

Your Body. Your Clock. The Hidden Health Toll of Changing the Clocks.

*A medical and mental health briefing for the Alaska State Legislature
on House Bill 229 — Permanent Standard Time*

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FIRST: UNDERSTANDING YOUR BODY CLOCK

Every person has a biological clock — the circadian rhythm — that runs on a 24-hour cycle. Morning light is the master switch: it resets neurotransmitters, hormones, and mood systems.



Morning light

↑ Serotonin
↑ Cortisol reset
Improves mood



Peak alertness

Ideal for work
and learning



Evening darkness

↑ Melatonin
HPA axis winds
down for sleep



What DST does — "Circadian Misalignment":

DST shifts the clock 1 hour forward, but your body clock stays anchored to the sun. For 1–3 weeks, your biological rhythm and daily schedule fall out of sync. This disrupts serotonin and dopamine production, activates the stress-hormone system (HPA axis), and fragments sleep architecture — all pathways directly linked to depression, anxiety, bipolar disorder, and psychosis. [Walker et al., 2020; McCarthy et al., 2021]

NEUROLOGICAL, SAFETY & PSYCHIATRIC HEALTH CONSEQUENCES

In the days following the spring clock change, researchers consistently document:



+8%

**Ischemic
Strokes**

First 2 days of
both transitions



+18%

**Missed Medical
Appts**

Spring transition
week



+6%

**Fatal Traffic
Crashes**

Days after
spring forward

Psychiatric hospitalizations also spike: +3–6% mood-related admissions in the week after spring forward. [Poteser & Moshammer, 2020; Rishi et al., 2020]



Americans lose an average of 40 minutes of sleep the night the clocks spring forward.

Sleep loss triggers:

Elevated cortisol · Reduced immune function · Impaired glucose regulation · HPA-axis hyperactivation [Walker et al., 2020]

Circadian misalignment leads to:

Cardiovascular inflammation · Mood instability · Impaired decisions · Autonomic dysregulation [McCarthy et al., 2021]

Chronic misalignment creates risk for:

Stroke, accidents, chronic illness · Depression & bipolar cycling · HPA-axis desensitization → psychiatric vulnerability [Walker et al., 2020; Bauer et al., 2021]

One lost hour cascades through every system in the body — including the brain.

DEPRESSION, BIPOLAR DISORDER & SEASONAL AFFECTIVE DISORDER

In Alaska, Seasonal Affective Disorder (SAD) affects

10–20% of Alaskans

vs.

~5% nationally



How DST worsens SAD

The spring change delays sunrise by 1 hour — extending darkness at exactly the wrong time for Alaskans already starved of morning light. This suppresses serotonin production, triggering or deepening depressive episodes. Post-spring transition: +10–20% symptom worsening in mood disorders. [McCarthy et al., 2021]



Bipolar disorder: a special risk

A 31-year Finnish registry (comparable latitude) found bipolar admissions 10% higher in slowly decreasing photoperiods (late summer/fall) — precisely when DST ends. Manic episodes peak in long photoperiods; depressive episodes surge in short ones. Transitions exacerbate cycling via desynchronization. [Törmälehto et al., 2022; Bauer et al., 2021]



Standard Time protects mood

Permanent ST preserves morning sunrise year-round, driving serotonin synthesis and stabilizing melatonin onset. Morning light therapy reduces depressive symptoms by 20–50% in mood disorders — permanent ST is a zero-cost, population-scale version of that intervention. [Lindskov et al., 2021; Canazei et al., 2022]



Suicide Risk & Alaska

1.6×

attempt risk during variable-light seasons in bipolar disorder [Bauer et al., 2021]

**1.5–
2×**

risk when winter/summer insolation ratio is extreme — Alaska's signature condition [Bauer et al., 2021]

**15–
30%**

projected reduction in depressive episodes under permanent ST (hypothesis for Alaskan cohort evaluation) [Bauer et al., 2021]

Anxiety & Chronotype Risk



Fall transition anxiety spike

2× increased odds of onset insomnia and anxiety symptoms in the week after the clocks fall back. [Zolfaghari et al., 2023]



Evening chronotype vulnerability

Psychiatric patients disproportionately have later chronotypes — already misaligned with morning schedules. DST deepens this gap, correlating with worse anxiety and insomnia. [Zou et al., 2022]



Year-round DST: worst outcome

In winter, permanent DST would delay Alaska sunrise 1–2 hours, preventing morning cortisol reset — mechanistically the most harmful option for anxiety and mood disorders. [Meyer et al., 2024; Bauer et al., 2021]



Children are most vulnerable

Their biological clocks run later than adults — and school start times already conflict with their natural sleep window. The DST transition compounds an existing crisis.



Post-DST academic performance drops

Measurable declines in test scores, attention, and classroom behavior in 1–2 weeks after the spring change.



Teen sleep debt worsens

Adolescents already carry chronic sleep debt. Losing an additional hour disrupts peak cognitive development — and elevates mood disorder onset risk.



