



SCIENCE MADE SIMPLE

# Lactate Scout+ Product presentation

# LACTATE SCOUT +

Mobile lactate testing from capillary blood samples  
Simple, fast and accurate



**EKF**  
DIAGNOSTICS

# PRODUCT FEATURES LACTATE SCOUT+



## Easy to use

- Simple operation with scroll wheel
- High quality display
- Menu based on symbols
- Small sample size (0.2 µl)
- CE marked , FDA registered



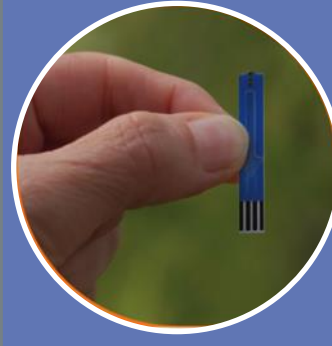
## Practical and portable

- Compact size
- Weight 80g
- Integrated self-test
- 2x AAA standard battery (last for ca. 1000 tests)
- Stopwatch, Countdown timer, Step test function



## Fast and accurate

- Results in 10 seconds
- Compensates for hematocrit
- Imprecision: CV  $\pm$  3% ( $\pm$  4% in extended Hct range)
- Test solutions available , 3 level



## Data handling

- Stores up to 250 test results with date, time and memory no.

- Integrated Bluetooth interface

- Software: Lactate Scout Data Link, Lactate Scout Assistant
- Compatible with other 3rd party software



## Product range

- Lactate Scout + Solo
- Lactate Scout+ Basic incl. belt case and accessories
- Lactate Scout+ Start Set incl. Belt case, software and accessories
- Lactate sensors
- Test solutions

# LACTATE SCOUT+ DEVICE



- 1) Insert 2x AAA standard batteries
- 2) Press scroll wheel for two seconds to start the device in configuration mode or insert sensor to start directly in test mode

## Options in configuration mode (settings):

- Set sensor code
- Perform functionality test (CTRL D+S). Note! Lactate Scout+ test solutions must be measured in the CTRL D+S mode
- Activate/Deactivate Bluetooth module
- Set speaker volume, time+date and step duration
- View memory
- Start count down for step test or stop watch

Turn scroll wheel to select/change settings and press briefly to activate or confirm

# LACTATE SCOUT+ SENSORS

- Unique design minimises contamination
- Secure and fast, automatic sample uptake
- Boxes of 24, 48 and 72 sensors available
- Imprecision:
  - $\pm 3 \%$  (min. SD  $\pm 0.2$  mmol/L) for Hct range 35 – 50%
  - $\pm 4 \%$  (min. SD  $\pm 0.3$  mmol/L) for extended Hct range
- Approved hematocrit (Hct) range: 20 – 70%



# Why compensate for hematocrit (Hct) ?

- Hematocrit (Hct) is the total amount of solid blood particles, 99 % is red blood cells
- The volume of the red blood cells reduces the effective sample volume involved in the reaction. Other minor influences are an increased electrical resistance caused by the hematocrit and a reduced diffusion of the reaction partners.
- **The higher the Hct the lower the lactate reading, the lower the Hct the higher the lactate reading**
- Hematocrit compensation allows accurate lactate measurements even from patients with either:
  - Very low hematocrit levels e.g. after blood loss
  - Very high hematocrit levels e.g. professional athletes and neonates



# **PERFORMING A TEST WITH THE LACTATE SCOUT+**



# STIMULATING BLOOD CIRCULATION

1. Lightly massage the fingers in order to stimulate the circulation. The hand should be warm and relaxed.
2. The operator should wear suitable protective gloves.
3. The middle or ring finger should be used for taking a sample. The patient should not be wearing a ring on the finger used for sampling.
4. Clean puncture site with water. Desinfect with alcohol if required. Dry incision site thoroughly!



