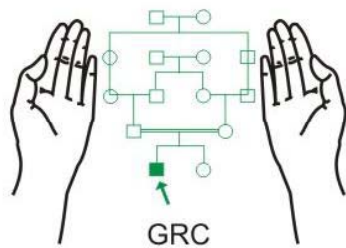


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# Quality Control in Haematology

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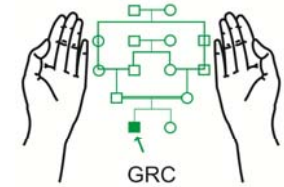


Genetics Resource Centre (GRC)

[www.grcpk.com](http://www.grcpk.com)

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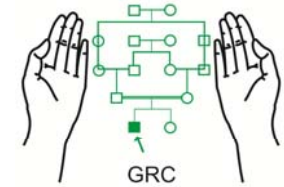
# Quality Control



- To ensure that the quality of work remains within a predetermined standard.

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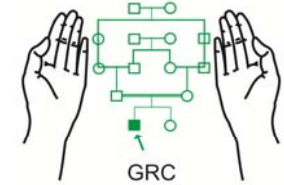
# Reference Method



- An exactly defined technique which provides sufficiently accurate and precise data for it to be used to assess the validity of other methods.
-

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# QC Material



## ■ Standards

- Values are assigned by a reference method
- Used to calibrate analytical instruments
  - International standards (WHO)
  - Secondary Standards (Calibrators)
    - Commercial
    - Laboratories

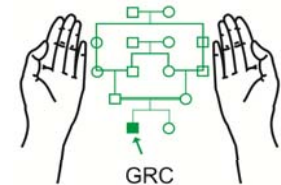
## ■ Controls

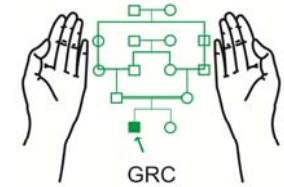
- Values assigned are approximate
-

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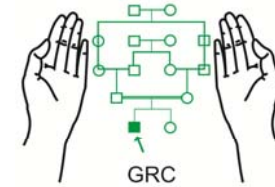
# QC Materials in Haematology

- Haemoglobin
- Blood Cells
- Plasma





- Internal Quality Control
  - Measurements on specially prepared material
  - Repeated measurements on routine specimens
  - Statistical analysis of routine test data
- External Quality Control
  - Retrospective analysis
  - Specially prepared material
  - Comparison
    - Between laboratory
    - Between methods



# Dispersion around the Mean

## Group-I

- 2.5
- 4.5
- 7.2
- 7.9
- 8.7
- 9.6
- 9.8
- 10.5
- 11.7
- 13.2
- 14.1

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Mean: 9.1

Range: 2.5-14.5

## Group-II

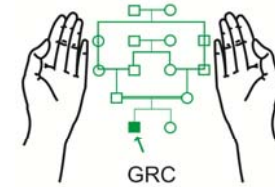
- 7.3
- 8.4
- 8.6
- 8.7
- 9.0
- 9.1
- 9.6
- 9.7
- 10.1
- 10.2
- 10.3

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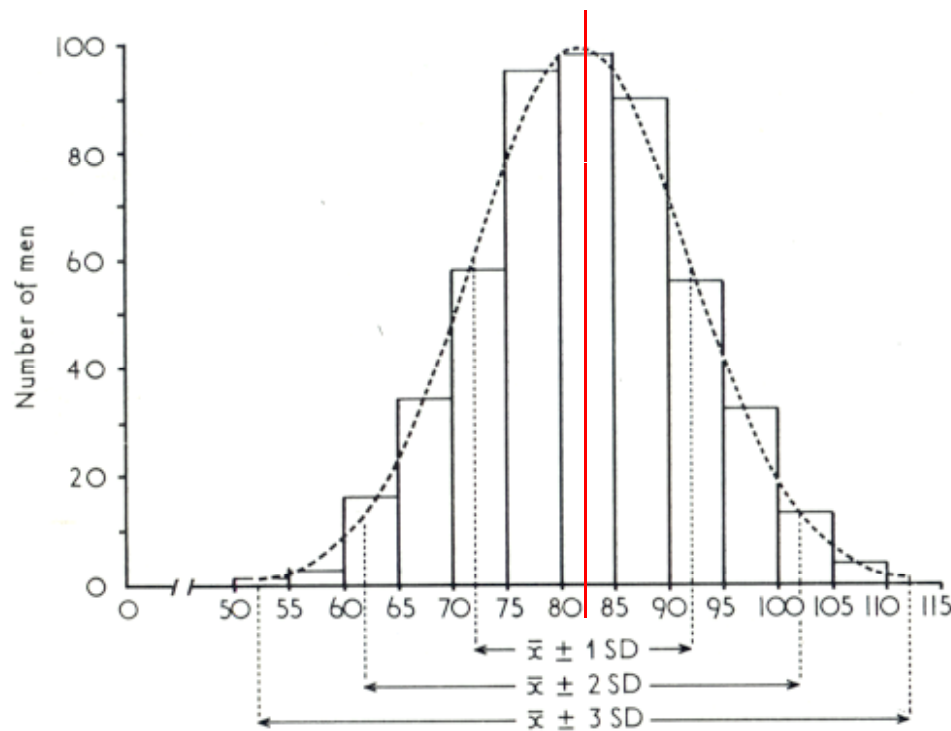
Mean: 9.2

Range: 7.3-10.3

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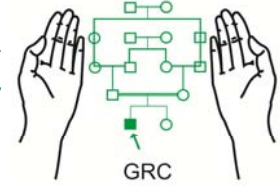
# Standard Deviation (SD)



- **+1 SD: 70%**
- **+2 SD: 95%**
- **+3 SD: 99%**

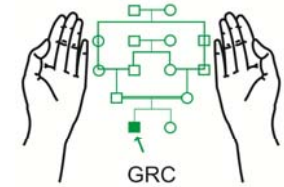


# Statistical Methods in QC



- Range
- Standard Deviation (SD)
- Coefficient of Variation (CV)
- Confidence Interval (CI)

# QC in Practice



- Calibration of Instruments with Standards
  - Six monthly
  - Fluctuation in results (LJ Charts, EQA)
  - After repair/service
- Control Charts (LJ Charts)
  - Daily
  - With each batch of specimens
- Patient Samples
  - Daily
- Duplicate measurements on patient samples
  - Daily
- Statistical analysis of patient's data
  - MCV, MCH, MCHC etc.
- Correlation Checks

