# Level 2: A quick intro to tachycardias

After having ruled out the "rhythms at a glance," which are so typical that you should be able to recognize them immediately, we shall now continue the evaluation of rhythm problems in a more systematic way. One feature of a rhythm strip that is a real eye-catcher is when the heart runs in a rapid manner (> 100 beats per minute), something that we call **tachycardia**.

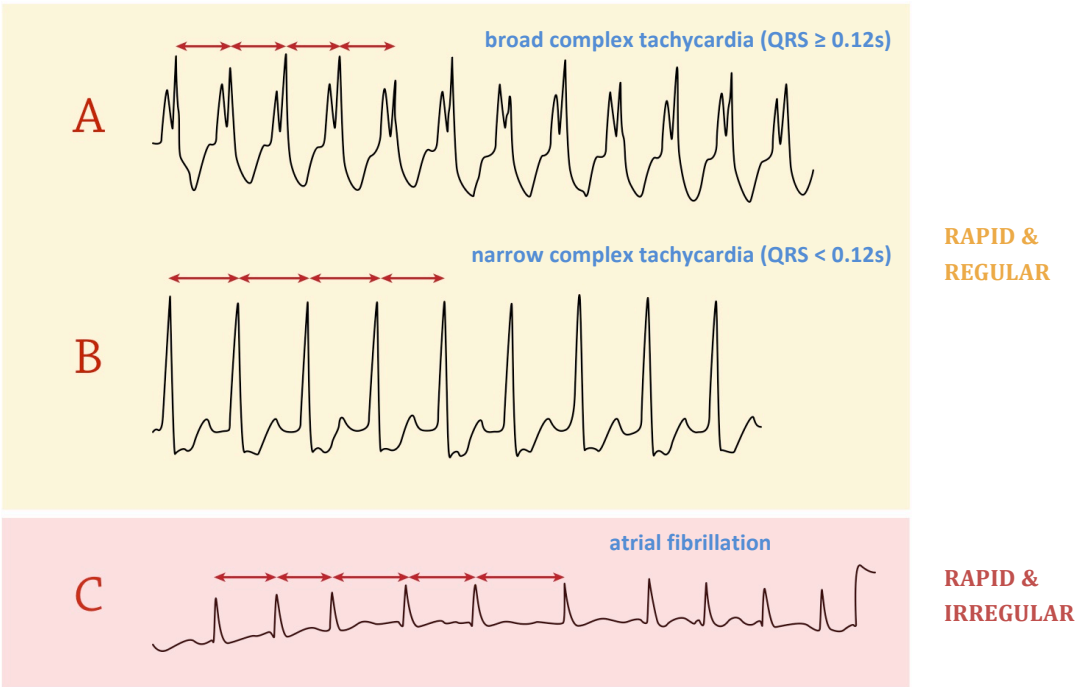
| initial question | | | answer | | additional question | rhythm diagnosis |
|---|---|---|---|---|---|---|
| RAPID AND REGULAR | 3 | Is the rhythm rapid & regular? | N | Y | QRS duration > 0.1 s | Ventricular tachycardia<br>Atrial tachycardia with BBB |
| | | | | | QRS duration ≤ 0.1 s | Sinus tachycardia<br>Atrial tachycardia<br>Atrio-ventricular reentry tachycardia (AVRT)<br>AV nodal reentry tachycardia (AVNRT) |

Step 3 of the Cheat Sheet

## Evaluating tachycardias

Step 3 of our Cheat Sheet is dealing with tachycardias. Here, you should ask yourself the following **two questions**:

1. Is the rhythm **rapid and regular?** That is, is the heart rate > 100 beats/minute and the distance between the QRS complexes constant?
2. If the answer to the above question is "yes," you should ask yourself: Are the QRS complexes **broad (≥ 0.12s) or narrow (< 0.12s)**? Merely knowing whether a regular tachycardia is broad or narrow will bring you much closer to the underlying diagnosis.

