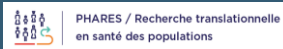


# Analyse des politiques publiques à impact sur l'enfant (APPIE)

Le bien-être de l'enfant, une responsabilité collective

Linda Cambon, CHU Bordeaux



## Une période critique

Formation des synapses dépend des premières expériences ( Les 3 1ères : 25% à 80% de la taille adulte).

=> **La plasticité cérébrale**

Sous influence environnementale

Retards cognitifs, sociaux et comportementaux à long terme

S'engraine biologiquement : différences de santé et de mortalité entre groupes socio-économiques.

Fragilité et vulnérabilité...

# Les mondes de l'enfant....

**Le monde général :**  
l'inégalité des revenus,  
l'offre éducative et la  
qualité de  
l'environnement ;

**Le monde autour de  
l'enfant :** les ressources  
disponibles dans son  
foyer, son école et son  
quartier

**Le monde de l'enfant :**  
ses relations avec sa  
famille et ses amis, ainsi  
que ses comportements  
et ses activités.

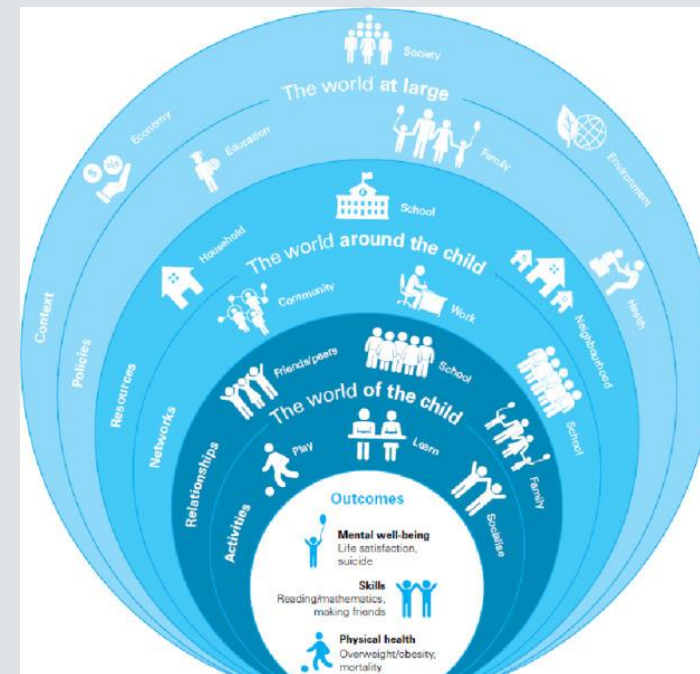


Figure 1. Unicef's multi-level framework of child well-being. UNICEF Innocenti, 'Worlds of Influence: Understanding what shapes child well-being in rich countries', *Innocenti Report Card 16*, UNICEF Office of Research Florence, 2020

# Les mondes de l'enfant....

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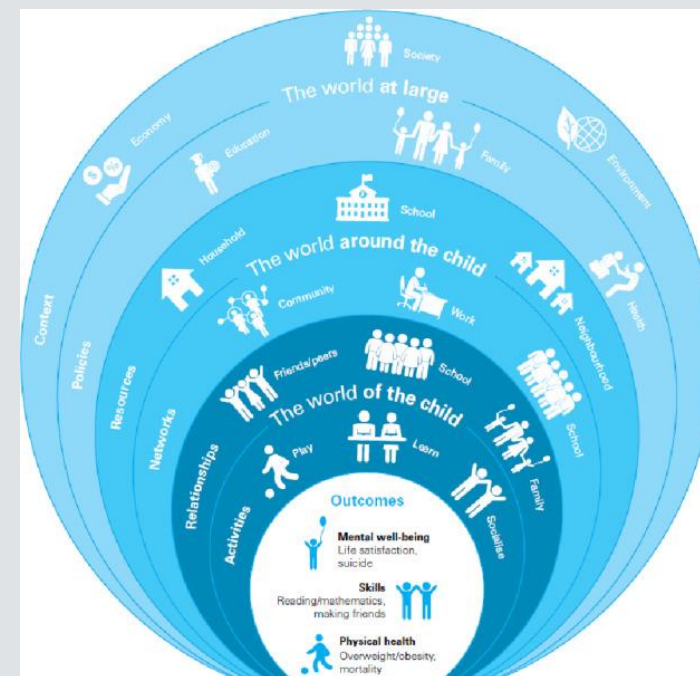
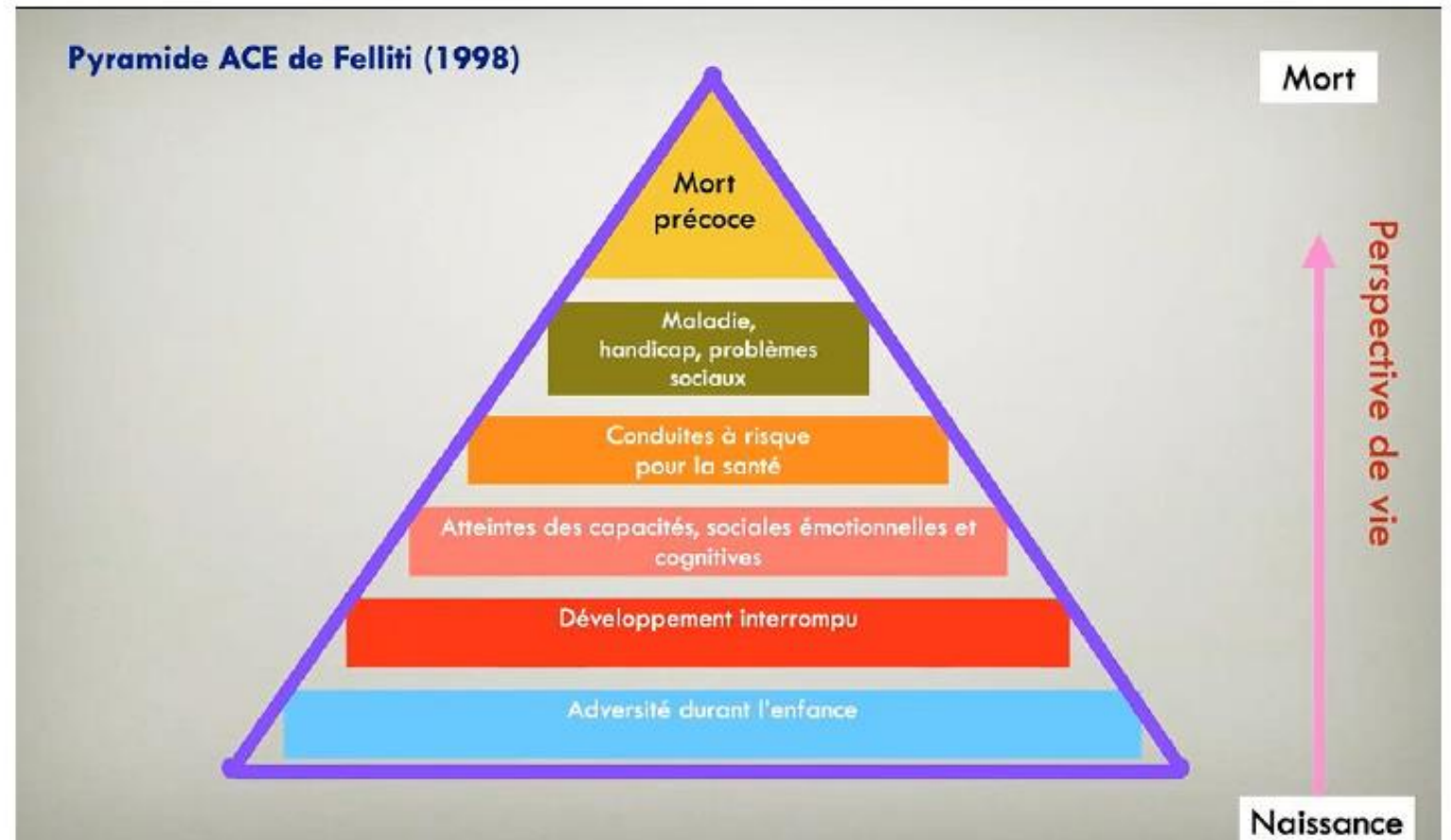


