Evidence Hunter

ACTIVITY PACK
The Evidence Hunter activities are designed to give young people the opportunity to explore claims they encounter – online, in the news, in advertising, or among their friends – using evidence to evaluate them.
Included in this guide

- Instructions on how to run the Evidence Hunter activities.
- Discussion points and questions to help participants understand how, why and when to ask for evidence, and to encourage them to think critically about claims they see in day-to-day life.
- Five examples of claims from five different sources (an advertisement, a newspaper headline, a celebrity endorsement, a scientific study and a scientific review) and a set of evidence items that may or may not support them. These will form the basis of the Evidence Hunting activity.
- You will need to provide: a print-out of the resource pack (claims, sources and items cut out), tokens of two different colours (for example Post-it notes) and a stack of newspapers or magazines.

Definitions

Claim

A statement that suggests something is true

Evidence

The available information indicating whether or not a claim is true
The Claims

In the attached resource pack there are five claims from five different sources. These will be explored during the Evidence Hunting activities. Here's a guide to each claim:

1. ‘Caffeine reduces premature hair loss’
   Source: Alpecin Shampoo advertisement
   The company uses this claim to sell its product.

2. ‘Using social media affects your sleep’
   Source: a headline in the Metro, a free newspaper
   The newspaper is reporting a scientific study.

3. ‘Charcoal toothpaste whitens your teeth’
   Source: Nicole Scherzinger, a celebrity
   This is an endorsement based on personal experience.

4. ‘Eating dark chocolate reduces stress’
   Source: ScienceDaily, a science news site
   This claim comes from a single piece of research.

5. ‘Being kind to others makes you happier’
   Source: University of Oxford
   This claim is concluded from several research results.
• Claims should be printed and stuck up to create five stations within the activity area. Do not include the sources at this stage.

• Give participants a set of 10 tokens each – these are their ‘trust tokens’.

• After moving around the room and considering each claim, participants must allocate their trust tokens to the claims they think are most likely to be true. For example, out of 10 tokens they might place 7 under the claim they believe the most and 3 under another claim they think could also be true. They may put all tokens under one claim, or allocate them evenly across all five of the claims.
• Now pin up the source next to each claim. Give each participant 10 more tokens of a different colour. Ask them to think about how much they trust each source. They will then repeat the first exercise. Now they know who made the claim, their allocations may change.

Discussion

Look at the results - why did participants trust one claim more than another?

For example, you might find that they are more likely to trust claims that they can relate to or have experienced themselves.

Discussion

Is there a big difference between the results of the two exercises?

Why do they trust one source more than another?

Did participants think about whether there might be evidence for the claims?

What do they consider to be 'evidence'?
• Divide into groups. Each group is given a set of printed website excerpts. These are in the style of web browser windows.

• Having just discussed the definition and concept of evidence, groups will read through these excerpts and identify those that they think represent the strongest evidence.

• Each excerpt can be one of the following types:

  **TYPE ONE**  
  Something that sounds ‘sciencey’ but isn’t actually evidence

  **TYPE TWO**  
  One person’s experience

  **TYPE THREE**  
  One scientific study

  **TYPE FOUR**  
  Multiple news stories about one scientific study

  **TYPE FIVE**  
  Multiple scientific studies compiled and analysed
• The participants will then go around the room pinning their evidence choices under the claim that they think it supports.

Discussion

Why did the groups pick these examples as the strongest evidence?

Can they describe the different types of evidence they’re looking at?

What are the limitations of each type of evidence?

The accompanying evidence guide (p10-14) will help you lead a discussion about this.

Has the evidence changed their minds about which claims they believe?

No matter the claim or source, we must always look for the evidence.
Evidence Guide

WHAT DOES ‘GOOD EVIDENCE’ LOOK LIKE?

Use this guide to help lead the group in a discussion about types of evidence.

Type 1: Something that sounds ‘sciencey’ but isn’t actually evidence

Terms like ‘free radicals’ and ‘detox’ can make people say “that sounds complicated - it must be based on science!”, but this is often not the case and can mask a lack of real scientific evidence.

Did you know?

Researchers carry out experiments, collect and examine results, and compare these with the results of other experiments to work out how things work or how well they work. They will write a paper to describe what they did and submit it to an academic journal where it can be reviewed and published, so that other researchers can do the same.
Type 2: One person’s experience

Journalists often use anecdotes or personal stories to make their articles seem more relevant to people’s lives. They are usually presented as case studies of individuals’ experiences, which may not include any facts or figures.

