

Being Clockwise, Knowing your body clock for healthy living,



Annie Curtis

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MOLECULAR AND
CELLULAR THERAPEUTICS

CIPD Event , Croke Park, May 21st 2019



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Welcome to

CURTIS CLOCK LAB RCSI

Department of Molecular and Cellular Therapeutics

Tissue Engineering Research Group

Time is our obsession

@curtisclocklab



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Clocks and Time



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The most important clock for humans is our body clock



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What does our body clock control?

Practically Everything!

Every organ in the body is under the control of the clock

Metabolism

Immune Function

Hormonal Rhythms

Brain Function

Cardiovascular function

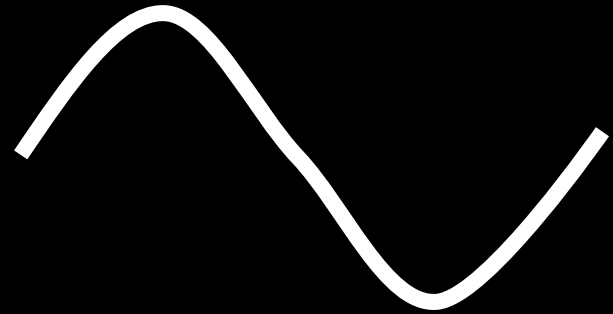
At least 40% of our genes are controlled by the clock



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Circadian
Circa dian
About Day



Light

Dark

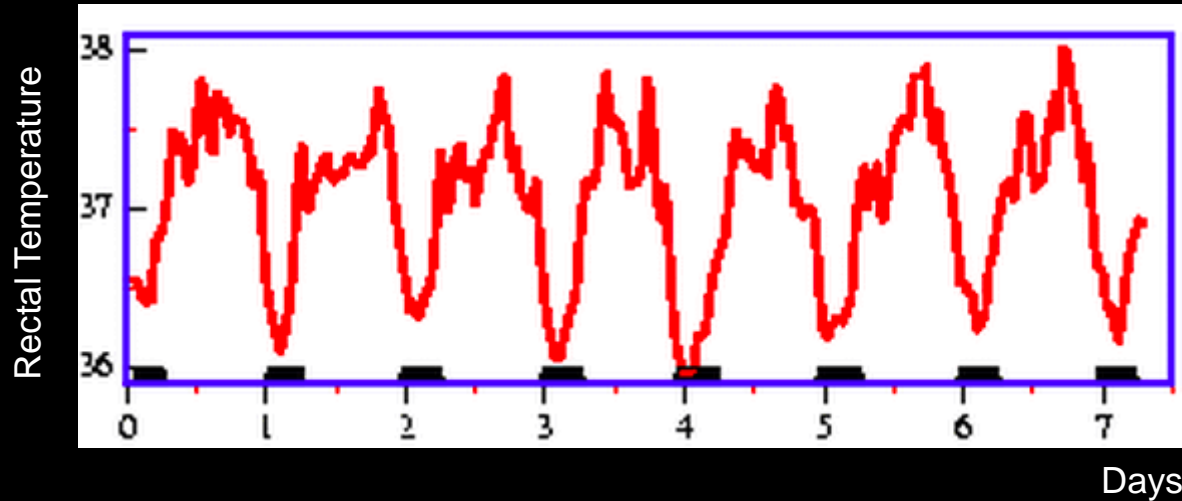
24 Hours



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Core Body Temperature follows a perfect circadian rhythm



