

# The EYES have it, Early Stage Detection of Diabetes and Cardiovascular Disease

written by InvestorNews | December 1, 2021

Using Artificial Intelligence (AI) to better image and analyze the retina of the eye to detect early stage disease is a potential game changer in the prevention of blindness and cardiovascular diseases such as stroke, heart attack, and diabetic related disease.

Today's company is pioneering its work in this field with [USA clinical trials](#) commencing soon and a global commercialization rollout already underway. The company is [Diagnos Inc.](#) (TSXV: ADK | OTCQB: DGNOF) ("DIAGNOS").

DIAGNOS has developed an Artificial Intelligence (AI) tele-ophthalmology platform, which uses Computer Assisted Retina Analysis (CARA) to examine a patient's retina (back of the eye) for the early detection of diseases, such as diabetes, and conditions such as cardiovascular disease, hypertension and stroke. CARA's image enhancement algorithms provide sharper, clearer and, thus, easier-to-analyze retinal images.

CARA has been cleared for commercialization by the following regulators: Health Canada, the FDA (USA), CE (Europe), COFEPRIS (Mexico) and Saudi FDA (Saudi Arabia). DIAGNOS already operates in [16 countries](#), with 131 screening sites, has 222,034 patients under their care, and has performed more than [400,000](#) retinographies around the world. DIAGNOS' CARA achieves great precision in diabetic retinopathy pre-diagnoses, reaching a sensitivity of 98.4%, specificity of 97.6% and [a certainty of 97.9%](#).

**DIAGNOS uses an AI technology know as CARA to better analyze the retina of the eye, a key way to detect early cardiovascular disease**



Source: [DIAGNOS website](#)

**DIAGNOS achieves two firsts and an eight at the GAMMA (Glaucoma grAding from Multi-Modality imAges) contest**

At the recent GAMMA competition, DIAGNOS achieved some stunning results including [two firsts and an eighth place out of a total of 566 teams](#). Now that's super impressive!

The October 28, 2021 announcement [stated](#): "DIAGNOS was the only one, of the top 8 teams, that competed with a marketed, commercialized system. DIAGNOS used the same platform that it currently uses for diabetic retinopathy screening, which is marketed worldwide, while the others were principally from academic institutions."

Key results included:

- Localization of macula fovea in fundus images. (**DIAGNOS placed 1<sup>st</sup> overall**)
- Segmentation of optic disc and cup in fundus images. (**DIAGNOS placed 1<sup>st</sup> overall**)
- Grading glaucoma using multi-modality data. (**DIAGNOS placed 8<sup>th</sup> overall**)

**USA clinical trial for the early detection and prevention of stroke using CARA-STROKE**

On November 23 DIAGNOS [announced](#): "DIAGNOS will start a clinical trial study in the USA commencing December 6th, 2021 for early

detection and prevention of stroke using CARA-STROKE.” The trial aims to confirm early Proof-of-Concept results that showed a strong potential in the early detection of stroke through the inspection and micro circulation analysis of the retina.

The upcoming USA clinic trial at the CommonSpirit Health Research Institute, Chattanooga Center for Neurologic Research LLC, is intended to further prove the effectiveness of DIAGNOS’s CARA technology.

Note: CommonSpirit Health is a non-profit national Catholic healthcare system that operates 137 hospitals and more than 1,000 care sites across 21 states of the USA.

### **Some facts about cardiovascular disease including stroke**

- Stroke causes 1 out of every 20 deaths.
- The management of stroke represents a cost of around US\$34 billion per year in the United States.
- According to the WHO, 15 million people suffer a stroke worldwide each year. Of these, 5 million die and another 5 million are permanently disabled.
- Europe averages approximately 650,000 stroke related deaths each year.
- Worldwide Research Institutes says that the worldwide market size for stroke management will hit over \$66 billion by 2023.

Source: [DIAGNOS announcement](#)

Clearly, the above facts speak volumes as to the need to diagnose cardiovascular disease early. And that is exactly what DIAGNOS does.

