A Manuscript Microscope 'Sentence Audit' of:

Non-REM sleep in major depressive disorder

What is the Manuscript Microscope Sentence Audit?

The Manuscript Microscope Sentence Audit is a research paper introspection system that parses the text of your manuscript into minimal sentence components for faster, more accurate, enhanced proofreading.

Why use a Sentence Audit to proofread your manuscript?

- Accelerated Proofreading: Examine long technical texts in a fraction of the usual time.
- Superior Proofreading: Detect subtle errors that are invisible to traditional methods.
- Focused Proofreading: Inspect each individual sentence component in isolation.
- Reliable Proofreading: Ensure every single word of your manuscript is correct.
- Easier Proofreading: Take the hardship out of crafting academic papers.

Bonus 1: Improved Productivity: Rapidly refine rough drafts to polished papers.
Bonus 2: Improved Authorship: Cultivate a clear, concise, consistent, writing style.
Bonus 3: Improved Reputation: Become known for rigorously precise publications.

Manuscript Source: https://www.biorxiv.org/content/10.1101/2021.03.19.436132v1

Manuscript Authors: Leonore Bovy, Frederik D. Weber, Indira Tendolkar, Guillén Fernández, Michael Czisch, Axel Steiger, Marcel Zeising & Martin Dresler

Audit Date: 31/03/21 **Audit Identifier:** S6DT1N9Y6214861 **Code Version:** 3.6

Features of the Sentence Audit:

The Sentence Audit combines two complementary proofreading approaches:

1. Each sentence of your text is parsed and displayed in isolation for focused inspection.
2. Each individual sentence is further parsed into Minimal Sentence Components for a deeper review of the clarity, composition and consistency of the language you used.

The Minimal Sentence Components shown are the smallest coherent elements of each sentence of your text as derived from it's conjunctions, prepositions and selected punctuation symbols (i.e. commas, semicolons, round and square brackets).

The combined approaches ensure easier, faster, more effective proofreading.

Comments and Caveats:

• The sentence parsing is achieved using a prototype natural language processing pipeline written in Python and may include occasional errors in sentence segmentation.

• Depending on the source of the input text, the Sentence Audit may contain occasional html artefacts that are parsed as sentences (E.g. "Download figure. Open in new tab").

• Always consult the original research paper as the true reference source for the text.

Contact Information:

To get a Manuscript Microscope Sentence Audit of any other research paper, simply forward any copy of the text to John.James@OxfordResearchServices.com.

All queries, feedback or suggestions are also very welcome.

Research Paper Sections:

The sections of the research paper input text parsed in this audit.

Section No.	Headings	Sentences
Section: 1	Abstract	21
Section: 2	Introduction	6
N/A	--- --- --- --- --- --- ---	0
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The Sentence Audit Of The Research Paper

Title # Non-REM sleep in major depressive disorder

S1 [001] Abstract

S1 [002] Disturbed sleep is a key symptom in major depressive disorder (MDD).

Disturbed sleep is a key symptom ...
... in major depressive disorder ...
... (MDD).

S1 [003] REM sleep alterations are well described in the current fliterature, but little is known about non-REM sleep alterations.

REM sleep alterations are well described ...
... in the current fliterature, ...
... but little is known ...
... about non-REM sleep alterations.

S1 [004] Additionally, sleep disturbances relate to a variety of cognitive symptoms in MDD, but which features of non-REM sleep EEG contribute to this, remains unknown.

Additionally, ...
... sleep disturbances relate ...
... to a variety ...
... of cognitive symptoms ...
... in MDD, ...
... but ...
... which features ...
... of non-REM sleep EEG contribute ...
... to this, ...
... remains unknown.

S1 [005] We comprehensively analyzed non-REM sleep EEG features in three independently collected datasets (N=284).

We comprehensively analyzed non-REM sleep EEG features ...
... in three independently collected datasets ...
... (N=284).

S1 [006] These included MDD patients with a broad age range, varying duration and severity of depression, unmedicated or medicated, age- and gender-matched to healthy controls.

These included MDD patients ...
... with a broad age range, ...
... varying duration ...
... and severity ...
... of depression, ...
... unmedicated ...
... or medicated, ...

... age- ...
... and gender-matched ...
... to healthy controls.

S1 [007] We explored changes in sleep architecture including sleep stages and cycles, spectral power, sleep spindles, slow waves (SW), and SW-spindle coupling.

