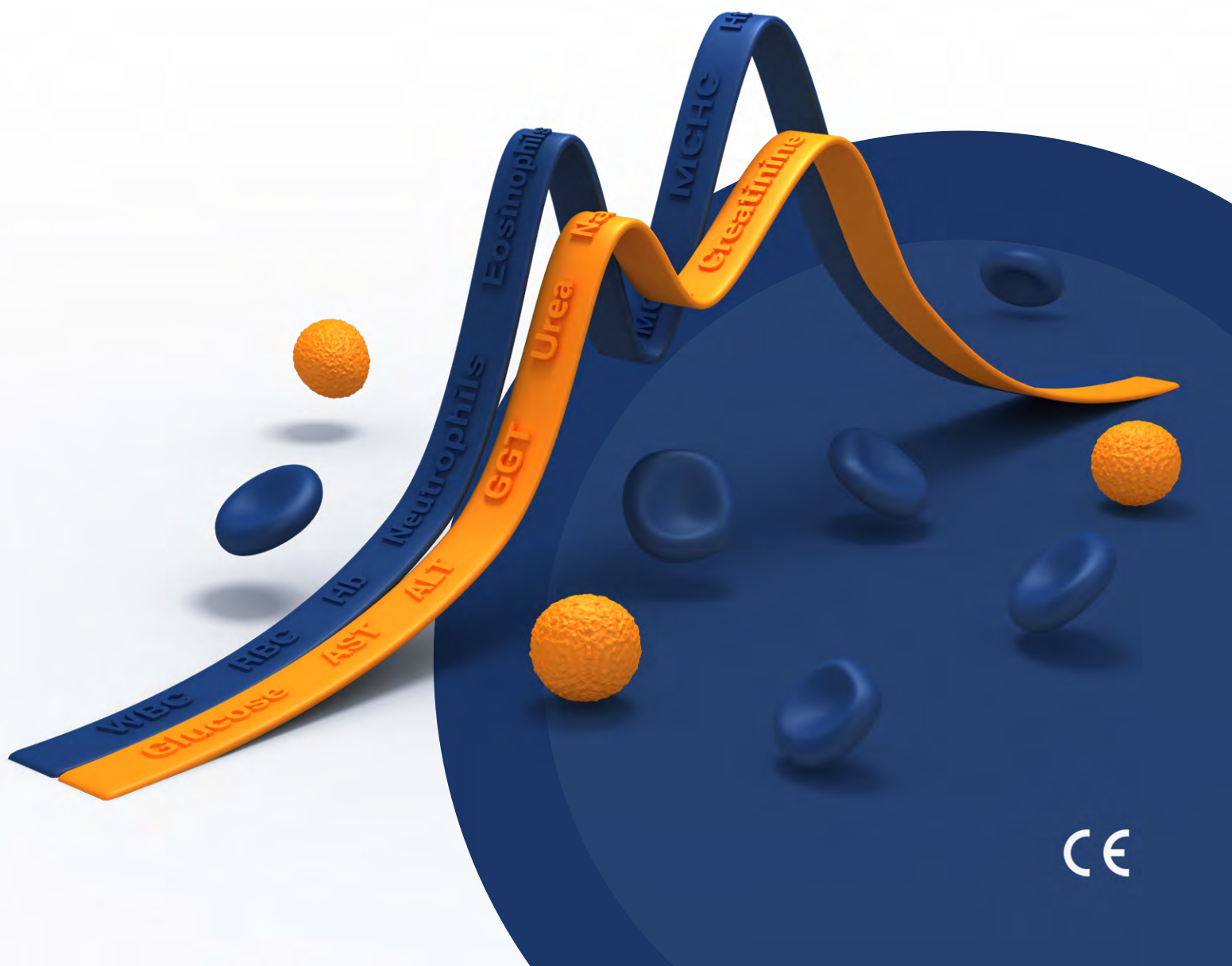




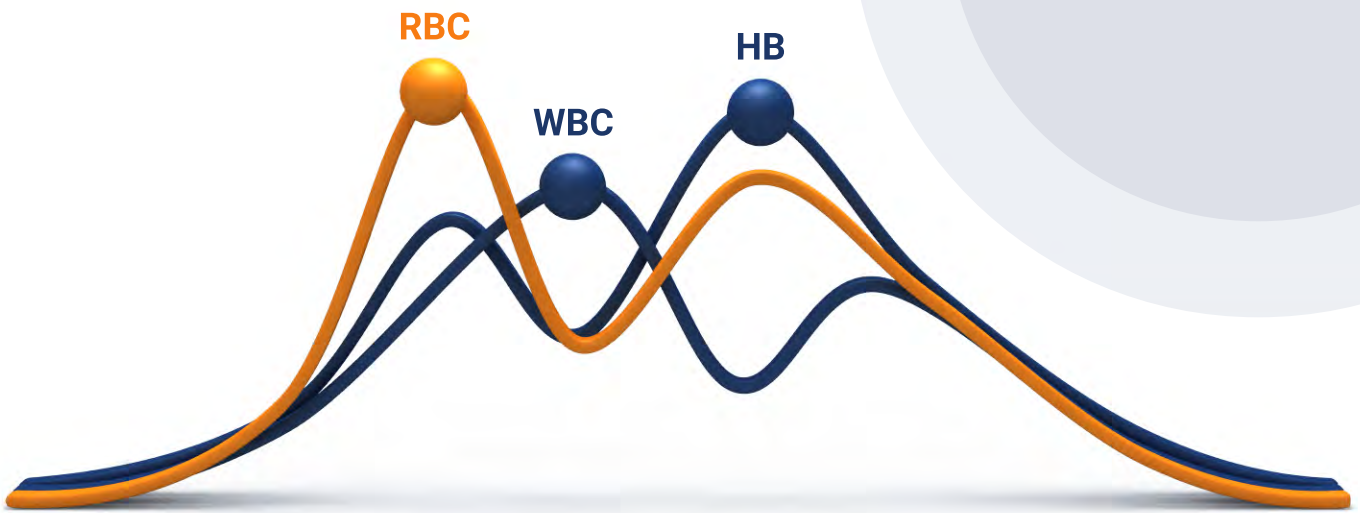
Smart Blood Analytics

Empowering differential diagnosis

Smart Blood Analytics Swiss (SBAS) uses advanced machine learning algorithms to provide different SBAS Software models for predicting the most probable diagnoses, based solely on blood test results of an individual.



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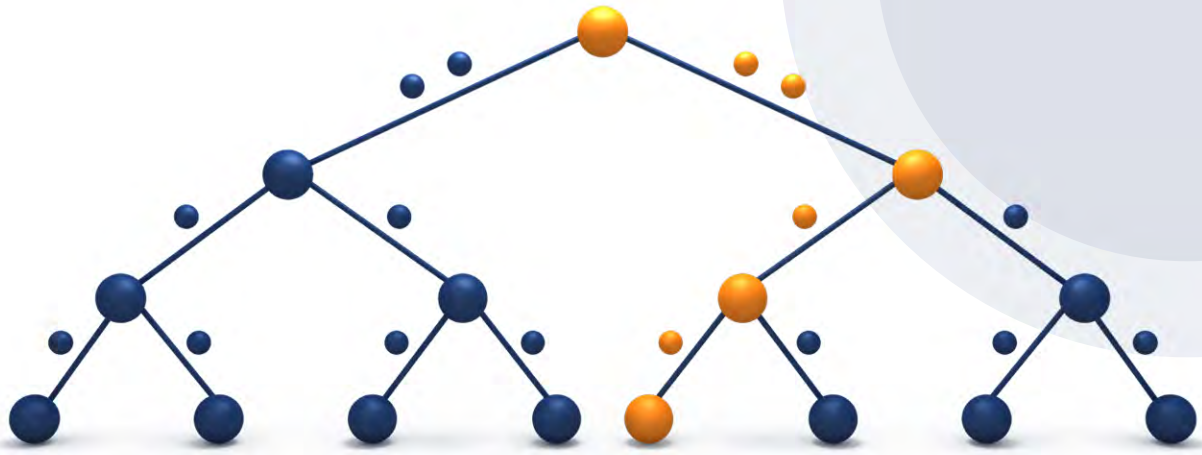
Operation Principle

The SBAS Software is a cloud-based software service that is accessible to physicians through a HIS platform. It uses advanced **machine-learning algorithms** to provide different models for determining the most probable diagnoses based solely on blood test results of an individual. The models use complex decision-making approaches, which simultaneously consider available blood parameters and their ratios to suggest a disease. Such models can detect even subtle correlated deviations in blood parameters that are significant for a good prediction.

Before using the SBAS Software, a physician determines the scope of the blood analysis and the required parameters based on **international diagnostics procedures**. Summarizing the patient's **anamnesis**, **symptoms** as well as **signs** and having obtained the blood test results, the physician decides which model can be used to interpret blood test results and thus expand the **differential diagnosis** of a patient.

