

HumaSRate 24^{PT}

Sets new standards in ESR automation

- › Use of EDTA primary tubes – no ESR tubes needed
- › Real sedimentation with excellent Westergren correlation
- › Unlimited use control without consumption

CoreLab DX

HEMATOLOGY



Human

Diagnostics Worldwide

Erythrocyte Sedimentation Rate (ESR)

The value of real RBC sedimentation rate

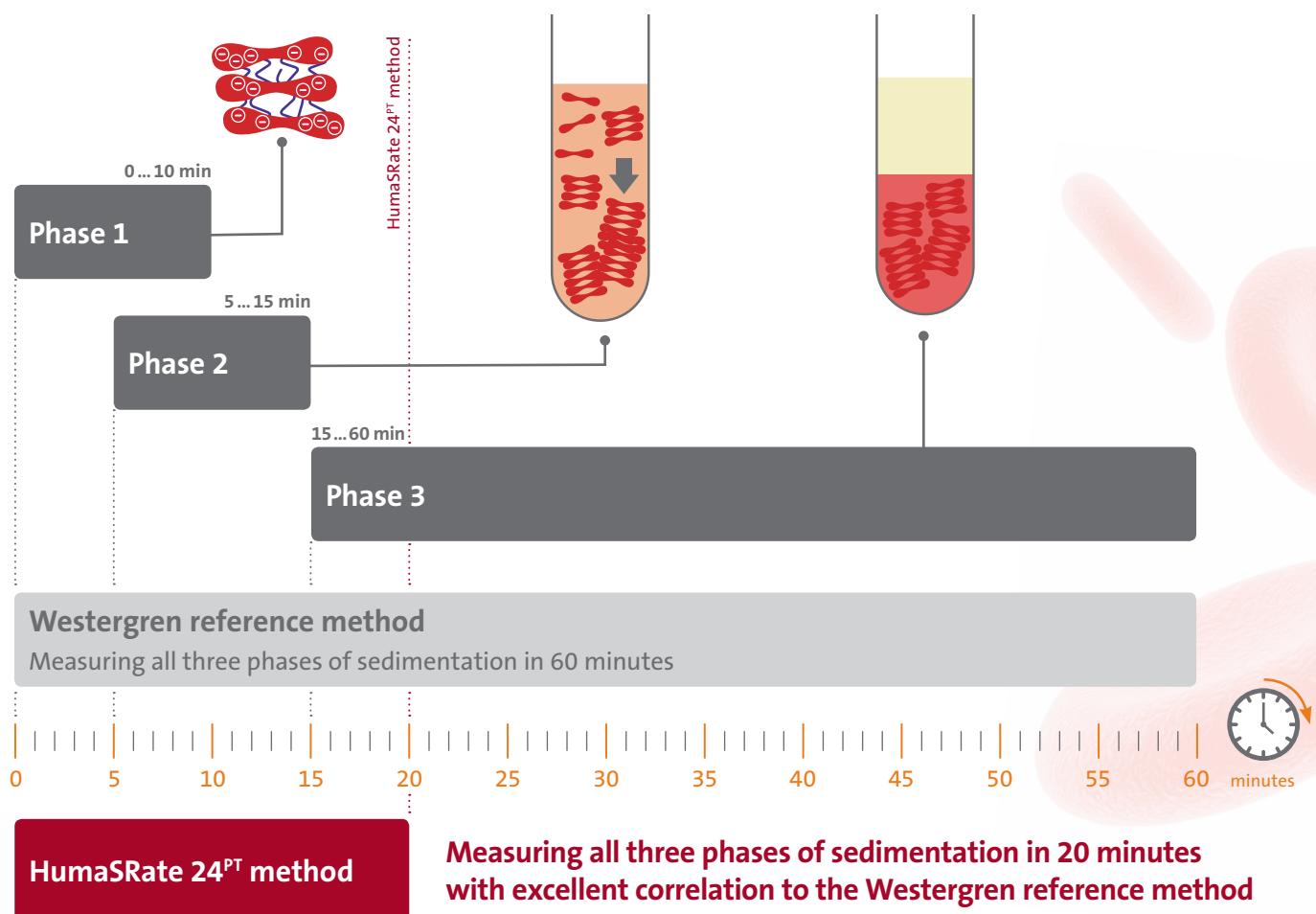
Erythrocyte sedimentation occurs in three phases¹

RBC (red blood cells) sedimentation is defined by the balance between plasma protein fibrinogen and the negative charge of the erythrocytes.

