

Skills guide:

Working with your chronotype

Getting the body back in sync can stop you feeling jetlagged, and help coordinate the body's functions, reducing bodily stress. Here's a guide on how to do it:

Step 1:

Step 2:

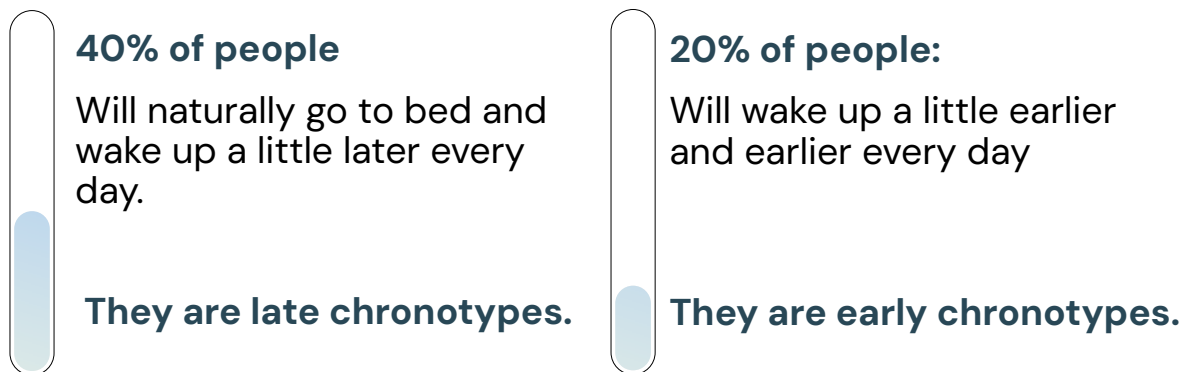
Step 3:



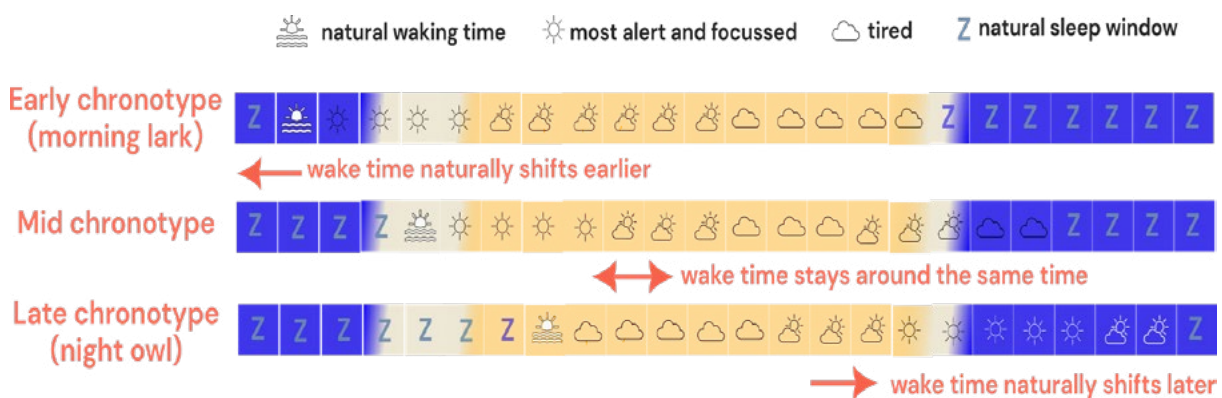
Step 1:

Understand your chronotype (body clock)

Your chronotype is related to how fast your body clock naturally runs.



Your chronotype also effects when in the day you feel most alert and focused, as well as other physiological rythms:



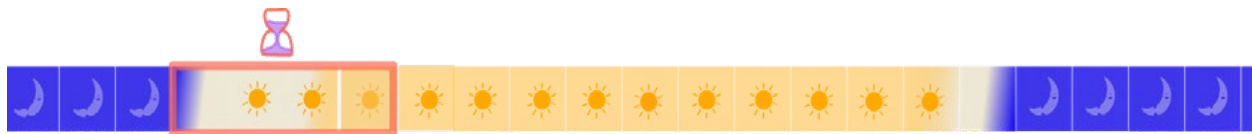
Takeaway:

If you naturally stay up late and find it hard to get up in the morning, you probably have a late chronotype.