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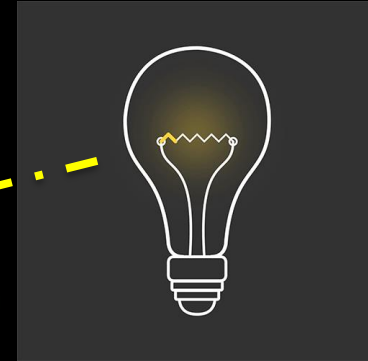
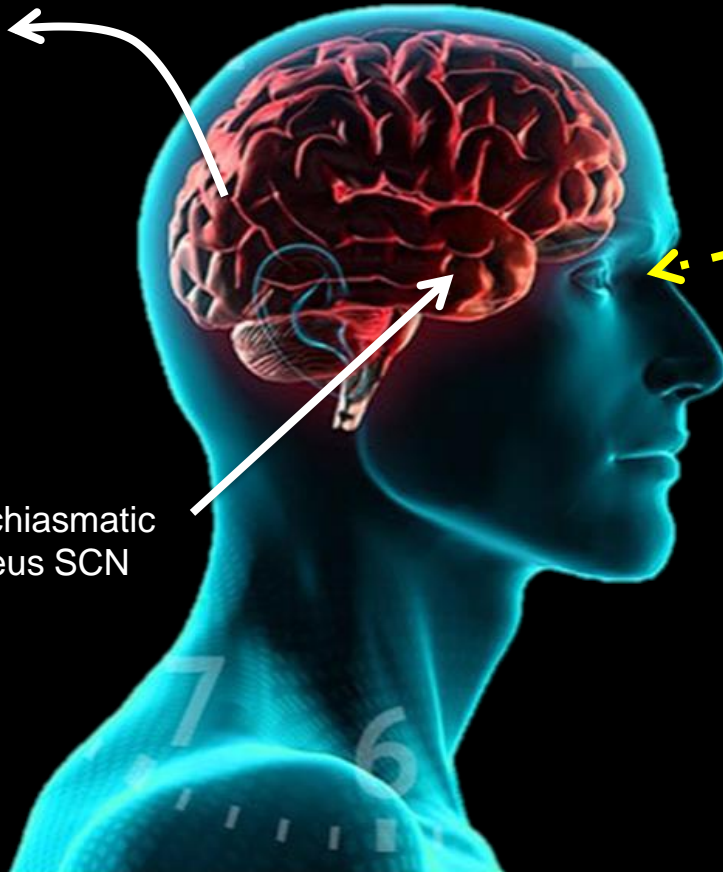
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Light is the dominant “synchronizer” of our clocks

output rhythms



Suprachiasmatic
Nucleus SCN



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We are almost a different species
at dawn versus dusk

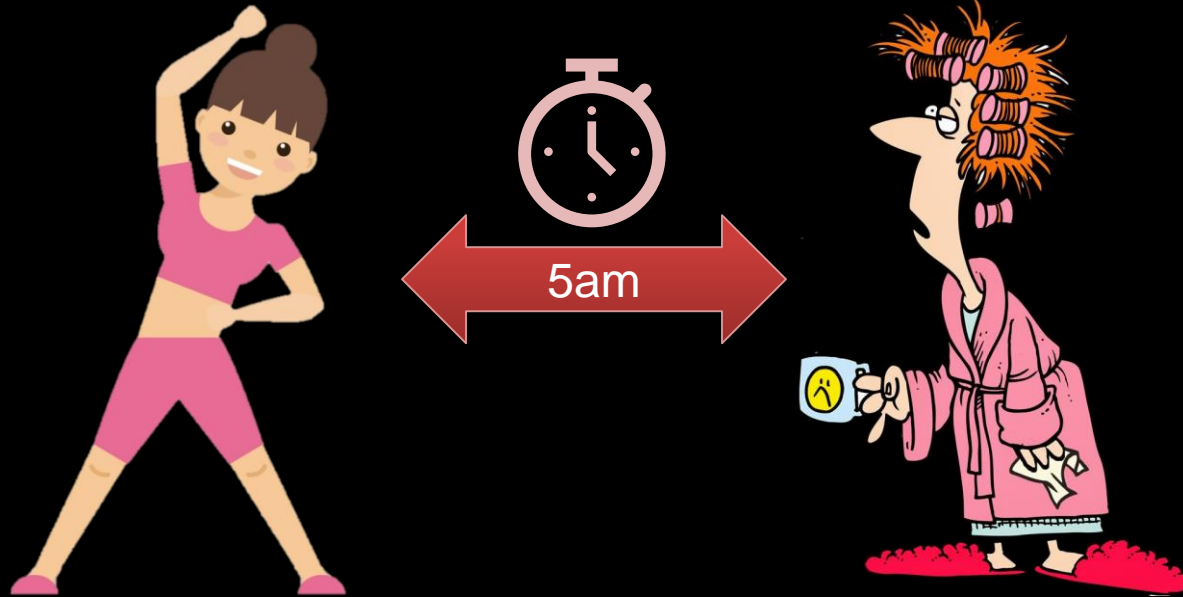


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Morning Larks Versus Evening Owls (Chronotype)

Blame it on your body clock genes



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Get your chronotype in a jiffy

Think of your behavior during “free days” days you are not required to awaken at a specific time

Now answer these three questions

1. What time do you usually go to sleep?
2. What time do you usually wake up?
3. What is the middle of those two times, this is your midpoint of sleep,

Example: if you typically fall asleep around 11.30pm, wake up at 7.30am, your midpoint of sleep is 3.30am

Discuss your midpoint of sleep with your neighbours



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What is your midpoint of sleep?