Mood and behavior disrupted

Irritability, emotional outbursts, and mood disorder symptoms rise in children post-transition. Evening chronotypes in adolescents are especially vulnerable. [Zou et al., 2022]



Standard Time aligns school days

Morning light arrival under ST synchronizes student and teacher alertness from day one — no adaptation lag, no performance cliff.

Circadian disruption is a core feature of psychotic disorders — not just a side effect.

What the research shows

**+2–
5%**

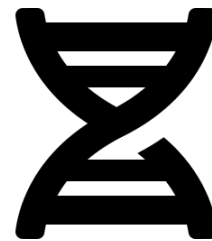
psychiatric admissions for psychosis in the days following both spring and fall transitions [Delorme et al., 2020; Törmälehto et al., 2022]

+2%

schizophrenia admissions in long photoperiods; drops when spring light increases rapidly — consistent with a morning-light-entrainment benefit [Törmälehto et al., 2022]

**31
yrs**

Finnish national registry data (comparable latitude to Alaska) documenting seasonal psychiatric admission patterns linked to photoperiod [Törmälehto et al., 2022]



Clock Gene Variants & Psychiatric Vulnerability

Genetic variants in the body-clock genes CLOCK and PER2 are directly linked to psychosis vulnerability. When DST imposes a "social jet lag" — shifting schedules against the solar clock — these genetic vulnerabilities are activated.

Evening light under DST delays circadian phase, increasing psychotic symptom severity in susceptible individuals. Permanent Standard Time removes this artificial trigger. [Kırlıoğlu & Balcioglu, 2019; Delorme et al., 2020]

CHRONIC DISEASE RISK & LONG-TERM WELLNESS

Beyond acute spikes: living out of solar alignment year-round creates "chronic circadian misalignment" — a cumulative health burden.



Type 2 Diabetes

Circadian disruption impairs glucose metabolism and insulin sensitivity. Night-shift workers — the most circadian-disrupted population — have markedly higher diabetes rates.



Obesity & Metabolic Syndrome

Disrupted sleep alters appetite hormones (ghrelin & leptin), increasing hunger for high-calorie foods and reducing satiety signals.



Cardiovascular Disease

Chronic misalignment increases blood pressure, inflammatory markers, and arterial stiffness — independent risk factors for heart disease and stroke.



Major Depression

The circadian clock regulates serotonin and dopamine. Chronic misalignment is linked to persistent depressive disorder and HPA-axis desensitization. [Walker et al., 2020]



Cancer Risk

Melatonin — suppressed by evening light — has anti-tumor properties. Disrupted melatonin cycles are linked in research to increased risk for certain cancers.



Immune Suppression

The immune system follows a circadian schedule. Misalignment reduces vaccine efficacy, infection resistance, and recovery speed from illness.

Standard Time minimizes chronic circadian misalignment. The medical goal is alignment with solar time, year-round.

Eleven major medical and scientific organizations formally endorse permanent standard time.

"Eliminating the time changes in March and November would be a welcome change. But research shows permanent daylight saving time overlooks potential health risks that can be avoided by establishing permanent standard time instead."

— American Medical Association · Endorsed by AASM position statement [Rishi et al., 2020]



American Medical Association



Amer. Academy of Sleep Medicine



National Sleep Foundation



Sleep Research Society



National Safety Council



Amer. College of Chest Physicians



Soc. of Behavioral Sleep Medicine



Amer. Academy of Neurology



World Sleep Society



Amer. Psychiatric Assoc.*

STANDARD TIME vs. PERMANENT DAYLIGHT TIME — THE HEALTH COMPARISON

Some propose permanent Daylight Time instead. Here is what medicine says about that choice:

✓ PERMANENT STANDARD TIME

✓ Morning sunrise aligns with body clock wake signal

✓ Maximizes serotonin production in shoulder seasons

✓ Reduces SAD risk — endorsed by AMA & AASM

✓ Stabilizes bipolar & psychotic disorder cycling

✓ Arizona & Hawaii on permanent ST — no side effects

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✗ PERMANENT DAYLIGHT TIME

⚠ Delays sunrise by 1 hr — morning darkness persists

⚠ Suppresses morning serotonin in fall/winter months

⚠ Worsens SAD & bipolar cycling — especially in Alaska

⚠ Risks deeper HPA-axis dysregulation & psychosis spikes

⚠ Florida chose this in 2018 — still waiting on Congress

What You Can Do for Alaskans' Health.



Every clock change causes documented spikes in strokes, psychiatric admissions, and fatal crashes.



Alaska's SAD rates are 2–4× national average — and bipolar, anxiety & psychosis risks are compounded by our extreme photoperiods.



Your children lose sleep and cognitive function twice a year; adolescents face heightened mood disorder onset risk.



11 medical organizations, 15+ peer-reviewed studies: permanent standard time is the evidence-based choice.

Pass HB 229. Give every Alaskan a healthier morning — permanently.