We explored changes ...
... in sleep architecture including sleep stages ...
... and cycles, ...
... spectral power, ...
... sleep spindles, ...
... slow waves ...
... (SW), ...
... and SW-spindle coupling.

S1 [008] Next, we analyzed the association of these sleep features with acute measures of depression severity and overnight consolidation of procedural memory.

Next, ...
... we analyzed the association ...
... of these sleep features ...
... with acute measures ...
... of depression severity ...
... and overnight consolidation ...
... of procedural memory.

S1 [009] Overall, no major systematic alterations in non-REM sleep architecture were found in patients compared to controls.

Overall, ...
... no major systematic alterations ...
... in non-REM sleep architecture were found ...
... in patients compared ...
... to controls.

S1 [010] For the microstructure of non-REM sleep, we observed a higher spindle amplitude in unmedicated patients compared to controls, and after the start of antidepressant medication longer SWs with lower amplitude and a more dispersed SW-spindle coupling.

For the microstructure ...
... of non-REM sleep, ...
... we observed a higher spindle amplitude ...
... in unmedicated patients compared ...
... to controls, ...
... and after the start ...
... of antidepressant medication longer SWs ...
... with lower amplitude ...
... and a more dispersed SW-spindle coupling.

S1 [011] In addition, long-term, but not short-term medication seemed to lower spindle density.

In addition, ...
... long-term, ...

... but not short-term medication seemed ...

... to lower spindle density.

S1 [012] Overnight procedural memory consolidation was impaired in medicated patients and associated with lower sleep spindle density.

Overnight procedural memory consolidation was impaired ...

... in medicated patients ...

... and associated ...

... with lower sleep spindle density.

S1 [013] Our results suggest that alterations in non-REM sleep EEG might be more subtle than previously reported.

Our results suggest ...

... that alterations ...

... in non-REM sleep EEG ...

... might be more subtle ...

... than previously reported.

S1 [014] We discuss these findings in the context of antidepressant medication intake and age.

We discuss these findings ...

... in the context ...

... of antidepressant medication intake ...

... and age.

S1 [015] Statement of Significance Depression affects large and diverse populations worldwide, including their sleep.

Statement ...

... of Significance Depression affects large ...

... and diverse populations worldwide, ...

... including their sleep.

S1 [016] Most sleep is non-REM sleep, which is vital to cognitive function, including memory.

Most sleep is non-REM sleep, ...

... which is vital ...

... to cognitive function, ...

... including memory.

S1 [017] How non-REM is affected during a depression or medical treatment remains poorly investigated.

How non-REM is affected ...

... during a depression ...

... or medical treatment remains poorly investigated.

S1 [018] We classified non-REM sleep of depressive patients against healthy controls in unprecedented analysis detail and confidence using the largest dataset published so far while also test sleep alterations associations with impaired memory.

We classified non-REM sleep ...

... of depressive patients ...
... against healthy controls ...
... in unprecedented analysis detail ...
... and confidence ...
... using the largest dataset published ...
... so far ...
... while also test sleep alterations associations ...
... with impaired memory.

S1 [019] Surprisingly, severe depression alone did not alter sleep.

Surprisingly, ...
... severe depression alone did not alter sleep.

S1 [020] We observed severe non-REM sleep alterations only worsening under patient medication, which ultimately coincided with 24-hour memory impairments.

We observed severe non-REM sleep alterations ...
... only worsening ...
... under patient medication, ...
... which ultimately coincided ...
... with 24-hour memory impairments.

S1 [021] Though causal influences of medication on sleep in depressive patients remains to be investigated, this cautions common clinical practice in long-term treatment with antidepressants.

Though causal influences ...
... of medication ...
... on sleep ...
... in depressive patients remains ...
... to be investigated, ...
... this cautions common clinical practice ...
... in long-term treatment ...
... with antidepressants.

S2 [022] Introduction

S2 [023] Major depressive disorder (MDD) is a common psychiatric disorder and a serious public health problem (World Health Organization, 2017).

Major depressive disorder ...
... (MDD) ...
... is a common psychiatric disorder ...
... and a serious public health problem ...
... (World Health Organization, 2017).

S2 [024] MDD patients suffer from several physical symptoms, including subjective sleep complaints such as sleeplessness (i.e. insomnia; [1].

End of Sample Audit

This is a truncated Manuscript Microscope Sample Audit.

To get the full audit of this text (or any other research paper),
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John.James@OxfordResearchServices.com