Phase 1 Aggregation: Erythrocyte aggregation is the reversible clumping of red blood cells

Phase 2 Sedimentation: Erythrocytes aggregate in a special way to form rouleaux and fall down

Phase 3 Packing: Sculptured rouleaux formations gather at the bottom



Agglutination methods

Measuring a value which cannot reflect all three phases in 20 seconds and has low correlation to Westergren²

« Only ESR methods that measure all three phases of sedimentation can achieve a good correlation with Westergren.

Methods that only reflect 20 seconds of aggregation show a low correlation to Westergren!²»

Clinical significance of the ESR parameter

During inflammations, the high fibrinogen level causes RBC's to stick to each other forming stacks (rouleaux), which settle faster and lead to higher ESR readings.

- ESR is a non-specific test to detect the presence of inflammation caused by one or more conditions such as infections, tumors or autoimmune diseases.³
- ESR helps to diagnose and monitor specific conditions such as temporal arteritis, systemic vasculitis, polymyalgia rheumatica or rheumatic arthritis.⁴



Advantages of HumaSRate 24^{PT} method in comparison to Westergren

- Fully automated, less demand on staff time
- Faster reporting, digital data processing and temperature correction
- High reliability by ready-to-use control material
- Cost efficiency by the use of EDTA tubes
- High accuracy by a continuous sedimentation curve recording with blood smear correction

Advantages of HumaSRate 24^{PT} method in comparison to the agglutination method (20 sec)

- Providing real ESR readings with excellent correlation to Westergren
- Providing normal value ranges and flagging of abnormal samples
- More economical by lower instrument costs

HumaSRate 24^{PT}

Sets new standards in ESR automation

Automated system – walk away capability

- › Batch mode – up to 8 samples
- › STAT mode capability
- › 24 samples / hour
- › Time to result: 20 min
- › Integrated mixer and printer
- › Bidirectional LIS connectivity
- › Identification of patient ID via integrated barcode reader
- › Touchscreen with intuitive user interface
- › Storage capacity of 5,000 results
- › Temperature correction according to Manley

Real sedimentation measurement – high accuracy and precision

- › Unique sedimentation curve with continuous scan technology
- › Excellent correlation to Westergren by recording of all three phases of sedimentation



Primary EDTA tubes instead of ESR tubes – convenient & cost-efficient

- › ESR (citrate) tubes eliminated
- › EDTA tubes – routine in hematology for complete blood count testing (CBC)
- › ESR is always requested together with CBC

Unlimited use control – no consumption, accurate results

- › QC control for daily use
- › Supported by QC software module (unique in automated sedimentation)
- › Can be reused during the full shelf-life of 6 months

ESR Testing with EDTA Tubes

Sets new standards in efficiency and convenience

Benefits using EDTA instead of ESR tubes

Cost-efficiency

- > ESR tubes are not necessary
- > Blood transfer disposables are not needed
- > Unlike ESR tubes, no expiration of test credits

Less demand on staff time

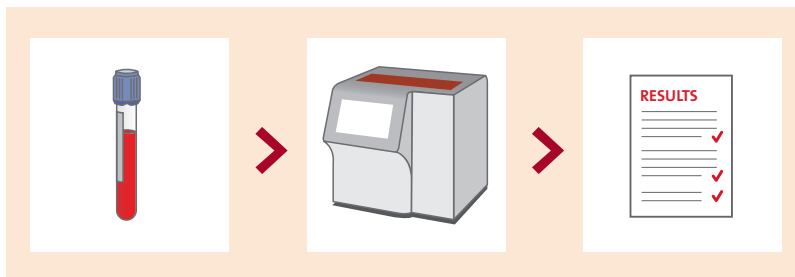
- > Simply insert the primary EDTA tubes and walk away
- > No need for an extra blood collection

