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App Review: The Radiology Assistant 2.0

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App Specs

App Icon URL https://is2-ssl.mzstatic.com/image/thumb/Purple128/v4/b5/53/ab/b553abf2-be0c-a5d1-493e-ad937128ce1c/AppIcon-1x_U007emarketing-0-0-GLES2_U002c0-512MB-sRGB-0-0-0-85-220-0-0-0-8.png/246x0w.jpg

App Name: The Radiology Assistant 2.0 (Version 1.1.0)

App Developer: BestApps BV

App Developer Website: https://itunes.apple.com/us/developer/bestapps-bv/id329677410

App Price: Free to Download; In-app-purchase of $5.99 for a 1-year subscription

Apple App Store URL: https://itunes.apple.com/us/app/radiology-assistant-2-0/id1173853906?mt=8

Google Play Store URL: https://play.google.com/store/apps/details?id=nl.radiologyassistant.android&hl=en (The Radiology Assistant Version 1.1.1)

Category: Medical

Tags: radiology reference, free, iPhone-compatible

Works Offline: Y

FDA Approval: N/A

Promotion Code: N/A

Quick Review

(1 star: lowest/5 stars: highest)

Overall Rating (1–5): 4.5

Content (1–5): 4

Usability (1–5): 5

Pros: Covers many common pathologies as well as normal anatomy across radiology subspecialties, well-labeled images from multiple imaging modalities, inexpensive, user-friendly interface.

Cons: Only iPhone and iPad compatible (previous version of app is android compatible). Content is not automatically updated and virtually no nuclear medicine specific content.

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At a Glance: User-friendly mobile device application, optimized for medical students and residents, that provides a searchable, offline database of up-to-date radiological articles which showcase many images and descriptions of common radiological pathologies as well as normal radiographic anatomy.

Full Review

Intro

The *Radiology Assistant* is an educational website, developed by the Radiology Society of the Netherlands, which provides up-to-date and peer-reviewed radiological cases and articles covering common presentations in imaging [1]. *The Radiology Assistant 2.0* application optimizes content from the website to be viewed on iPhone and iPad (Apple, Cupertino, CA). The app delivers a mobile educational resource for attending physicians, residents, and medical students to answer common radiology questions.

Purpose/Features/Content

The purpose of this application is to provide the user with a fast, searchable, database of radiological cases and articles across multiple subspecialties.

A $5.99 per year ($0.50/month) subscription allows the user access to all eight content categories: abdomen, breast, cardiovascular, chest, head and neck, musculoskeletal, neuroradiology, and pediatric imaging. Users also may also opt to purchase yearly subscriptions to only one ($0.08/month), two ($0.17/month), three ($0.25/month), or four ($0.33/month) categories of their choosing. Subscriptions are charged though user's iTunes account and may automatically renew every year on accounts with auto-renewal activated. In addition to supporting application development, proceeds from subscriptions go to support *Medical Action Myanmar*, a medical aid

organization that works to improve access to quality health care in Myanmar.

Usability

The Radiology Assistant 2.0 (version 1.1.0) application supports iOS versions 9.3 and up on iPad and iPhone The iPad version also supports multitasking. The previous version of the application (*The Radiology Assistant 1.0*) is currently available for Android and iOS. Users with a subscription to the previous application can transfer it to the newer version.