While research may well confirm the experience, we still have to do that research. What we observe and experience individually helps us decide what research to do, but shouldn’t be used in its place.

It’s important to ask questions - while you might hear one person saying “it worked!”, what about the cases where it didn’t work?

Did you know?

**Vested interests** can distort research in different ways, from directly biasing an experiment towards a particular outcome, to subtly influencing which result the research report emphasises. So it’s important to find out who funded what you’re looking at and ask whether it might have had an influence or not. In scientific journals, academics should always disclose their ‘interests’. Equally, celebrity endorsements and testimonies should be questioned if it appears that they are trying to influence the reader to buy a particular product and ask whether the result aligns with their interest.
Type 3: One scientific study

A well-designed and carefully carried-out experimental study can provide strong evidence. However, if it stands alone as the basis for a claim it’s important to ask questions of its quality:

- How large was the study?
- Did they include appropriate controls?
- What was the question that the researchers wanted to answer?
- Was it published in a respected, peer-reviewed journal?
- Who produced the research - was it done independently?

Did you know?

**Peer review** is the process by which the scientific community gives feedback on the quality of new research before it can be published. It is the academic publishing standard for knowing whether scientific results are valid, significant and original, and checks that the researchers’ assertions are supported by the results of the study.

Many of the claims we see online may not have come from research published in a peer reviewed journal, so always ask: has this been peer reviewed? If not, why not?
Sometimes if a piece of research hits the headlines its results can be misunderstood by reporters and the actual findings can be overlooked or exaggerated. On top of this, when the public sees the same single study reported in several newspapers, its reliability can be exaggerated - the ‘if everyone is saying it, it must be true’ effect.

If reading about scientific findings in a newspaper or online news site, it’s important to find and check the original published paper. We should then ask the same questions we would ask of any scientific study.

Did you know?
The ‘illusory truth effect’ is a psychological phenomenon whereby the more times we hear something, the more accurate we think it is. The human brain finds it easier to process phrases and ideas that are familiar, meaning that we trust claims more readily if they are repeated over time or across several sources.

Read more:
Type 5: Multiple scientific studies compiled and analysed

The strongest kinds of evidence are systematic reviews and meta-analyses. These filter and analyse results from only the highest quality studies in order to scientifically test a claim.

Did you know?

**Systematic reviews** collect and analyse all of the relevant and available data to assess the strength of the current evidence. They follow detailed quality control guidelines to weed out poor quality studies. Similarly, a **meta-analysis** is a statistical method which pools together data from different studies on the same subject to get the most complete possible picture of the existing evidence.
• Hand out magazines, newspapers, or browse websites that give examples of the kind of places we might encounter claims in day-to-day life.
• Get participants to search through and identify claims where they might want to ‘Ask for Evidence’.
• Ask them to think about where they might go to find out if there is evidence behind the claim.

Discussion

Where can we go to search for the evidence behind a claim?

*Participants might regularly use Wikipedia - this can be a useful resource, but it’s important to check that information is cited.*

*Google is also a useful tool, but ask questions of the results.*

*Remember to check the source - don’t just trust the headlines.*

*Find out if claims are correctly reported from a peer-reviewed paper.*
This is an optional take-home activity for those participants who would like to become Evidence Hunters and demonstrate their new skills.

Ask participants to spend the next week looking out for claims for which they would like to ‘Ask for Evidence’ - two or three if possible.

Get them to research whether there is evidence behind these claims, and write down whether they think the claims are valid, based on this evidence. They must be able to present this reasoning to their activity leader at a following session to demonstrate their new Evidence Hunter skills.
Further Information

Ask for Evidence: working out what’s reliable evidence

[www.askforevidence.org/help/evidence](http://www.askforevidence.org/help/evidence)

This collection helps answer common questions about evidence and how to identify the most reliable information.

Ask for Evidence: help by subject

[www.askforevidence.org/help/categories](http://www.askforevidence.org/help/categories)

A range of resources, organised by subject, from Sense about Science and other organisations to help make sense of the claims you might encounter online.

I don’t know what to believe


This booklet explains how scientists present and judge research using the peer review process, and how the public can make sense of science stories.