Flexibility

- > Get an ESR reading anytime from a CBC tube where EDTA is standard
- > Possibility of a combined report for both, CBC and ESR in about 20 min

*«EDTA, not citrate is now recommended by ICSH as an anticoagulant!»
(International Council for Standardization in Haematology)⁵*

Workflow efficiency and flexibility with EDTA tubes



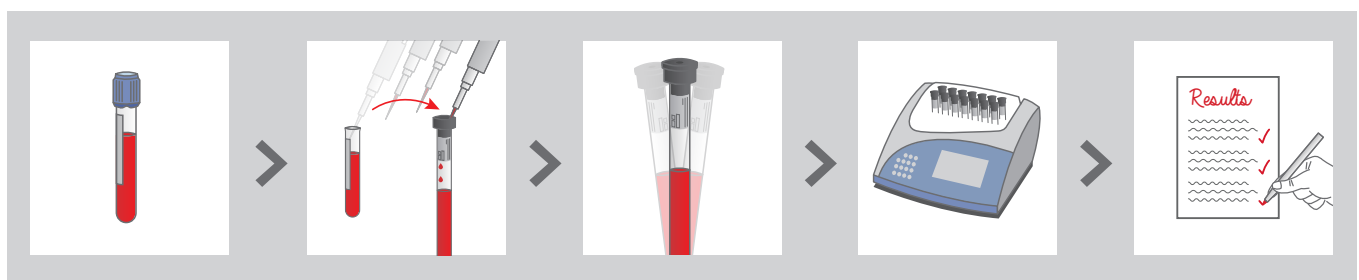
EDTA sample

HumaSRate 24^{PT}

Reporting
in 20 minutes

*«The EDTA tube is usually used first
for a CBC count
and is therefore available.»*