Step 2:

Understand the different ways time effects the body.

- 1. The Solar Clock** Solar time is based around the time the sun rises and sets. This changes depending on where you live and the time of the year. Solar time influences when the body can meet sunlight ☀️ the strongest circadian cues ⌚



- 2. The Social Clock** Social time is based around our individual responsibilities and routines. Social time is important because it determines when the body gets exposed to cues like light ☀️ / 📺 food, movement 🚲 and rest.



- 3. The Body Clock** Bodily processes run to their own rhythms. The body clock runs close to around 24 hours, to help it sync with solar time.

For **early chronotypes** (larks) the body clock runs to less than 24 hours. For **late chronotypes** (owls), the body clock runs longer than 24 hours.



What are circadian cues?

Circadian cues are the things that are able to sync clocks in different parts of the body. They are things the body detects directly, like movement, food and light.

Bright light, with the wavelength of morning sunlight, is the strongest circadian cue.

Step 3:

Sync the body clock with solar and social time.

If the body clock is out of sync with solar and social time this can cause symptoms of 'social jet-lag'. Late chronotypes, and night-shift workers have the most difficulty with this.

Q: Can you be outside during the solar syncing window?

The solar syncing window is the time window **3 hours after sunrise** in which it is easiest to sync up your body clock with the sunlight by being outside.



Solar syncing window



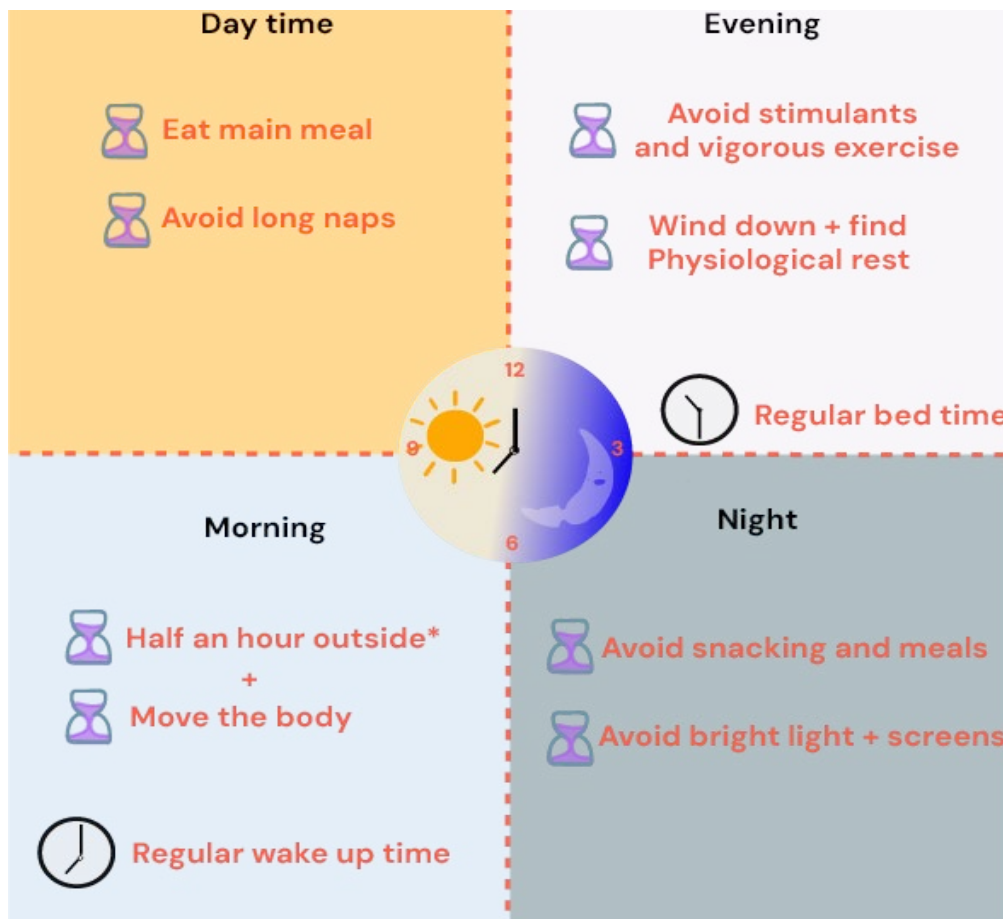
Takeaway:

If you are usually asleep during the solar syncing window, can you shift your sleep-wake cycle?