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# Adversité et santé

Pyramide ACE de Felitti (1998)



## Articles

### The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis

Karen Hughes, Mark A Ballis, Katherine A Handa, Dineesh Sethi, Alexander Butchart, Christopher Mikton, Lisa Jones, Michael P Dunne

**Summary**  
Background A growing body of research identifies the harmful effects that adverse childhood experiences (ACEs; occurring during childhood or adolescence; eg, child maltreatment or exposure to domestic violence) have on health throughout life. Studies have quantified such effects for individual ACEs. However, ACEs frequently co-occur and no synthesis of findings from studies measuring the effect of multiple ACE types has been done.

**Methods** In this systematic review and meta-analysis, we searched five electronic databases for cross-sectional, case-control, or cohort studies published up to May 6, 2016, reporting risks of health outcomes, consisting of substance use, sexual health, mental health, weight and physical exercise, violence, and physical health status and conditions, associated with multiple ACEs. We selected articles that presented risk estimates for individuals with at least four ACEs compared with those with none for outcomes with sufficient data for meta-analysis (at least four populations). Included studies also focused on adults aged at least 18 years with a sample size of at least 100. We excluded studies based on high-risk or clinical populations. We extracted data from published reports. We calculated pooled odds ratios (ORs) using a random-effects model.

**Findings** Of 11 621 references identified by the search, 37 included studies provided risk estimates for 23 outcomes, with a total of 253 719 participants. Individuals with at least four ACEs were at increased risk of all health outcomes compared with individuals with no ACEs. Associations were weak or modest for physical inactivity, overweight or obesity, and diabetes (ORs of less than two); moderate for smoking, heavy alcohol use, poor self-rated health, cancer, heart disease, and respiratory disease (ORs of two to three), strong for sexual inactivity, mental illness, and problematic alcohol use (ORs of more than three to six), and strongest for problematic alcohol use, mental illness, and self-directed violence (ORs of more than seven). We identified considerable heterogeneity ( $I^2$  of >75%) between estimates for almost half of the outcomes.

**Interpretation** To have multiple ACEs is a major risk factor for many health conditions. The outcomes most strongly associated with multiple ACEs represent ACEs for the next generation (eg, violence, mental illness, and substance use). To sustain improvements in public health requires a shift in focus to include prevention of ACEs, resilience building, and ACE-informed service provision. The Sustainable Development Goals provide a global platform to reduce ACEs and their life-course effect on health.

**Funding** Public Health Wales.

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**Introduction** Studies are increasingly identifying the importance of and increased allostatic load (ie, chronic physiological damage).<sup>1-4</sup> Thus, individuals who have ACEs can be



Lancet Public Health 2022; 7: e336-46

See Comment page e342

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81-98% des adultes (Dong et al 2004)

DOSE-EFFET (Felitti, 1998)

# Précarité et développement cognitif et langagier

## Facteurs familiaux

### Environnement linguistique

Des études ont montré que les enfants issus de familles défavorisées présentaient des **différences significatives dans la richesse de leur environnement linguistique**

### Dépression parentale

La **dépression parentale, en particulier maternelle**, est associée à des problèmes linguistiques et cognitifs chez l'enfant, en raison de l'**impact négatif sur les interactions et les pratiques éducatives**.



### Interactions parent-enfant

La **pauvreté et le stress familial** peuvent entraver les interactions parent-enfant et réduire les opportunités d'apprentissage à la maison, nuisant ainsi au développement linguistique.

### Ressources psychologiques

Le **soutien familial, le niveau d'éducation de la mère et sa santé mentale** influencent positivement les capacités cognitives et langagières des enfants, atténuant les effets négatifs du faible revenu.