Conventional ESR analyzer – inefficient as many manual steps are necessary



EDTA sample

Sample transfer

Mixing

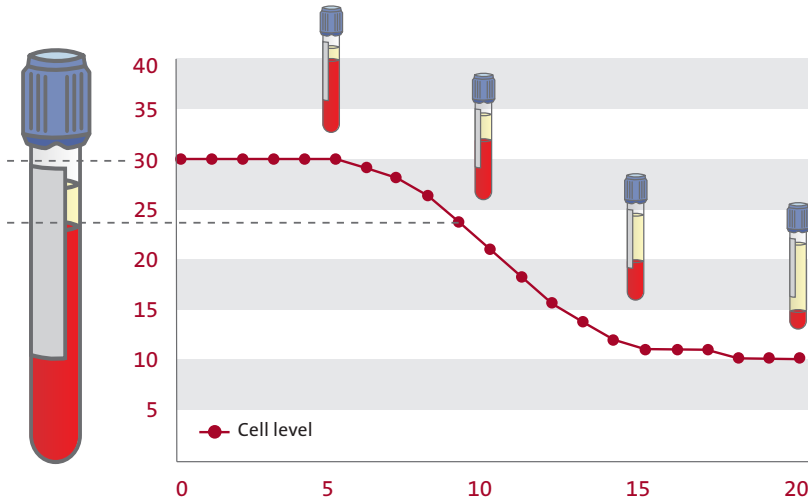
ESR analyzer

Manual reporting,
no printout / storage

Real Sedimentation Measurement

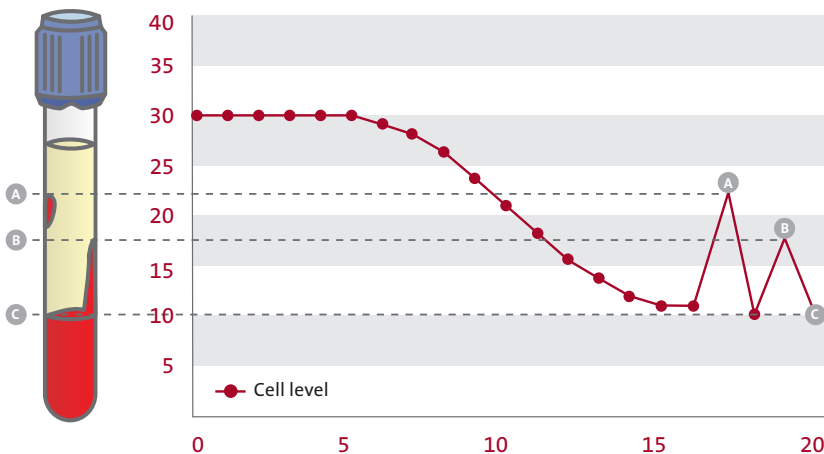
Sets new standards with continuous scan technology

Unique sedimentation curve



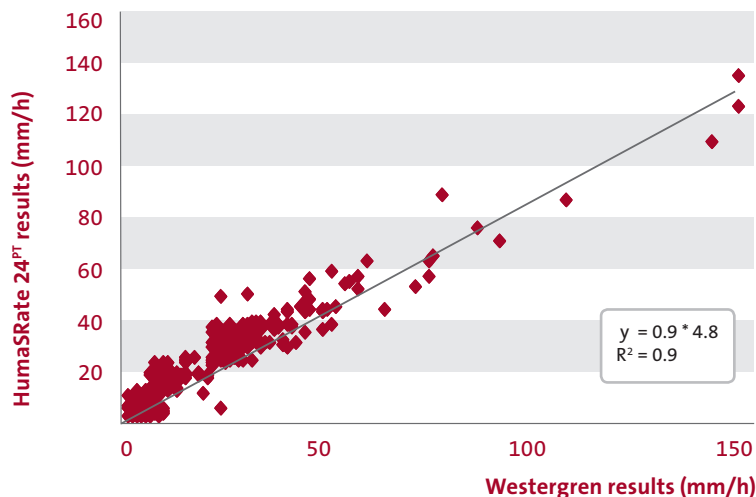
Accurate results with unique sedimentation curve – continuous recording every 10 seconds. An ESR curve offers more information than only an ESR reading after 20 minutes. Up to three labels on the EDTA tube do not affect reading.

Errors from blood smears on the tube wall are eliminated



Unclear sedimentation levels are corrected. Errors by blood smears on the tube wall are eliminated by sedimentation curve algorithm.

Excellent correlation to Westergren reference method⁶



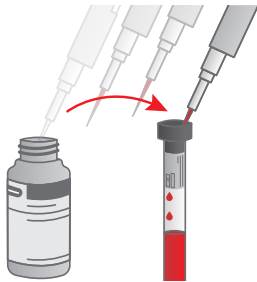
HumaSRate 24^{PT} continuous scan technology includes all 3 phases of real sedimentation measurement and ensures an excellent correlation to Westergren. Physicians get the results they are used to, for a profound diagnosis.

Unlimited Use Control

Sets new standards in quality control

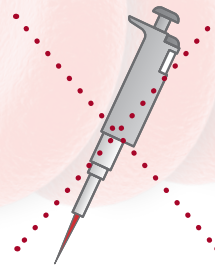
Control without consumption

- › QC control for daily use
- › No consumption of the control material even at daily use
- › Can be reused during the full shelf-life of 6 months
- › Control can be applied anytime in batch mode, and no extra run is necessary