Based on the blood test results and the chosen model, the software provides a physician with a list of the ten most likely diseases or medical conditions for a specific patient.





Intended medical indications

The use of the **SBAS Software** is recommended for interpreting blood test results of Caucasian adult patients (older than 18 years old), female and male patients with acute and/or chronic conditions in the fields of Internal medicine:

Rheumatology

Nephrology

Cardiology

Endocrinology

Pulmonology

Hematology

Gastroenterology

Toxicology

Intended User Profiles

The **SBAS Software** should only be used by:

- Physicians (with a Doctor of Medicine degree and a completed residency) from different fields of medicine
- Medical professionals, when supervised by a physician

Contraindications for use

The **SBAS Software** is contraindicated for use in:

- Children
- Pregnant women
- Patients who are taking drugs that interfere with the results of laboratory blood tests



Benefits & Risks



- Greatly improves the diagnostic process by enabling doctors to make **more accurate** and **quicker decisions**
- **Better outcomes** for patients
- **Reduced costs** for the healthcare system



- By its inherent design, the SBAS Software does not provide information that could itself be used to confirm or discard health condition, since it always provides a list of 10 likely diseases. By providing information in such a format, it enables the physician to naturally consider multiple options.

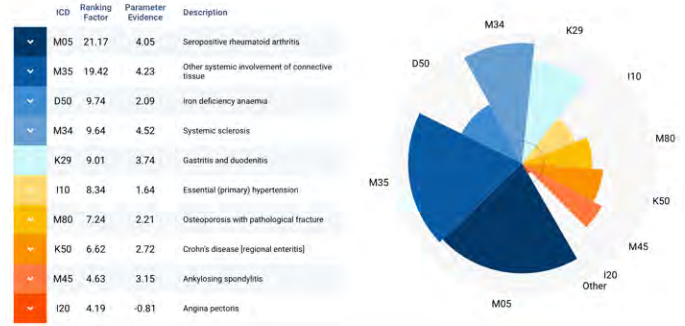
Special warning and precautions

- The use of the SBAS Software is not advised without considering the **symptoms** of the patient and their **medical history**. The SBAS Software should also not be used for **screening purposes**.
- The SBAS Software can only be used if a minimum of **30 blood test parameters** are available from the List of parameters.
- The SBAS Software can only predict the disease that is available in its database.

