

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

Hematology



Human

Diagnostics Worldwide

Erythrocyte Sedimentation Rate (ESR)

The value of real RBC sedimentation rate

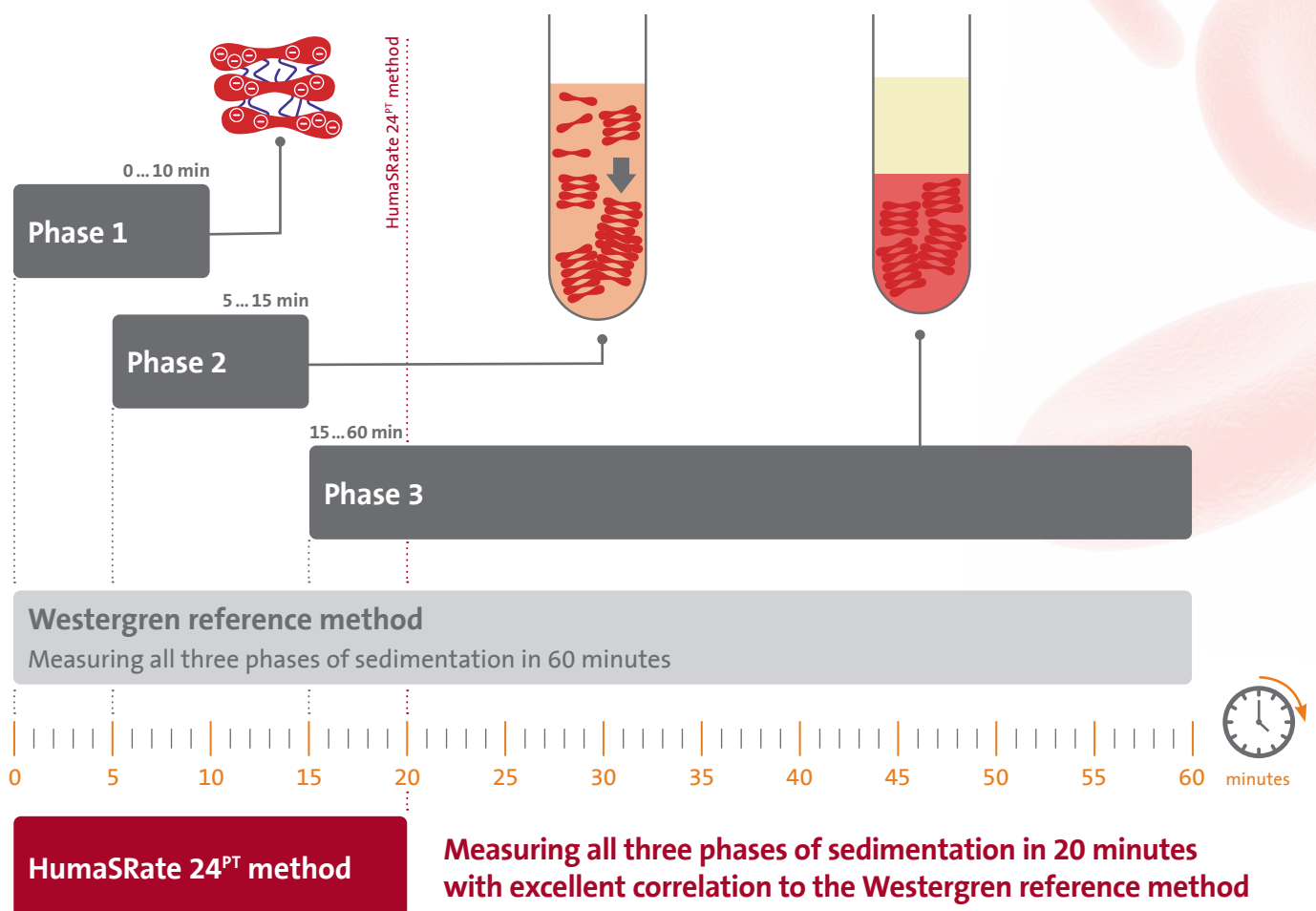
Erythrocyte sedimentation occurs in three phases¹