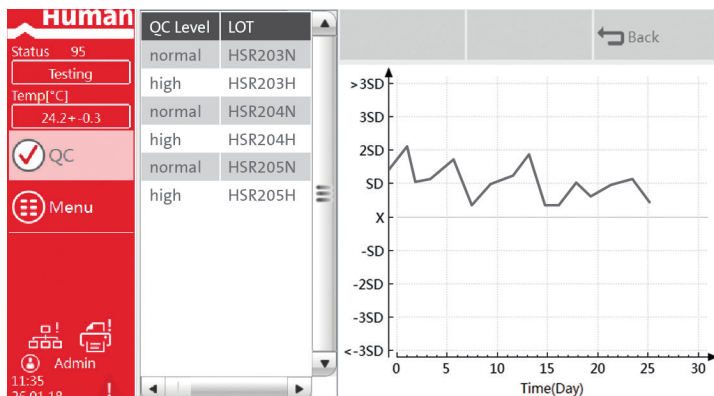
Conventional ESR analyzer

- › Control consumption for citrate tubes: 1.2 ml
- › Manual pipetting necessary



HumaRate 24^{PT} quality control

- › Ready to use
- › No pipetting of the control material into an ESR tube needed



QC software module – unique in sedimentation

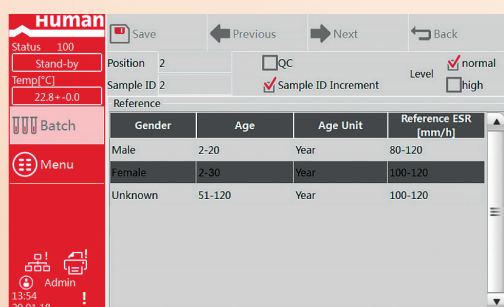
Based on unlimited use controls, the QC software module with Levey-Jennings diagram guarantees full control over correct ESR readings.

HumaSRate 24^{PT}

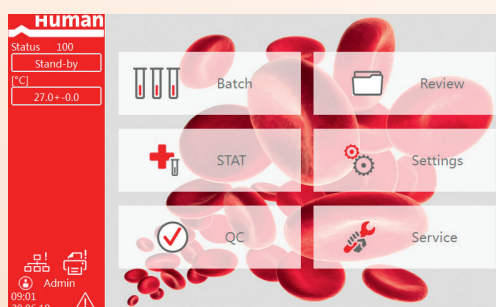
Sets new standards in result flagging

Easy interpretation with ICON based HUMAN software

- > HumaSRate 24^{PT} is the first ESR analyzer providing normal values of patients
- > The flagging of abnormal samples by the analyzer is another novelty in ESR diagnostics
- > Intuitive menu guidance with clear structured screens



Providing normal values of samples



ICON based intuitive user interface

Ordering information

	REF
HumaSRate 24^{PT}	15024
> ESR analyzer	
Smart Card for HumaSRate 24^{PT}	15024/12
> 1200 tests	
HSRate-Control	15024/40
> Normal and high level 2 x 2 ml	
HumaTube K3-EDTA	73040/12
> 3 ml, PET (12 x 100 tubes)	
Printer Paper	15024/100
> 57 x 30 mm (5 rolls)	



- 1) Erythrocyte sedimentation rate (ESR). National Institute of Open Schooling, India. Retrieved 8 April 2018.
- 2) Hüseyin Yaman, Comparisons of Two Different Autoanalyzers for Erythrocyte Sedimentation Rate According to Westergren M. Faculty of Medicine Medical Biochemistry Department of Education Trabzon/Turkey, Lab Expo 2017 [PS-054].
- 3) Kellner C, Erythrocyte Sedimentation Rate, Medscape Reference. Aug 1, 2014.
- 4) Caylor T, Recognition and Management of Polymyalgia Rheumatica and Giant Cell Arteritis, Am Fam Physician. 2013 Nov 15; 88(10) : 676–684.
- 5) ICSH recommendations for measurement of erythrocyte sedimentation rate. International Council for Standardization in Haematology (Expert Panel on Blood Rheology). J.Clin.Pathol 1993; 46 :198–203
- 6) Design verification report on HumaSRate 24^{PT}, data on file at HUMAN

