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# Study: Feasibility of a hand-held non-mydriatic fundus camera in pediatric use: evaluating ease of use and image quality

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# Aim

- The feasibility of a hand-held and non-mydriatic fundus camera in pediatric use.
- Feasibility is measured by two outcome measures:
  - Ease of use
  - Image quality

# Methods

- Pediatric patients (0-12years) visiting our ophthalmology clinic were considered for selection, regardless of eye disorder.
- Consent was obtained from patient's legal guardian.
- Non-mydriatic macula-centered fundus images of both eyes of each subject were taken with Smartscope PRO retinal camera (Optomed).

- **Ease of use** was graded on a Likert scale:

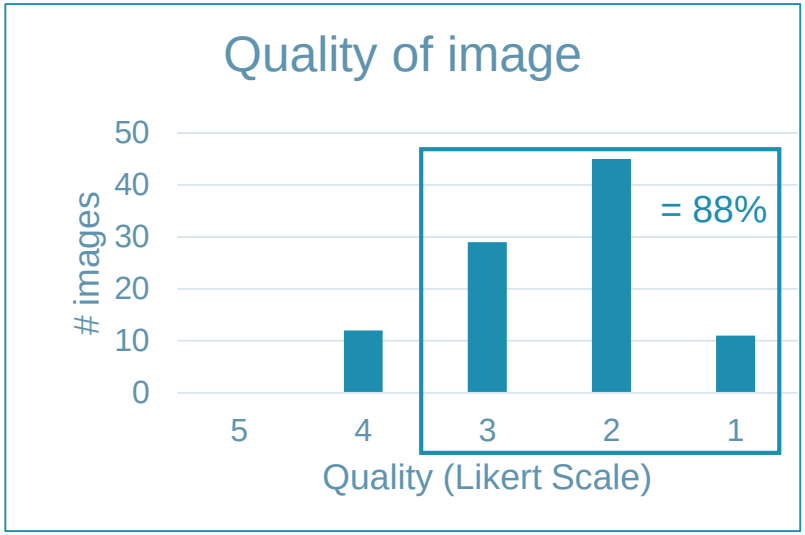
  1: image made after 1 attempt
  2: image made after 2 attempts
  3: image made after 3-5 attempts,
  4: image made after more than 5 attempts
  5: no image was made.

- **Image quality** of the best photo was graded:

  1: all details are well visualized
  2: most details are visualized
  3: macro details are visualized, microdetails aren't visualized
  4: blurry image, details are difficult to visualize
  5: unclear image, no details

# Results

- 50 patients (range 23 months – 11 years)
- **Ease of use**:
  - All patients: median rating of 1 (image after 1 attempt)
  - ≤ 3 years: median rating of 2 (image after 2 attempts)
  - Photographs of both eyes could be taken in 48 (96%) patients.
- **Quality of image:**
  - Score of ≤ 3 (acceptable to good quality)
    - 88% (85/97) – all patients
    - 90% (72/80) – patients > 3 years
    - 76% (13/17) – patients ≤ 3 years
  - None of the images had score 5 (unclear image)



# Conclusions

Non-mydriatic fundus images could be taken in almost all children, with improving ease of use and image quality with age.

This makes it an easy tool in pediatric ophthalmology clinic and for bedside examination.