

Simplified blood monitoring — Less disruption. More living.

A point-of-care solution for hematological monitoring
in patients with treatment-resistant schizophrenia (TRS)



~25%-30% of patients with schizophrenia meet the criteria for TRS¹

When Routine Blood Monitoring Becomes a Barrier

Schizophrenia is a chronic and disabling disorder for many affected people.² For those who live with TRS, treatment may carry a risk of agranulocytosis and requires regular hematological monitoring of white blood cell and neutrophil levels.³

Frequent blood draws and ongoing monitoring requirements may present a significant barrier to treatment.^{4,5}

~40
blood
samples

may be taken in the first year of treatment.⁶

Is it time to rethink routine blood monitoring?

Point-of-care monitoring offers an alternative to traditional lab-based approaches.^{4,5}

Get to know CSAN[®] Pronto[®]

A blood monitoring device to help simplify routine bloodwork.

CSAN[®] Pronto[®] is a point-of-care device indicated for quantitative determination of white blood cells (WBCs) and neutrophil percentages (NEUT%) in capillary or K₂EDTA venous whole blood.

For use in adults by trained healthcare professionals.⁷



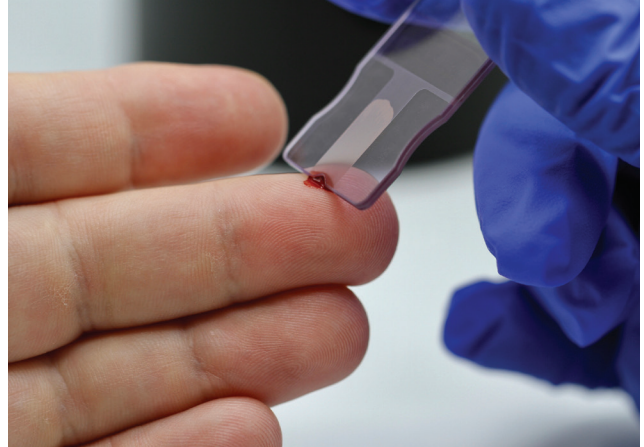
Routine Lab Monitoring vs CSAN® Pronto® Point-of-Care



Traditional Lab Monitoring

Venous Blood Collection

- Venous blood sampling is required⁸
- Testing may require scheduling a separate lab visit⁶
- Sample collection and analysis may be done away from the point of care, potentially by a healthcare professional who is unfamiliar with the patient⁶
- It is unlikely that results will be discussed with the patient in one visit – lab-based results are typically available in 24 to 48 hours⁶



CSAN® Pronto® Point-of-Care

Finger-Prick Sample Collection

- A drop of blood from a finger prick is sufficient for testing and is a less painful method of blood sampling^{6,8}
- Testing is done at the doctor's clinic and may be performed by a member of the patient's existing care team⁶
- **CSAN® Pronto®** WBC and NEUT% results are available in minutes and may be reviewed and discussed during the same appointment⁸
- Same-day treatment decisions may be made⁶

NEUT%, neutrophil percentages; WBC, white blood cell.



CSAN® Pronto® supports a simplified and streamlined approach to routine blood monitoring.



Features of CSAN® Pronto®

CSAN® Pronto® is equipped with technology that works in conjunction with the CSAN® Portal to provide:



Built-in safeguards that are compliant with lab quality standards⁷

- Automatic electronic quality control
- Reusable external quality control strip
- Device manager dashboard with reporting and quality control lock-out, and operator certification management

Seamless integration^{7,9}

- Bi-directional LIS capability
- Automatic results uploaded to CSAN® Care Portal
- Critical results shared with the circle of care
- Remote device management for configuration, updates, and troubleshooting



Comprehensive support services⁷

- White glove onboarding, training, and IT support
- Ongoing monitoring and management of critical results by the CSAN® clinical care team

Testing is done in 3 easy steps⁷

Fill

Apply sample to the microfluidic test strip
(~5 minutes staining)

Insert

Place the test strip into the CSAN® Pronto® device

View Results

Results will be available and securely transmitted within a few minutes



Simple. Efficient. Ready when you are.



CSAN® Pronto® Workflow: From Sample to Results⁷

PRE-ANALYTICAL STAGE

1 Sample collection

Apply a drop of capillary blood to the test strip.



2 Test initiation

Access the patient profile in the CSAN® Portal.