Midnight – 3am



Lark

3am – 6am



Hummingbird

6am – 9am



Owl



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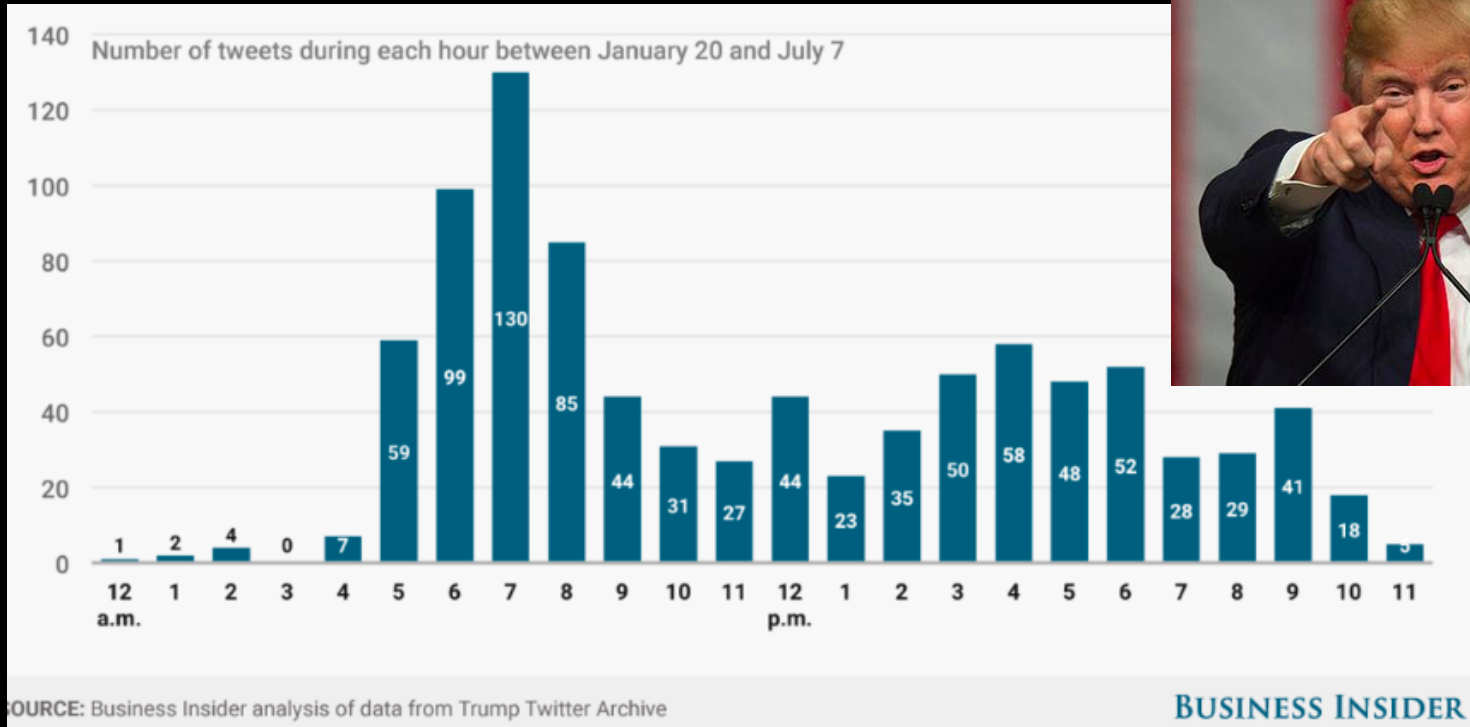
Owls are in constant battle with expectations of society



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Donald Trump – a hard working lark??



But when does he sleep?



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Disruption of our body clock is making us sick

Cardiovascular
disease

Depression

Obesity

Cancer

Diabetes

Arthritis



We are continually disrupting our body clock

A glowing lightbulb is centered in the frame against a dark background. The lightbulb is illuminated from within, creating a bright glow and casting a soft shadow on the surface below it. The text "We are all Shift workers" is printed in a bold, black, sans-serif font in the center of the lightbulb's glass envelope.

**We are all
Shift workers**

We are continually disrupting our body clock

Insufficient Sleep

Sporadically working
into the night

Irregular sleep and
wake times

Majority of time
spent indoors



One schedule during
the week, another at
the weekend

Erratic eating times

Exposure to light at night
Blue light emitting devices

Travelling across
time zones

Nearly all people suffering from mood disorders have significant disruptions in their body clocks and sleep/wake cycle.



