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## Abstract

Primary Hyperparathyroidism(PHPT) is a relatively common disease, affecting about one in every 1,000 adults. However, screening for PHPT can be difficult, meaning it often goes undiagnosed for long periods of time. While looking at specific blood test results independently can help indicate whether a patient has PHPT, often these blood result levels can all be within their respective normal ranges despite the patient having PHPT. Based on clinical data from the real world, in this work, we propose a novel approach to screening PHPT with neural network (NN) architectures, achieving over 97% accuracy with common blood values as inputs. Further, we propose a second model achieving over 99% accuracy with additional lab test values as inputs. Moreover, compared to traditional PHPT screening methods, our NN can reduce the false negatives of traditional screening methods by 99%.

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