I’ve got nothing to lose by trying it


Every day there are news reports about medical breakthroughs and wonder drugs. This guide explores how the public can ask for evidence to help weigh up claims and make decisions about healthcare.

Making sense of statistics


This guide isn’t a lesson in statistics, but a source of questions you can ask and pitfalls to avoid. Knowing something about statistics can help us test and debunk claims and get closer to working out what the figures might be telling us.
Claim

A statement that suggests something is true

Evidence

The available information indicating whether or not a claim is true
Eating dark chocolate reduces stress.
Using social media affects your sleep
Being kind to others makes you happier.

THE CLAIM
Charcoal toothpaste whitens your teeth.
Nicole Scherzinger (singer and TV celebrity)
Caffeine reduces premature hair loss.
Resource Pack References

Type 1: Something that sound ‘sciencey’ but isn’t actually evidence

4. www.dailymail.co.uk/health/article-4944290/Trendy-charcoal-toothpaste-WON-T-make-teeth-white.html

Type 2: One person’s experience

8. www.instagram.com/p/BZjjkSbgty0/?hl=en&taken-by=maya.la.mode

Type 3: One scientific study

11. www.nature.com/articles/ncomms15964
Type 4: Multiple news stories about one scientific study

Chocolate headlines

www.mirror.co.uk/science/chocoholics-rejoice-eating-dark-chocolate-12423565

www.independent.co.uk/life-style/chocolate-reduce-stress-inflammation-cacao-research-a8328651.html

www.dailymail.co.uk/health/article-1227313/How-bar-dark-chocolate-day-cut-stress-levels.html

Sleep and social media headlines

www.metro.co.uk/2018/01/25/just-one-hour-of-social-media-a-day-can-ruin-your-sleep-7257718/

www.dailymail.co.uk/health/article-5304209/Just-ONE-HOUR-social-media-ruins-sleep.html

www.standard.co.uk/news/world/using-social-media-for-just-one-hour-a-day-is-enough-to-disrupt-your-sleeping-pattern-a3749121.html

Type 5: Multiple scientific studies compiled and analysed

www.ox.ac.uk/news/2016-10-05-being-kind-others-does-make-you-happy-concludes-large-scale-review-evidence

www.ncbi.nlm.nih.gov/pmc/articles/PMC5380441/
The Sleep Doctor Guide for Social Media/Sleep Balance:

• Charge your mobile devices out of the bedroom (this way you can’t hear it buzz in the middle of the night).
• Stop social media use at least an hour before bedtime (this can be a tough one, try 30 minutes at first, then make it a little longer).
• Replace this time with light reading (not on an electronic device), simple stretches, meditation or deep breathing.
• Don’t check Social Media in the middle of the night when you may wake to use the restroom or just get more comfortable.

Sweet Dreams,
Michael J. Breus, PhD
The Sleep Doctor™
www.thesleepdoctor.com
For updates follow me @thesleepdoctor

FOCUSING ON THE BRAIN

Within the confines of the brain, you’ll find that chemical releases are found. Chemical releases such as serotonin can promote mood elevation.

Well, when someone gives, out of the goodness of their heart, something as simple as a helping hand the brain reacts in a positive manner.

Dopamine rushes through the body, and the brain signals a certain type of “high” or elation as a result.
The Sleep Doctor Guide for Social Media/Sleep Balance:
• Charge your mobile devices out of the bedroom (this way you can't hear it buzz in the middle of the night).
• Stop social media use at least an hour before bedtime (this can be a tough one, try 30 minutes at first, then make it a little longer).
• Replace this time with light reading (not on an electronic device), simple stretches, meditation or deep breathing.
• Don’t check Social Media in the middle of the night when you may wake to use the restroom or just get more comfortable.

Sweet Dreams,
Michael J. Breus, PhD
The Sleep Doctor™
www.thesleepdoctor.com
For updates follow me @thesleepdoctor

FOCUSING ON THE BRAIN
Within the confines of the brain, you’ll find that chemical releases are found. Chemical releases such as serotonin can promote mood elevation.

Well, when someone gives, out of the goodness of their heart, something as simple as a helping hand the brain reacts in a positive manner. Dopamine rushes through the body, and the brain signals a certain type of “high” or elation as a result.

Kindness makes you happier and here is why.

