

continues to rise, the PR interval becomes longer, the P wave loses its amplitude and may disappear, and the QRS complex widens (B). When hyperkalemia is very severe, the widened QRS complexes merge with their corresponding T waves and the resultant ECG looks like a series of sine waves (C).



If the rise in serum potassium continues unabated, the heart arrests in asystole. (NB: The narrow and tall peaked T wave of hyperkalemia may be confused with the hyper-acute T wave occasionally seen in transmural myocardial infarction. The patient's presenting history and physical findings would help to differentiate the two.)

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With hypokalemia, the T wave becomes flattened together with appearance of a prominent U wave. The ST segment may become depressed and the T wave inverted. Unlike hyperkalemia, these additional changes are not related to the degree of hypokalemia.



Hypercalcemia and Hypocalcemia

ECG signs of hypercalcemia and hypocalcemia may not be obvious even in patients who have deranged plasma calcium concentrations that are clinically significant. If they are present, hypercalcemia is associated with short QT interval (A) and hypocalcemia with long QT interval (B). Interval shortening or lengthening is mainly in the ST segment.