Insert the test strip and click “Begin Test.”

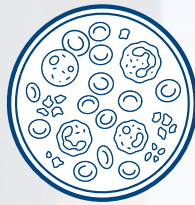
Begin Test



ANALYTICAL STAGE

3 Microscope imaging

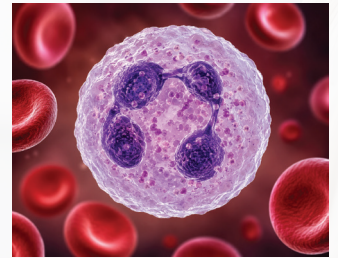
Multiple images of the WBC monolayer are captured.



4 Image analysis

A unique job ID is created for each image.

Cells are counted and classified by computer vision-based image analysis on a cloud server. The calculation of indices is based on international principles in hematology.



POST-ANALYTICAL STAGE

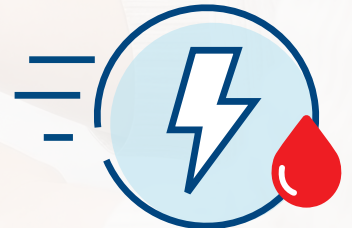
5 Data return

WBC and NEUT% results are returned to the CSAN® Portal within minutes. **ANC is automatically calculated and displayed in the portal.**



6 Result management

Results are available during the same visit, allowing abnormal neutrophil levels to be identified and addressed on the spot.



Technical Specifications⁷

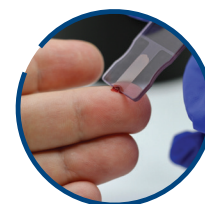
DEVICE OVERVIEW

Principle	Cloud-based image analysis on secure CSAN® server
Parameters	WBC and NEUT%
Measuring range	WBC 1.0–25.0 x 10 ³ /μL



SAMPLE COLLECTION

Sample type	Capillary or venous (K ₂ EDTA) whole blood
Sample volume	~3-4 μL



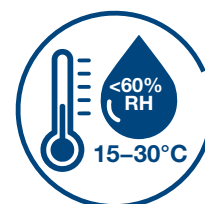
SYSTEM & CONNECTIVITY

Connectivity	Ethernet or Wi-Fi / hotspot
Electrical	12V DC, 2.2A



OPERATING TEMPERATURE AND RELATIVE HUMIDITY

CSAN® Pronto®	15–30°C, <60% RH
Test strips	15–30°C, <60% RH



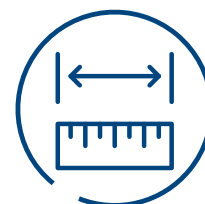
CALIBRATION, QUALITY & SECURITY

Calibration	Factory calibrated; no further calibration required
Quality control	Built-in electronic QC, reusable external QC test strip (at least monthly)
Security	Access to CSAN® Portal and CSAN® Pronto® is limited to authorized healthcare professionals



