

Under the skin

Early-life stress exposure and the co-occurrence of mental and physical health problems

Table of contents

PREFACE	4
Aknowledgements	5
INTRODUCTION	6
References	6
I PART 1: The role of ELS in the development of mental and physical health	7
1 ELS and adolescent psycho-physical health	8
Abstract	8
1.1 Introduction	9
1.2 Methods	9
1.3 Discussion	9
References	9
2 Lifestyle factors, ELS and adolescent psycho-physical health	10
Abstract	10
2.1 Introduction	10
2.2 Methods	10
2.3 Discussion	10
References	10
3 ELS and intracortical myelination	11
Abstract	11
3.1 Introduction	11
3.2 Methods	11
3.3 Discussion	11
References	11
4 ELS and cardiac morphology	12
Abstract	12
4.1 Introduction	12
4.2 Methods	12
4.3 Discussion	12
References	12

II	PART 2: Reciprocal relationships between mental and physical health problems	13
5	Longitudinal psycho-physical co-development	14
	Abstract	14
	5.1 Introduction	14
	5.2 Methods	14
	5.3 Discussion	14
	References	14
	DISCUSSION	15
	References	15

PREFACE

“In the depth of winter, I found there was, within me, an invincible summer.” Albert Camus
– Summer (1954)

AUTHOR

Serena Defina

PROMOTOR

Henning Tiemier

CO-PROMOTORS

Charlotte A.M. Cecil
Janine F. Felix

Note

This is a work in progress. Stay tuned :)

Aknowledgements

TODO

INTRODUCTION

Dear reader,

oh my good why does this not update

This an that (Fraser et al., 2013; R Core Team, 2021)

See Chapter [1](#) for additional discussion.

References

Part I

PART 1: The role of ELS in the development of mental and physical health

1 ELS and adolescent psycho-physical health

Adapted from:

Differential effects of pre- and postnatal early-life stress on internalizing, adiposity and their comorbidity

Defina, S., Woofenden, T., Baltramonaityte, V., Pariante, C. M., Lekadir, K., Jaddoe, V. W., Serdarevic, F., Tiemeier, H., Walton, E., Felix, J. F., & Cecil, C. A. M., *on behalf of the EarlyCause Consortium*. (2023). JAACAP*. [DOI](#)

Abstract

Objective: Depression and obesity are two highly prevalent and often comorbid conditions. Exposure to early-life stress (ELS) has been associated with both depression and obesity in adulthood, as well as their preclinical manifestations during development. However, it remains unclear whether: *(i)* associations differ depending on the timing of stress exposure (prenatal vs postnatal) and *(ii)* ELS is a shared risk factor underlying the comorbidity between the two conditions.

Method: Leveraging data from two large population-based birth cohorts (ALSPAC: n=8428 (52% male participants); Generation R: n=4268 (48% male participants)), we constructed comprehensive cumulative measures of prenatal (in utero) and postnatal (from birth to 10 years) ELS. At age 13.5 years we assessed: a) internalizing symptoms (using maternal reports); b) fat mass percentage (using dual-energy X-ray absorptiometry); c) their comorbidity, defined as the co-occurrence of high internalizing and high adiposity.

Results: Both prenatal (*total effect* [95%CI] = 0.20 [0.16; 0.22]) and postnatal stress (β [95%CI] = 0.22 [0.17; 0.25]) were associated with higher internalizing symptoms, with evidence of a more prominent role of postnatal stress. A weaker association (primarily driven by prenatal stress) was observed between stress and adiposity (prenatal: 0.07 [0.05; 0.09]; postnatal: 0.04 [0.01; 0.07]). Both pre- (OR [95%CI] = 1.70 [1.47; 1.97]) and postnatal stress (1.87 [1.61; 2.17]) were associated with an increased risk of developing comorbidity.

Conclusion: We found evidence of *(i)* timing and *(ii)* shared causal effects of ELS on psycho-cardiometabolic health in adolescence, but future research is warranted to clarify how these associations may unfold over time.

1.1 Introduction

In summary, this book has no content whatsoever (Boyd et al., 2012; Fraser et al., 2013). But I shall write it anyway cause. Cause I kind of do have no choice so, checking justification works

1.2 Methods

1.3 Discussion

References

2 Lifestyle factors, ELS and adolescent psycho-physical health

Adapted from:

The role of lifestyle factors in the association between early-life stress and adolescent psycho-physical health: Moderation analysis in two European birth cohorts

Defina, S., Woofenden, T., Baltramonaityte, V., Tiemeier, H., Fairchild, G., Felix, J. F., Cecil, C.A.M., & Walton, E. (2024). *Preventive Medicine*. [DOI](#)

Abstact

2.1 Introduction

In summary, this book has no content whatsoever (Boyd et al., 2012; Fraser et al., 2013). But I shall write it anyway cause. Cause I kind of do have no choice so, checking justification works

2.2 Methods

2.3 Discussion

References

3 ELS and intracortical myelination

Adapted from:

Early-life stress exposure and intracortical myelination in childhood: a population-based neuroimaging study

Defina, S., Manzoni, D., Tiemeier, H., Brouwer, R.M., Cecil, C.A.M., & Muetzel R.L. (*in preparation*)

Abstact

3.1 Introduction

In summary, this book has no content whatsoever (Boyd et al., 2012; Fraser et al., 2013). But I shall write it anyway cause. Cause I kind of do have no choice so, checking justification works

3.2 Methods

3.3 Discussion

References

4 ELS and cardiac morphology

Adapted from:

Early-life stress exposure and heart morphology in childhood: a prospective population-based study

Defina, S., Kamphuis, A., Gaillard, R., & Felix, J. F. (*in preparation*)

Abstact

4.1 Introduction

In summary, this book has no content whatsoever (Boyd et al., 2012; Fraser et al., 2013). But I shall write it anyway cause. Cause I kind of do have no choice so, checking justification works

4.2 Methods

4.3 Discussion

References

Part II

PART 2: Reciprocal relationships between mental and physical health problems

5 Longitudinal psycho-physical co-development

Adapted from:

Longitudinal co-development of depressive symptoms and cardio-metabolic risk factors from childhood to young adulthood

Defina, S., Cecil, C.A.M., Felix, J.F., Walton, E., & Tiemeier, H. (*under revision*)

Abstact

5.1 Introduction

In summary, this book has no content whatsoever (Boyd et al., 2012; Fraser et al., 2013). But I shall write it anyway cause. Cause I kind of do have no choice so, checking justification works

5.2 Methods

5.3 Discussion

References

DISCUSSION

See Chapter 1 for whatever whatever.

References

- Boyd, A., Golding, J., Macleod, J., Lawlor, D. A., Fraser, A., Henderson, J., Molloy, L., Ness, A., Ring, S., & Davey Smith, G. (2012). Cohort profile: The 'children of the 90s'—the index offspring of the avon longitudinal study of parents and children [Journal Article]. *International Journal of Epidemiology*, 42(1), 111–127. <https://doi.org/10.1093/ije/dys064>
- Fraser, A., Macdonald-Wallis, C., Tilling, K., Boyd, A., Golding, J., Davey Smith, G., Henderson, J., Macleod, J., Molloy, L., Ness, A., Ring, S., Nelson, S. M., & Lawlor, D. A. (2013). Cohort profile: The avon longitudinal study of parents and children: ALSPAC mothers cohort [Journal Article]. *Int J Epidemiol*, 42(1), 97–110. <https://doi.org/10.1093/ije/dys066>
- R Core Team. (2021). *R: A language and environment for statistical computing* [Journal Article]. <https://www.R-project.org/>