## **IMPORTANT!**

**Sweat contains lactate and can falsify the test. Sweat is securely removed by water but not by alcohol!**

**Remains of alcohol on the skin cause the droplet to run. Ensure that all alcohol is evaporated before puncturing.**



# LANCING THE FINGER

1. Use a sterile single use lancet approved for capillary blood sampling
2. Lance the finger on the side of the fingertip. This is less painful and the blood flow is better.
3. Press lightly on the fingertip and puncture it with the lancet.
4. Blot away the first drop of blood.
5. If necessary, press the finger gently again to get a second drop of blood which is large enough for the sample uptake by the sensor.
6. Avoid 'milking' the finger for blood.

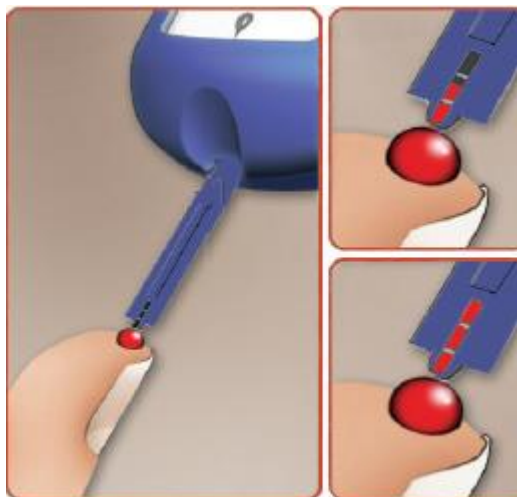


# PERFORMING THE TEST

Insert strip into analyzer



Take blood sample



Results in 10 seconds



*Note! Lactate Scout+ sensors are coded. Check code on sensor vial and display and set new code if needed before performing the test*

# IMPORTANT INFORMATION

1. Keep the sensors protected from moisture and direct sunlight.
2. Store sensors at -18° to + 8°C. Maximum shelf-life is 12 month.  
Store without refrigeration at temperatures below 25°C for max. 30 days.  
Transport and store the sensors only in the original vial! After first opening of the sensor vial, the storage stability is three months or until expiry date if it is sooner.
3. Take out the required sensors for immediate use only and close the vial again. Before using refrigerated sensors, take the vial out and keep it at regular temperature for 20 min at least. When used, analyzer and sensors should be at same temperature.
4. Only fresh capillary blood can be used for meaningful results! Wipe away the first droplet of blood and use the second for the test.
5. Lactate Scout readings represent the total lactate concentration contained in red blood cells and plasma.

