

## Pathology Lexicon A-Z: A multilingual glossary app

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Pathology, or the study of disease, is fundamental knowledge for the healthcare practitioner.<sup>[1]</sup> Health sciences students are typically required to describe and interpret gross pathology specimens. These specimens are organs or tissues displaying key features of a disease. Description of their pathological features requires proficiency in unique terminology. This terminology includes precisely tailored adjectives or metaphors (particularly food terms) with which the novice may be unfamiliar – for example, the ‘verrucous’ appearance of certain tumours and the ‘bread-and-butter’ appearance of fibrinous pericarditis. In the South African context where many students are second-language speakers of English,<sup>[2]</sup> pathology terms may be particularly challenging.<sup>[3]</sup>

The University of Cape Town (UCT) Pathology Learning Centre is a facility holding more than 4 000 pathology specimens, and is an integral part of ‘practical’ pathology teaching for health sciences students. To support teaching and learning, we sought to develop a tool to clarify terminology for macroscopic pathology.

### Approach

We developed a pathology glossary in the form of a mobile application (app), as our students tend to have continual access to their cellular phones, and when on campus have free internet access via international roaming service, Eduroam. Pathology Lexicon A-Z (PathLex) offers definitions, photographs and multilingual translations intended to make the terminology as accessible as possible. It contains an expanding alphabetical list of descriptive terms. Each term is explained in non-technical English, alongside a high-quality photograph of a specimen to which the term is correctly applied. Image sizes have been carefully chosen to create the best balance between image size and quality. Additionally, an audio clip is available for users to hear the English term spoken. With the assistance of subject specialist and language specialist translators, each term in PathLex has been translated into Afrikaans and isiXhosa (Fig. 1). These languages align with those taught in the health sciences undergraduate programmes at UCT, and represent the most prevalent non-English languages of the region.

Linguistic challenges during the development of PathLex have been complex, beginning with discerning which terms to include and which likely did not need clarification. The precise descriptive terms used in pathology often reflect subtle differences in tissue appearance, and translation into everyday language required careful thought. Furthermore, translations were especially problematic where particular terms were not known to exist in isiXhosa. In such instances, it was necessary to replace single-word pathology terms with phrases.

The app is available as a free download on Android and iOS platforms, with no mobile network operator partnerships.

### Outcomes

The work of PathLex is in alignment with ongoing work in multilingualism, glossary development and learning, as outlined in UCT’s language plan.<sup>[2]</sup> In developing PathLex, we encountered both linguistic and technical challenges. Technical challenges included acquiring the necessary knowledge and skills for app-building on both the Android and iOS platforms.

The app was launched in 2020, and this was timely due to, but also hindered by, the move to remote teaching brought about by the COVID-19 pandemic. Moving forward, we intend to actively promote PathLex to our students, and conduct formal research on this project. The research that we envision will unpack the design, development and implementation of the app, and how it may shape student learning. App sustainability has been conceived in terms of ongoing refinements to isiXhosa translations, through review by an isiXhosa first-language pathologist now on staff. In addition, we have updated teaching material to direct students to make use of the app. It is a non-exhaustive lexicon at this stage, and we will be looking to add new macroscopy terms and a microscopy glossary, if feasible.

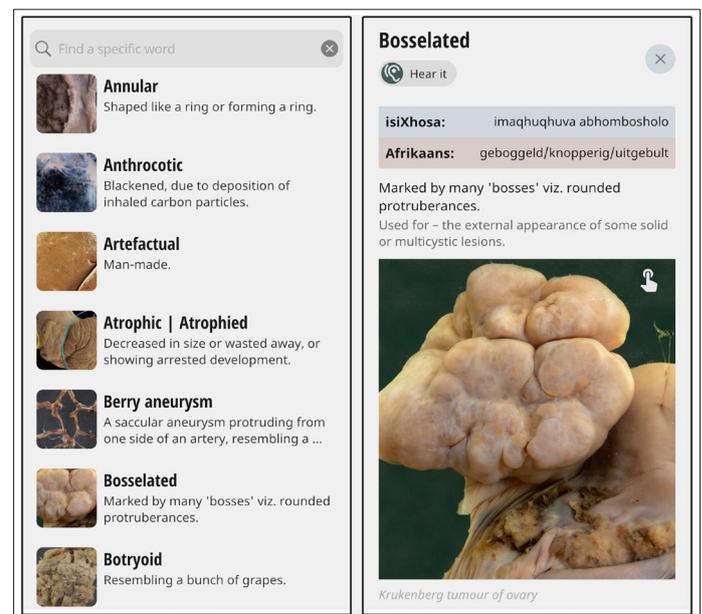


Fig. 1. Representative screenshots from Pathology Lexicon A-Z mobile application. Note that for the sample word shown at right, ‘bosselated’, no direct translation exists in isiXhosa or in Afrikaans. In IsiXhosa the phrase ‘maququhuva abhombosholo’ (rough surface with small knobs around) has been used to explain the term, and in Afrikaans three similar adjectives are employed – ‘geboggeld/knopperig/uitgebult’ (humped/knobly/bulging).

**Declaration.** None.

**Acknowledgments.** We acknowledge the valuable contributions of Dr Ayanda Mfokazi, a pathologist who has joined this project to assist as a subject specialist and translator.

**Author contributions.** All the authors complied with the International Committee of Medical Journal Editors' rules of authorship and were part of conceptualising, formulating and editing the article. Although the initial draft was prepared by the first author, subsequent work on the manuscript included essential input from all authors.

**Funding.** None.

**Conflicts of interest.** None.

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*Accepted 6 September 2021.*

*Afr J Health Professions Educ* 2021;13(4):212-213. <https://doi.org/10.7196/AJHPE.2021.v13i4.1490>