### **Not just an idea, commercialization has begun**

As previously discussed in some detail [here](#), DIAGNOS

commercialization is gaining momentum. Some examples include:

- [July 22, 2021](#) – DIAGNOS announced the official opening of the AI Assisted screening clinic at Magrabi Hospital in Saudi Arabia. Magrabi Hospitals and Centers has **thirty-four branches in the Middle East**.
- [July 28, 2021](#) – DIAGNOS announced a pilot in Spain with three franchisees from Opticalia Group.
- [August 16, 2021](#) – DIAGNOS announced signing a Memorandum of Understanding (MoU) for a distribution agreement with Essilor International. **Essilor International is the world's leading ophthalmic optics company.**
- [September 2, 2021](#) – DIAGNOS announced a three-year contract renewal with Optina Diagnostics providing a Telemedicine Platform to support their early detection of Alzheimer's Disease.
- [September 14, 2021](#) – DIAGNOS announced a 3-year contract with Cielo Vista Eye Clinic in Mexico.
- [September 16, 2021](#) – DIAGNOS announced a multi-year contract with Juarez Health & Medical Tourism Cluster in Mexico, who focuses on medical tourism and **serves between 10-12,000 patients a day.**

## Closing remarks

DIAGNOS's CARA technology is clearly a winner. It has already won numerous global contracts and the recent GAMMA competition. Any potentially positive results from the upcoming CommonSpirit Health Research Institute clinical trial would just be icing on the cake.

With 15 million people suffering a stroke worldwide each year the time has come for better early diagnosis to allow earlier treatment and prevention, potentially reducing this terrible statistic.

Diagnos Inc. trades on a market cap of just [C\\$30 million](#) which seems very small when compared to the massive market for cardiovascular disease diagnosis. One to follow closely in the years ahead.

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## **Expanding globally in the AI image based diagnosis sector, Diagnos is actively commercializing their CARA technology**

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CARA's Artificial Intelligence image enhancement algorithms make standard retinal images sharper, clearer and easier to read. CARA is accessible securely over the internet, and is compatible with all recognized image formats and brands of fundus cameras, and is EMR compatible. Targeting the early detection of these diseases by using AI to better examine and diagnose patients as early as possible is the focus for [Diagnos Inc.](#) (TSXV: ADK | OTCQB: DGNOF) ('Diagnos').

Diagnos uses an Artificial Intelligence (AI) tool known as CARA (Computer Assisted Retina Analysis) to examine patient's retinas in the eye for the early detection of diseases such as diabetics, hypertension and other cardiovascular disease. CARA is a tele-ophthalmology platform that integrates with existing equipment (hardware and software). CARA's AI image enhancement

algorithms make standard retinal images sharper, clearer and easier to read.

Key winning features of CARA:

- CARA is accessible securely over the internet and is compatible with all recognized image formats and brands of fundus cameras.
- CARA is a cost-effective tool for screening large numbers of patients in real-time.
- CARA complies with local regulations, is FDA cleared for commercialization in the United States of America, is Health Canada licensed for commercialization in Canada, licensed by the Saudi FDA, COFEPRIS in Mexico and is CE marking compliant in Europe.

**Diagnos' AI software enhances the ability to detect early-stage cardiovascular disease by viewing the retina of the eye**



Source: [www.diagnos.ca/](http://www.diagnos.ca/)

Diagnos has already had their CARA platform in production since mid-February 2020 and will be following with further applications and enhancements for the technology. Diagnos already operates in [16 countries](#), 131 screening sites, and has 222,034 patients under their care. The Company is fully funded until about [mid 2022](#) and should continue to grow revenues as their CARA platform commercializes further.

**Diagnos operates in 16 countries and has 222,034 patients under care**



Source: [www.diagnos.ca/](http://www.diagnos.ca/)

The latest news just the past month shows how quickly Diagnos is commercializing. For example:

- [24 February, 2021](#) – Exclusive Strategic Partnership Agreement with Labtician Ophthalmics, a leader in Canadian and International eyecare markets. Labtician Ophthalmics has customers across Canada and will introduce and commercialize Diagnos' AI platform to monitor ocular health and improve patient care in diabetic patients.
- [2 February, 2021](#) – Further deployment of Diagnos' AI based CARA Technology in Saudi Arabia. Dr. Salman Abdullah Al-Mutairi, Executive Director of Enayah Charitable Association [stated](#):

“For almost three years, Enayah has been using DIAGNOS' AI based CARA platform successfully to screen thousands of diabetic patients for diabetic retinopathy with an early detection test. By using DIAGNOS' telemedicine solution we have been able to identify patients needing care early so their vision can be saved. As part of our “Combating Blindness” program, we are extremely pleased to extend this service and add it to other tests in our fleet of vans of Mobile Smart Eye Clinics.”

### **Closing remarks**

Diagnos Inc. is in the early days of commercializing their CARA technology having only begun in mid-February 2020, approximately a year ago. This is good news for investors as the company is trading on a market cap of just C\$39 million.

I see (no pun intended) exciting times ahead for this company in a potentially huge market.

- [Diagnos' Andre Larente on the benefits of using AI for the early detection of critical health issues \(video\)](#)