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



« 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

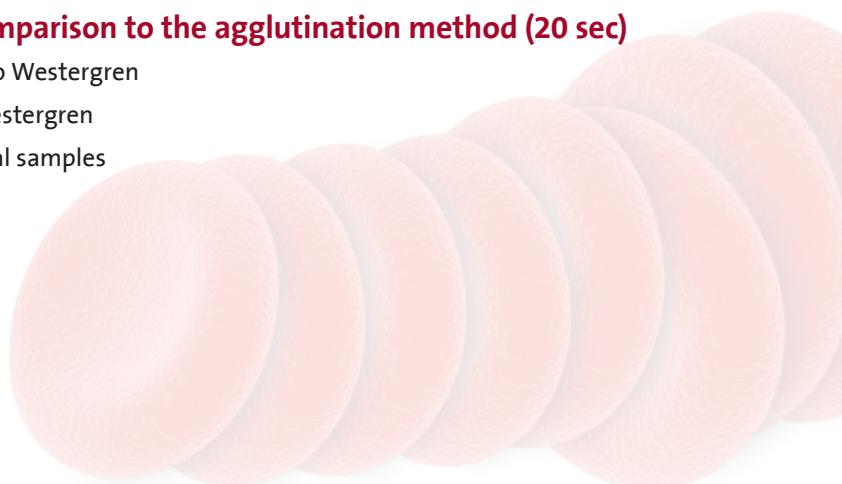


Advantages of HumaSRate 24^{PT} method in comparison to Westergren

- › 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
- › Users can report the ESR/h as they are used to from Westergren
- › Providing normal value ranges and flagging of abnormal samples
- › More economical by lower instrument costs



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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 and QC target values via integrated barcode reader
- › Touchscreen with intuitive user interface
- › Storage capacity of 5,000 results
- › Temperature correction according to Manley
- › Correction for anemic samples according to Fabry's formula

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

- › No special ESR tubes required
- › EDTA tubes – routine in hematology for complete blood count testing (CBC)
- › ESR is often requested together with CBC

Unlimited use control – no consumption, accurate results

- › Quality 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

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

Less demand on staff time

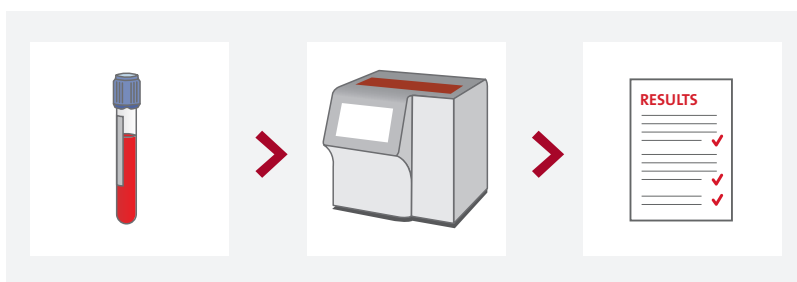
- > Simply insert the primary EDTA tubes and walk away
- > No need for an extra blood collection



“The HumaSRate 24^{PT} has solved manual problems by eliminating the need to remove the caps from the tubes, which has speed up the work. The ability to use primary tubes allows cost and time savings as well as risk-free operation. The instrument provides accurate and repeatable data.”

Gruppo Aima Societa' Consortile A Responsabilita' Limitata
Capaci, Palermo, Italy

