

Exergen Temporal Scanner™ Temporal Artery Thermometer



Simply a better way to take a
patient's temperature

***EXERGEN* TemporalScanner™**

A breakthrough in thermometry —

Non-invasive, fast, easy and accurate

- Not only generates clinical intelligence you can rely on to make timely and well-informed decisions,
- It can support your efforts to enhance patient comfort as part of your caregiving process.



How Does it Work?

Put your index finger on the center of your forehead - slide it in a straight line over to your hairline

Lift your finger off your forehead and touch behind your ear - halfway down the mastoid process (the bone in back of your ear)

Slide your finger down to the little soft depression behind the earlobe

If you had the TAT in your hand, you would have taken the fastest, gentlest, most accurate temperature in the world!

Who is ***EXERGEN***?

- **Recognized world leader in IR technology**
- **In business >30 years**
Industrial and Medical Divisions
- **Approximately 200 employees**
- **Founded by CEO Dr. Francesco Pompei**
Massachusetts Institute of Technology
BS, MS
Harvard University
MS, PhD, and Member of the Department of Physics
- **More than 100 patents in the technology**

Overview of Temperature Measurement Sites and Errors

- **Sublingual**

- Minimally invasive
- Affected by extraneous variables
- Used in adults & children >5 years of age

Errors

- Placement, patient activity, dwell time

- **Ear**

- Minimally invasive
- Requires precise technique

Errors

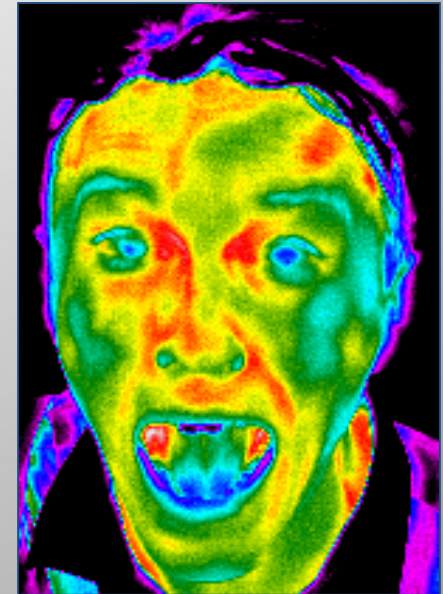
- Low blood flow, technique, ambient temperature

- **Axillary**

- Minimally invasive
- Used in children < 5 years of age

Errors

- Accurate only for infants <4 months of age



Temperature Measurement

Sites and Errors

- **Rectal**

- Invasive
- Used in unconscious patients and in children

Errors

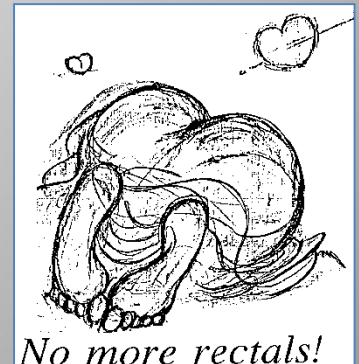
- Can lag behind other core sites when temp is rapidly changing
- Insertion depth
- Dwell time

- **Bladder**

- Invasive

Errors

- Can lag behind other core sites when temp is rapidly changing
- Dependent on volume of urine and placement of thermistor



- **Pulmonary Artery and Esophageal**

- Invasive core temperature
- Used during surgery
- Used in ICU's

What's So Special About TAT?

A Paragon of Excellence

Highest Accuracy

- 26 peer-reviewed published papers demonstrate interchangeability with all true gold standards
 - Rectal Temperature
 - using tie-breaker of t/time or outcome
 - Esophageal Probe
 - PA Catheter
- Validated daily by the 2,000,000 temps taken in hospitals every day
- TAT has **NEVER** been proven inaccurate when compared to true gold standards

What's So Special About TAT?

Lowest Cost - *and it's green!*

- First thermometer to eliminate disposable covers, although available when required
 - Reduce thermometry cost by 90%
 - Reduce associated waste by 90%
 - Payback in less than 9 months
- Only thermometer completely protected by a ***LIFETIME WARRANTY***

What is the Technology?

Arterial Heat Balance (AHB) Method

Temperature at the TA

- **Heat:** arterial blood from heart
- **Heat loss/gain:** from environment



- **Patented Measurement**
 - TA scan for peak temperature
 - Ambient temperature
- **Measuring Speed**
 - 1000 times per second
- **Result**
 - Accuracy = PA catheter temperatures

Getting a Reading is as Easy as 1,2,3

Patient temperature readings are
gathered quickly and displayed clearly



What is the Technique?