The initial interface displays color icons that open their respective content categories as well as a search icon that links to a full-text search for all articles in all categories (Figs 1 and 2). Figure 3 demonstrates the screen layout within a content area (ex. abdomen). The search icon within a content section links to a full-text search within that content category only. A "back arrow" returns the user to the initial interface from a content area. The first page of each article displays the author's name and institution. It also presents an interactive table of contents that links to each section of the article, as well as the article's publication date and a short summary of the material covered in the article (Fig. 4). Figure 4 also displays an
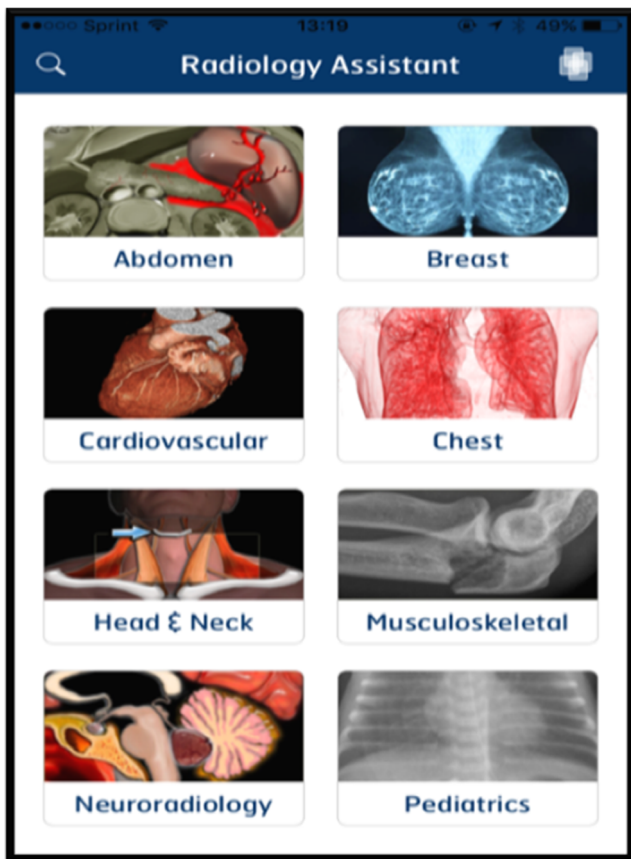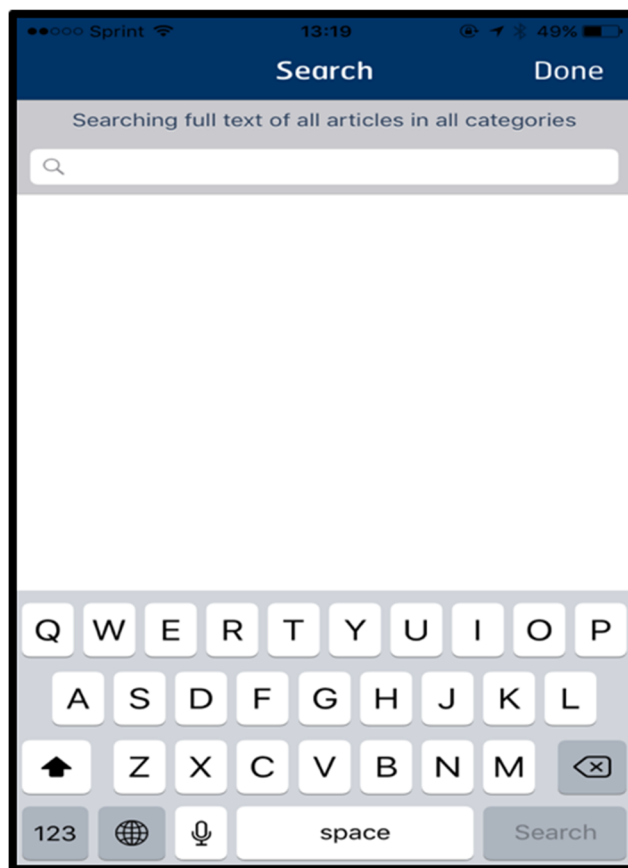

Fig. 2 Full-text search interface as viewed from an iPhone

article's simple icon interface that allows user to return to the content category, initiate a full-text search within the article, return to the top of the article, or display the article in 1-page or 2-page format. The three icons located on the bottom of the screen also shift off-screen during page scrolling to prevent inadvertent clicks while browsing.

Text, videos, images, and computed tomography (CT) scroll-stacks all may be embedded within an article. Scroll-stacks are series of CT images that are easily manipulated by swiping the finger up and down on the device's screen. Clicking an image, video, or scroll-stack displays the media in full screen. Exiting the full-screen media returns the user to their previous place in the article. A "pinch" finger gesture allows for adjustment of zoom on images and scroll-stacks.