# LACTATE SCOUT+ Start SET

Info CD/ Software and multi-language digital manual



Lancets

Lactate Scout +  
meter

Spray Bottle

Test Strips

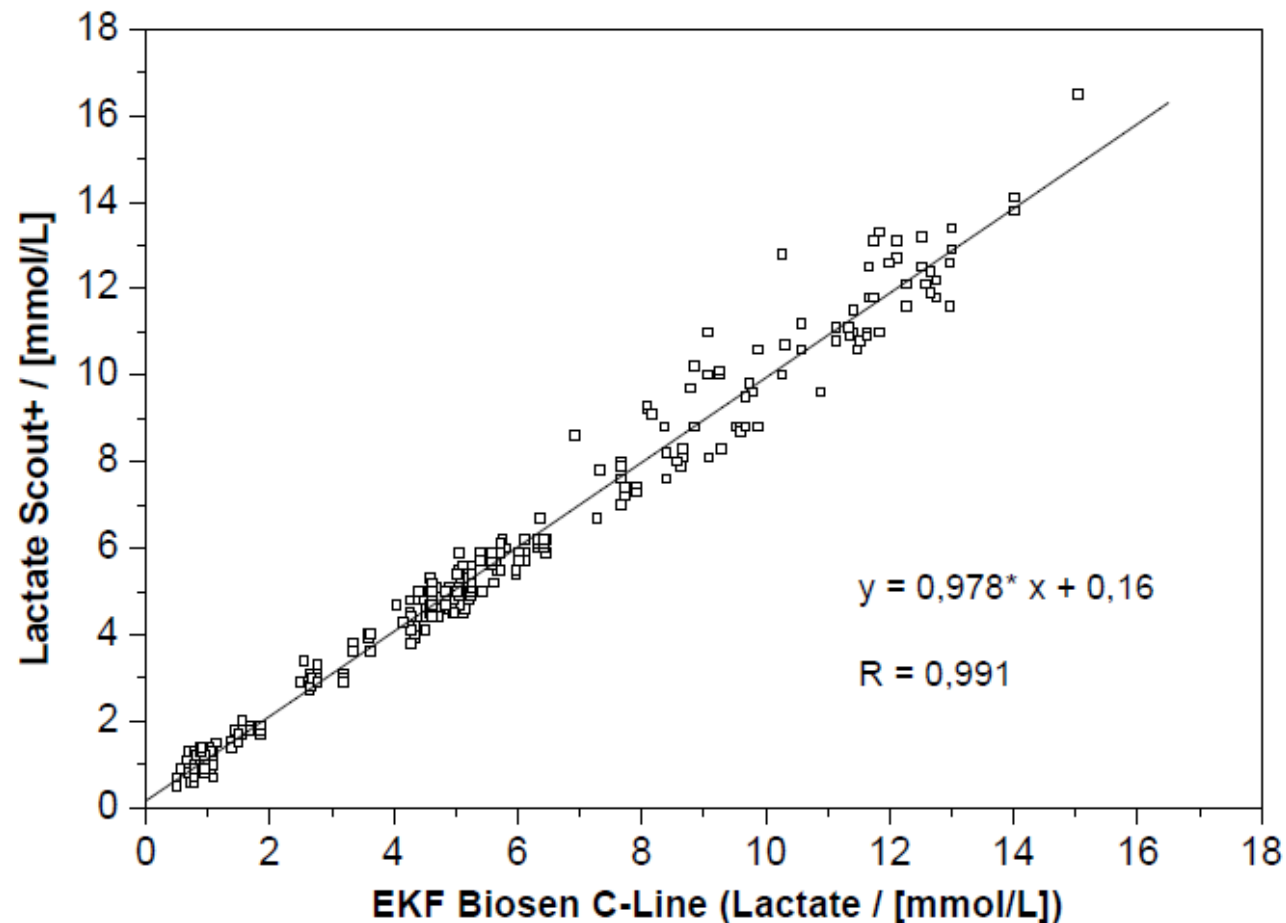
AAA Batteries

Test solution

User Manual

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# CORRELATION OF LACTATE SCOUT+ AND BIOSEN



Blood samples: fresh capillary whole blood, n = 299

# REFERENCES

*"The Lactate Scout helps to realize quick and accurate lactate measurements during the training. So I can react immediately, controlling and improving the individual training of sportsmen. Compact sized, we can take the device with us to all training camps and competitions"*

**Jirka Letzin, A-License swimming coach Leipzig/ Germany**

*"In past times limited to professional sports only, sports diagnostic got now an essential part of the training also for amateurs: It delivers valuable information for the performance increase of top athletes, and it helps amateurs to find their individual heart rate for optimized cardio training"*

**Prof. Dr. Braumann, Marathon runner and medical director in sports institute Hamburg/ Germany**

*"I have finally gotten to testing, and overall I love the Lactate SCOUT. It's so easy to analyze samples! "* **Chris Harnish, Exercise Physiologist & Coach (Peaks Coaching Group)**

*"The Scout is excellent for the endurance horses in competition"*

**Michael Baxter, International Academy of Equine Sports**

# SPORT APPLICATIONS

**Lactate Scout+ is used for testing and monitoring athletes performance in:**

- Step tests (graded exercise tests)
- Single point tests (repeated test under standardized conditions)
- Lactate Scout+ can be used for self-testing or by coaches and sport scientists



# MEDICAL APPLICATIONS

- Lactate Scout+ can be used as a monitoring or screening tool by qualified staff in various medical settings.
- The test results should only be used as a support for clinical decision making.
- As with any chemical reaction, the user must be alert to the possible effect on the result due to unknown interference from medication or endogenous substances.
- All patient results must be evaluated considering the total clinical status of the patient.
- Any decision for medical use of the device must be taken by the responsible clinician based on the specification of the device and local regulatory guidelines.

Note: The new Lactate Scout+ compensates for the effect of high and low hematocrit levels but does not compensate for possible interferences of drugs or abnormal metabolic states.

