)
- Still important to treat BP
- May need diuretics for fluid retention
- **No drugs** for rate / rhythm control of AF

Can I still drive?

- YES
- (only if you could beforehand!)
- You should inform your insurance co. that you have a pacemaker - they may ask you to tell the DVLA who may require you to fill in forms

What are my options if it doesn't work?

- It does
- AV node ablation occasionally needs a re-do
- Pacemaker may require re-programming
- Residual palpitation may be ectopic beats
- Continuing fatigue etc. may be another problem
- You may well need to build up your fitness

Summary

- Simpler solutions may work -
worth trying
- Complex LA/PV ablation may work -
but for how long?
- Pacing and AVN ablation **does** work -
20 years experience
- **But** the underlying condition is still there

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Thanks to the AFA for arranging a great meeting

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