QT measurements and heart rate corrections

Marek Malik,
London, England

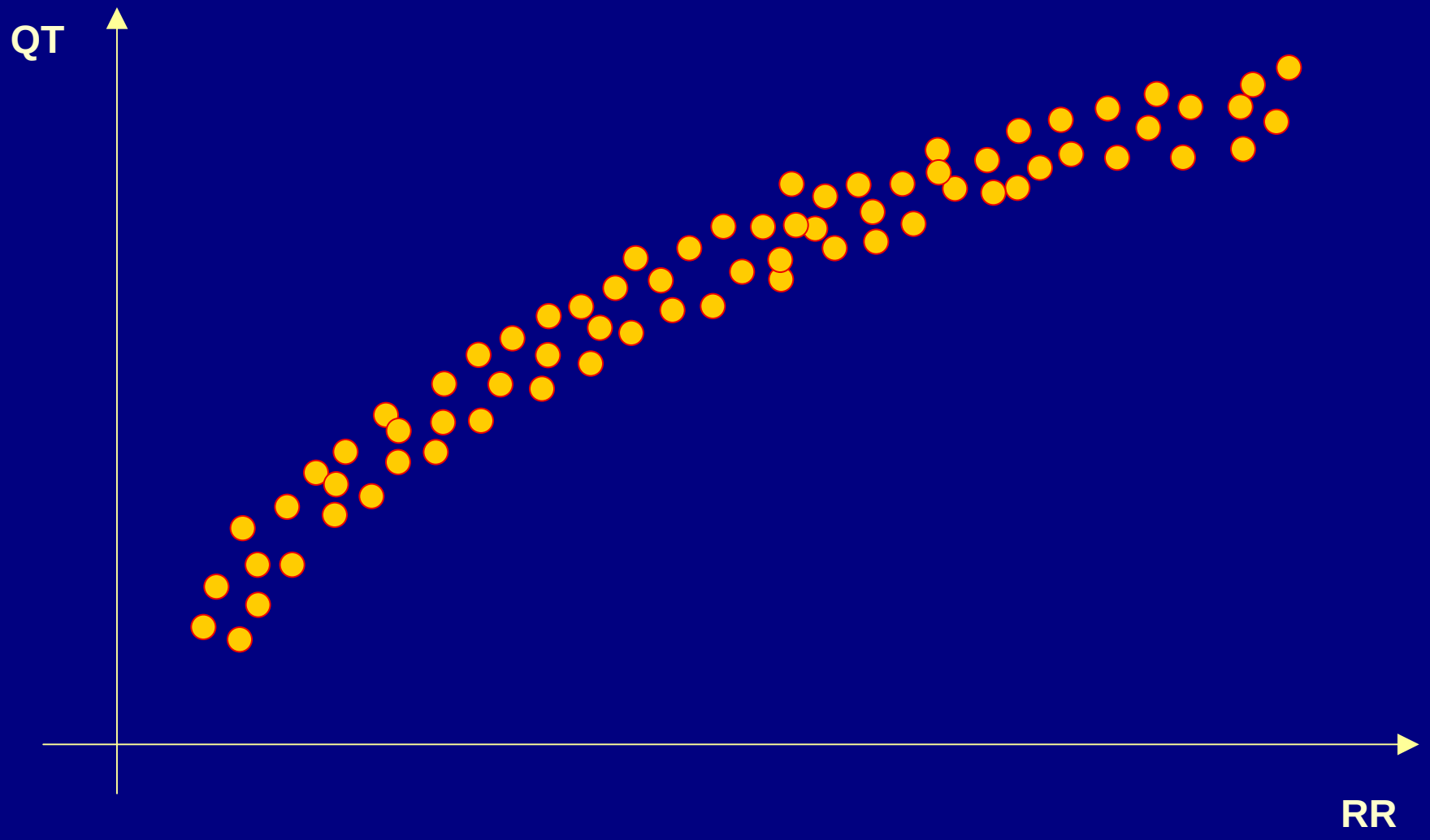
marek.malik@btinternet.com
Tel 011 44 20 8660 2112 Fax 011 44 20 8660 6031

QT measurements and heart rate corrections

- Individual heart rate correction
  - What it is
  - What are the advantages
  - What it is not
- ECG measurements
  - How are these linked to the accurate QT correction

