

**VESTRE VIKEN****Diakonhjemmet
Hospital**

URINE MICROSCOPY: DEVELOPMENT OF AN APPLICATION FOR MOBILE DEVICES AS A LEARNING AID

Tale Norbye Wien¹, Heidi Andersen², Gro Jensen², Ludvig N. W. Daae²

1. Bærum Sykehus, Vestre Viken HF, Department of Internal Medicine, Nephrology section, Bærum, NORWAY

2. Diakonhjemmet Hospital, Department of Medical Biochemistry, Oslo, NORWAY

INTRODUCTION AND AIMS:

Microscopy of urine sediment is a valuable tool to help differentiate between various causes of renal injury. The procedure is easily performed at a low cost, but demands some experience to identify various particles in the urine sediment. Our previous audit of urine microscopy skills revealed a substantial potential for improvement in urine microscopy among doctors and biomedical laboratory scientists at our hospital (1). Junior doctors expressed they lacked a readily accessible source of reference

for urine microscopy in their clinical work with patients presenting with acute kidney injury. The aim of this project was to develop a reference guide and learning aid for urine microscopy.

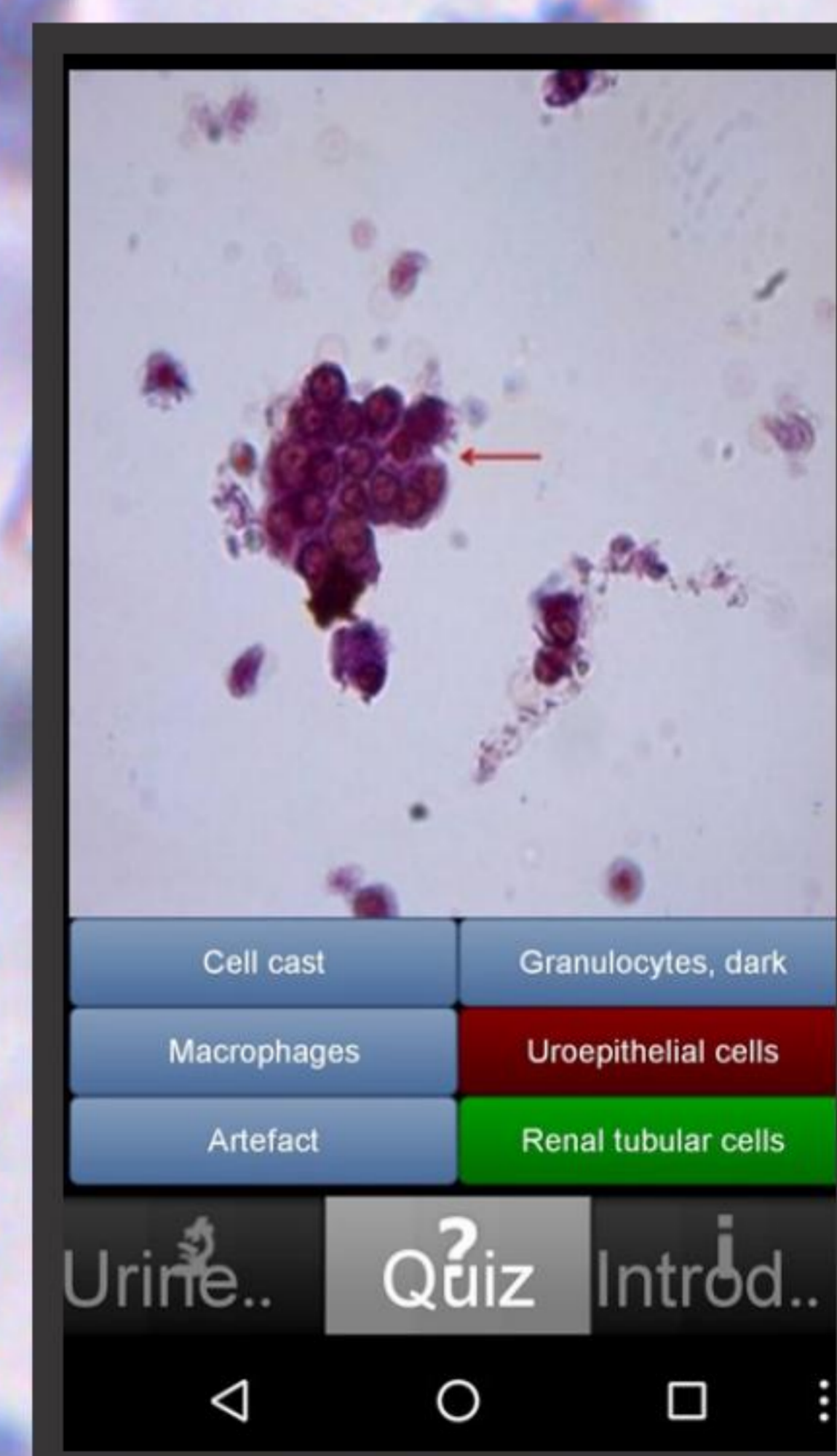
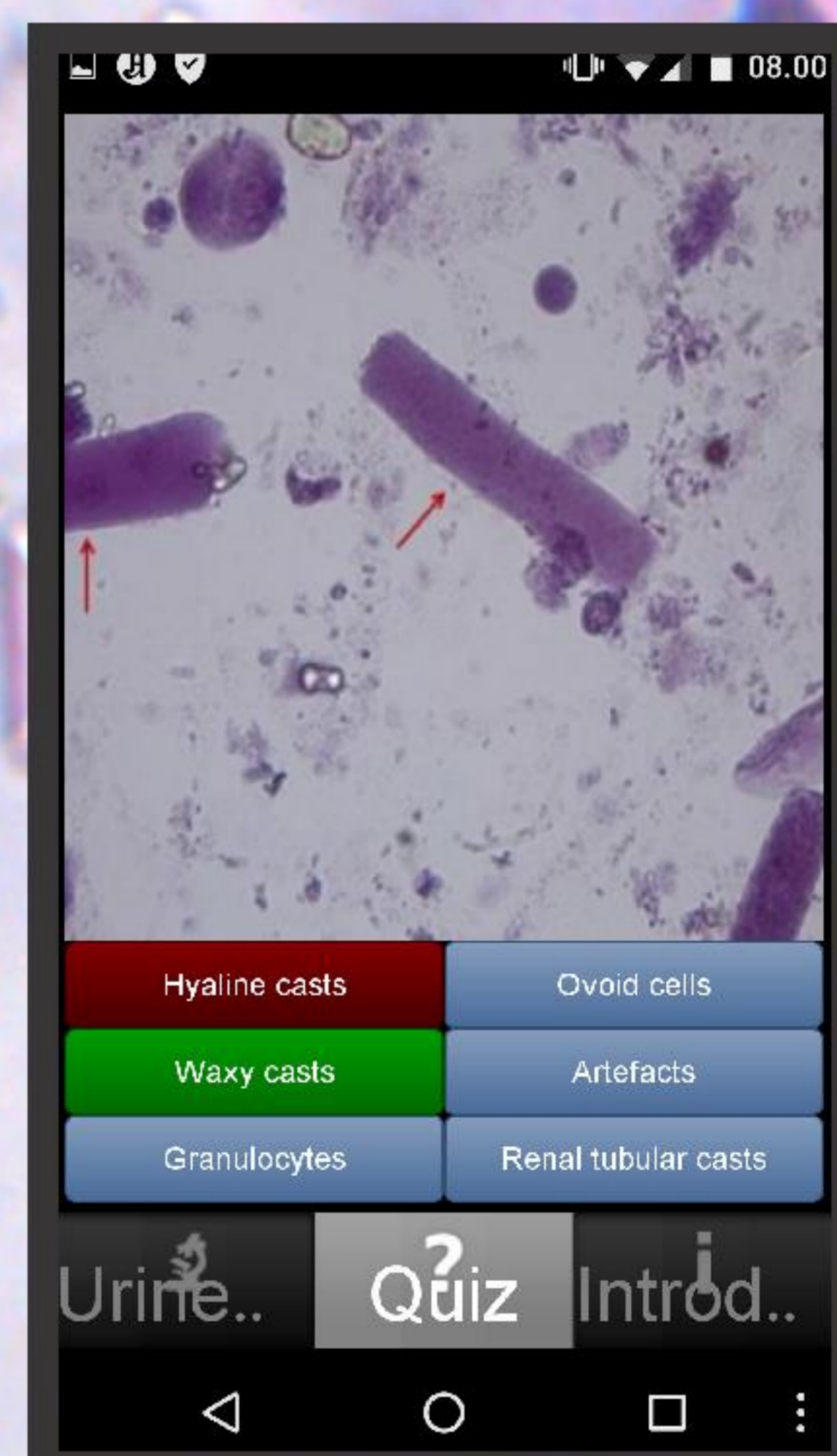
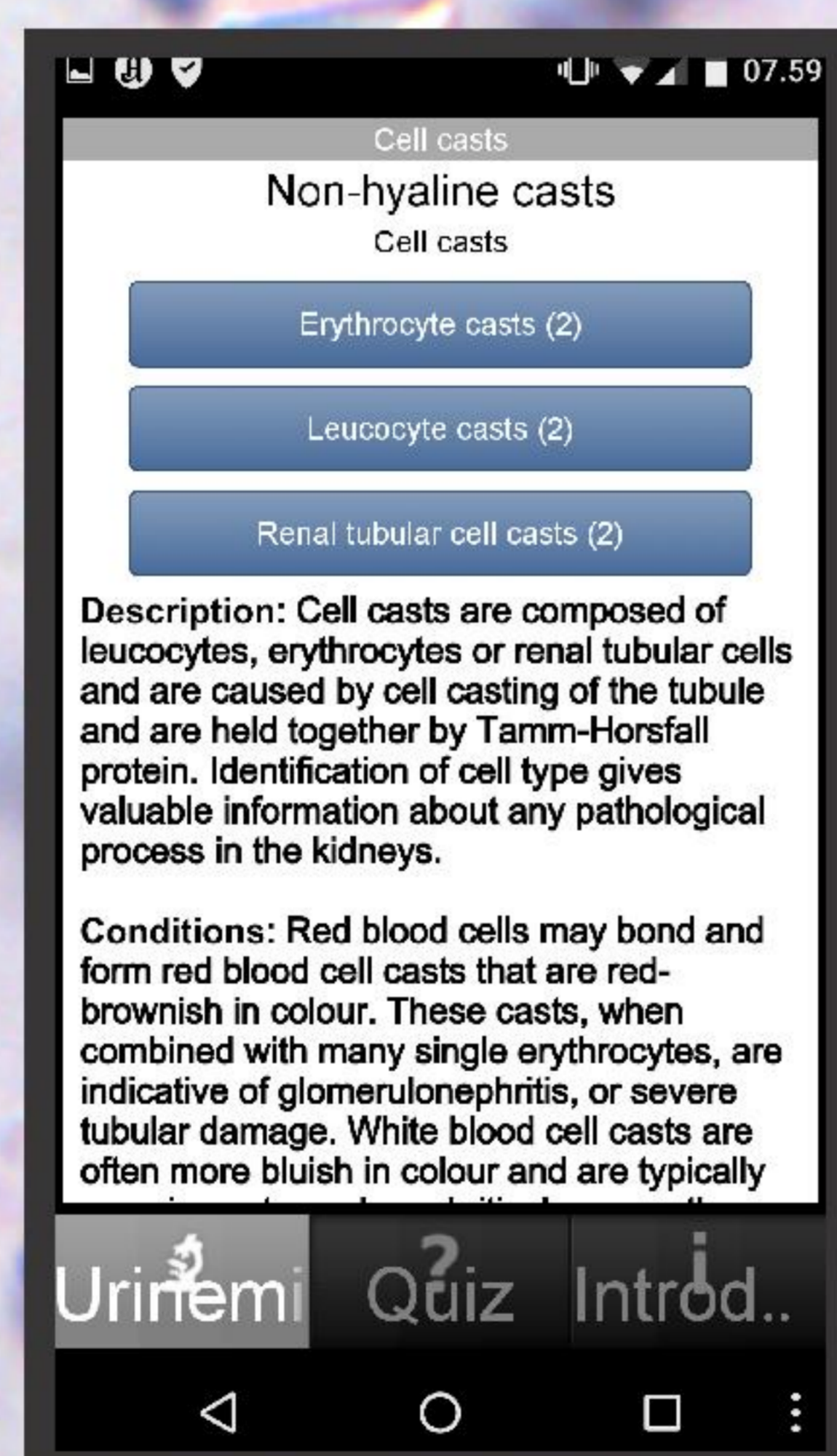
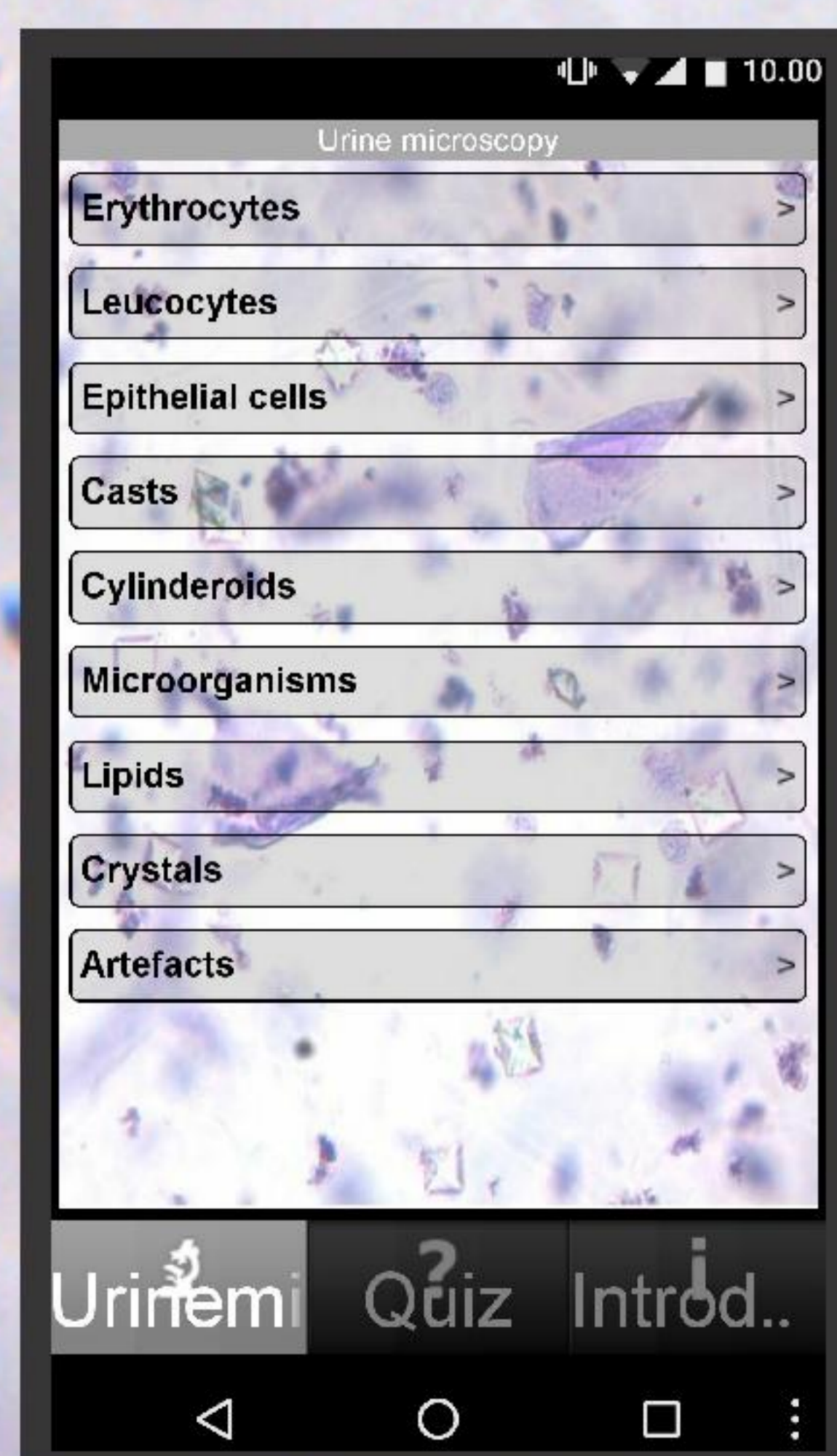
METHODS: We sampled urine microscopy images from our routine work in the hospital and prepared a systematic guide for particle identification, based on the European Urinalysis Guidelines (2). A web engineer was engaged to program our text and images to function on cellular phones as an applica-

tion (app). The reference guide was supplemented with a quiz of urine microscopy images. After installation on a mobile device the app does not need web access. The app has been distributed free of charge on a non-profit basis.

RESULTS: Our app (urinemicro) is as far as we know the only available app for microscopic particle identification of urinary sediments and has since its release by our hospital in 2012 via Apples App store and Google Play been installed on more than 42,000 mobile devices. The app

has received good ratings, in April 2016 with an average score of 4.4 out of 5 based on 331 ratings in Google Play. We have received feedback from many users that they find the app useful to aid in urine microscopy when assessing patients with acute renal failure.

CONCLUSIONS: It is our hope and belief that our development of an app guiding in urine microscopy, available free of charge, will help colleagues in the diagnosis and assessment of renal injury.



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Declaration of interest: No conflict of interest. Correspondence to: twien@vestreviken.no