Workflow efficiency and flexibility with EDTA tubes



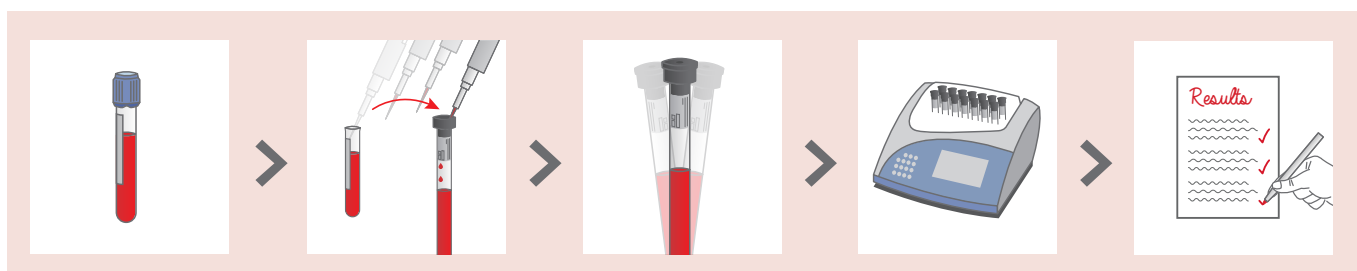
EDTA sample

HumaSRate 24^{PT}

Reporting
in 20 minutes

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

Conventional ESR analyzer – inefficient as many manual steps are necessary



EDTA sample

Sample transfer

Mixing

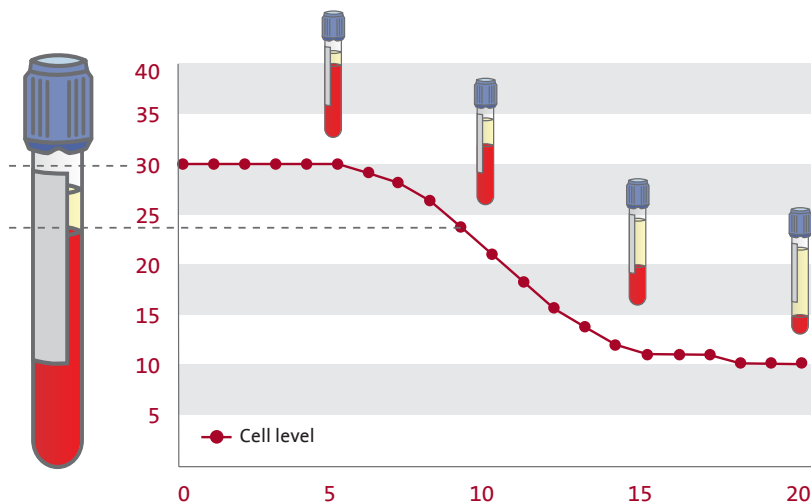
ESR analyzer

Manual reporting,
no printout / storage

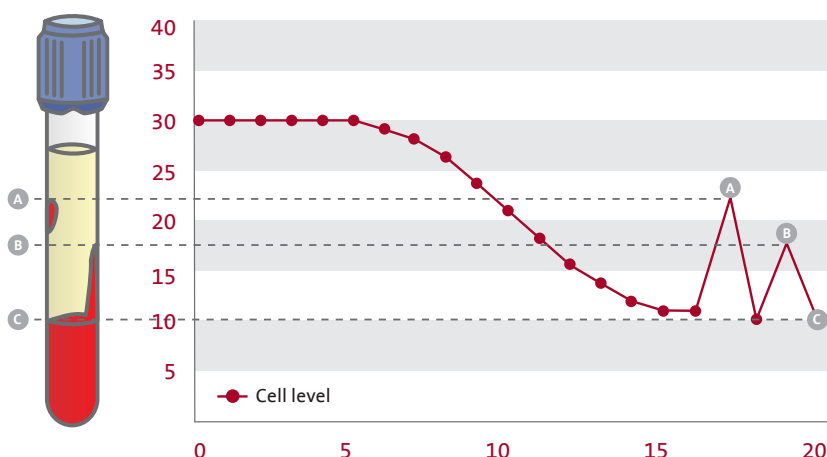
Real Sedimentation Measurement

Sets new standards with continuous scan technology

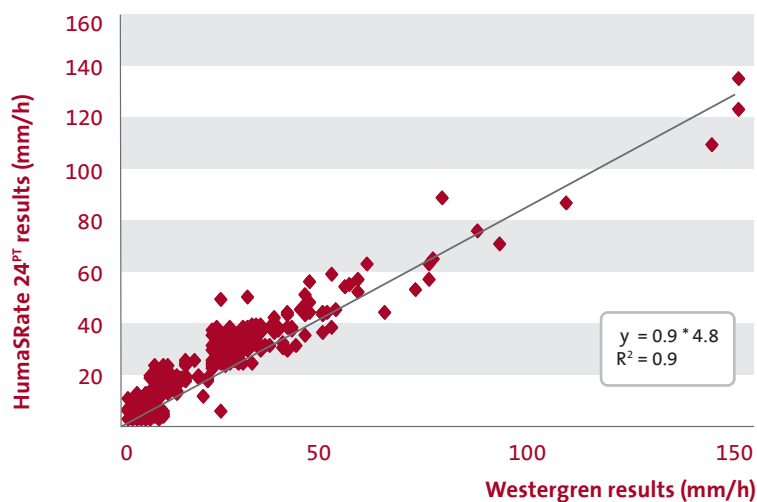
Unique sedimentation curve



Errors from blood smears on the tube wall are eliminated



Excellent correlation to Westergren reference method⁶

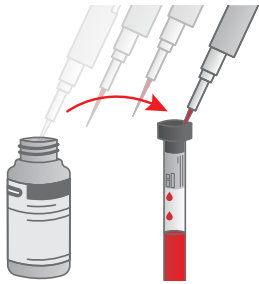


Unlimited Use Control

Sets new standards in quality control

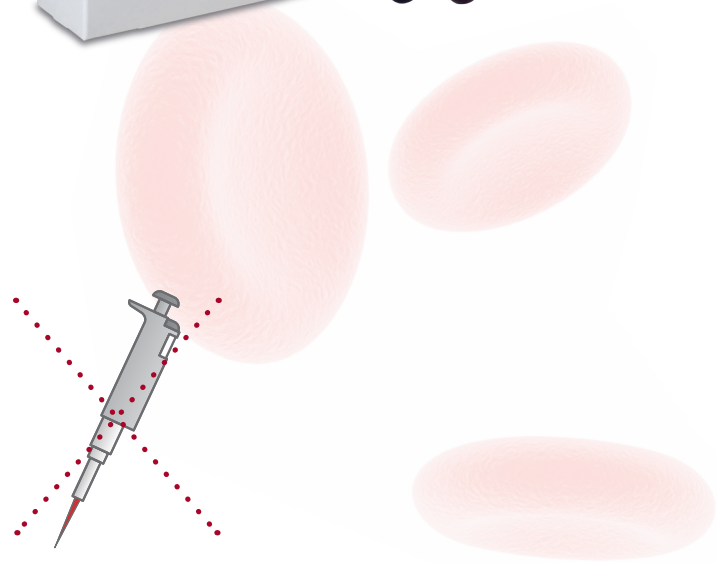
Control without consumption

- › 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



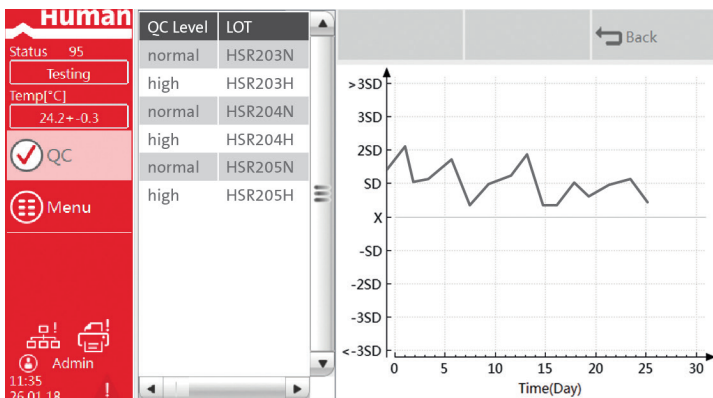
Conventional ESR analyzer

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



HumaSRate 24^{PT} quality control

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



