

Using skin measurements in scientific research

- ▶ It has been used - Published research
- ▶ General considerations
 - ▶ Knowledge of the instruments
 - ▶ Factors influencing measurements
 - ▶ Study design
 - ▶ Taking measurements
 - ▶ Interpretation of data and data reporting

Knowledge of the instruments

- ▶ What do they measure?
- ▶ What is the measurement principle?
- ▶ Are there any instrumental limitations?

Factors influencing measurements

- ▶ Endogenous factors (related to the subject measured)
 - ▶ Age
 - ▶ Gender
 - ▶ Ethnicity
 - ▶ Anatomical position
 - ▶ Medication, smoking, exercise, etc
- ▶ Exogenous factors
 - ▶ Skin washing/wet work
 - ▶ Solvents/surfactants/soaps
 - ▶ Occlusion

Factors influencing measurements

- ▶ Environmental factors
 - ▶ Air convection/movement
 - ▶ Ambient temperature
 - ▶ Relative humidity
 - ▶ Ambient light
 - ▶ Season
- ▶ Measurement factors
 - ▶ Calibration
 - ▶ Different models

Study Design

- ▶ Clearly defined study objective
 - ▶ Measurement variable directly linked to study objectives
- ▶ Subject inclusion and exclusion criteria
 - ▶ Control groups
- ▶ Accessibility of subjects and compliance
- ▶ Ethically justified

Taking measurements

- ▶ Measurement settings
 - ▶ Clinical
 - ▶ Non-clinical
- ▶ Calibrate and verification of instruments
- ▶ Also "characterise" the measurement environment
- ▶ Acclimatisation of instruments and subjects
- ▶ Observations of environment and subjects
 - ▶ Note deviations
- ▶ It takes time to make measurements

Interpretation of data and data reporting

- ▶ Take note of factors influencing data
- ▶ Absolute values
 - ▶ Comparison with reference values
- ▶ Relative as a %change over time

Conclusions

- ▶ Many parameters can be measured
 - ▶ Hydration
 - ▶ TEWL
 - ▶ pH
 - ▶ Pigmentation
 - ▶ Microcirculation mapping
- ▶ Objective evaluation of skin
- ▶ Quantitative assessment of the skin