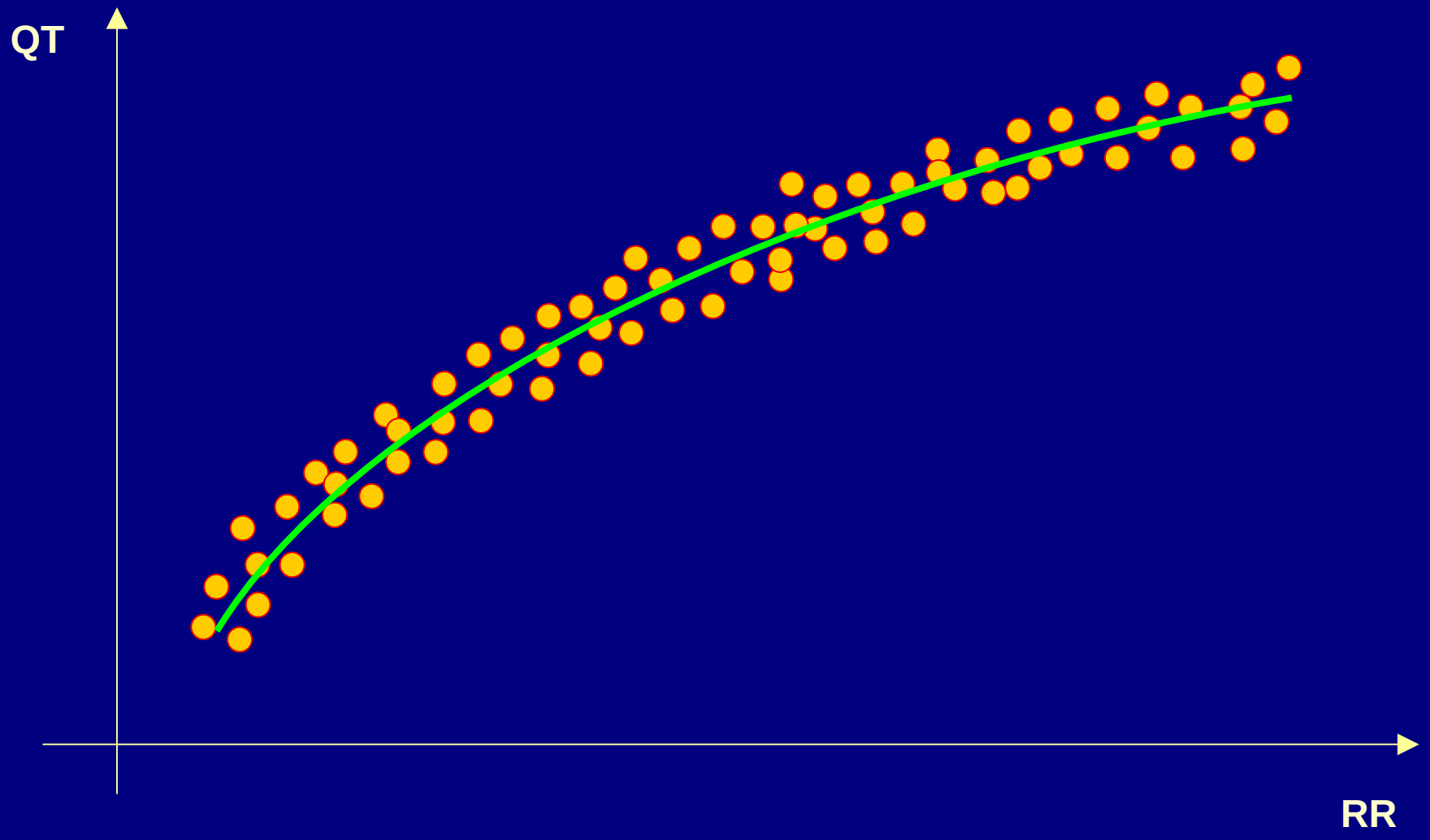
Principle of heart rate correction

Step 1: Collect baseline QT/RR data of sufficient spread of heart rates



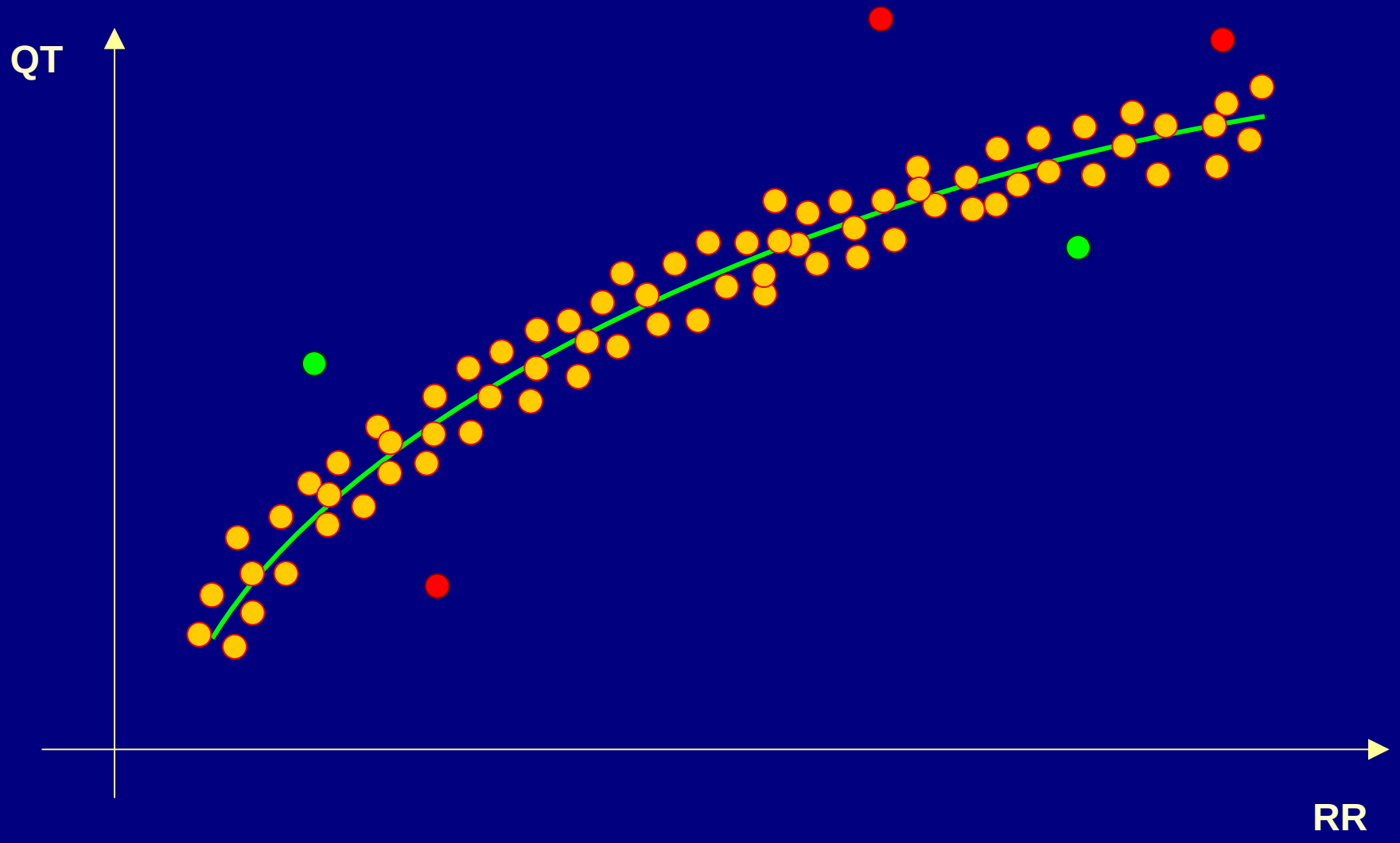
Principle of heart rate correction

Step 2: Model the QT/RR pattern by a mathematical formula



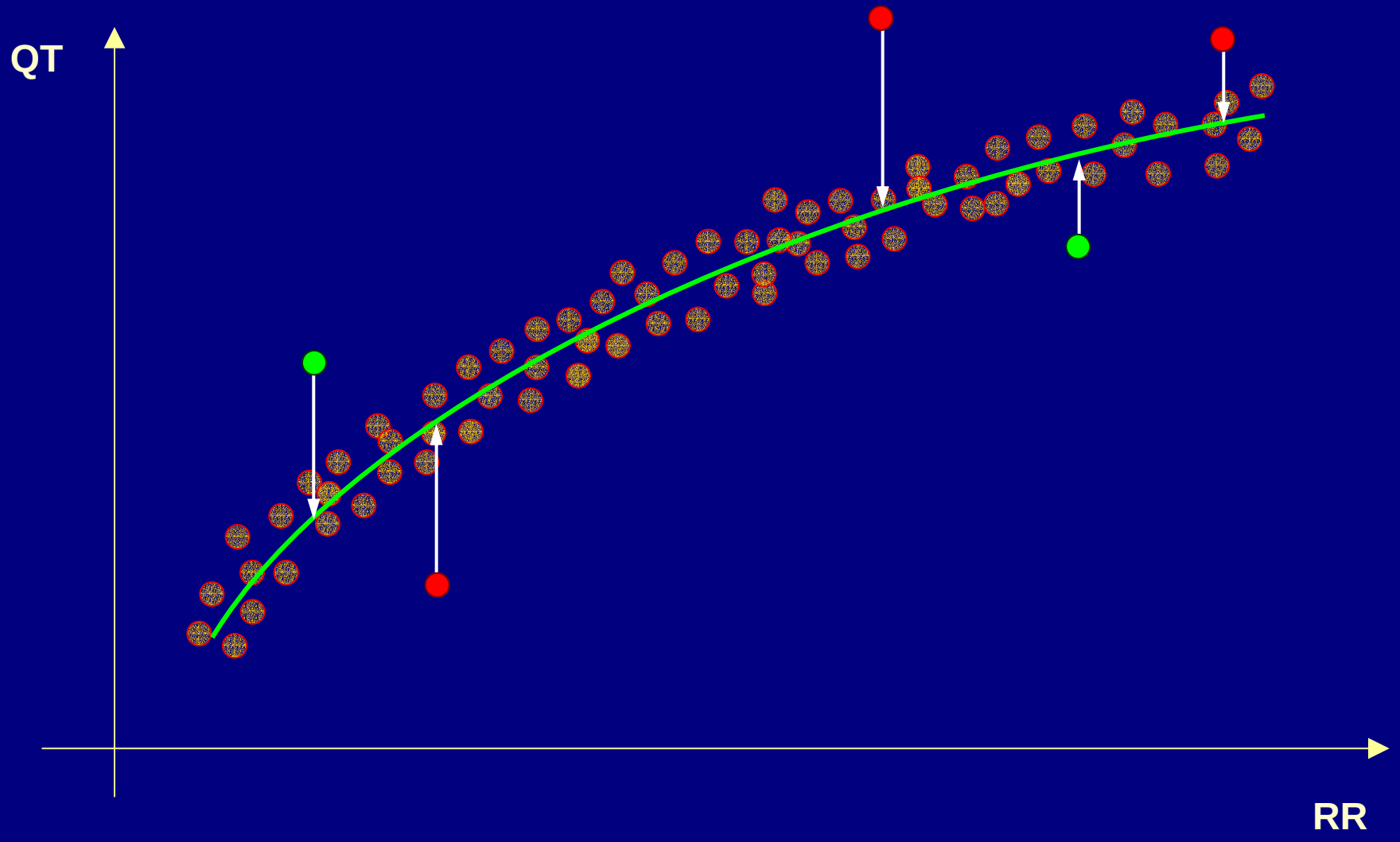
Principle of heart rate correction

