CAUSES OF SVT

AV nodal reentry circuit – 60% of cases
Another 30% are due to an accessory pathway.
10% are focal atrial causes, ectopic pacemakers of some sort.

RARE SPECIES:

- **Inappropriate Sinus Tachycardia**
  - Poorly understood; seems like something in the SA node has gone wrong. May be a dysautonomic thing, but we just don't know.
  - TOTALLY NORMAL RHYTHM! ECG looks like a sinus tachy; just with a very high rate.
  - Occasionally you may discover an inappropriately increased tachycardia response to exercise or an elevated resting heart rate.
  - Typically, these patients don't have any heart disease or hyperthyroidism, and are not coke fiends.
  - Treatment is the usual - vagus, adenosine, verapimil... Slow AV conduction and you slow the ventricular response; increase vagal tone and you slow down the SA node.

- **Sinus node reentrant tachycardia:**
  - This is initiated in much the same way as any other sinus beat; except the sinoatrial node keeps sending impulses. The atria, behaving normally, transmit these to the rest of the heart, and the P wave looks completely normal. Most of the time this is caused either by a reentry circuit within the SA node itself, or by a reentry circuit which lies just next to the node- either way, the SA nodes’ own impulse triggers further impulses.
  - rate is usually 100 to 150 bpm. Treatment is the usual - vagus, adenosine, verapimil...

- **Intraatrial reentry tachycardia:**
  - usually initiated with a premature atrial ectopic, and so the P wave looks abnormal. In V1, it will be negatively deflected if it starts in the right atrium, and positively deflected if it starts in the left atrium
  - This sometimes happens after a large atrial incision, in cardiac surgery.
  - Treatment, once again, is just the usual.

- **Ectopic Junctional tachycardia and nonparoxysmal junctional tachycardia:**
  - A weird tachycardia, arising from the AV bundle- NOT the AV node! So there’s no reentry to speak of. Seems to be a matter of increased automaticity.
  - Occasionally this is the result of digoxin toxicity or a big heart attack.
  - This is also a congenital condition affecting neonates.
  - Adenosine is useless: AV node is not involved. Some trials recommend amiodarone.

STRUCTURAL DEFECTS

- **Hypertrophic cardiomyopathy:**
  - These people often get transient and asymptomatic SVT events.

- **Ebsteins’ Anomaly:**
  - This is a congenital abnormality, where the tricuspid leaflets are malformed, and there is some degree of “atrialisation” of the right ventricle.
  - 20% of these people end up with an accessory pathway, seeing as the normal fibrous insulation between the atria and ventricles is so disturbed and abnormal.