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**STATworkUP**

Version: 2.0.0  
 Developer Name: IATROCOM  
 Year Created: 2010  
 Price: 39.99 USD

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Developer Website (click)  
 Description: [CLICK HERE](#)

Clino-Meter : ★★★★★ ?

Features: ★★★★★  
 Navigation: ★★★★★  
 Value: ★★★★★  
 Content: ★★★★★

**The Bottom Line:** 🍏

STATworkUP™ has an immense amount of correlated data between symptoms, tests, diagnoses and treatments. While the app cannot be relied upon to thoroughly determine a differential diagnosis or provide an evidence-based summary of therapy, it can serve as an additional arrow in the clinicians quiver especially when wrestling with an uncommon diagnostic dilemma.

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 Content: ★★★★★

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Device used: iOS  
 Profession: Athletic Trainer  
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**EDITORIAL REVIEW**



Dr. Robert Spence

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**EDITORIAL NOTE:** We have been notified by the developer of this app that a significant update is due to be released upon approval by Apple within the next 1-2 weeks. This will be version 2.0 of STATworkUP™ which the developer claims "will be reengineered" and is a "a dramatically improved medical app with enhance database." We will provide an independent review and addendum to this one at that time.

**Who is the App For?**

Medical students in training or experienced physicians in a clinical environment

**REVIEW:**

**Description of the App:**

STATworkUP is a diagnostic expert system designed for clinical decision support. It allows the user to combine Symptoms, Studies, Diagnoses and Treatments to develop a differential diagnosis, evaluate characteristics of diagnoses already made, determine the limitations of tests and their applicability, and to assess the range of treatments and their applicability.

**Features Include:**

- Updates without additional charges
- Associates symptoms, tests, and diagnoses to help clinical evaluations
- Links to Google Web searches on internet-connected devices
- Assists a clinician identify other possible diagnosis that fits a constellation of symptoms
- Over 10,000 separate symptoms, tests, diagnoses and treatments, all interconnected.
- Can print to an Airprint capable printer
- Allows the user to adjust a probability setting to add or subtract from a list of differential diagnoses



**Editorial Review:**

Clinical decision expert systems have been around for a long-while. The concept is to replace the thought process of a medical provider with a computer algorithm that seeks to the diagnosis initially. Potentially, the algorithms will not suffer from the fallibilities of people and not miss important diagnoses, tests or therapies.

The fault is probably from medical education in general – it is often a diagnoses directed process where the clinician learns about, say "small-bowel obstruction" and subsequently learns the symptoms that lead to the diagnosis, the tests used to make the diagnosis and the treatments used and their relative efficacy for that particular diagnosis.

Unfortunately many aspects of medicine, particularly the generalist specialties like emergency medicine, family medicine, internal medicine, and pediatrics, rarely have the diagnosis initially. Instead we have a constellation of symptoms and must use those to decide which tests to order and what treatments to initiate, often before the diagnosis is made (if indeed it is ever made). The human nature of providers leads to bias, such as anchor-bias where we fixate on a diagnosis and ignore signs leading in another direction.

STATWorkUP is the latest expert system trying to reduce these limitations of our humanity. While the database of information collected is impressive, it suffers from the difficulty of trying to simulate the complexity of clinical thought.

The app starts with a search box and a list of symptoms, studies, diagnoses, and treatments. The search box is intuitive and includes synonyms for various symptoms – for example, vomiting can be found by searching on vomiting or emesis, although this versatility is limited. My searches for 'puking' and 'up-chucking' came up dry.

The symptoms can be selected from a list to generate a constellation that applies to a particular patient. This list can be reviewed or a differential diagnosis generated. This differential diagnosis can be expanded to include more or less likely diagnoses. It is not clear (and I'm sure proprietary) what algorithm is used to generate the differential diagnosis and how decisions are made to include or exclude possibilities based on the symptom-complex. Accordingly, the actual decisions made should be taken with a grain of salt. For example, a group including abdominal distention, decreased bowel sounds, and vomiting would definitely include ileus, and to a lesser extent perforated bowel. Of course a more common possible diagnosis would also be small-bowel obstruction. Unfortunately this was conspicuous in its absence unless the "likelihood slider" was set all the way to the left, which allowed small-bowel obstruction to appear, albeit in the company of "zebras" such as tularemia or systemic loxoscelism.