Step 3: Get on-treatment / placebo QT/RR readings



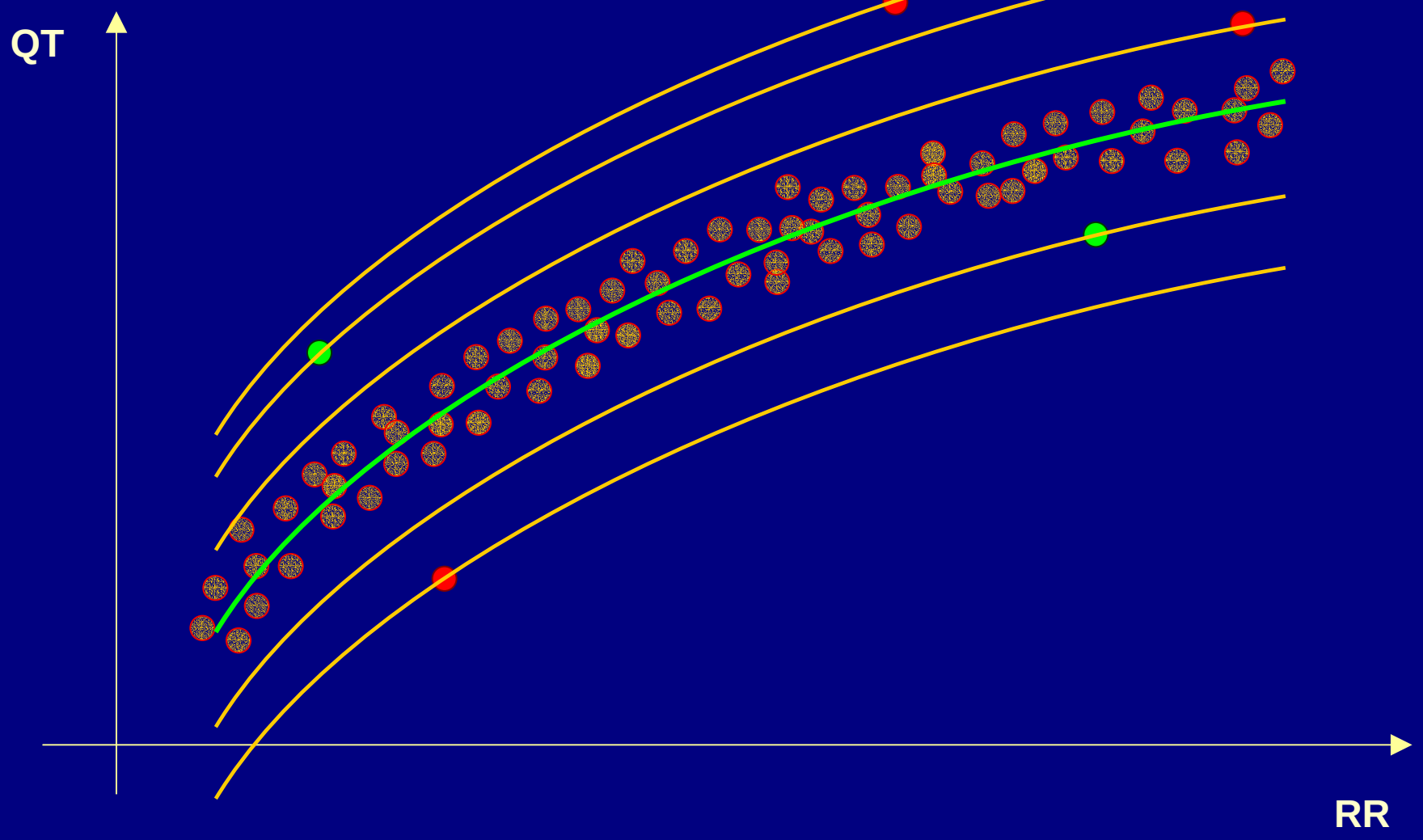
Principle of heart rate correction

Step 4: The goal is to calculate how much each differs from baseline



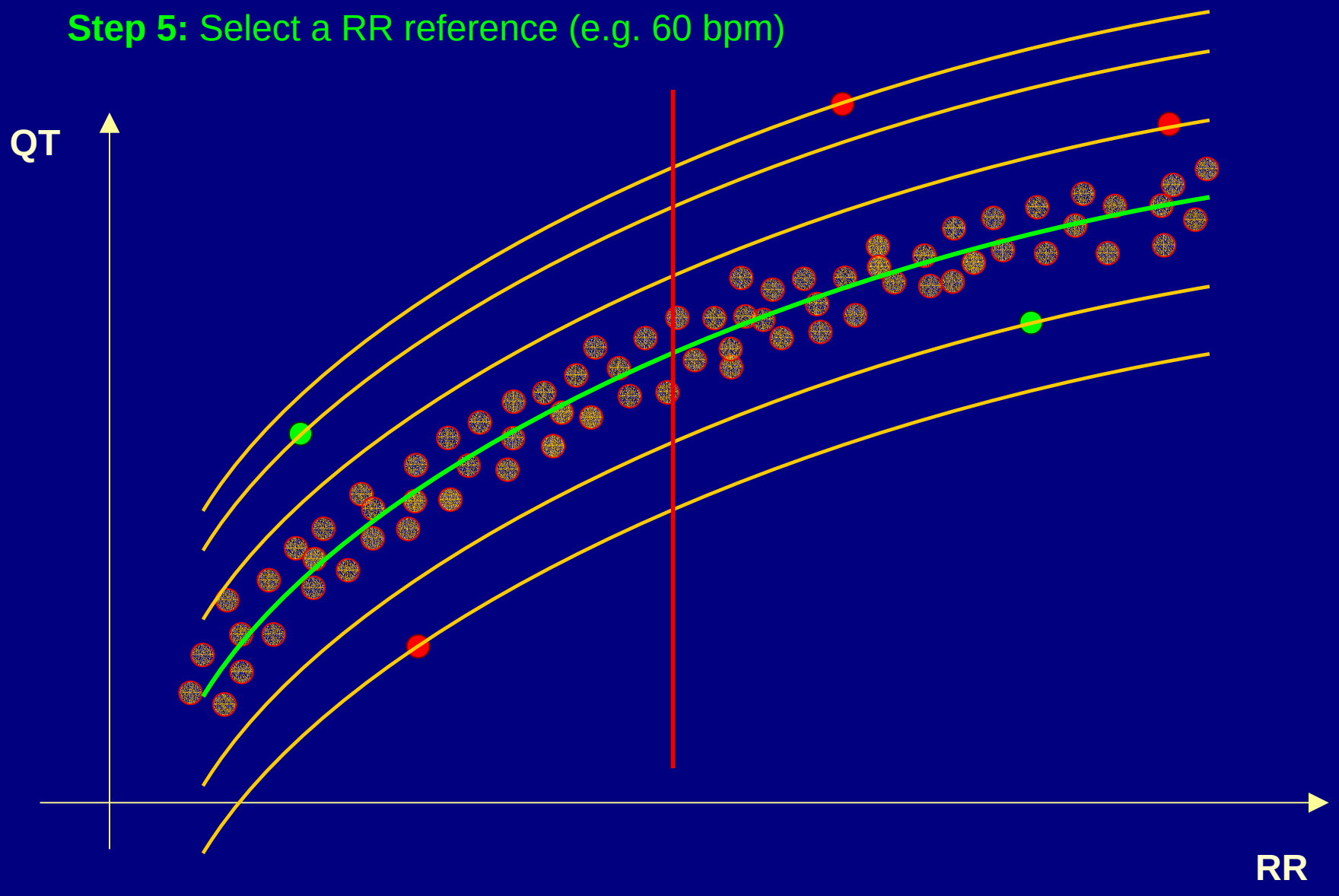
Principle of heart rate correction

Step 4: For this purpose, draw a parallel with baseline curvature through each in-study measurement