Shifting the sleep-wake cycle: rules by chronotype.

Early and Mid Chronotypes:

The body clock can easily be reset daily to the sun. The key is consistency. Do your best to maintain a consistent routine, going to bed and waking up at the same times each day, even on weekends.



*if getting outside is not an option, sit directly by a window or use a light therapy box

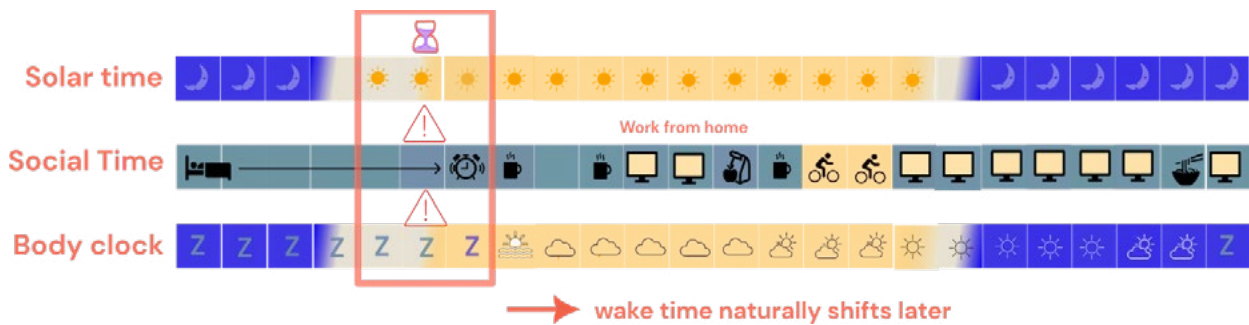
Takeaway:

A consistent routine including circadian cues helps regulate the body clock.

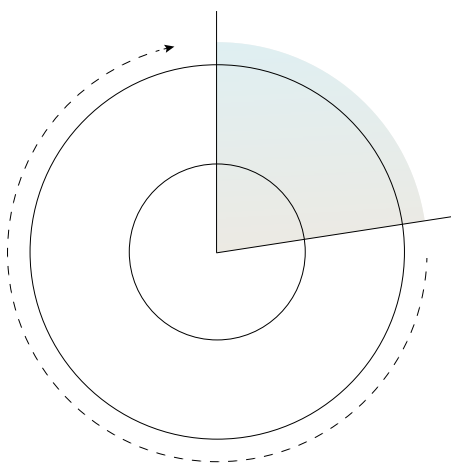
Late chronotypes:

People with late chronotypes often have the most difficulty with their bodies falling out of sync with the sun, and social jet-lag.

You can see why this is a problem in the example below. The solar syncing window (orange box) is while the late chronotype is asleep:



Being outside during the solar syncing window means waking up earlier. However for the late chronotype, waking time naturally shifts later. Waking up earlier will bring the body clock even further out of sync, and worsen jet-lag like symptoms.



For people with a late chronotype, it is easier to get to the new ideal wake time by **advancing the body clock forward** through the 24-hour cycle until it aligns again with solar time.

A **sleep deprivation regime** is the quickest way to do this.

Takeaway:

Late chronotypes cannot just 'get up earlier'

Resetting the body clock for late chronotypes:

A sleep deprivation regime.....

1. Work out your new ideal wake time and sleep time, based on solar and social time.
2. Stay up one night and all the next day (Try not to nap).
Tip: Coordinate this with a party or another fun reason to stay up late!
3. After staying up all night, go to bed the next day at your new ideal bedtime.
4. Set an alarm and wake at your new wake time.
5. Get out into the morning sunlight! Don't forget this step. Catching the solar syncing window is the reason you went through the sleep deprivation!
6. It will still feel hard to wake up for the first few days. The body needs a few days of regular morning light exposure to get back in sync.