In 80% of all cases it is androgenetic alopecia that presents a problem to men. Hereditary hair loss is inherited dominantly and is not a disease but a disposition. As such, hereditary hair loss cannot be cured and, instead, it must be continuously prevented. Since this is a cosmetic problem, a cosmetic solution should be sought. The use of pharmaceuticals that involve the risk of undesirable side effects is not advisable.

WHAT CAUSES HEREDITARY HAIR LOSS?
The testosterone surplus, which begins during puberty, makes beard hair grow on the one hand but also weakens predisposed hair roots in the scalp. These hair roots react hypersensitively to testosterone (DHT). It cuts the energy supply, thereby weakening the hair roots. Their growth phases are shortened and their lifetime ends prematurely.

Hair loss is the no.1 issue among men
50% of men are affected by hair loss!

In 80% of all cases it is androgenetic alopecia that presents a problem to men. Hereditary hair loss is inherited dominantly and is not a disease but a disposition. As such, hereditary hair loss cannot be cured and, instead, it must be continuously prevented. Since this is a cosmetic problem, a cosmetic solution should be sought. The use of pharmaceuticals that involve the risk of undesirable side effects is not advisable.

WHAT CAUSES HEREDITARY HAIR LOSS?
The testosterone surplus, which begins during puberty, makes beard hair grow on the one hand but also weakens predisposed hair roots in the scalp. These hair roots react hypersensitively to testosterone (DHT). It cuts the energy supply, thereby weakening the hair roots. Their growth phases are shortened and their lifetime ends prematurely.

Normal, the hair root is active for up to eight years (growth phase), followed by a resting phase. The hair root then releases the hair and it falls out without the threat of hair loss. Subsequently, the hair root starts another growth phase and does so about 14 times before dying.

With the corresponding genetic predisposition, testosterone (DHT) prevents the generation of c-AMP, a messenger compound for energy, which is required for the hair roots’ metabolism. This shortens their growth phases and the hair roots’ lifetime ends prematurely. If more and more hair roots die this way, male baldness will be the result.
This trend involves brushing teeth using an activated charcoal – the product comes as in capsule form or as a powder – mixed with water to create a paste which is then applied to a brush and used to scrub teeth.

It’s believed charcoal can absorb tannins – these are the compounds found in coffee, tea and wine that stain your teeth.

And it’s also claimed the gritty black stuff has the power to eliminate toxic bacteria which cause bad breath.

While many claim the product has miracle whitening properties, Sydney-based cosmetic dentist Dr Luke Cronin warned against embracing the trend because there’s limited evidence to support if it’s any good for you, or your teeth.

‘It’s unclear if activated charcoal is safe as there are concerns that it may be too abrasive to use on your teeth and gums,’ he said in August.
This trend involves brushing teeth using an activated charcoal – the product comes as in capsule form or as a powder – mixed with water to create a paste which is then applied to a brush and used to scrub teeth.

It's believed charcoal can absorb tannins – these are the compounds found in coffee, tea and wine that stain your teeth. And it's also claimed the gritty black stuff has the power to eliminate toxic bacteria which cause bad breath.

While many claim the product has miracle whitening properties, Sydney-based cosmetic dentist Dr Luke Cronin warned against embracing the trend because there's limited evidence to support if it's any good for you, or your teeth.

'It's unclear if activated charcoal is safe as there are concerns that it may be too abrasive to use on your teeth and gums,' he said in August.

The Science Behind The Trend

In the last week Donna Fairall has left a coffee voucher on a stranger’s car, ordered a Christmas hamper for a needy family and offered to babysit for friends with a newborn baby.

Donna says she enjoys being kind to other people, friends and strangers whenever she can. "It makes me feel valued as a person, humbled, maybe a little less selfish" says the creative arts director from Coffs Harbour.

Nice one: being kind makes you happier, healthier and more attractive

Nicole Scherzinger shares her secret behind her perfectly white smile.

The X Factor judge said she brushes her teeth with a powdered form of the substance, which is said to remove toxins and stains and kill bacteria.

Revealing her unusual beauty regime, the 38 year old singer told the Mail: ‘I’d much rather brush my teeth with coal. Makes your teeth whiter.’