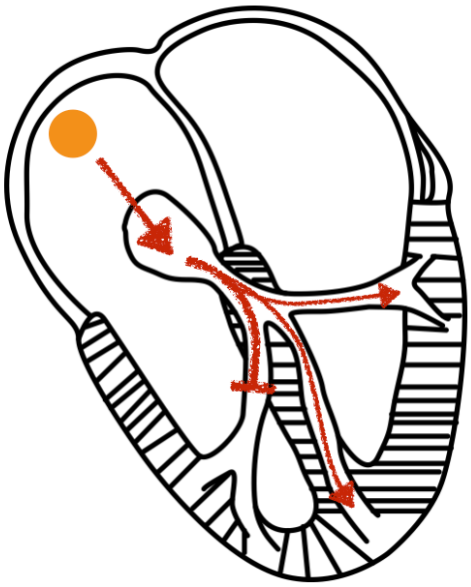



Rapid and irregular rhythms are most often due to atrial fibrillation (AF)

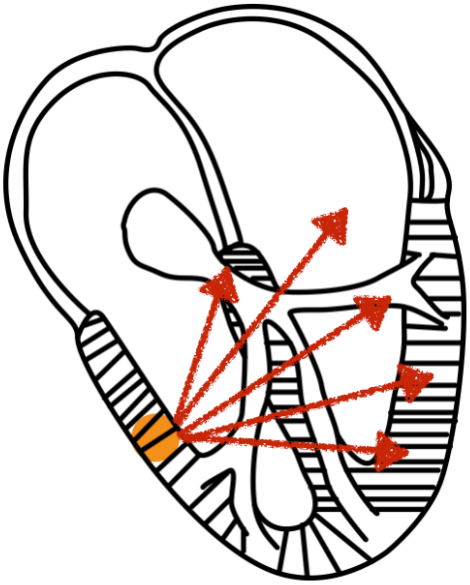
## Broad complex tachycardias = rapid + regular + broad

Let's recap the two most common instances when the QRS complex is broad (≥ 0.12s):

BUNDLE BRANCH BLOCK:



VENTRICULAR PACEMAKER CENTER:



The QRS complex will be broad in bundle branch block and in cases with a ventricular pacemaker center. What follows is that there are two types of broad complex tachycardias—instances when the rhythm will be rapid and regular and the QRS complexes will be broad:

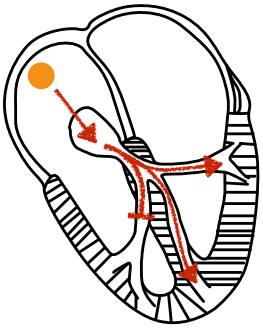
1. Supraventricular tachycardias with bundle branch block (supraventricular tachycardia with aberration).
   and
2. Ventricular tachycardias.

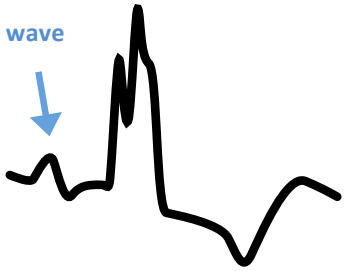
And how can you discriminate between these types of tachycardias?

- In **supraventricular (atrial) tachycardias with aberration**, each QRS complex is preceded by a P wave at a constant distance.
- In **ventricular tachycardia**, on the other hand, atria and ventricles are beating independently of one another. Hence, QRS complexes are not preceded by P waves at a constant distance.

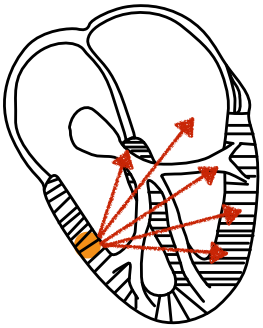
*Narrow tachycardias are covered in the next level.*

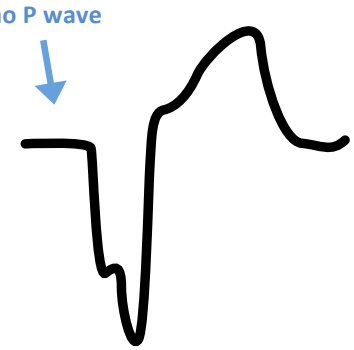
atrial tachycardia with aberration





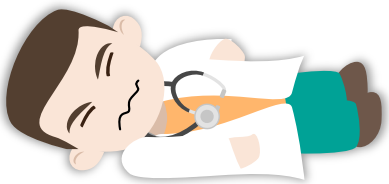

ventricular tachycardia






These two types of tachycardia are very different from a clinical perspective: Atrial tachycardia with aberration is usually not a life-threatening condition. Conversely, ventricular tachycardia can be life-threatening (as we have just mentioned in ventricular flutter), and in most cases you have to take action immediately. So it's really important to check how the patient is doing clinically. Is the patient in circulatory arrest or is he hemodynamically stable? How's the blood pressure doing? You really have to be on the lookout.

ATRIAL TACHYCARDIA



VENTRICULAR TACHYCARDIA