- Besoins fondamentaux comme
  - un logement sûr,
  - une alimentation saine
  - et des services de garde de qualité.
- Facteurs familiaux

# Harcèlement à l'école

- Psychopathologie,
- Suicidalité
- Criminalité (Klomek et al, 2015)
- 1 enfant sur 3
- Enjeux d'une approche structurelle centrée sur l'environnement (efficace) :
  - A l'échelle de l'établissement
  - Impliquant toutes les parties prenantes
  - Niveau élevé d'engagement du personnel
  - Solutions construites en contexte
- Moins efficaces : programmes scolaires et apprentissage ciblé des compétences soci-victimisation)

## REVIEW ARTICLE

### A Systematic Review of School-Based Interventions to Prevent Bullying

Rachel C. Vreeman, MD; Aaron E. Carroll, MD, MS

**Objective:** To conduct a systematic review of rigorously evaluated school-based interventions to decrease bullying.

**Data Sources:** MEDLINE, PsycINFO, EMBASE, Education Resources Information Center, Cochrane Collaboration, the Physical Education Index, and Sociology: A SAGE Full-Text Collection were searched for the terms *bullying* and *bully*.

**Study Selection:** We found 2090 article citations and reviewed the references of relevant articles. Two reviewers critically evaluated 56 articles and found 26 studies that met the inclusion criteria.

**Interventions:** The types of interventions could be categorized as curriculum (10 studies), multidisciplinary or "whole-school" interventions (10 studies), social skills groups (4 studies), mentoring (1 study), and social worker support (1 study).

**Main Outcome Measures:** Data were extracted regarding direct outcome measures of bullying (bullying, victimization, aggressive behavior, and school

responses to violence) and outcomes indirectly related to bullying (school achievement, perceived school safety, self-esteem, and knowledge or attitudes toward bullying).

**Results:** Only 4 of the 10 curriculum studies showed decreased bullying, but 3 of those 4 also showed no improvement in some populations. Of the 10 studies evaluating the whole-school approach, 7 revealed decreased bullying, with younger children having fewer positive effects. Three of the social skills training studies showed no clear bullying reduction. The mentoring study found decreased bullying for mentored children. The study of increased school social workers found decreased bullying, truancy, theft, and drug use.

**Conclusions:** Many school-based interventions directly reduce bullying, with better results for interventions that involve multiple disciplines. Curricular changes less often affect bullying behaviors. Outcomes indirectly related to bullying are not consistently improved by these interventions.

*Arch Pediatr Adolesc Med.* 2007;161:78-88

**B**ULLYING IS A FORM OF AGGRESSION in which 1 or more children repeatedly and intentionally intimidate, harass, or physically harm a victim.<sup>1</sup> Victims of bullying are perceived by their peers as physically or psychologically weaker than the aggressor(s), and victims perceive themselves as unable to retaliate.<sup>2</sup> Although bullying, harassment, and victimization can take many forms, the key elements of this behavior are aggression, repetition, and the context of a relationship with an imbalance of power.<sup>3</sup> Bullying can impact the physical, emotional, and social health of the children involved. Victims of bullying more often report sleep disturbances, enuresis, abdominal pain, headaches, and feeling sad than children who are not bullied.<sup>4,5</sup> Bullies, their victims, and those who are both bullies and victims have significantly increased risk for depressive symptoms and suicidal ideation.<sup>6,7</sup> Students who report victimization are 3 to 4 times more likely to report anxiety symptoms than uninvolved children.<sup>8,9</sup> The effects of bullying on emotional health may persist over time; 1 study<sup>10</sup> showed that children bullied repeatedly through middle adolescence had lower self-esteem and more depressive symptoms as adults. Victims of bullying are more likely to feel socially rejected or isolated and to experience greater social marginalization and lower social status.<sup>11</sup> Bullying impacts a child's experience of school on numerous levels. Bullying creates problems with school adjustment and bonding, affecting the victims' completion of homework or desire to do well at school.<sup>5,12</sup> In 1 study,<sup>13</sup> 20% of grade-school children reported being frightened through much of the school day. Bullying seems to increase school absenteeism,

Author Affiliations: Children's Health Services Research, Indiana University School of Medicine (Dr Vreeman and Carroll), and The Regenstrief Institute for Health Care (Dr Carroll), Indianapolis, Ind.

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# Les mondes de l'enfant....

