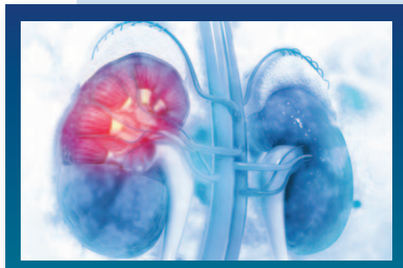
Technology Snapshot I



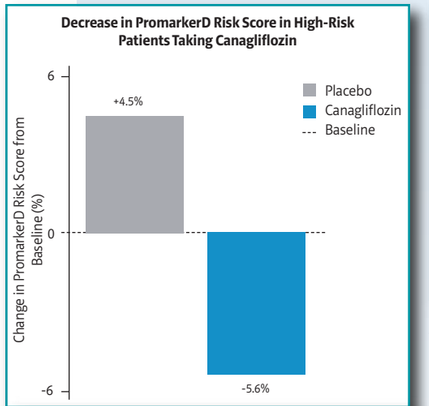
One-in-three adults with diabetes currently have DKD - often called a 'silent killer', DKD can cause irreversible loss of 80% of kidney function prior to the onset of symptoms. DKD leads to renal failure requiring dialysis or kidney transplant. This makes early and accurate diagnosis critical.

PromarkerD and Drug Therapies for Diabetic Kidney Disease

Diabetic Kidney Disease (DKD) is a serious complication of diabetes causing irreversible loss of kidney function. Diabetes currently affects 1 in 10 adults globally which is estimated to increase within the next 20 years to 1 in 8[1]. Of these adults with diabetes, 1 in 3 currently have DKD[2].

New treatment option to slow DKD – SGLT2-inhibitor lowers PromarkerD risk scores

In May 2023, Proteomics International published a feature article in the internationally renowned Journal of Clinical Medicine showing the benefits of early therapeutic intervention on diabetes patients at risk of DKD. The study was conducted in collaboration with Janssen Research and Development (part of Johnson & Johnson) and assessed the effect of the SGLT2-inhibitor canaglifozin (Invokana®) versus placebo on PromarkerD risk scores.



Comparison of average PromarkerD score changes over three years in 'high-risk' patients taking a placebo versus the SGLT2-inhibitor canagliflozin. Patients on canagliflozin had a significant reduction in PromarkerD scores compared to the placebo group[3].

Journal of Clinical Medicine — MDPI

Article — J. Clin. Med. 2023, 12, 3247. https://doi.org/10.3390/jcm12093247

Canagliflozin Attenuates PromarkerD Diabetic Kidney Disease Risk Prediction Scores

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The study asked the question:

Do "at-risk" diabetes patients identified by PromarkerD continue to decline, stabilise or recover?

- Over 2,000 patients were analysed retrospectively from the completed CANVAS clinical trial (ClinicalTrial.gov registration number NCT01032629).
- The results showed a significant decrease in PromarkerD risk scores among type-2 diabetes patients receiving canagliflozin, compared to those on a placebo over a three-year period.
- The biggest benefit was observed in patients identified as high-risk by the PromarkerD test, with average reductions of 5.6% (P<0.001) in PromarkerD scores for those on canagliflozin, while high-risk patients on placebo had increased risk scores after the three years - an overall improvement of >10%.

The publication demonstrates early use of an SGLT2-inhibitor can mitigate the decline in kidney function in patients classified as high-risk of disease.

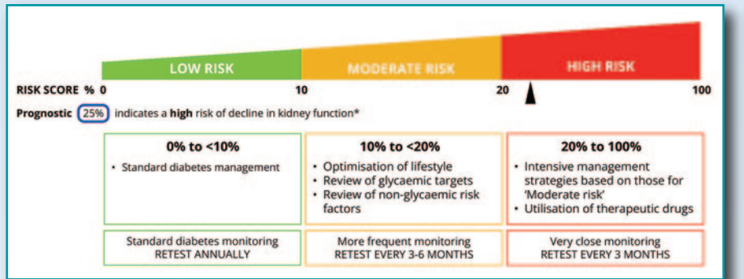
[1] IDF Diabetes Atlas 10th Edition, 2021
[2] Centers for Disease Control and Prevention 2019
[3] Peters et. al, Journal of Clinical Medicine, 2023

Proteomics International Laboratories Ltd

PromarkerD: Using precision diagnostics to predict DKD

Current clinical measures for diagnosing DKD can only detect the disease once it is already present. With existing testing regimes a patient's kidneys will have already sustained irreversible damage by the time the disease is identified.

PromarkerD is a protein biomarker-based blood test that predicts the onset of DKD in type-2 diabetes patients up to four years in advance. Clinical studies have shown that PromarkerD predicted over 86% of disease-free patients that went on to develop DKD within four years of testing[4] .



Sample PromarkerD Test Report: The cloud-based PromarkerD algorithm categorises patients into 'risk profiles' (low, moderate or high) based on their four-year prognostic risk of developing DKD. This risk-score helps physicians to administer appropriate early interventions to slow or stop the onset of kidney disease.

PromarkerD

PROACTIVELY CHANGING RENAL HEALTHCARE

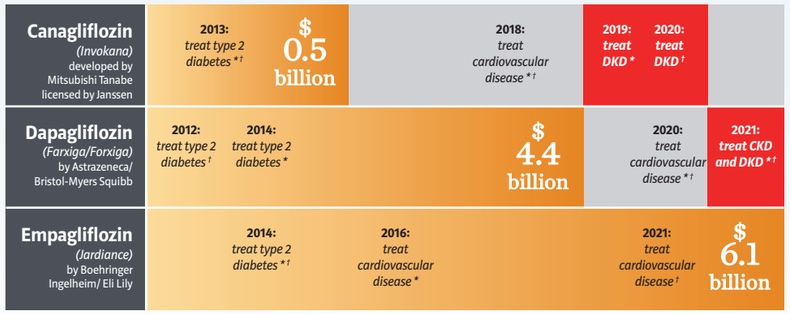
A simple blood test for predicting diabetic kidney disease

With an accurate prognostic test for DKD, alongside an effective early treatment option, physicians now have the tools to improve the quality of life for their diabetes patients and in the process save healthcare systems billions of dollars.

Blockbuster drugs for DKD

Sodium glucose cotransporter protein 2 (SGLT-2) inhibitors, commonly referred to as 'gliflozins', are FDA-approved blockbuster medicines used for glycaemic control in diabetes. The drugs are also indicated for treating cardiovascular disease in diabetes patients, and more recently their approval has been extended to treating DKD. These medications are made by some of the world's largest pharmaceutical companies amassing global sales exceeding $11 billion in 2022[5]. The wide use of SGLT2-inhibitors makes them an ideal therapeutic intervention for high-risk patients identified by PromarkerD.

Sales of gliflozin drugs



[4] Peters et. al, Journal of Diabetes and its Complications, 2019
[5] Company reported global sales in USD