

# Diagnostic Accuracy of Rapid Antigen Tests for COVID-19 Compared to the Viral Genetic Tests in Adults: A Systematic Review Protocol

Megan DeArmond<sup>1,2</sup>, Shelby Feliciano<sup>3</sup>, Ellyn Hirabayashi<sup>3</sup>, Karen M. Duus<sup>2,3</sup>, Terry A. Else<sup>2,3</sup>, Amy E.L. Stone<sup>2,3</sup>

1. Touro University Nevada Jay Sexter Library, 2. JBI Affiliated Group, Touro University Nevada, 3. Touro University Nevada College of Osteopathic Medicine, Henderson, NV

## Purpose

The purpose of a systematic review is to develop an understanding of what the current research says about a given topic of interest, combining the existing data into one document using a highly structured and rigorous protocol. As of 3 February 2021, the World Health Organization states that there have been over 103 million confirmed cases of COVID-19 and over 2.2 million deaths. Hundreds of diagnostic molecular assays have been developed since the start of the COVID-19 pandemic, however there has yet to be a comprehensive study that compares the increasingly popular and cost-effective rapid antigen tests to the gold-standard PCR-based assays. By conducting a systematic review on the diagnostic accuracy of rapid antigen tests, we will contribute to current research which can ultimately determine standard clinical practice and will strengthen our ability to evaluate health science literature.

## Methods

This synthesis of current research creates a framework for researchers to identify gaps that may be filled in by future studies. The acronym "PIRD" (**P**articipants, **I**ndex test, **R**eference test, and **D**iagnosis of Interest) was used to formulate our systematic review research question. Our protocol and subsequent systematic review will investigate the diagnostic accuracy of the currently available rapid antigen tests relative to viral genetic PCR test as a reference test for the diagnosis of COVID19/Sars-CoV-2 in adults (18+). The primary objective of our protocol is to clearly define the methodology to be used in our systematic review based on our research question as defined previously. The secondary objective is to establish the inclusion and exclusion criteria that will inform our study selection as well as the critical appraisal of the selected studies.

## Results

We developed a well constructed search strategy for PubMed (MEDLINE) that retrieves articles relevant to our PIRD framework question. Our protocol outlines our methodology for study selection, data extraction, critical appraisal, data synthesis, and a summary of findings table. The information yielded from the data synthesis can then be used by clinicians to inform their choice of diagnostic testing when evaluating a patient in the context of the COVID-19 pandemic.