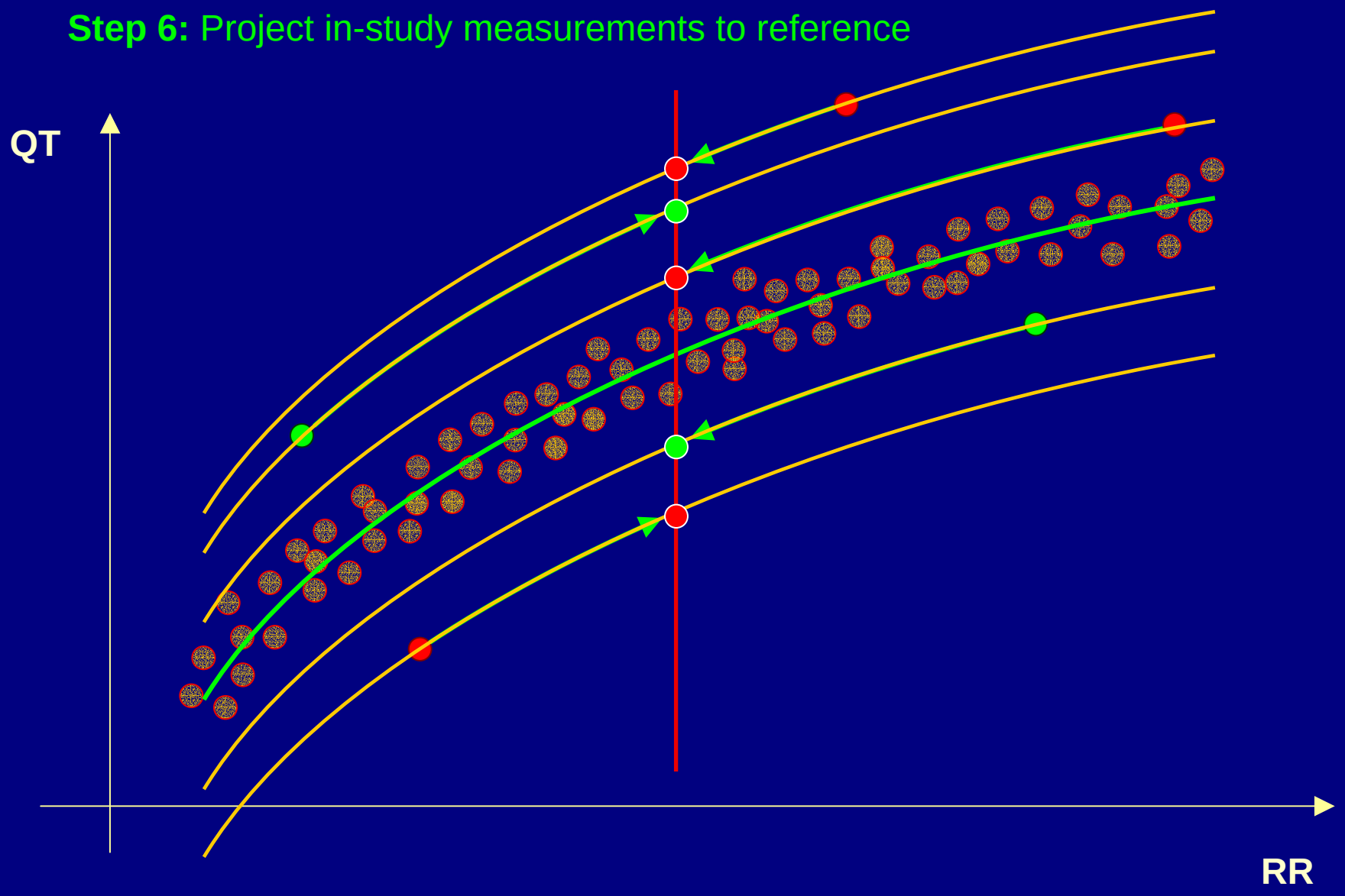
Principle of heart rate correction

Step 5: Select a RR reference (e.g. 60 bpm)