COLOR GUIDE

COLD: Green, blue, purple, black

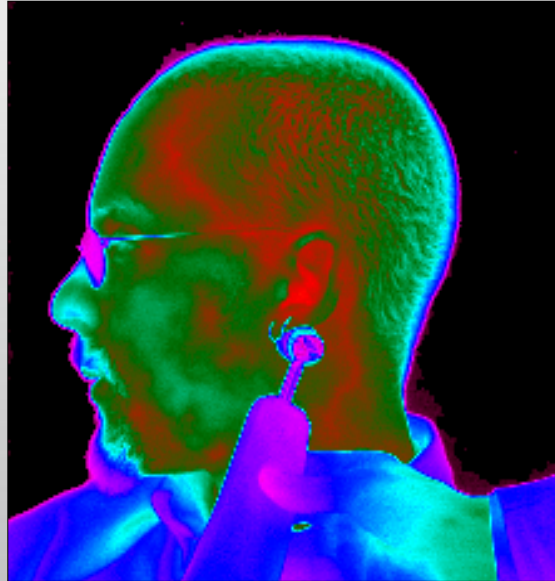
HOT: Red, orange

1 – Slide across forehead

- Place probe flush on center of forehead and depress button.
- Keeping button depressed, slowly slide probe mid-line across forehead

(updates 1000 times/sec to locate PEAK temperature)

What is the Technique?



COLOR GUIDE

COLD: Green, blue, purple, black

HOT: Red, orange

2 – Slide down behind ear

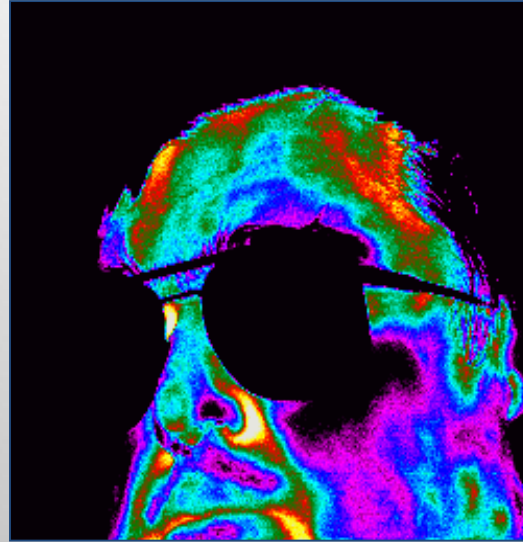
- Keeping button depressed, lift probe from forehead,
- Touch behind ear halfway down the mastoid process,
-(the bone in back of the ear)
- Slide down to the soft depression behind the earlobe

3 - Read

➤ Release button and read



FAQ's



Q: Why scan straight across the forehead when the TA runs down the side of the face?

A: TA can go deep at the temple area, but <2mm below skin at midline on forehead

Remember: If you had to remove your PT's glasses, you incorrectly went down the side of the face

What's the issue with sweat?



Problem: Sweat causes evaporative cooling of forehead

Solution: Peak temperature
-in this case, behind the ear

Why TA and Behind the Ear?

A Touch of Insurance



Problem:

- Sweat will cool the forehead area – not always easy to identify
- Bandages can prevent access to the head

Solution:

- TA + Behind Earlobe = Peak Temperature
- Peak temperature overrides site errors

Why not just behind the ear?



Problem: Normal blood flow in neck is too variable for reliability

Solution: Peak temperature
in this case, the TA

I took 6 readings in less than a minute

Why are they different?

- **Sequential measurements cool the tissue**
 - The head is about 100°F, TAT is at room temperature
 - This 30° difference creates a heat sink
- **Waiting ~30 seconds between readings will allow the skin to recover**
 - While it is not a skin measurement, the skin is there

Top 5 Reasons for Low Readings

#5...Ice pack or wet compress on forehead

#4...Measuring a completely diaphoretic patient

TIP: Wait until the patient is dry.

#3...Releasing the button too early

#2...Incorrect scanning

TIP: Ensure you scan across the forehead where the TA is located closest to the skin. Do not scan *down* the side of the face.

TIP: You should not have to remove a patient's glasses.

#1 Reason for Low Readings

A Dirty Lens!

- **Biweekly cleaning of the lens is required every 2 weeks**

Incorporate a procedure :

- With another Quality Checked device such as a glucometer
- A bi-weekly payday

- **Critically important to accuracy**

- **Main reason for “repairs”**

- **To clean lens, use a Q-Tip:**

- Dampen Q-Tip w/alcohol wipe
- Twirl on lens deep in center of probe
- Dry with another Q-Tip
- Twisting an alcohol wipe will not work!