Known interferences and their acceptable level for accurate measurements:

Ascorbic acid:  $\leq 0.11$  mmol/L

Uric acid:  $\leq 0.35$  mmol/L

Paracetamol:  $\leq 0.20$  mmol/L

# MEDICAL APPLICATIONS

**Lactate Scout+ is used for screening and monitoring in:**

- Cardio-rehabilitation (performance health check)
- Obstetrics (umbilical cord and fetal scalp testing)
- Ambulances
- Sepsis

# VETERINARY

**Lactate Scout+ is used in:**

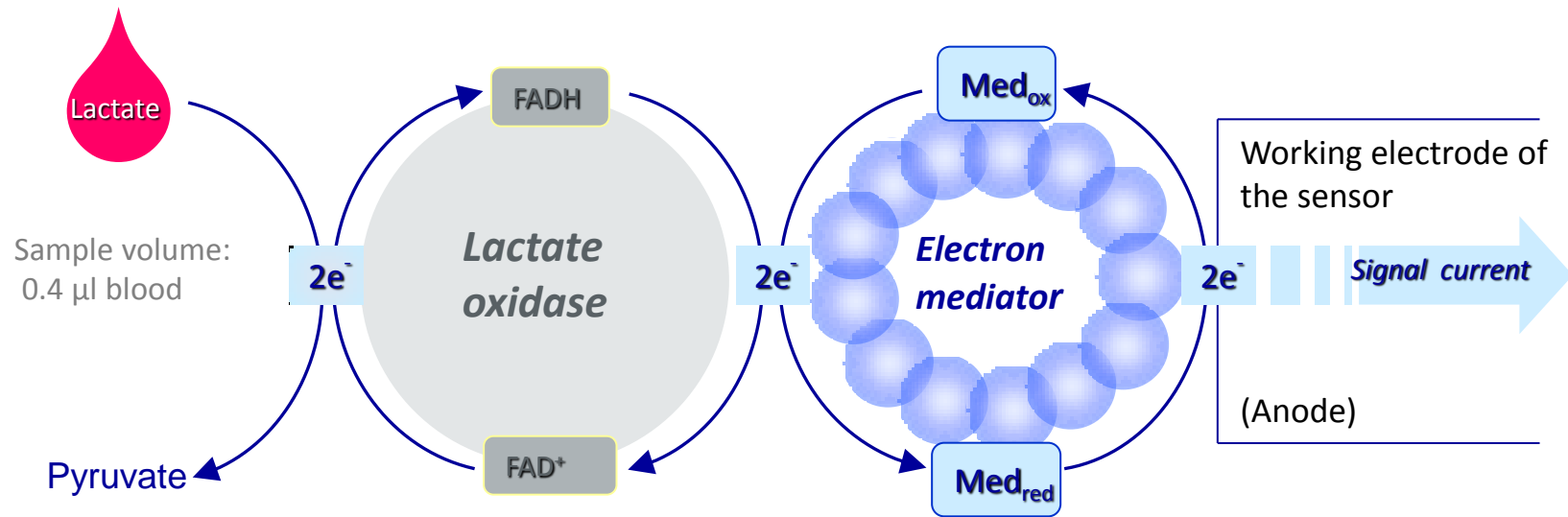
- Racing animal sports (compare human sports application)
- Monitoring special animal diets
- Monitoring slaughter stress
- Research
- Animal critical care

# ARGUMENTS FOR LACTATE SCOUT+

- Mobile, accurate and robust hand-held lactate analyzer
- Combines ease of use with advanced features
- Short measurement time of 10 sec
- Small sample volume (0.2  $\mu$ l)
- Suitable for use at the training site
- Data export via Bluetooth
- Approved for professional use and self-testing
- Excellent correlation with EKF Biosen Analyzer



# Measuring principle of the lactate sensor



*Lactate oxidation: Electron transfer from lactate to the prosthetic groups of the LOD (FAD $^+$ )*

*Reversible electron shuttle between FADH and the surface of the working electrode by the mediator*

*Mediator oxidation: Electron flow vs. reference electrode (= signal current)*