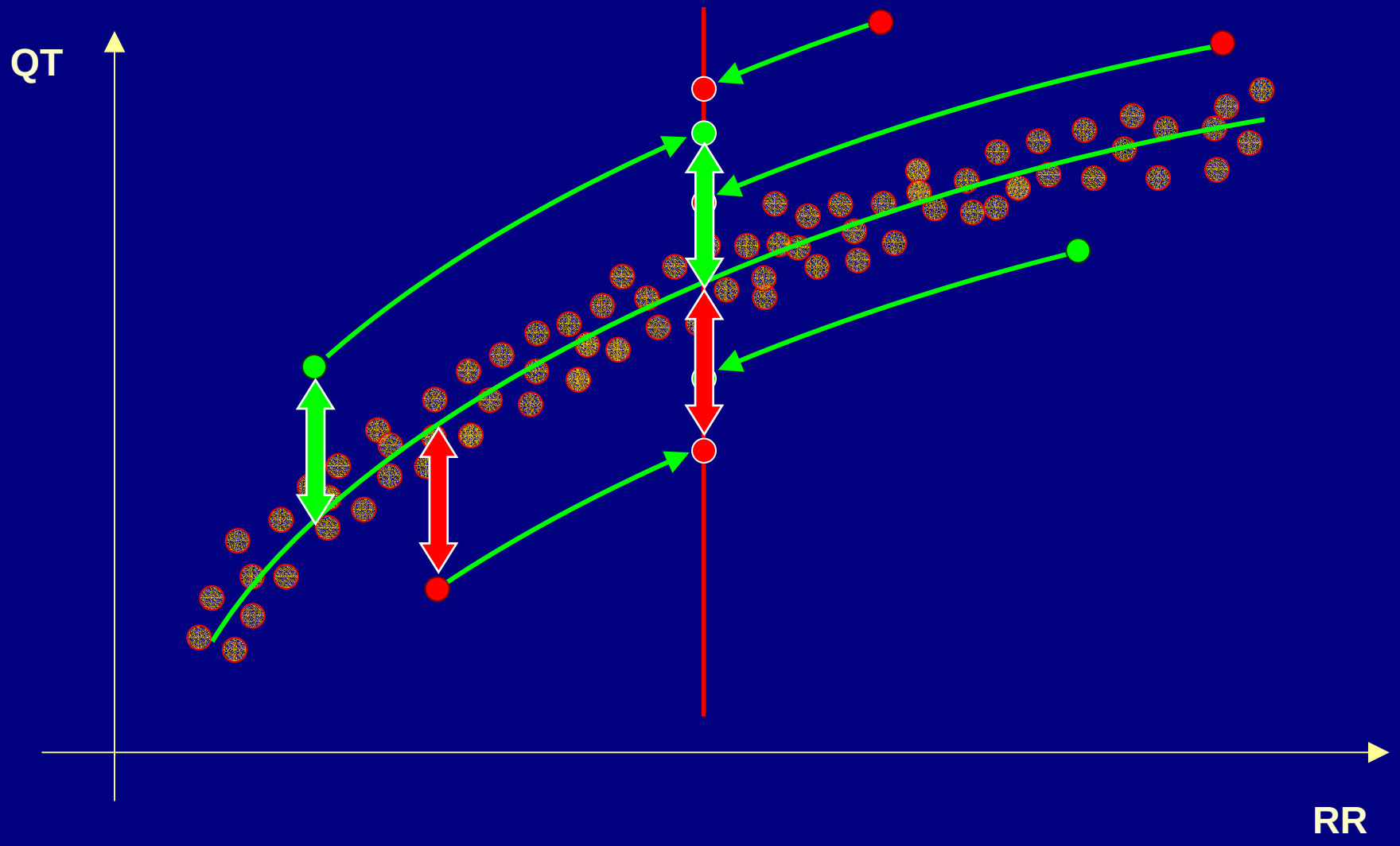
Principle of heart rate correction

Step 6: Project in-study measurements to reference



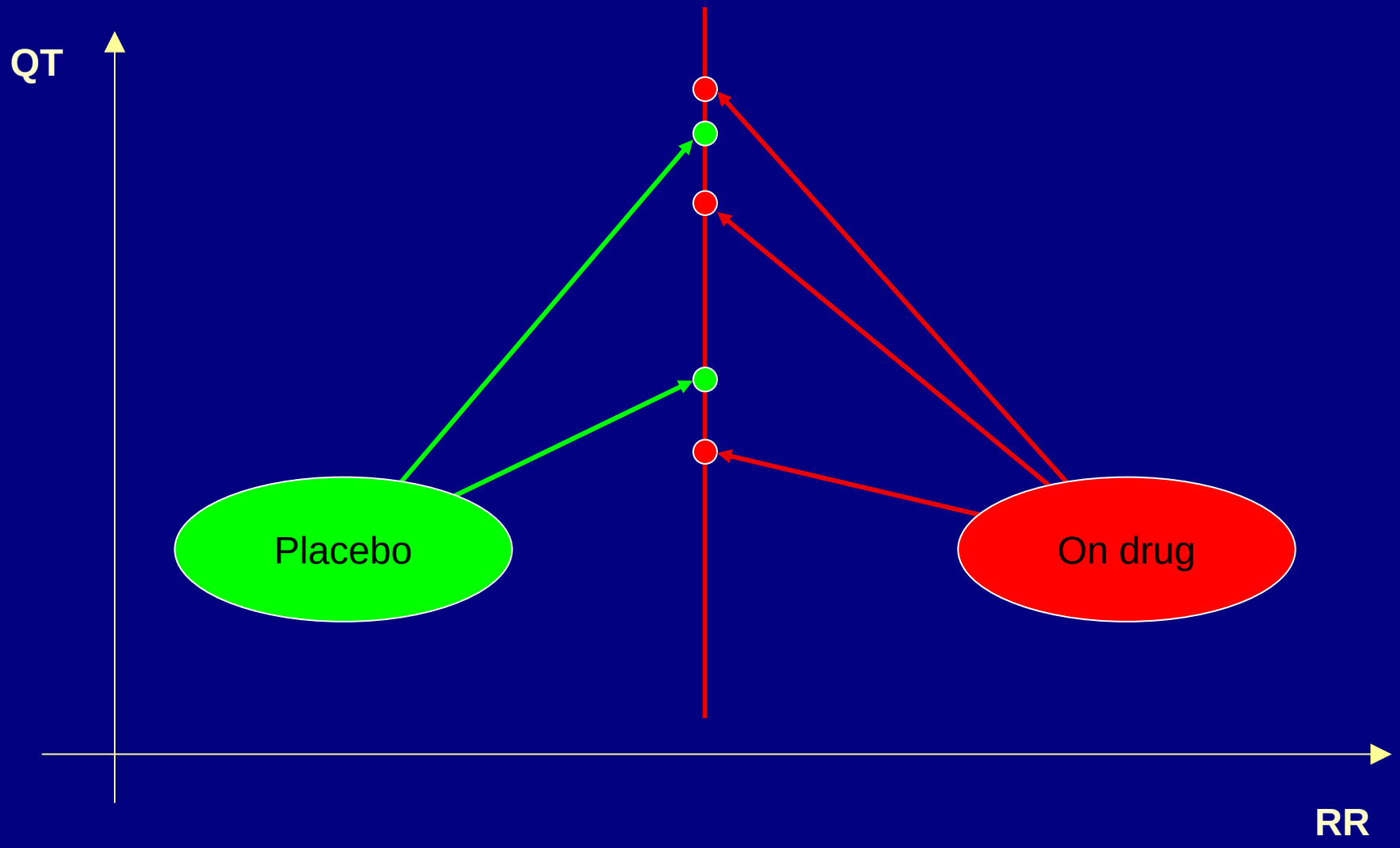
Principle of heart rate correction

Step 6: The distances to baseline QT/RR are maintained



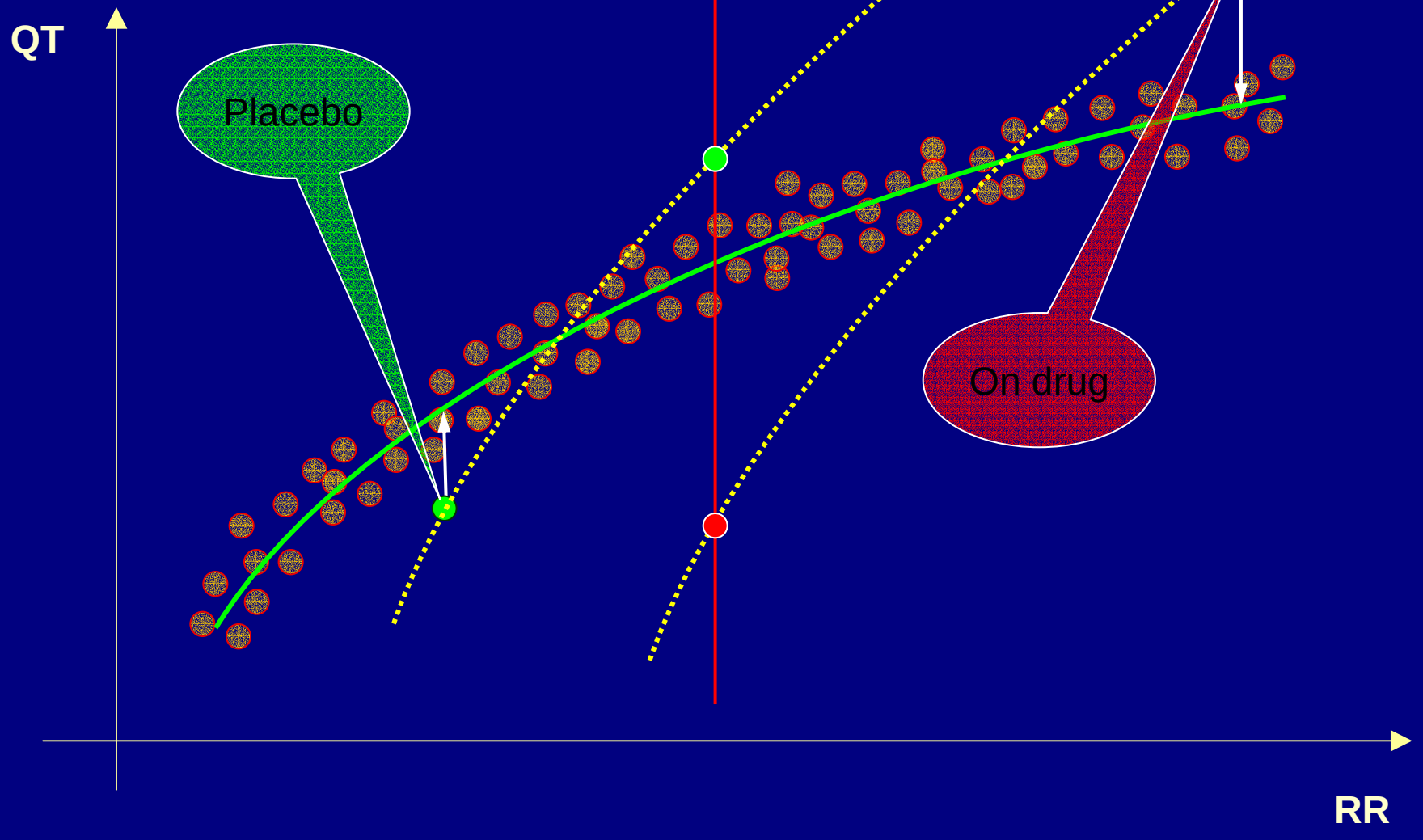