What makes my patient feel hot yet I get a “normal” temperature?

- **Vasodilation**: circulating blood transports heat to skin surface, where it dissipates into the environment – the body’s way of maintaining a normal temperature

Skin will feel **warm** to the touch, but does not always indicate a fever

What makes my patient feel cool yet I get a high temperature?

- **Vasoconstriction:** decreases transport of heat to skin surface, keeping it within the deeper core tissues of the body – allowing a fever to increase

Skin will feel *cool* to the touch even though fever is present.

TA Temp Doesn't Match PO Temp

Nor do you want it to!

Oral Temperature

- Can seriously mislead clinician by missing many fevers
- Is under patient control and affected by many errors

TA Temperature

- **As accurate as all Gold Standards**
 - ~ Core temp is 1°F (0.5°C) higher than an oral temp
 - ~ The same as rectal temp on stable patient
 - ~ Indicates changes in BT one to several hours earlier than rectal methods (rectal temp lags)

Alternate Sites

Neck Area – If diaphoresis or head trauma is present

- If neck is dry it can be used alone as vasodilation is assured under these two conditions .
- If all sites are wet, return in about 15 minutes when patient should be dry and take a temperature will be rapidly dropping and fever is not an issue. standard TA temperature.
- Wiping the sweat will not work as the sweat glands secrete too quickly

Femoral Artery Area

- Scan across the femoral artery in the crease of the groin, keeping button depressed until scan is completed.

Lateral Thoracic Artery Area

- Scan in a zigzag pattern about 4 inches wide from an imaginary line in between the axilla and the nipple, scanning down to the waist and back up to the level of the nipple, keeping the button depressed until scan is completed.

Cost Benefits

First Clinical Thermometer to Eliminate Disposable Covers

If you are wiping your stethoscope with an alcohol prep between patients, apply same procedure to TAT

- **Reduce thermometry cost by 90%**
- **Reduce associated waste by 90%**
- ***Protect the Environment!***

Please know that resposable caps and full instrument sheaths are available if required or preferred

Other Options for Cross-Contamination Protection

For those areas where covers might be required or preferred

➤ Resposable Cap

- Disinfect between Patients
- Issue one per patient
- Use once, throw away



➤ Disposable Sheath

- Issue one per patient
- Use once, throw away



Benefits

Post Anesthesia Care Unit



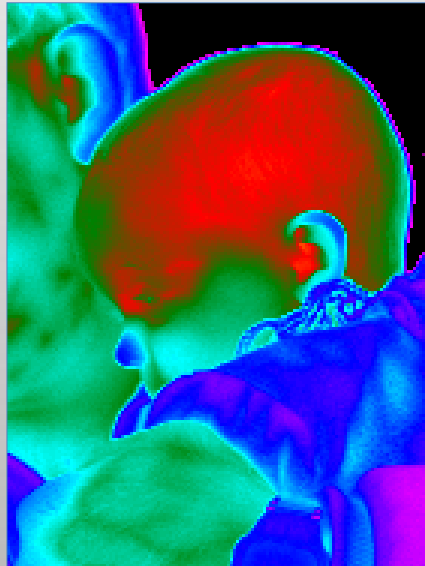
Problem: Warming patients - ear and oral methods keep patients in PACU longer than necessary

Solution: TA unaffected by artifactual errors of other sites – significantly improves patient throughput

Biomedical/Clinical Engineering

- **Lifetime Warranty**
 - Significantly cuts down on their work
- **Repair Rate of <2%**
 - Some thermometers have a repair rate of ~400%
- **No Spare Parts to Stock**
 - None required with Lifetime Warranty
 - Call Exergen for no-cost repair or replacement
- **Calibration Verifier**
 - Allows verification of calibration quickly & easily

Emergency & Ambulatory Care



Problem: Patients just in from cold (or hot) environment

Solution: Temporal Artery equilibrates faster than any other site

Geriatric Patients



- **Gentle and non-invasive, can be used on a sleeping patient**
- **No need to remove hearing aids**
- **No patient compliancy required**
- **Most cost effective of all thermometers**
- **Wiping with alcohol or approved disinfectant significantly reduces or eliminates risk cross-contamination – a major issue with this fragile population**

Approved Disinfectants

- **DisCide Ultra Disinfecting Wipes**
- **Hydrogen Peroxide**
- **Isopropyl Alcohol, 70%**
- **Minncare**
- **Oxivir**
- **PDI Sani-Cloth Plus (Red Top)**

Clinical Conversion Cons?



Change!

Thank You