Good

At the time of writing, the application includes 114 peer-reviewed articles that cover common pathologies and illustrations of normal anatomy that medical students and young radiology residents should be familiar with. Articles contain well-labeled examples and descriptions of cross-sectional imaging, plain films, and even 3D reconstructions. Many articles
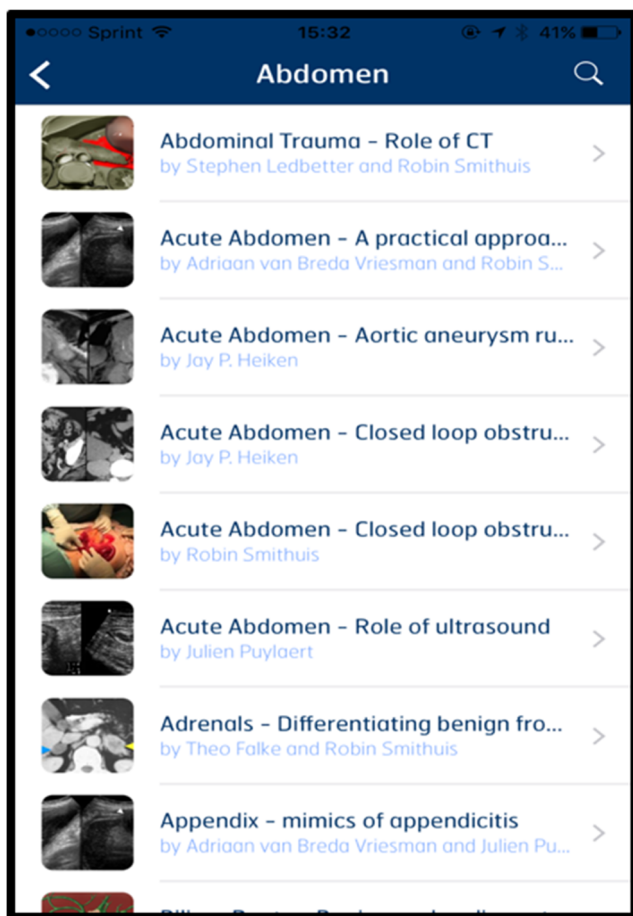

Fig. 1 Initial user interface as viewed from an iPhone

Fig. 3 Initial interface of the abdominal content category

Fig. 4 Initial opening screen of an example article

also include information on imaging protocols. All references are cited at the end of each article.

The content is written plainly enough for medical students but has enough depth to be beneficial to the resident or even faculty as well. Many articles include questions to guide the reader and also have external links to further resources. Images of histological and anatomical specimens create excellent radiologic-pathologic correlations. Most importantly, the content not only explains *what* the imager should expect to see, but *why* based on the anatomy, pathology, and physics.

As new or updated material is added, it can be downloaded manually for free with a subscription. The offline access to downloaded articles increases convenience and speed, since the user does not have to rely on data or internet.

Overall, the interface is straightforward and intuitive. The full-text search and interactive table of contents makes it easy to browse for an article and peruse its contents. Image resolution is nearly on par with what is to be expected on a PACS station and scroll-stack manipulation is very user-friendly, allowing the full experience of an image series.

Many articles contain multiple topics and subtopics. A clickable table of contents allows the user to quickly jump to specific sections which is very helpful in some of the lengthier articles.

Finally, there are no on-screen advertisements that may distract, delay, or otherwise discourage the use of the application.

Room for Improvement

There are occasional sluggish loading times and/or freezing of the application when attempting to make media full-screen, particularly scroll-stacks images. The user must then close the app and manually return to their previous article. Scroll-stacks also lack the intuitive arrow, found in other parts of the app that will return users to their previous page.

Availability is also a concern, as the application is not offered for Android users. However, a previous version (*The Radiology Assistant 1.0*) is available for Android devices.

The app attempts to return the user to their last reading location within the article when it is reopened. However, more often than not, the article opens at a new location distant from the actual previous position.

References at the end of articles hyperlink to their original document when clicked on the Radiology Assistant website, but not when clicking within the app.

One additional area of improvement would be an in-app notification when new articles or article updates are available to be downloaded without the user having to check manually.

Finally, including a category to cover fundamental principles of nuclear medicine would help to complete the content. In addition, although some vascular/interventional radiology and emergency radiology articles may be found dispersed throughout the content categories, these subspecialties are discrete enough to warrant their own specific content sections.

Reference

1. Smithuis, R., & Van Delden O. The radiology assistant. Retrieved January 03, 2018, from http://www.radiologyassistant.nl/en/p420f0b3ef35c6/the-radiology-assistant.html