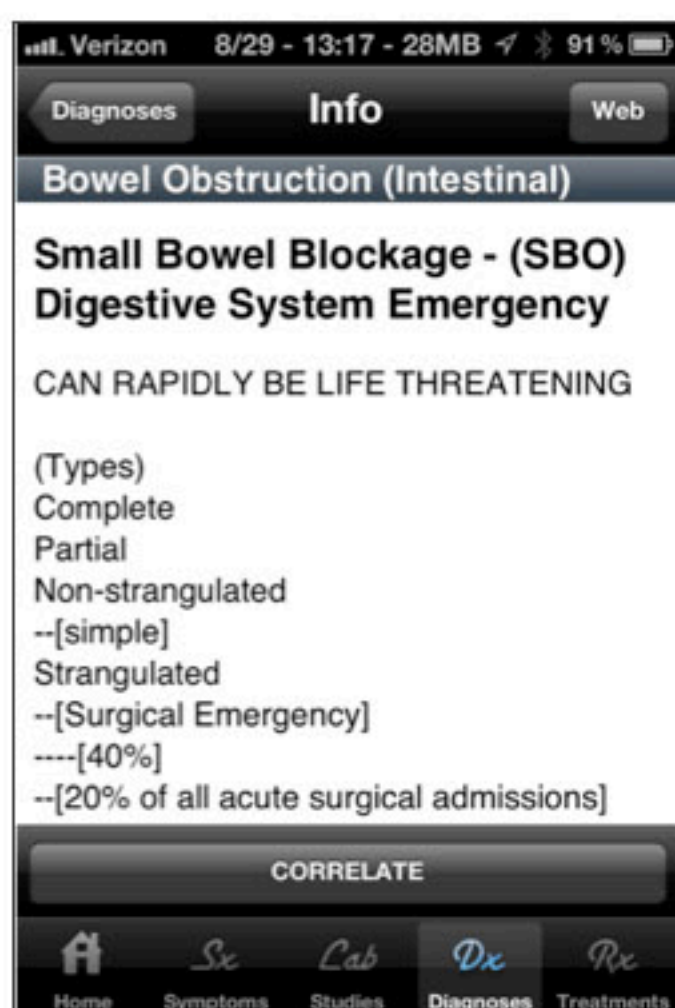


FIGURE 3: The diagnosis section has helpful overview bullets and can be correlated to a list of symptoms

The risk when using a system like this is to enter as many symptoms as possible leading to possible elimination of the true diagnosis because you chose "right-lower-quadrant pain" instead of "diffuse abdominal pain". Another risk is choosing symptoms that are too broad leading to an unreasonably large list of potential diagnosis.

The app seems to have some pediatric decision rules – for example mucosal hyperemia and conjunctival injection readily resulted in Kawasaki's disease as the number one diagnosis. However, any pediatrician knows that a child with strep pharyngitis will often present with abdominal pain, and these paradoxical, albeit well documented, associations can lead the expert system in the wrong direction.

The laboratory findings cannot be chosen for integration into a differential diagnosis but do include a list of potential disorders that can result in the test being abnormal. This is helpful as a reminder of other potential conditions that might have resulted in a surprising laboratory finding, such as ceramide deficiency causing an elevated ammonia when hepatocellular disease is less likely. Laboratory testing cannot be combined normally although common abnormalities (e.g. hypokalemia) are actually included in the symptom listings, which means a differential for, for example, hypokalemic metabolic acidosis can be generated.

The diagnosis section, which outlines the major characteristics of each disease process, and includes diagnostic criteria, etiologies, associations with other disease or genetic syndromes, and complications. A correlate button allows you to show the associated symptoms that might be present for the disease, tests that might be helpful, and potentially beneficial therapies. For therapies there are no doses so this cannot serve as a substitute for a drug reference app. In addition, tests generally do not include normal ranges so you would have to know independently if the test is abnormal.

The web links for the app are somewhat misleading as there is not really a well-thought out connection between the app and peer-reviewed resources online. Instead the app simply conducts a Google search of the chapter title. In addition, none of the chapters have references, so despite the fact that therapies for otitis media are listed, we don't really know the evidence that supports these therapies.

The app is content for the iPad and adjusts the screen size to the iPad version screens, allowing more content to be visible at one time. As a universal app, the iPhone and iPad versions are included in the same package, making purchasing separate iPhone and iPad versions unnecessary.