Principle of heart rate correction

Step 7: Calculate the “in-study” differences at RR reference



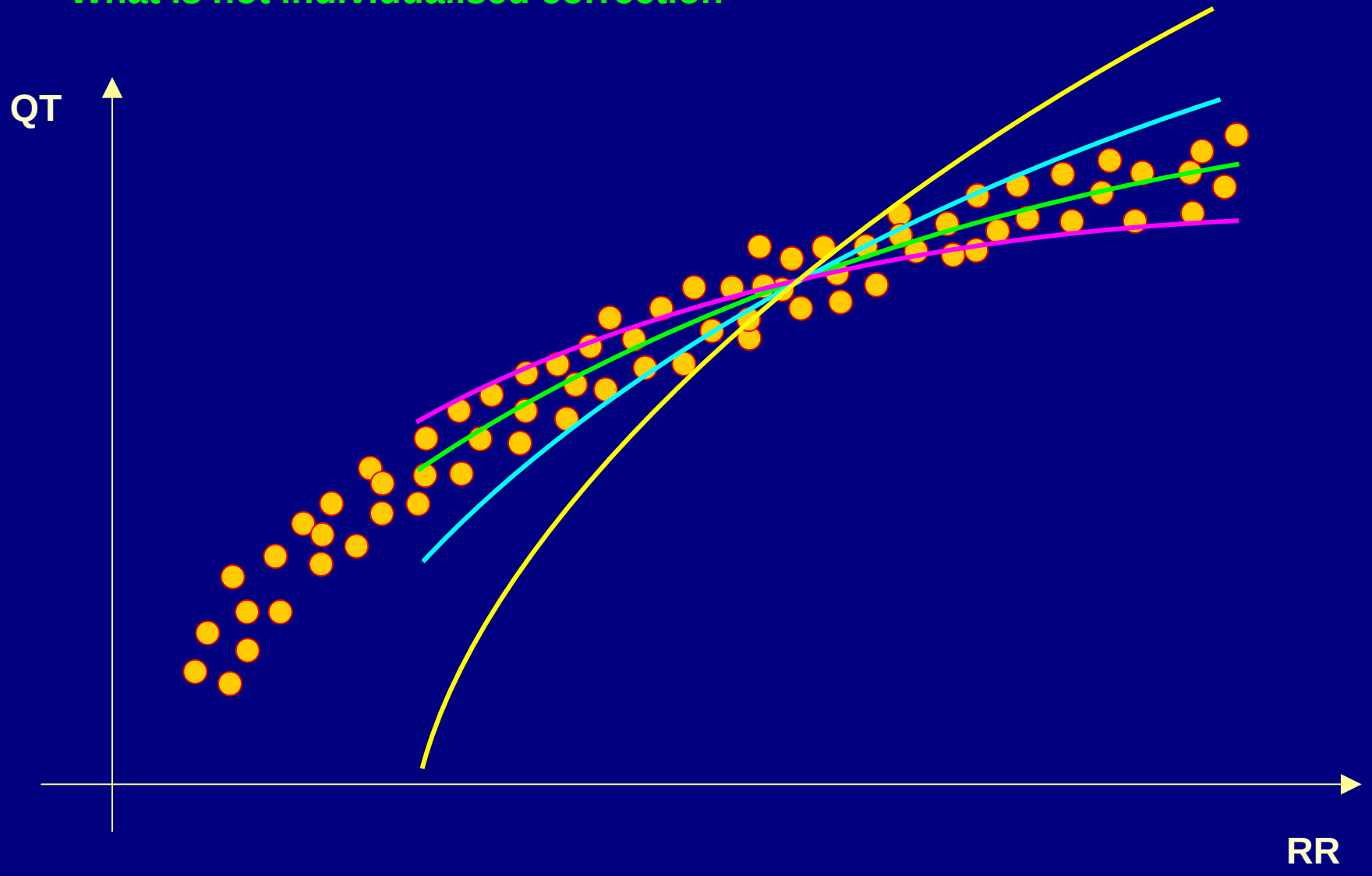
Principle of heart rate correction

What is the disadvantage of non-individualised correction

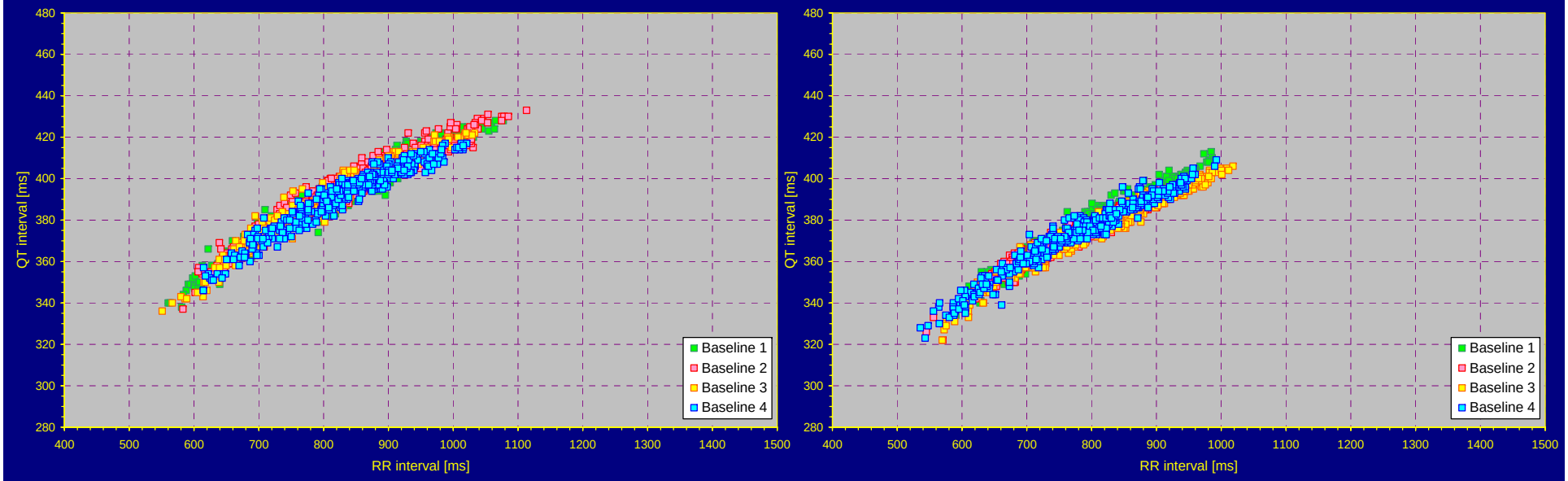


