

Temperature Dysregulation

a biological symptom

A simple, structured protocol for recording body temperature and practical tips for identifying behaviors associated with temperature dysregulation so families and providers can identify an underlying thermoregulatory disturbance.

Temperature dysregulation is the brain's inability to control, and to properly stabilize and maintain, appropriate body temperature. It is identified in the body's inability to dispel generated heat appropriately.

When the body overheats it can trigger the other symptoms that are often misperceived as intentional behaviors, including reactive and territorial aggression, oppositional and defiant reactions, hypervigilance and misperceptions of threat, and sleep/wake disturbances.

Identifying temperature dysregulation and treating it at home with simple cooling interventions can help control other, so-called "behavioral" symptoms in mental illness.

Children's Mental Health Resource Center provides these descriptions of readily identifiable indicators of temperature dysregulation, and this tracking protocol to help families gather objective, day to day readings that can support an accurate picture of thermoregulatory disturbance for themselves and their providers.



FOR FAMILIES

How to *Track Temperature*

Researchers who study temperature dysregulation in bipolar disorder use the following protocol to have patients and their families collect data on daily temperature fluctuations and on the differences between proximal and distal body temperature.

The protocol requires that every temperature reading be tracked, noting both the time of day and the location on the body where the reading was taken. Consistency is what makes the pattern visible.

Take temperature three times a day, and each time, take it on two different parts of the body: the temple and the palm of the hand.

- 1st** Upon waking in the morning
- 2nd** Between 3:00 and 4:00pm
- 3rd** 90 minutes before bed

These three windows capture the daily rhythm: the early morning cold, the afternoon build up of heat, and the evening overheating that disrupts settling down for sleep.

Recording both temple and palm readings at each of the three times gives providers the objective, day to day data needed to recognize thermoregulatory disturbance.

Make sure to keep the times the readings are taken consistent from one day to the next day. This means all waking readings should be taken within an hour of each other, all afternoon readings should be taken within an hour of each other, and all evening readings should be taken within an hour of each other.

COMMON QUESTIONS ANSWERED

Why record two body locations at each check?

TEMPLE & PALM

The temple reading captures proximal body temperature, the temperature of the body's core. The palm reading captures distal body temperature, the temperature of the body's extremities. It's the ratio between these numbers that can help clarify if temperature dysregulation is present.

Is overheating only a nighttime problem?

NO

Heat build up and overheating symptoms can occur during the day as well as during the night, while sleeping. The three daily check times are designed to capture the individual's temperature rhythms, so they can be compared with the usual temperature changes a body is expected to experience.

Are there physical signs of overheating to watch for?

YES

Sweating excessively during regular exercise, sweating when it is not particularly hot out, a flushed face, warmer than usual skin, and bright red ears that are warm or hot to the touch.

Does refusing a coat in freezing weather mean anything?

YES

Wearing a coat traps whatever heat the body is trying to release. The body cannot cool itself down appropriately, so the coat makes the overheating feel worse. This is why many children and adults with temperature dysregulation feel more comfortable without a coat in the cold, making it a red flag for thermodysgulation.

Isn't refusing to get dressed or stay dressed simply oppositional behavior?

NO

Temperature dysregulation causes the body and skin to hold onto built up heat. Adding layers of clothing traps that heat, which can feel intolerable. Not wanting to feel that discomfort is not defiance.

Is feeling cold in the morning after feeling hot at night normal?

NO

Normally, body temperature cools for sleep and warms for waking. With thermoregulatory disturbance, this cycle is reversed. This causes cold feelings that make it harder to get up in the morning. It also causes heat build up in evenings that makes it impossible to fall asleep.

Understanding *Temperature Dysregulation*

A BIOLOGICAL SYMPTOM

Thermoregulatory disturbance is a biological and physiological symptom, not a psychological or psychiatric one. This makes it a symptom that can be objectively tracked and monitored. It also has specific and effective interventions that will work to help re-regulate body temperature.

The body's inability to correctly regulate its temperature results in heat building up throughout the day that is not released as it should be. When temperature dysregulation is present it can intensify other symptoms such as aggression, hypervigilance, fear and the fight or flight response, and sleep disruptions.

REAL LIFE EXAMPLES

Feeling hot and sweating in neutral room temperatures. Reversed daily rhythms, hot in the evening and cold in the morning, sometimes unable to get out from under the covers. Bright red ears or cheeks that are warm or hot to the touch. Refusing weather appropriate clothing, such as shorts in winter, with little discomfort in the cold.

Treating this single symptom of temperature disruption can cause other symptoms, including fears, aggressive behaviors, and sleep disruptions, to reduce or even go into remission.

ON WHY THIS SYMPTOM MATTERS

Recording Temperature, *When & Where*

To gather useful and objective data, track all temperature readings, indicating both the time of day and the location on the body where the temperature was taken.

Take temperature three times a day, each time on two different parts of the body.

WHERE TO TAKE THE READINGS

On the temple, and on the palm of the hand. Both locations are recorded at each of the three daily check times, so temple and palm readings can be compared side by side across the day, and from one day to the next.

Consistency from one day to the next in terms of the times the readings are taken provides the necessary information that individual readings in isolation cannot.

Times per day to take temperature

1. Upon waking up in the morning.
2. Between 3:00 and 4:00pm.
3. 90 minutes before bed.

Locations to take temperature

1. Temple
2. Palm of the hand

Add to the temperature tracking a list of the times each day when episodes of symptomatic emotional dysregulation occur.

Keep the log going day after day. It is the run of readings, not any single check, that lets a provider see the pattern of thermoregulatory disturbance clearly.

Spotting the Pattern *Day to Day*

Look for two or more of these together: feeling excessively warm or overheating at bedtime, feeling cold in the morning after having felt hot at bedtime, feeling excessively warm during the day in neutral temperatures, moderate to extreme cold tolerance, and overheating or sweating profusely with minimal exertion.

Everyday behaviors that may signal it:

- Stripping off clothes right after school or getting home
- Sitting around the house in just underwear
- Feeling hot and sweating in neutral temperatures
- Refusing coats, hats, or long sleeves even in freezing temperatures
- Wearing shorts, t-shirts, and sandals outside in freezing temperatures
- Fighting to put on outerwear before waiting for the bus in cold weather
- Kicking off sheets and blankets, or waking with damp or wet bed sheets
- Difficulty waking up and wanting to stay bundled in blankets
- A red, flushed face or bright red, warm ears

What looks like oppositional behavior, refusing a coat, stripping off clothes, fighting to stay under the covers, often reflects a body that cannot dispel heat the way it should.

ON REFRAMING "DIFFICULT" BEHAVIOR

Once you start noticing these signs of temperature dysregulation you can begin to notice whether or not they happen before, during, or after times of emotional dysregulation. Maintaining a proactive cooling plan can potentially prevent emotional dysregulation by preventing overheating.

Bring the completed tracking log to your child's provider. Objective, day to day data helps turn a pattern that looks behavioral into one that is understood as biological.