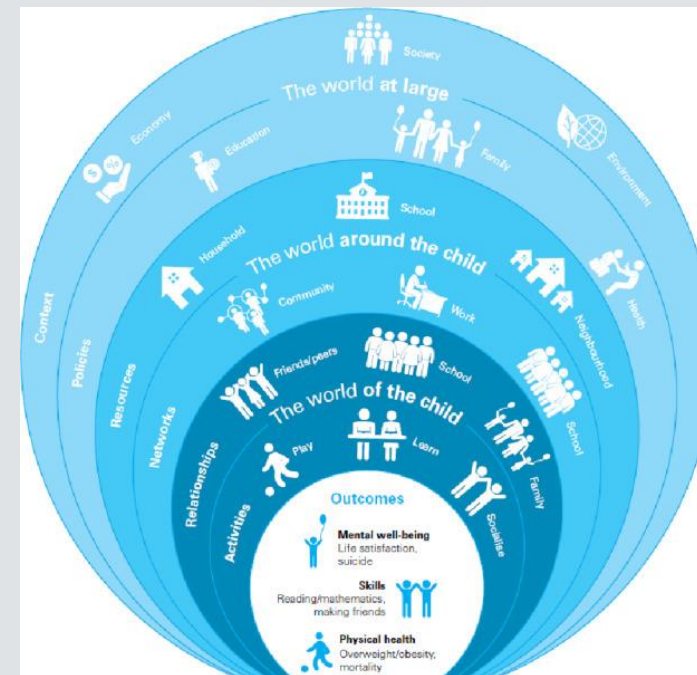
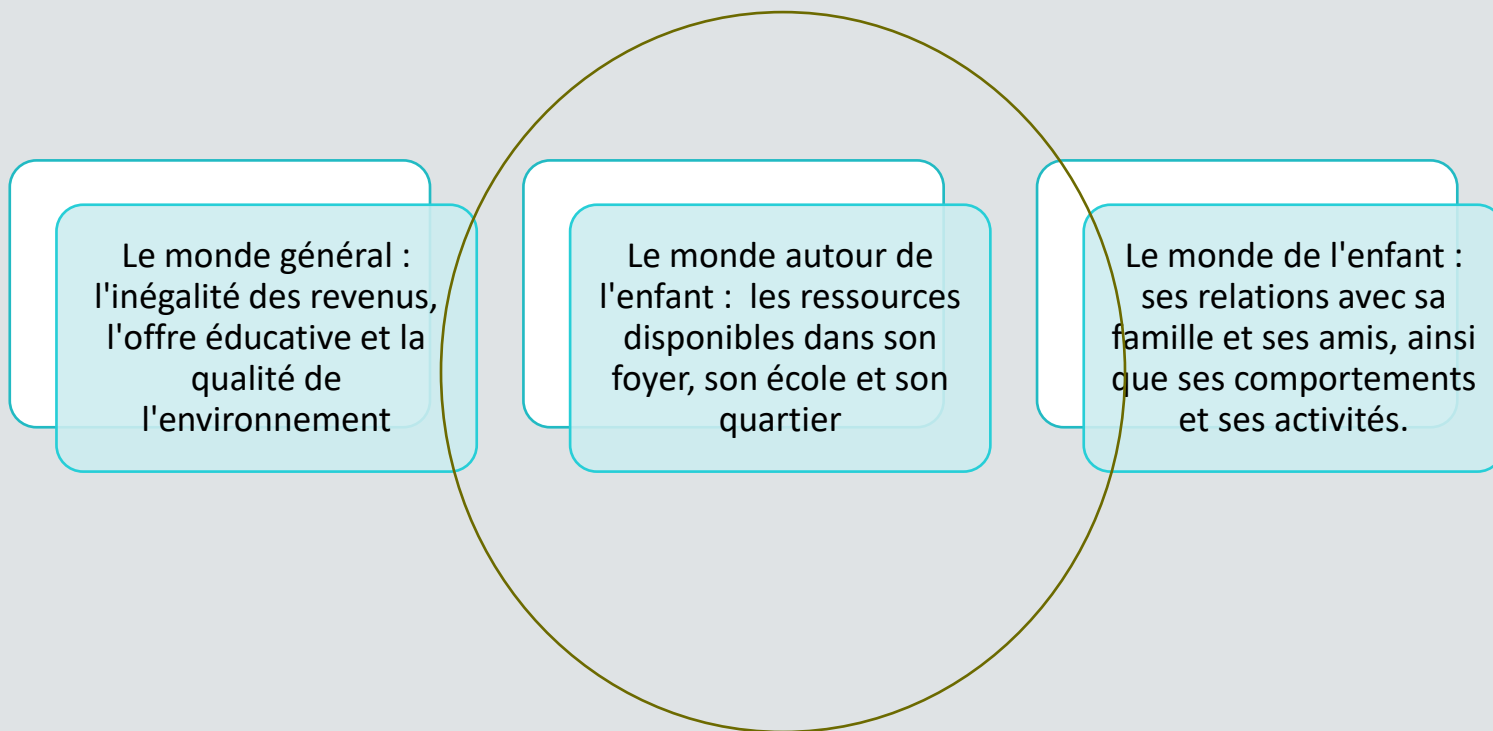


Figure 1. Unicef's multi-level framework of child well-being. UNICEF Innocenti, 'Worlds of Influence: Understanding what shapes child well-being in rich countries', *Innocenti Report Card 16*, UNICEF Office of Research Florence, 2020