Alternatives:

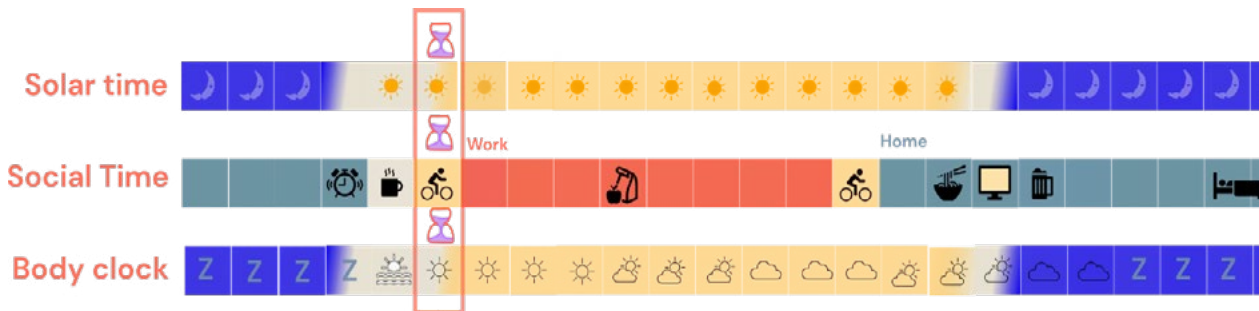
*If staying up all night doesn't work, an alternative is a more gradual phase advancement: **Go to bed 2 hours later and wake up two hours later each day, until you are at your new ideal wake time.***

*If shifting the body clock using solar time does not work (due e.g. to shift work or living in the far north): **Consider using a therapeutic light box at the same time every day, as an alternative to syncing with solar time. This gives more flexibility but still provides the consistency the body rhythms need to function at their best.***

Bodysymptoms.

The goal:

Solar, social and body clocks are synced with each other. A daily routine provides consistent exposure to circadian cues to maintain this synchronisation.



Remember:

It may take up to 6 weeks for the different body rhythms to entrain onto a new routine, and for the full benefits to be seen in your symptoms. Be patient with yourself, your situation, and your body.



References

Climent-Sanz, C., Valenzuela-Pascual, F., Martínez-Navarro, O., Blanco-Blanco, J., Rubí-Carnacea, F., García-Martínez, E., ... & Gea-Sánchez, M. (2022). Cognitive behavioral therapy for insomnia (CBT-i) in patients with fibromyalgia: a systematic review and meta-analysis. *Disability and Rehabilitation*, 44(20), 5770–5783.

Cox, R. C., & Olatunji, B. O. (2019). Differential associations between chronotype, anxiety, and negative affect: A structural equation modeling approach. *Journal of affective disorders*, 257, 321–330. <https://pubmed.ncbi.nlm.nih.gov/31302521/>

Ditmer, M., Gabryelska, A., Turkiewicz, S., Białasiewicz, P., Małeczka-Wojcieszko, E., & Sochal, M. (2021). Sleep problems in chronic inflammatory diseases: prevalence, treatment, and new perspectives: a narrative review. *Journal of Clinical Medicine*, 11(1), 67.

Lewis P, Korf HW, Kuffer L, Groß JV, Erren TC. Exercise time cues (zeitgebers) for human circadian systems can foster health and improve performance: A systematic review. *BMJ Open Sport Exerc. Med* (2018) 4:443. doi: 10.1136/bmjsem-2018-000443

Roenneberg T. (2023). How can social jetlag affect health? *Nat. Rev. Endocrinol.* 19 (7), 383–384. [10.1038/s41574-023-00851-2](https://doi.org/10.1038/s41574-023-00851-2)

Rutters, Femke et al. "Is social jetlag associated with an adverse endocrine, behavioral, and cardiovascular risk profile?" *Journal of biological rhythms* vol. 29,5 (2014): 377–83. <https://pubmed.ncbi.nlm.nih.gov/25252710/>

Youngstedt SD, Kline CE, Elliott JA, Zielinski MR, Devlin TM, Moore TA. Circadian phase-shifting effects of bright light, exercise, and bright light + exercise. *J Circadian Rhythms* (2016) 14:1–8. doi: 10.5334/jcr.137

Roenneberg T. (2015). What on Earth Is Chronotype?. *Journal of biological rhythms*, 30(6), 487–491 <http://journals.sagepub.com/doi/10.1177/0748730415603835>