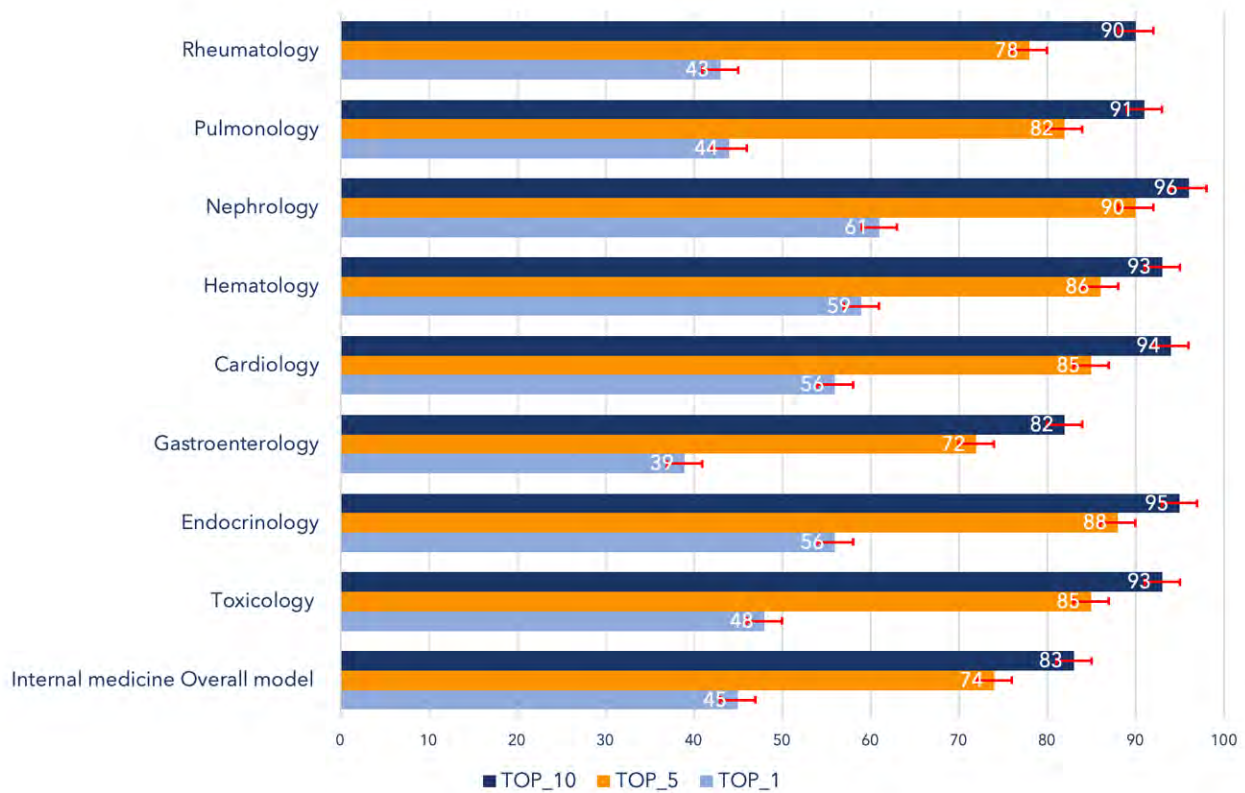


Representation of the results

The **SBAS Software** includes a novel approach for visualizing the results of a machine learning model. Based on the blood test results and chosen model, the report includes a table with the list of 10 most likely diseases, the corresponding ranking factors and parameter evidence, as well as an intuitive multilevel pie-chart presenting the same information.



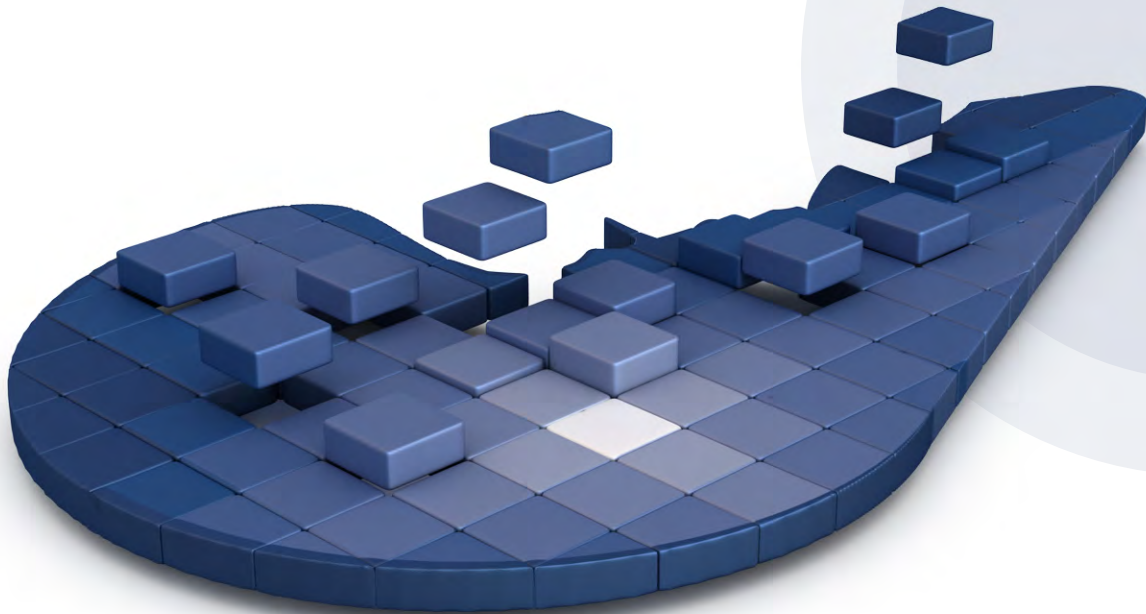
Models Accuracy



$$TOP_K = \frac{\text{number of correct diagnosis among the first K predicted diagnoses}}{\text{number of patients}}$$

K= 1, 5, 10





About the Company

Smart Blood Analytics Swiss SA is Swiss based company established in 2016. The team behind Smart Blood Analytics Swiss is comprised of professionals from the fields of medicine, machine learning, laboratory biomedicine and chemistry.

A small part of the SBAS work (hematology, neurology) has been published in January 2018 and in October 2019 with Springer Nature in Scientific Reports. Both of our articles are in the top 5% of all research outputs ever tracked by Altmetric.

SBAS Software offers wide possibilities for additional research and development. For example, the most important (fundamental) blood parameters for diagnosing various diseases can easily be identified or determined.

Contact

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