# Urbanisme et enfance

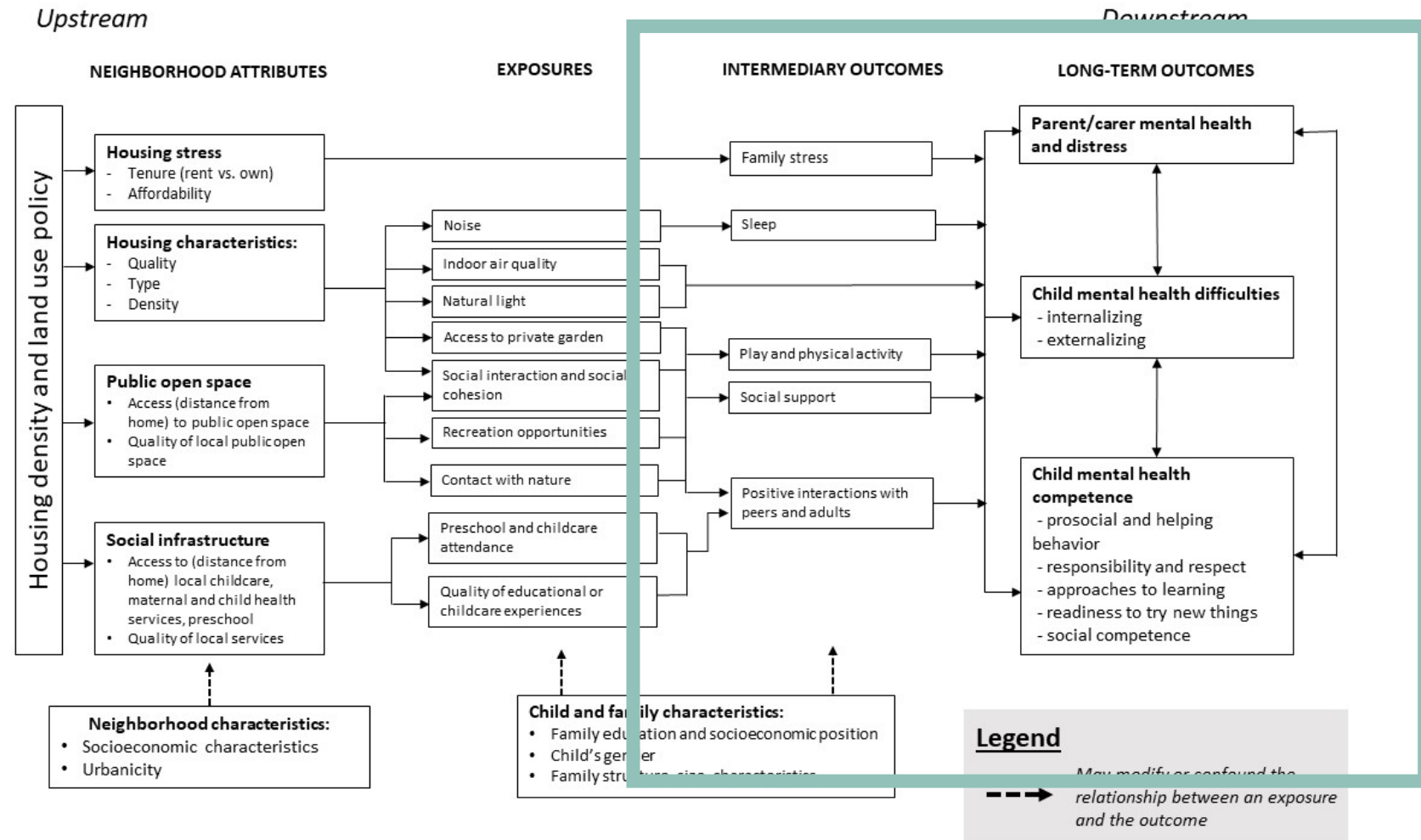


Figure 1. Conceptual framework theorizing possible pathways from the neighborhood built environment to child mental health outcomes.

# Nature et enfance

## Fort niveau de preuve

- *activité physique,*
- *développement cognitif*
- *santé mentale*
- *comportements sociaux*

## Les leviers efficaces

- *espaces verts à proximité du domicile ou de l'école de l'enfant,*
- *activités pratiquées dans des espaces verts*

### Nature and Children's Health: A Systematic Review

Amber L. Fyfe-Johnson, ND, PhD,<sup>1</sup> Marnie F. Hadehurat, MS, PhD,<sup>2</sup> Sara P. Perrins, EdM, PhD,<sup>3</sup> Gregory N. Bratman, PhD,<sup>4</sup> Rick Thomas, MESM, MS,<sup>5</sup> Kimberly A. Garrett, MPH,<sup>6</sup> Kiara R. Hafferty, BS,<sup>7</sup> Tess M. Cullaz, BS, BS,<sup>8</sup> Edgar K. Marcuse, MD, MPH,<sup>9</sup> Pooya S. Tandon, MD, MPH<sup>10</sup>

**CONTEXT:** Daily outdoor play is encouraged by the American Academy of Pediatrics. Existing evidence is unclear on the independent effect of nature exposures on child health. **abstract**

**OBJECTIVE:** We systematically evaluated evidence regarding the relationship between nature contact and children's health.

**DATA SOURCES:** The database search was conducted by using PubMed, Cumulative Index to Nursing and Allied Health Literature, PsychInfo, ERIC, Scopus, and Web of Science in February 2021.

**STUDY SELECTION:** We followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. In all searches, the first element included nature terms; the second included child health outcome terms.

**DATA EXTRACTION:** Of the 10 940 studies identified, 296 were included. Study quality and risk of bias were assessed.

**RESULTS:** The strongest evidence for type of nature exposure was residential green space studies ( $n = 147, 50\%$ ). The strongest evidence for the beneficial health effects of nature was for physical activity ( $n = 108, 32\%$ ) and cognitive, behavioral, or mental health ( $n = 85, 25\%$ ). Physical activity was objectively measured in 55% of studies, and 41% of the cognitive, behavioral, or mental health studies were experimental in design.

**LIMITATIONS:** Types of nature exposures and health outcomes and behaviors were heterogeneous. Risk of selection bias was moderate to high for all studies. Most studies were cross-sectional ( $n = 204, 69\%$ ), limiting our ability to assess causality.

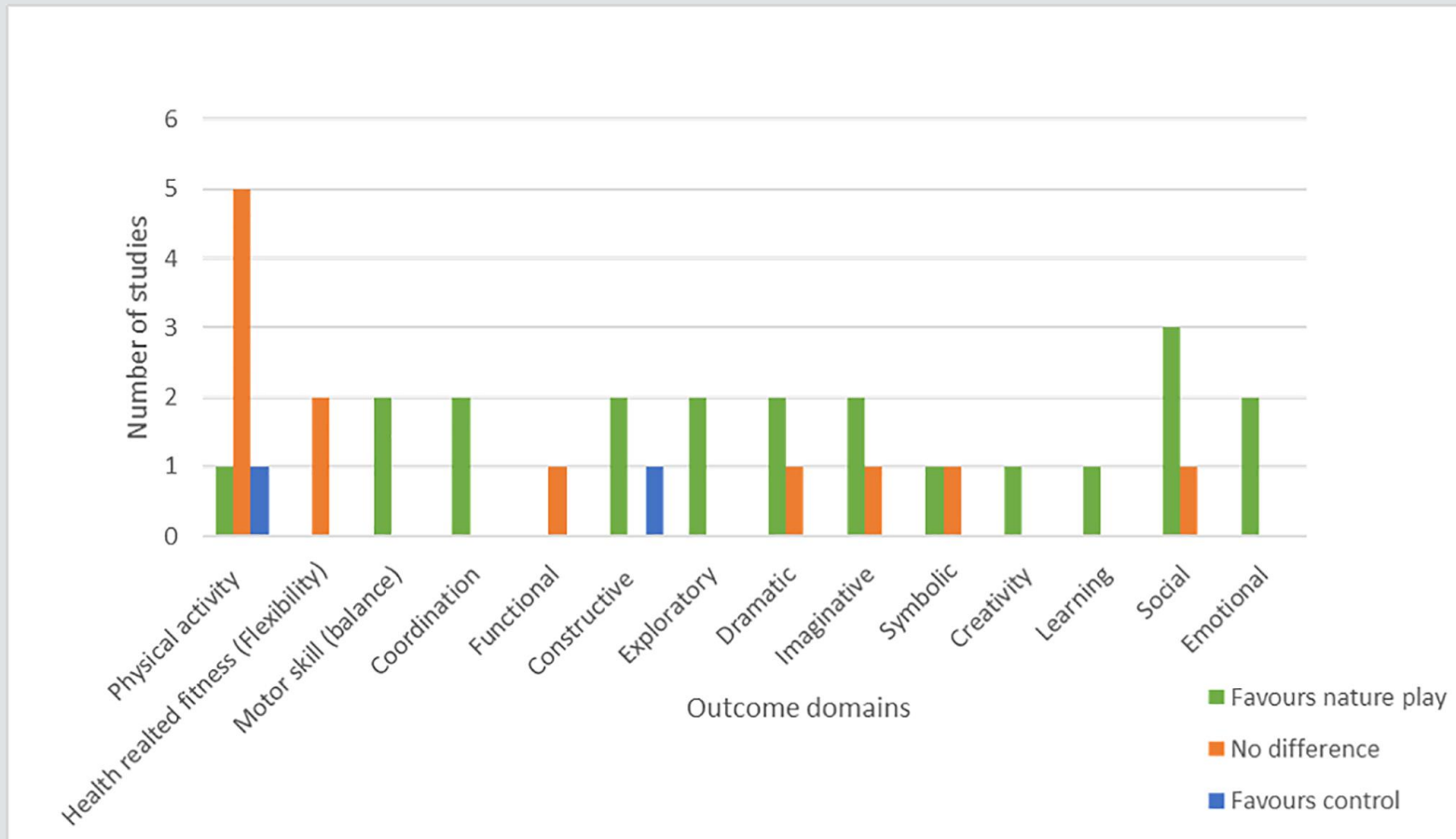
**CONCLUSIONS:** Current literature supports a positive relationship between nature contact and children's health, especially for physical activity and mental health, both public health priorities. The evidence supports pediatricians in advocating for equitable nature contact for children in places where they live, play, and learn.