Although she refers to the whitener as coal the ingredient used in a variety of products on the market is activated charcoal.
Blake Lively has a very relatable addiction

“I can’t start the day without a hot chocolate, or finish it without a few squares of dark chocolate,” she told Marie Claire in 2014. “It’s good for my mood!”

Just tried the @activatedcoco charcoal powder and I’m OBSESSED. My teeth looked whiter even after the first use! This stuff is 100% natural, organic, cruelty free, and made with medical grade activated charcoal. What’s not to love? Click the link in my bio to get your charcoal powder and enjoy free expedited shipping. Use promo code MAYA at checkout for an additional 15% off! Video of the process coming soon—stay tuned!
Dark chocolate consumption reduces stress and inflammation

New research shows there might be health benefits to eating certain types of dark chocolate. Findings show that consuming dark chocolate that has a high concentration of cacao has positive effects on stress levels, inflammation, mood, memory and immunity.

While it is well known that cacao is a major source of flavonoids, this is the first time the effect has been studied in human subjects to determine how it can support cognitive, endocrine and cardiovascular health.

Use of social media is associated with short sleep duration in a dose-response manner in students aged 11 to 20 years

AIM

This study examined the association between social media and sleep duration among Canadian students aged 11–20.

METHODS

Data from 5,242 students were obtained from the 2015 Ontario Student Drug Use and Health Survey, a province-wide, school-based survey that has been conducted every two years since 1977. We measured the respondents’ sleep duration against the recommended ranges of 9–11 h per night at 11–13 years of age, 8–10 h at 14–17 and 7–9 h per night for those aged 18 years or more.

RESULTS

Overall, 36.4% of students met or exceeded the recommended sleep duration and 63.6% slept less than recommended, with 73.4% of students reporting that they used social media for at least one hour per day. After adjusting for various covariates, the use of social media was associated with greater odds of short sleep duration in a dose-response manner (p for linear trend <0.001). Odds ratios ranged from 1.82 for social media use of at least one hour per day to 2.98 for at least five hours per day.

CONCLUSION

Greater use of social media was associated with shorter sleep duration in a dose-response fashion among Canadian students aged 11–20.
ABSTRACT
Generous behaviour is known to increase happiness, which could thereby motivate generosity. In this study, we use functional magnetic resonance imaging and a public pledge for future generosity to investigate the brain mechanisms that link generous behaviour with increases in happiness. Participants promised to spend money over the next 4 weeks either on others (experimental group) or on themselves (control group). Here, we report that, compared to controls, participants in the experimental group make more generous choices in an independent decision-making task and show stronger increases in self-reported happiness. Generous decisions engage the temporo-parietal junction (TPJ) in the experimental more than in the control group and differentially modulate the connectivity between TPJ and ventral striatum. Importantly, striatal activity during generous decisions is directly related to changes in happiness. These results demonstrate that top–down control of striatal activity plays a fundamental role in linking commitment-induced generosity with happiness.

BACKGROUND
Cocoa polyphenols have been shown to reduce stress in highly stressed, as well as normal healthy individuals, we wondered whether commercially available chocolate could reduce perceived stress in medical students or not, so we decided to conduct this study.

RESULTS
Mean stress scores compared between the groups by ANOVA revealed statistically not significant differences before (F = 0.505; P = 0.606) and after chocolate consumption (F = 0.188; P = 0.829). Paired t-test compared stress scores means before and after chocolate supplementation within the same group and exhibited statistically significant decrease in DC (t = 2.341; p value = 0.03) and MC (t = 3.302; p value = 0.004) groups. Mean stress scores decreased, on average, by approximately 2 and 3 points in DC and MC groups, respectively, at 95% Confidence Interval. The difference was more evident and statistically significant in female students as compared to the males.

CONCLUSION
Consumption of 40 g of Dark and Milk chocolate daily during a period of 2 weeks appear to be an effective way to reduce perceived stress in females.
ABSTRACT

Generous behaviour is known to increase happiness, which could thereby motivate generosity. In this study, we use functional magnetic resonance imaging and a public pledge for future generosity to investigate the brain mechanisms that link generous behaviour with increases in happiness. Participants promised to spend money over the next 4 weeks either on others (experimental group) or on themselves (control group). Here, we report that, compared to controls, participants in the experimental group make more generous choices in an independent decision-making task and show stronger increases in self-reported happiness. Generous decisions engage the temporo-parietal junction (TPJ) in the experimental more than in the control group and differentially modulate the connectivity between TPJ and ventral striatum. Importantly, striatal activity during generous decisions is directly related to changes in happiness. These results demonstrate that top–down control of striatal activity plays a fundamental role in linking commitment-induced generosity with happiness.