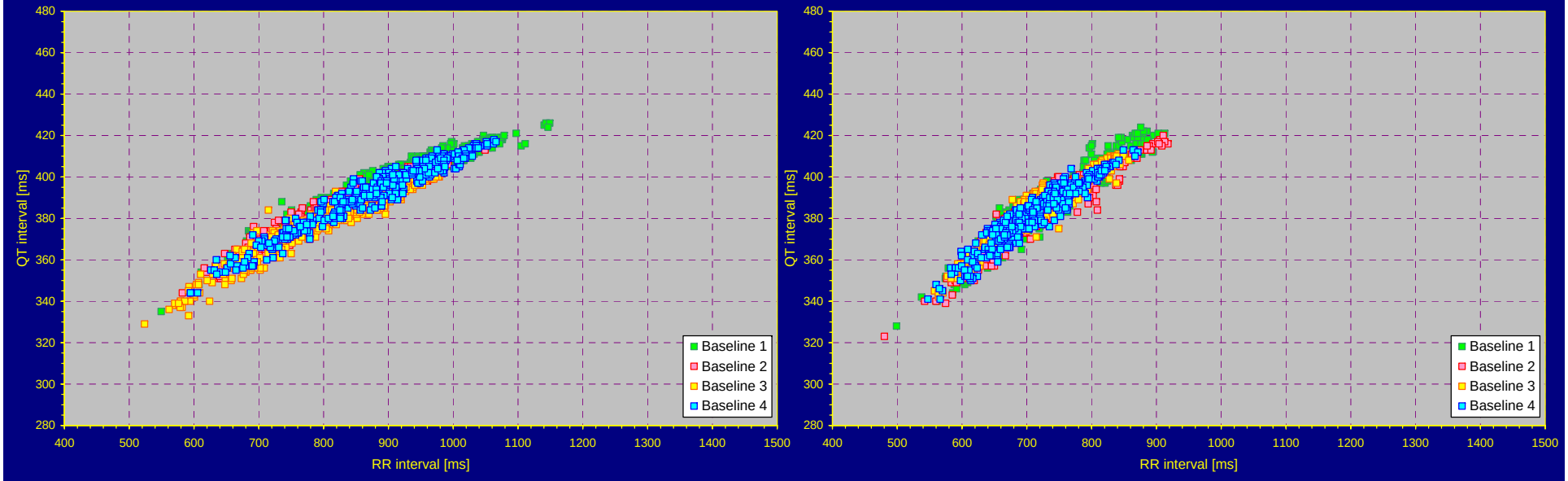
Principle of heart rate correction

What is not individualised correction



Comparison of individual QT/RR patterns

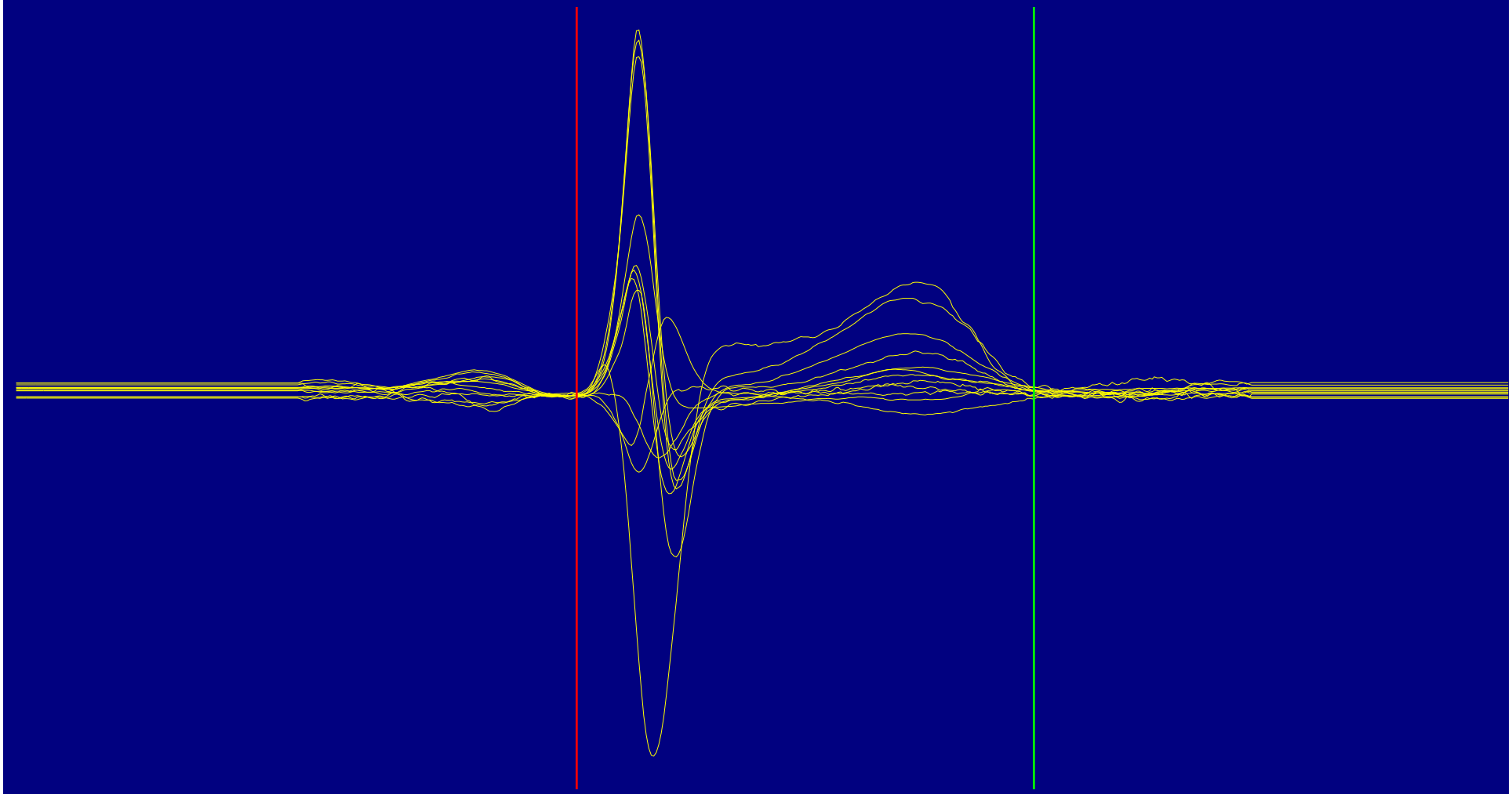




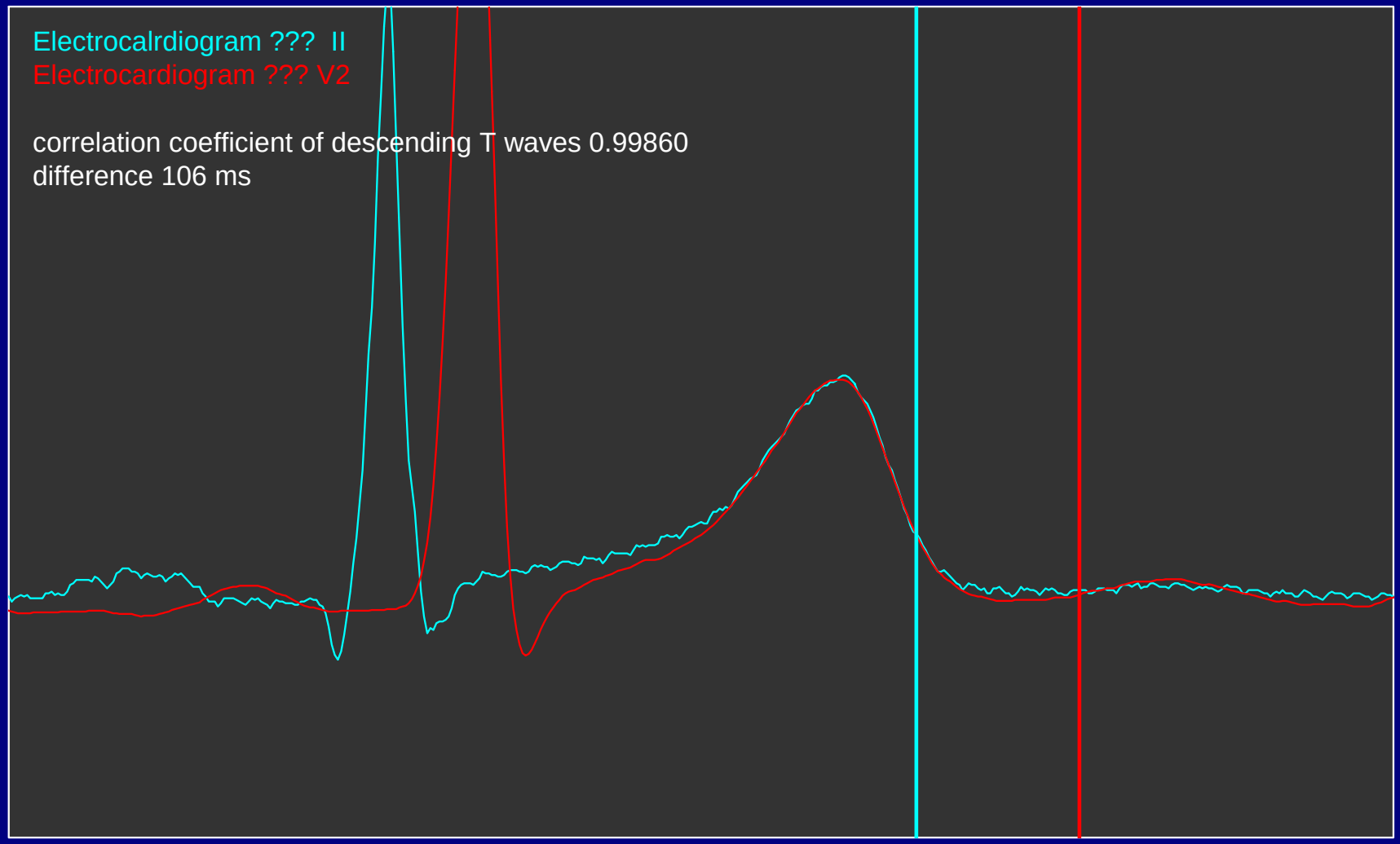
How is this dependent on ECG measurement ??