<sup>1</sup>Elson S. Floyd College of Medicine, Washington State University, Spokane, Washington, <sup>2</sup>Departments of Epidemiology and <sup>3</sup>Pediatrics and <sup>4</sup>School of Environmental and Forest Sciences, University of Washington, Seattle, Washington, <sup>5</sup>National Academy of Sciences, Washington, District of Columbia, and <sup>6</sup>Seattle Children's Research Institute, Seattle Children's Hospital, Seattle, Washington

Dr Fyfe-Johnson contributed methodologic design additions, participated in full text review, data extraction, quality assessment, categorical exposure, and outcome summaries, moderated the consensus process, drafted the initial manuscript, and reviewed and revised the manuscript. Ms Hadehurat and Ms Perrins participated in screening, full text review, data extraction, quality assessment, categorical exposure, and outcome summaries, performed all analyses, and reviewed and revised the manuscript. Dr Bratman participated in screening, full text review, data extraction, quality assessment, categorical exposure, and outcome summaries and reviewed and revised the manuscript. Mr Thomas participated in screening, full text review, data extraction, and quality assessment, and reviewed and revised the manuscript. Ms Garrett participated in screening, full text review, data extraction, quality assessment, and

**To cite:** Fyfe-Johnson AL, Hadehurat MF, Perrins SP, et al. Nature and Children's Health: A Systematic Review. *Pediatrics*. 2021;148(4):e2020049155

# Jeu naturel



- Herrington, 2015,
- Dankiw, 2020

# Des bases à revoir



Une bonne  
alimentation

Santé, sécurité et  
hygiène

Un environnement bien entretenu et aménagé pour le  
développement des enfants



Des interactions  
positives entre adultes

Pratiques favorisant les interactions  
positives  
entre les enfants

Participation, soutien et  
communication avec les parents



Des possibilités de jeux  
actifs, en particulier à  
l'extérieur

Des possibilités de développer des  
compétences motrices, sociales,  
linguistiques et cognitives par le  
biais du jeu

Facilitation de la  
croissance émotionnelle

Des possibilités  
de jeux calmes  
et de repos

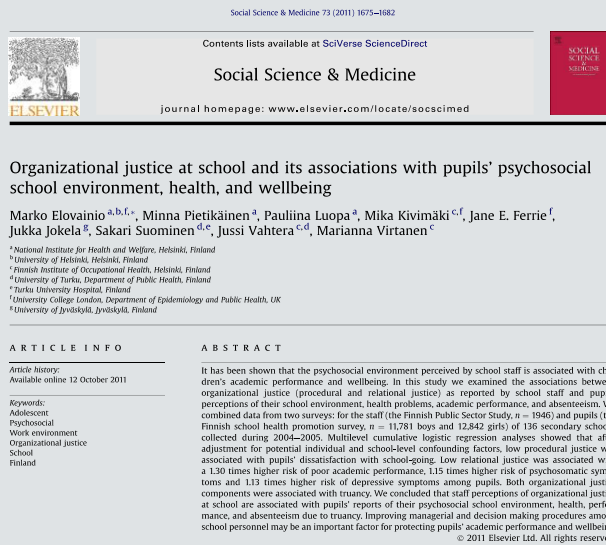


Respect de la diversité et de la différence, de l'égalité des sexes et de l'intégration des enfants handicapés.



Un personnel en nombre suffisant, sensible et à l'écoute des enfants

# La transmission du mal-être



Justice organisationnelle : pratiques, principes de décision, reconnaissances et distribution des ressources dans l'école » sur le bien-être des enfants (Elovainio et al, 2011):

- perceptions positives des élèves de leur environnement scolaire,
- problèmes de santé (soma et psy),
- performances scolaires,
- bien-être (perception d'être écouté, satisfaction)

## Introduction

Schools have an important influence on children's learning and development as a connection to the external environment and the place where they spend a large share of their day. A large body of literature has shown that the school climate, defined as the social, psychological, and academic atmosphere of a school (Anderson, 1982), is associated with children's academic performance and wellbeing (Aveyard, Markham, & Cheng, 2004; Aveyard, Markham, Lancashire et al., 2004; Bonny, Britto, Klostermann, Hornung, & Slap, 2000; Britto, Klostermann, Bonny, Altum, & Hornung, 2001; Han, 2009; Hill & Tyson, 2009; Karvonen, Vikat, & Rimpela, 2005;

Konu & Rimpela, 2002; Maddox & Prinz, 2003). For example, Simons-Morton and colleagues (Simons-Morton, Crump, Haynie & Saylor, 1999) have suggested that a positive school climate may enhance pupils' ability to develop a social bond with their school, which in turn, predicts later academic achievements. Pupils' own perceptions of positive psychosocial school climates have also been associated with positive developmental outcomes, such as good mental health, and a low risk of delinquency and truancy (Maddox & Prinz, 2003).