BACKGROUND

Cocoa polyphenols have been shown to reduce stress in highly stressed, as well as normal healthy individuals, we wondered whether commercially available chocolate could reduce perceived stress in medical students or not, so we decided to conduct this study.

RESULTS

Mean stress scores compared between the groups by ANOVA revealed statistically not significant differences before (F = 0.505; P = 0.606) and after chocolate consumption (F = 0.188; P = 0.829). Paired 't' test compared stress scores means before and after chocolate supplementation within the same group and exhibited statistically significant decrease in DC (t = 2.341; p value = 0.03) and MC (t = 3.302; p value = 0.004) groups. Mean stress scores decreased, on average, by approximately 2 and 3 points in DC and MC groups, respectively, at 95% Confidence Interval. The difference was more evident and statistically significant in female students as compared to the males.

CONCLUSION

Consumption of 40 g of Dark and Milk chocolate daily during a period of 2 weeks appear to be an effective way to reduce perceived stress in females.

Social media usage is widespread among young adults.

A user study was conducted to investigate whether usage of social media before bed time would result in sleep disturbance and diminished sleep quality.

Ten participants were asked to not use social media before bed (baseline) for one week and use several popular applications for three weeks.

While the effects were not statistically significant, social media usage before sleep might still negatively affect sleep quality.

Effectiveness of a caffeine-containing liquid against premature hereditary hair loss in men

CONDUCTED AT THE CENTER FOR COSMETIC RESEARCH OF CATHOLIC UNIVERSITY OF THE SACRED HEART IN ROME

About half of all men at the age of 50 suffer from hereditary hair loss. Due to the genetic predisposition, this number can even increase in the future. Therefore, great efforts are made in order to achieve effective prevention against premature hair loss. Caffeine is a particularly interesting substance, since its performance-enhancing impact is already known.

From ex-vivo tests, we already know that caffeine can achieve growth effects in the hair root. However, the exact mechanism is as yet unknown. The known effect of caffeine in the energy metabolism may be a key in the effectiveness against premature hair loss.

As a result, it was the objective of this study to confirm the clinical significance of caffeine in a caffeine-containing liquid in the application for hereditary hair loss.
Being kind to others does make you happy, concludes large-scale review of evidence

Researchers conclude that being kind to others causes a small but significant improvement in subjective well-being. The review found that the effect is lower than some pop-psychology articles have claimed, but also concluded that future research might help identify which kind acts are most effective at boosting happiness.

The claim that ‘helping makes you happy’ has become a staple of pop psychology and self-help manuals. Performing ‘random acts of kindness’ has been touted as a sure-fire way of boosting your mood — doing good makes you feel good, as well as benefiting others. But do these claims stack up, or are they ‘too good to be true’?

In order to find out, a team from the universities of Oxford and Bournemouth carried out a systematic review of the scientific literature. They analysed over 400 published papers that had investigated the relationship between kindness and happiness, and identified 21 studies that had explicitly put the claim to the test – that being kind to others makes us happier. They then conducted a ‘meta-analysis’, which statistically combines the results of these previous studies.

Association Between Portable Screen-Based Media Device Use and Sleep Outcomes: A Systematic Review and Meta-analysis

OBJECTIVE
To conduct a systematic review and meta-analysis to examine whether there is an association between portable screen-based media device (eg, cell phones and tablet devices) access or use in the sleep environment and sleep outcomes.

DATA EXTRACTION AND SYNTHESIS
Of 467 studies identified, 20 cross-sectional studies were assessed for methodological quality. These studies involved 125,198 children. Two reviewers independently extracted data.

CONCLUSIONS AND RELEVANCE
To date, this study is the first systematic review and meta-analysis of the association of access to and the use of media devices with sleep outcomes. Bedtime access to and use of a media device were significantly associated with the following: inadequate sleep quantity, poor sleep quality, and excessive daytime sleepiness. An integrated approach among teachers, health care professionals, and parents is required to minimize device access at bedtime, and future research is needed to evaluate the influence of the devices on sleep hygiene and outcomes.