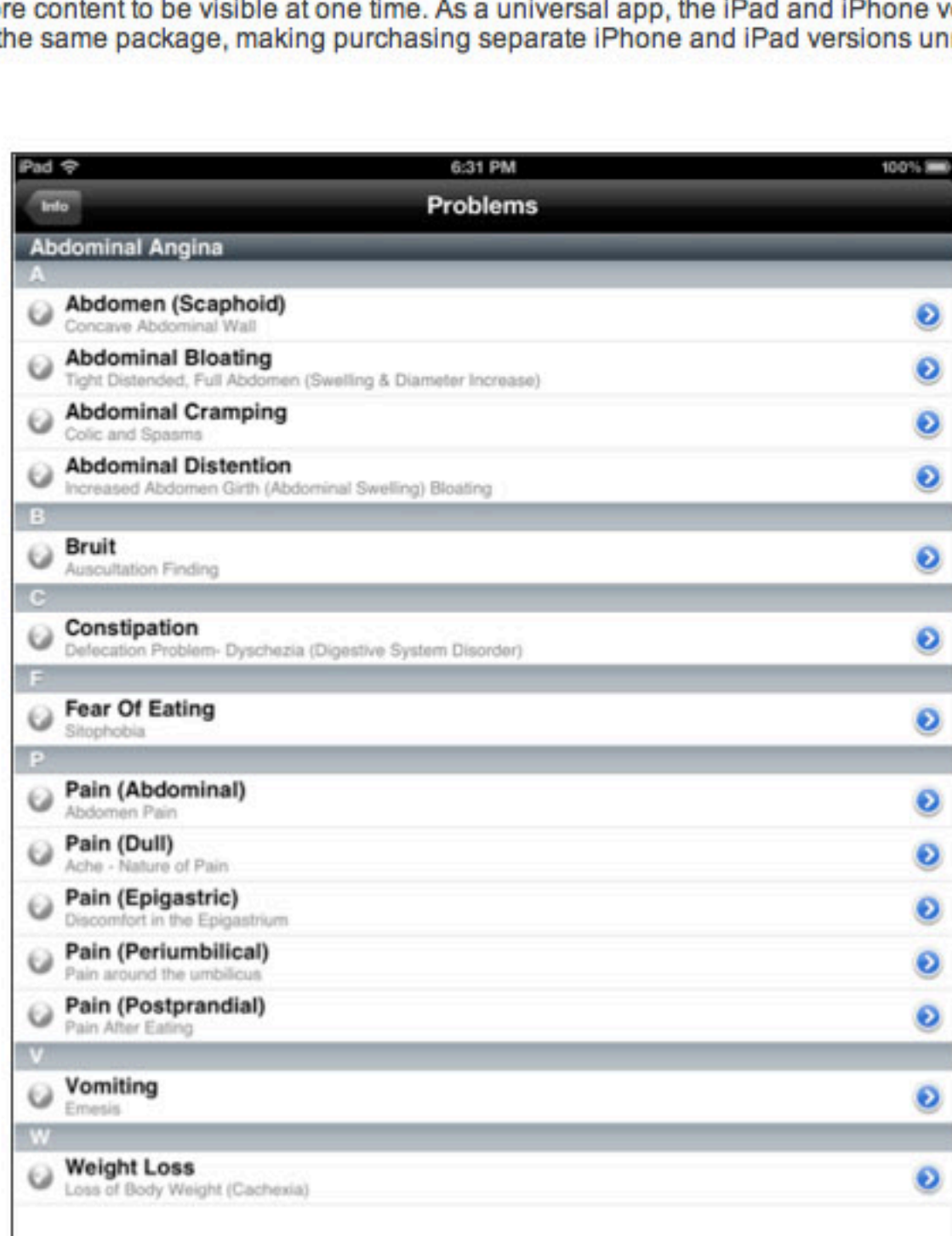


FIGURE 4: The app takes advantage of the iPad real-estate but does nothing special with it

**DISCLOSURE:**

I have no conflict of interest to disclose. I have nothing beneficial to gain from the nature of this review, whether financial or of a different nature.

Version #: 1.3.0  
 Device Tested On: iPhone 4S and the new iPad with iOS 5.1  
 Price at time of review: \$39.99  
 Date of review: 27 September 2012

**BOTTOM LINE:**

STATworkUP™ has an immense amount of correlated data between symptoms, tests, diagnoses and treatments. While the app cannot be relied upon to thoroughly determine a differential diagnosis or provide an evidence-based summary of therapy, it can serve as an additional arrow in the clinicians quiver especially when wrestling with an uncommon diagnostic dilemma.