In addition to measuring students' perceptions, researchers can also measure teachers' perceptions of school climate, including their perceptions of organizational leadership and the overall functioning of the school (Parcel et al., 2003). When school climate is measured using teachers' responses, the school climate can also be thought of as a work climate. Teacher reports of their school or work climate have also been linked to student academic outcomes, the successful implementation of health promotion programmes

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## Un investissement

---

- Prix Nobel James Heckman : 1 dollar investi dans l'accueil de la petite enfance **permet d'en économiser plus de 7,**
- **10 ou 20 ans plus tard,** consacrés à la compensation de l'échec scolaire, à la mise en place de plans de reclassement et à la fourniture de prestations sociales.



# Les mondes de l'enfant....

Le monde général :  
l'inégalité des revenus,  
l'offre éducative et la  
qualité de  
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Le monde autour de  
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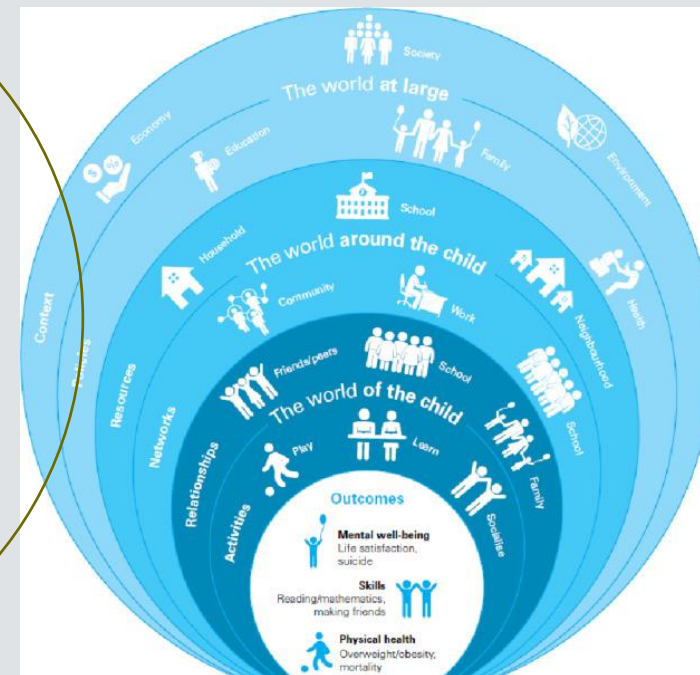
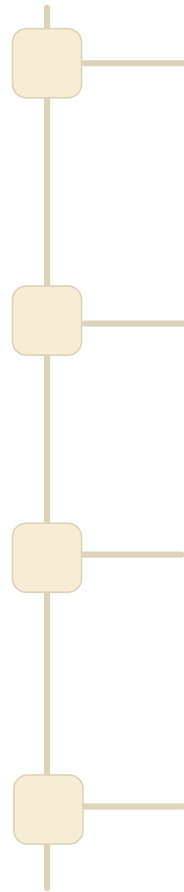


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## Sécurisation et développement de l'enfant : prendre soin



### CHALEUR ET AFFECTION

Les démonstrations de chaleur et d'affection de la part des parents : développement socio-émotionnel.

### RENFORCEMENT POSITIF

Le renforcement positif des comportements des enfants : bien-être et performances académiques.

### REGLES COHERENTES

Des stratégies de régulation consistantes : autorégulation et comportements prosociaux.

### EXPLORATION SECURISEE

Un style éducatif réceptif et sécuritaire : explorer leur environnement et apprendre.

# La capacité à prendre soin s'enracine ailleurs

....



Ressources  
familiales

Le revenu et les  
ressources des familles :  
environnement  
stimulant, soins de  
qualité



Niveau d'éducation  
des parents

Le niveau d'éducation  
des parents, en  
particulier de la mère :  
environnement  
linguistique et  
interactions de soutien  
offertes à l'enfant.



Santé mentale des  
parents

Santé mentale et bien-  
être des parents, en  
particulier de la mère



Pratiques  
parentales

Le style parental, les  
interactions parent-  
enfant et les attentes  
envers l'enfant



Si le soutien à la parentalité se limite aux pratiques parentales, il ne peut être  
qu'inéquitable  
Nécessité de stratégie de réparation des effets de la précarité, de l'isolement, des  
différences socio-éducatives

# Variation in neural development as a result of exposure to institutionalization early in childhood

Margaret A. Sheridan<sup>a,b,c</sup>, Nathan A. Fox<sup>d</sup>, Charles H. Zeanah<sup>e</sup>, Katie A. McLaughlin<sup>b,c,f</sup>, and Bruce S. McEwen<sup>g</sup>

Laboratories of Cognitive Neuroscience, Division of Developmental Medicine, Boston Children's Hospital, Boston, MA 02115; <sup>a</sup>Center for the Developing Child, Harvard University, Cambridge, MA 02138; <sup>b</sup>Department of Psychology, University of Maryland, College Park, MD 20742; <sup>c</sup>Department of Child and Adolescent Psychiatry, Tulane University, New Orleans, LA 70118; and <sup>d</sup>Division of General Pediatrics, Boston Children's Hospital, Boston, MA 02138

Received June 21, 2012; revised August 7, 2012; accepted August 14, 2012.