- QT interval measurement must be correct
- RR interval must be correct

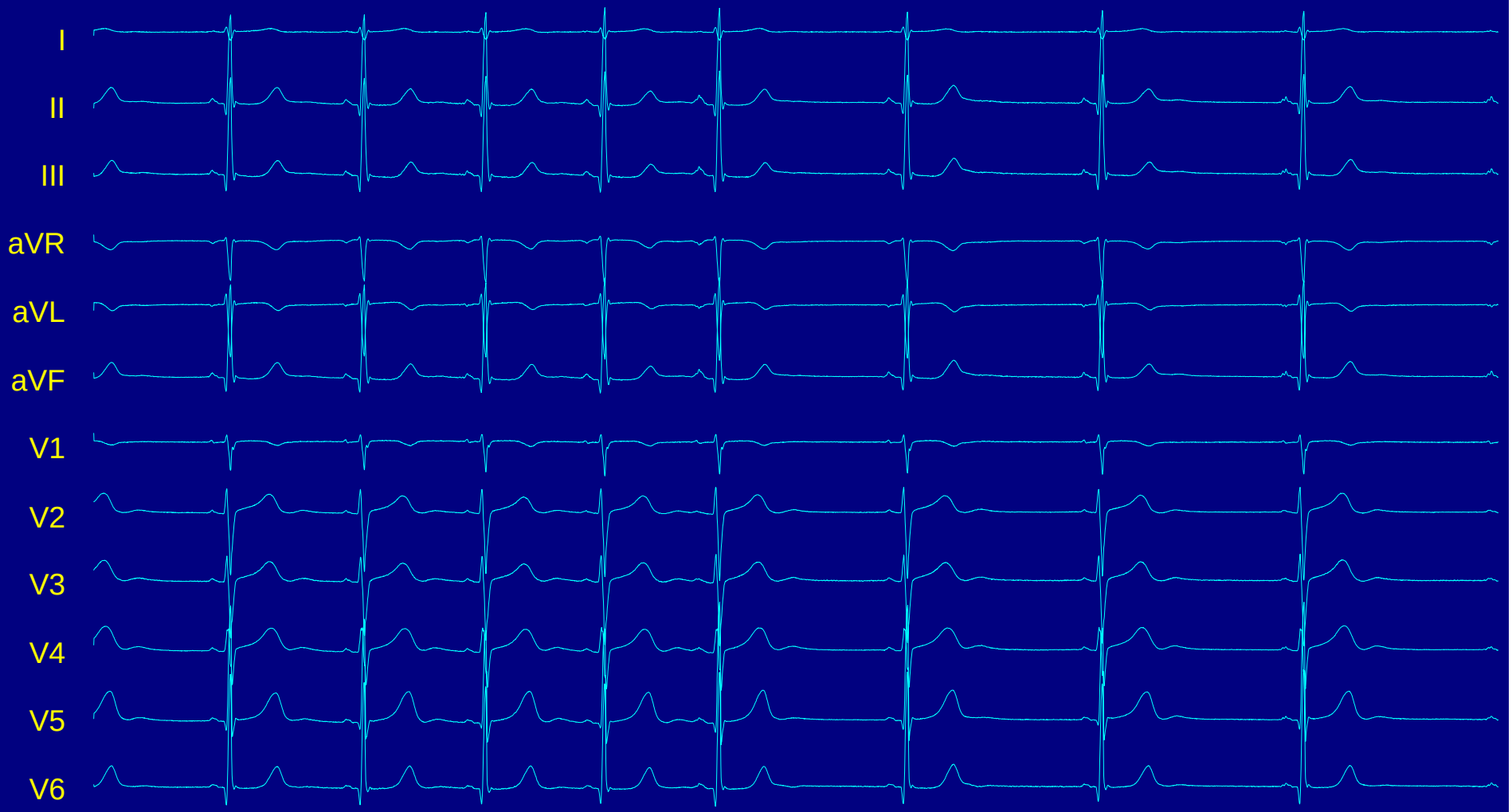
“Optimum” QT measurement



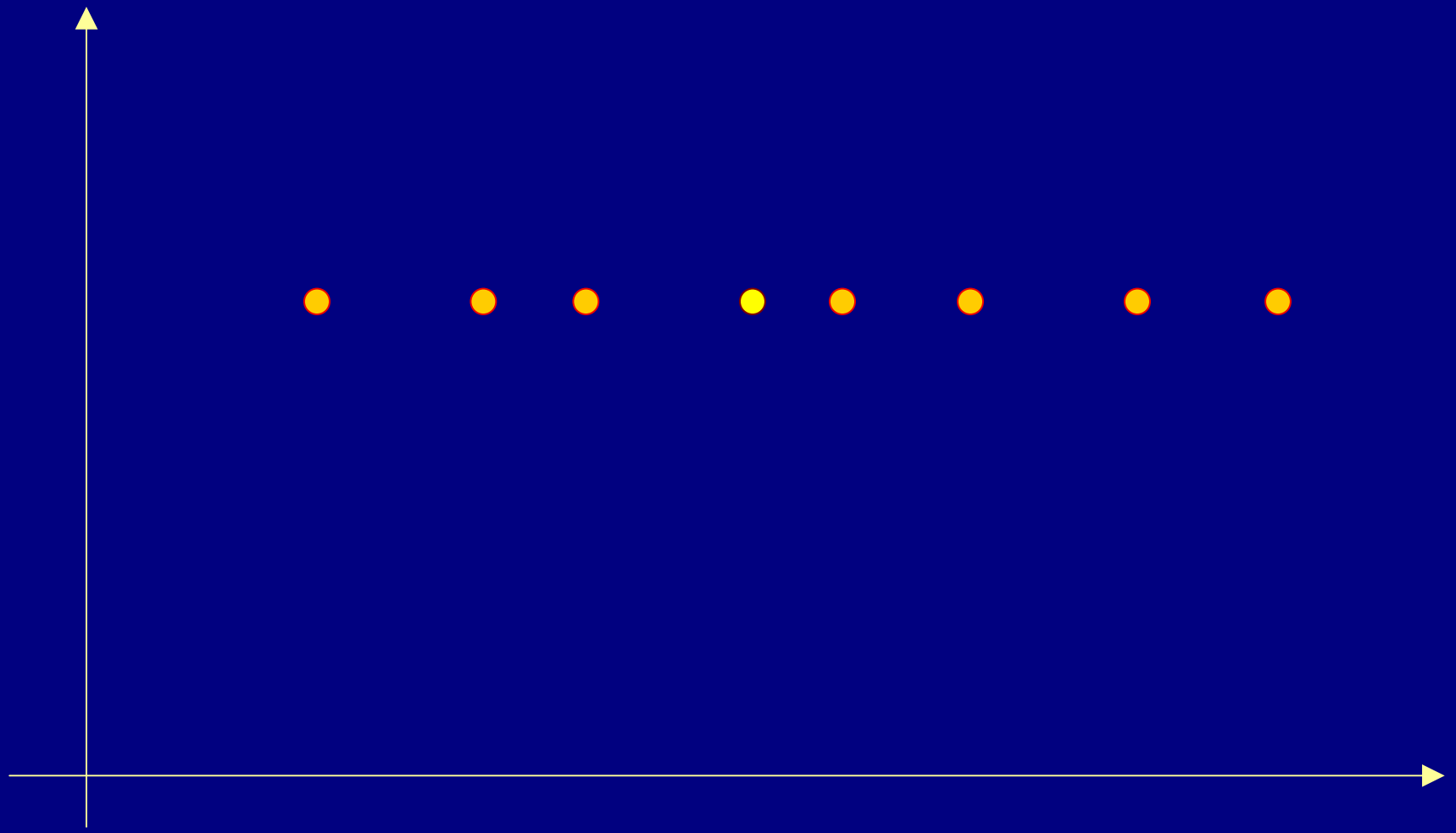
“Optimum” QT measurement



RR intervals must represent the underlying heart rate



RR intervals must represent the underlying heart rate



THANK YOU