QC software module – unique in sedimentation

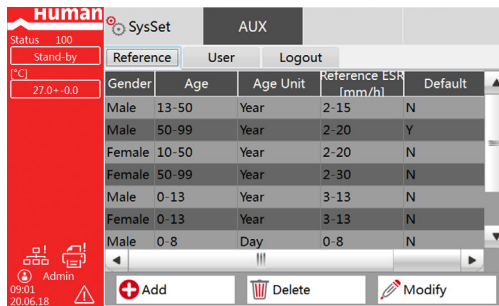
Based on unlimited use controls, the QC software module with Levey-Jennings diagram guarantees full control over correct ESR readings.

HumaSRate 24^{PT}

Sets new standards in result flagging

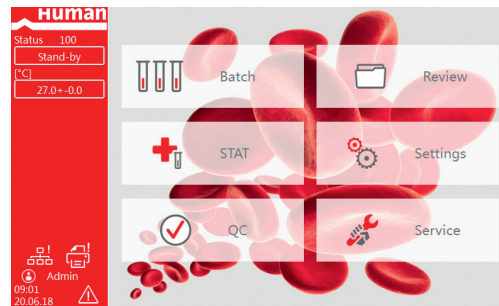
Easy interpretation with ICON based HUMAN software

- › 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



Reference	User	Logout		
Gender	Age	Age Unit	Reference ESR (mm/h)	Default
Male	13-50	Year	2-15	N
Male	50-99	Year	2-20	Y
Female	10-50	Year	2-20	N
Female	50-99	Year	2-30	N
Male	0-13	Year	3-13	N
Female	0-13	Year	3-13	N
Male	0-8	Day	0-8	N

Providing normal values of samples



ICON based intuitive user interface

Ordering information

HumaSRate 24^{PT}	REF 15024
› ESR analyzer incl. 3 Smart Cards a 1,200 tests	
Smart Card for HumaSRate 24^{PT}	15024/12
› 1200 tests	
HSRate-Control	15024/40
› Normal and high level 2 x 2 ml	
Printer Paper	15024/100
› 57 x 30 mm (5 rolls)	



References

- 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 [P5-054].
- 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