**We used structural MRI and EEG to examine brain structure and function in typically developing children in Romania ( $n = 20$ ), children exposed to institutional rearing ( $n = 29$ ), and children previously exposed to institutional rearing but then randomized to a high-quality foster care intervention ( $n = 25$ ). In so doing, we provide a unique evaluation of whether placement in an improved environment mitigates the effects of institutional rearing on neural structure, using data from the only existing randomized controlled trial of foster care for institutionalized children. Children enrolled in the Bucharest Early Intervention Project underwent a T1-weighted MRI protocol. Children with histories of institutional rearing had significantly smaller cortical gray matter volume than never-institutionalized children. Cortical white matter was no different for children placed in foster care than never-institutionalized children but was significantly smaller for children not randomized to foster care. We were also able to explain previously reported reductions in EEG  $\alpha$ -power among institutionally reared children compared with children raised in families using these MRI data. As hypothesized, the association between institutionalization and EEG  $\alpha$ -power was partially mediated by cortical white matter volume for children not randomized to foster care. The increase in white matter among children randomized to an improved rearing environment relative to children who remained in institutional care suggests the potential for developmental "catch up" in white matter growth, even following extreme environmental deprivation.**

neglect | brain development | early adversity | brain volume | early experience

A common societal response to orphaned or abandoned children is to rear such children in institutions (1, 2). UNICEF estimates that there are at least 8 million children who live in institutional settings. Institutional rearing of young children represents a severe form of early psychological and physical neglect, and as such, serves as a model system for understanding how early experience—or the lack of thereof—impacts brain and behavioral development.

In most forms of institutional rearing, the ratio of caregivers-to-children is low (e.g., in our sample ~1:12), care is highly regimented, and caregiver investment in children is low (3). Children raised in institutions are more likely than children raised in families to have deficits in cognitive function (4, 5) and in language production and comprehension (6, 7). Relative to noninstitutionalized children, children reared in institutional settings experience a wide range of developmental problems including markedly elevated rates of attention-deficit/hyperactivity disorder and other forms of psychopathology (8–10) and difficulties with social functioning (11–13). These developmental difficulties are not unique among children exposed to institutionalization. Indeed, exposure to a wide range of adverse early environments—including physical and sexual abuse, neglect, domestic violence, and chronic poverty—also increases a child's risk for psychopathology (14, 15), language delays (16), and reduced academic achievement (17). Thus, elucidating how institutionalization results in developmental deviations is important both for informing the care

of children raised in these environments and for improving our understanding of typical and atypical development.

One of the most likely explanations for the developmental problems observed in children raised in institutions is that the institutional rearing does not provide adequate scaffolding for normal brain development. Children raised in institutions are expected to see differences in neural development relative to their community. We examine this possibility in the current study.

**Effect of Institutionalization on Brain Structure and Function.** We have identified associations between institutionalization and neural structure/function in the Romanian Adoptees study, gray matter volume in the left hippocampus and amygdala among previously institutionalized children (19) and gray matter volume was observed in the left hippocampus and amygdala among previously institutionalized children (20). Both groups were ~16 y of age at the time of the study. Additionally reported smaller uncus volume of the left hippocampus and amygdala among previously institutionalized children in a second study (21) of 34 institutionally reared children in the United States (average age 8.4 y and 9.4 y old), did not replicate the finding of larger amygdala volume across groups relative to total brain volume, when analyzed after 15 mo of age (21).

A third study (22) used diffusion tensor imaging to examine structural connectivity in seven children born to families with a history of institutionalization and seven children born to families with a history of noninstitutionalization. Smaller whole brain, white, and gray matter volume was observed among previously institutionalized children. In addition, reduced apparent fractional anisotropy was observed in the white matter of previously institutionalized children, and most significantly indicating a general compromise of white matter integrity.

In sum, across three samples of children, institutionalized children, relative to noninstitutionalized children, are associated with differences in neural structure and function.

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The authors declare no conflict of interest.

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## Exemple : Les conditions de la mise sous protection

### Effet du manque d'attention et de soins affectifs/supportifs sur du développement neuronal

### Rattrapage possible en cas d'accueil de "haute qualité"

# Et tout est lié.... : Précarité et quartier (Zhou, 2019)

- Statut socio - économique associé de manière significative à l'environnement du quartier lui-même significativement associé au bien-être des enfants.
- Mais non direct !
- Effet médiateur du voisinage (cohésion et lien)

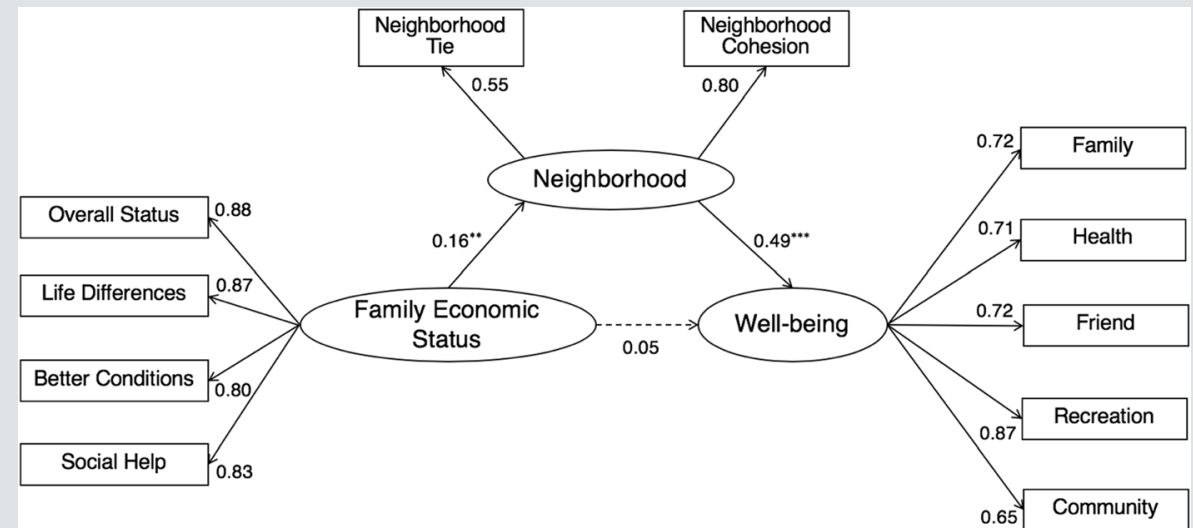


Fig. 1 Structural relationships among family economic status, neighborhood environment, and childrens' well-being. \* $p < .05$ , \*\*  $p < .01$ , \*\*\* $p < .001$

# 3 voies de prévention





# Le rôle d'APPIE



De la réponse  
individu-centrée



A la remise en question de la  
manière dont la société dans  
son entiereté fait ou non  
santé