PHYSICAL SPECIFICATIONS

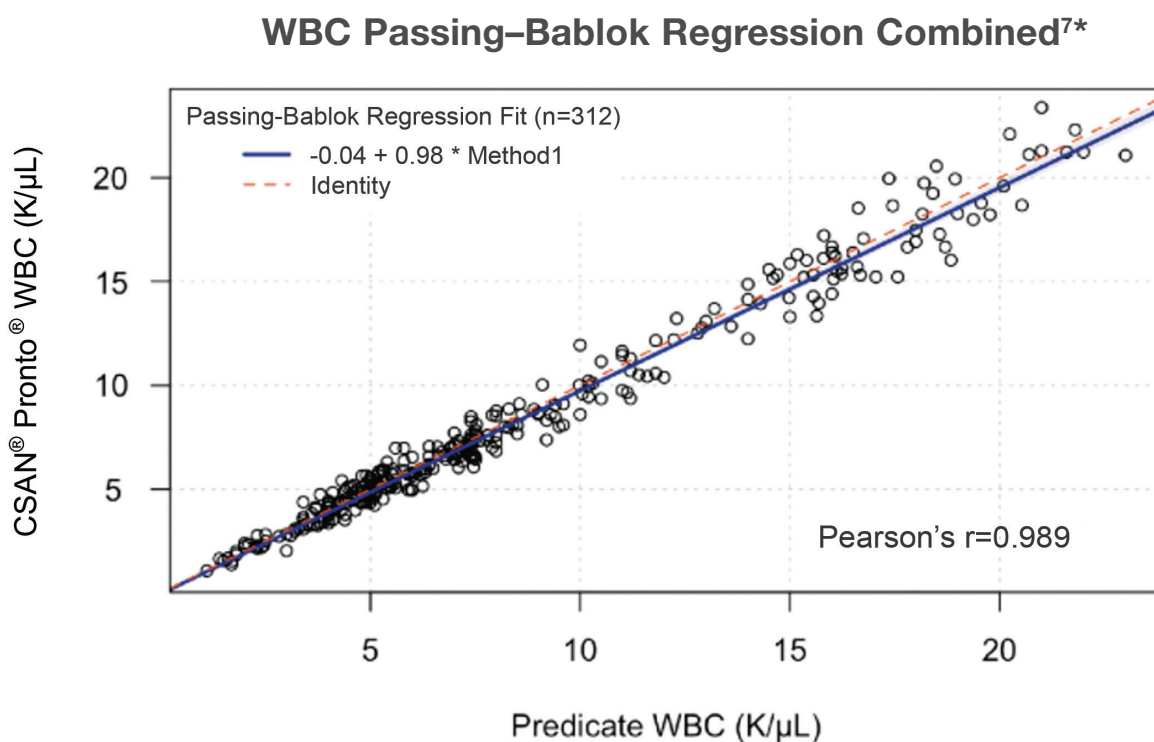
Dimensions	90 mm (diameter) × 220 mm (height)
Weight	0.79 kg



Comparable Measurements to Laboratory Methods⁷

In an analysis comparing CSAN® Pronto® with a commercially available laboratory reference method:^{7*}

- CSAN® Pronto® demonstrated a high level of statistical significance in all key parameters — **r²**, **slope**, **intercept**, and **bias** using Passing–Bablok regression



*The study was conducted at 3 point-of-care sites, using nurse and clinician operators with abnormal and normal patient samples. Overall bias was analyzed as well as bias at medical decision levels (WBC counts of $3.9 \times 10^3/\mu\text{L}$ and $10.4 \times 10^3/\mu\text{L}$, and NEUT% of 46.4% and 76.9%). All met the predefined maximum criteria of 7.5% for WBC and 10% NEUT% (as did their 95% confidence intervals). The 0.95-confidence bounds were calculated with the bootstrap (quantile) method.

NEUT%, neutrophil percentages; WBC, white blood cell.

Patients with TRS may require **~40 blood samples** in the first year of treatment.⁶

Consider a more streamlined approach to routine blood monitoring.



QUESTIONS?

Contact the CSAN® team at **1-800-267-2726**.

References:

1. Remington G, *et al.* Guidelines for the pharmacotherapy of schizophrenia in adults. *Can J Psychiatry*. 2017;62(9):604-616.
2. American Psychiatric Association. Schizophrenia spectrum and other psychotic disorders. *Diagnostic and Statistical Manual of Mental Disorders. Fifth edition*. 2013.
3. Canada.ca. Health Canada releases important information on the dispensation of Clozapine products in Canada. June 23, 2004. Accessed April 15, 2026 at: <https://recalls-rappels.canada.ca/en/alert-recall/health-canada-releases-important-information-dispensation-clozapine-products-canada>.
4. Farooq S, *et al.* Barriers to using clozapine in treatment-resistant schizophrenia: systematic review. *BJPsych Bull*. 2019;43(1):8-16.
5. Kelly DL, *et al.* Addressing barriers to clozapine underutilization: a national effort. *Psychiatr Serv*. 2018;69(2):224-227.
6. HLS Therapeutics. CSAN® data on file.
7. HLS Therapeutics Inc. CSAN® Pronto® User Manual. July 2025.
8. CADTH. Health Technology Update – Issue 26 – May 2020 (cadth.ca).
9. CISION. HLS Therapeutics announces Health Canada grants medical device license for White Blood Cell Point-of-Care Device to be marketed as CSAN® PRONTO™ (newswire.ca). Oct 17, 2019. Accessed April 16, 2026 at: <https://www.newswire.ca/news-releases/hls-therapeutics-announces-health-canada-grants-medical-device-license-for-white-blood-cell-point-of-care-device-to-be-marketed-as-csan-r-pronto-tm--899297239.html>.