Reduced motivation
& creativity
Reduced resilience
Reduced ability to
cope



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Maintaining a Strong Body Clock is essential for health and wellbeing



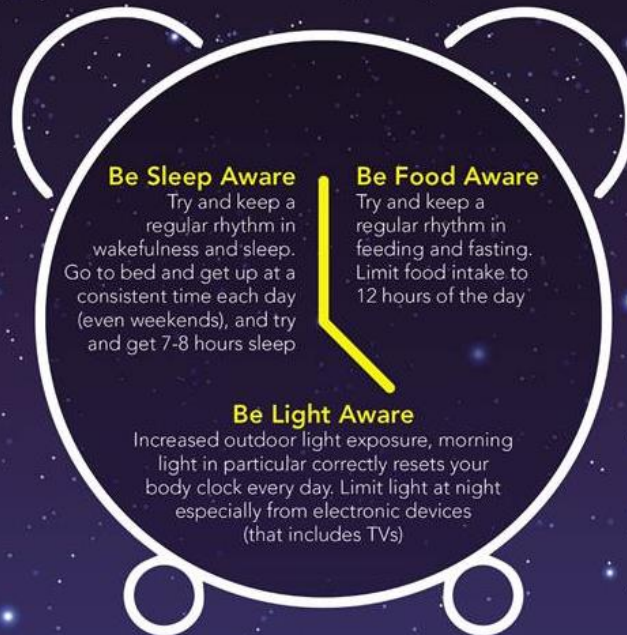
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4 ways in which you can maintain a strong body clock

Being **Body Clock** Wise

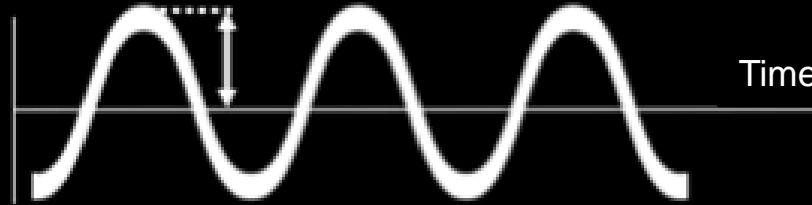
A healthy body clock improves mental health and overall wellbeing. Three ways in which you can maintain a strong body clock are:



Be Exercise Aware

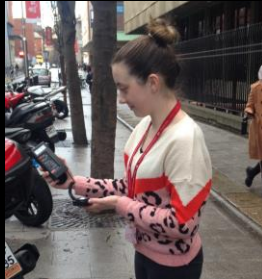
Be Light Aware

How all our time spent indoors causes circadian disruption



High Amplitude

5000 Lux



Outside RCSI

380 Lux



Foyer RCSI

800 Lux



Barry Holmes
Shared HR offices
RCSI

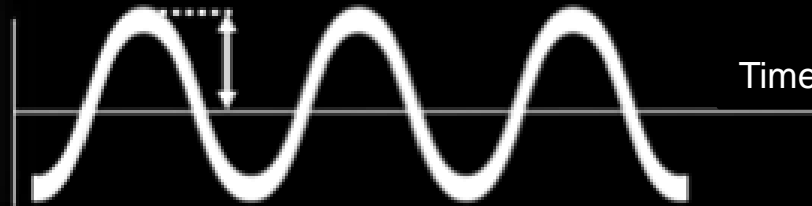


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Be Light Aware

85% of our time is now spent indoors



High Amplitude



Low Amplitude

Expose yourself to outdoor light each day (especially in the morning) and when inside sit beside windows



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Be Food Aware

When you eat is as important as what you eat



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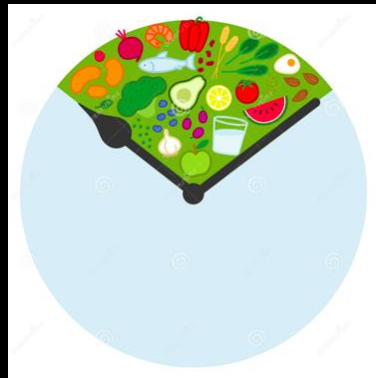
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Be Food Aware – Embrace Time Restricted Feeding

Start by trying to eat within a 12 hour window

This will boost your body clock

Even a cup of tea breaks the fast



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Be Sleep Aware



Bright light during day, dim light during night

Time Restricted Feeding enhances sleep

Think of sleep as not the conclusion of your day, but preparing yourself for the next day



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Be Exercise Aware



Exercise 3 hours or more before bedtime

Exercise promotes sleep



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By looking after your body clock you can look after your health



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