

Refining how doctors assess hypertension risk

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L–R: Primary Aldosteronism patient, Dr Elisabeth Ng, Associate Professor Jun Yang. Credit: Hudson Institute of Medical Research

The team from Hudson Institute of Medical Research established that in around one in seven Australians with hypertension the cause was primary aldosteronism (PA), a condition which usually goes undiagnosed and untreated.

Now they have found that interpreting results of the test for PA may not be as simple as previously thought.

Refining hypertension testing

Their study, published in *The Journal of Clinical Endocrinology and Metabolism*, found significant variability in aldosterone and renin levels within individuals, so much so that people with PA can have results that look like they do not have PA at times, and vice versa.

Lead researcher and Ph.D. candidate Dr. Elisabeth Ng said this means that in most cases, a single test is unlikely to suffice for a reliable diagnosis.

"PA is a condition that occurs due to high levels of a hormone called aldosterone, which is produced by the [adrenal glands](#)," Dr. Ng said. "It results in hypertension and can increase the risk of heart and [kidney damage](#)."

"The screening test is an aldosterone-to-renin ratio (ARR), where an elevated ARR prompts further investigations to confirm the diagnosis.

"But in our study nearly 40% of people with PA had at least one ARR

result that was considered normal and 46% of those without the condition had at least one test that was considered abnormal," she said.

Single test is not enough

This study shows us that in the majority of cases, a single ARR test is not enough to rule in or rule out the diagnosis of PA.

These results contribute to an emerging body of evidence that highlights the importance of repeating the screening blood test for primary aldosteronism testing. This will change guidelines for [clinical practice](#) and content for educating clinicians.

"An accurate diagnosis is important," Dr. Ng said, "... as the risk of missing the diagnosis of PA is poorly controlled [hypertension](#) resulting in an increased risk of stroke, [heart disease](#) and reduced kidney function over time."

"Equally, pursuing the diagnosis of PA involves multiple tests, some of which can be invasive, so it is important to make sure the initial ARR results are truly abnormal before further testing."

Effective primary aldosterone diagnosis

"Given our current approach to diagnosing PA begins with identifying elevated ARR results, understanding the variability that exists in [aldosterone](#) and renin levels will help clinicians to ensure the [diagnosis](#) of PA is appropriately pursued or excluded.

"This will mean that people with PA are diagnosed and treated promptly, while those who do not have PA are not put through unnecessary investigations."

More information: Elisabeth Ng et al, Aldosterone, Renin, and Aldosterone-to-Renin Ratio Variability in Screening for Primary Aldosteronism, *The Journal of Clinical Endocrinology & Metabolism* (2022). [DOI: 10.1210/clinem/dgac568](https://doi.org/10.1210/clinem/dgac568)

Provided by Hudson Institute of Medical Research

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