



LETTER TO THE EDITOR

A growing disconnection from nature. Urgent call to action for a nature prescription global health alliance

Creciente desconexión de la naturaleza. Urge una alianza de salud global para la prescripción de naturaleza

Dear Editor:

At present, the time children can spend playing out of doors is considerably less compared to their parents when they were children. Today, young individuals can have 4000 Instagram followers, but no one to play outside with. The lack of direct contact with people, animals, plants and landscapes, exacerbated by the COVID-19 pandemic, has been substituted by a growing supply of virtual reality options that attempt to simulate nature. The body of evidence supporting the benefits of contact with nature (CN) is ever growing and diverse, including exposure to plants, animals and immersive nature experiences (Table 1).^{1,2} There are many elements of nature whose positive effects on health have yet to be discovered. Our aim was two-fold: first, to report key findings regarding the connection with nature of school-aged children in Spain, and to introduce the Alianza Global para Renaturalizar la Salud de la Infancia y la Adolescencia (GRSIA, Global Alliance to Reintroduce Nature in Child and Adolescent Health).

In 2015, 74% of the population of the European Union and 80% of the population in Latin America lived in cities, and 20%–21% in suburbs, with greater poverty and fewer green spaces. Most of today's youth have barely had any experiences in the fields, the woods or the sea... The young spend an increasing amount of time indoors and have nature deprivation. The Committee on Environmental Health (CEH) of the Asociación Española de Pediatría (AEP, Spanish Association of Pediatrics) has identified nature deprivation as one of the key challenges in child health in Europe and Latin America.³ What dose of nature should children receive? Although the CN needs may vary, children should spend at least 1 or 2 h a day (>1 h) in the nearest green or blue space to satisfy the requirements for healthy development. If this dose is not achieved, they are considered nature deprived. Still, the beneficial effects can be perceived from

Table 1 Health effects associated with contact with nature in scientific studies.^{1,2}

Decrease in overall mortality (by 3.5% per 10% increase in green spaces)
Increased happiness and wellbeing
Increase in sociability
Decrease in aggressive behaviours and hyperactivity, improvement in attention
Decreased anxiety and depression
Decreased stress and inflammatory markers
Improved sleep
Lower cardiovascular risk
Improved motor development (coordination/balance) and cognitive development
Improved academic performance and reading test scores
Decrease in consumption of alcohol and other drugs
Improved obstetric outcomes and birth weights
Decrease in child overweight and obesity
Decreased risk of diabetes
Improved motor, social and communication skills in patients with neurodevelopmental disorders (foetal alcohol syndrome, autism spectrum disorder...)
Improved health-related quality of life in cancer survivors
Decreased risk and increased overall survival for some types of cancer
Improved immunity (increased NK activity, expression of anticancer peptides and immunoglobulin A in mucosae)
Improved visual acuity
Improvement in lung function and asthma symptoms
Increased level of physical activity
Increased levels of vitamin D
Improvement in acute and chronic pain control
Quicker recovery after surgery
Reduction in medical visits and in the use of medication

small doses of 2 h a week.⁴ Healthier cities that meet the 3–30–300 rule (3 trees visible from every home, 30% of tree canopy cover in every neighbourhood and a maximum distance of 300 m to the nearest green space) can help achieve this goal. Contact with nature is essential in the first years of life, and the sooner it starts, the greater the benefits. In 2022 we started to study the level of contact with nature of school-aged children (N = 3500 children aged 7–17 years), and we already know that only 1–2 out of 4 plays outdoors

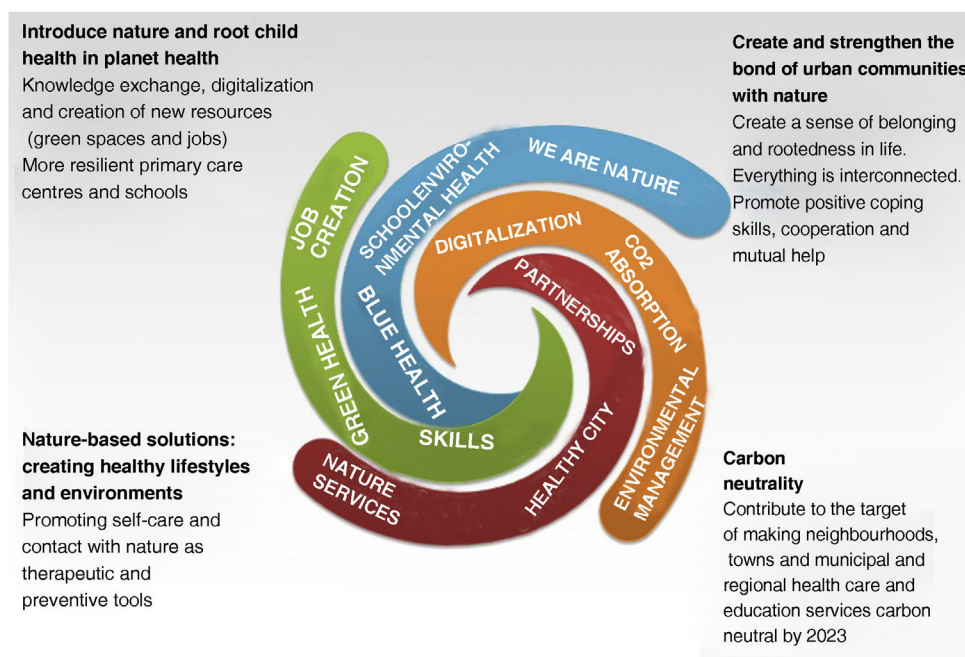


Figure 1 Goals of the GRSIA for reintroducing contact with nature in cities.

daily in contact with nature. In their parents' generation, the ratio was 3 out of 4. Twenty-five percent of children and adolescents barely goes spend time out of doors once or twice a month, and only 25% goes to urban parks or natural spaces daily. These are unpublished data of the research project on environmental health (EH) trends in children and adolescents (file FFIS-DF-2022-36) funded by the Sociedad de Pediatría Sureste de España (Society of Paediatrics of Southeast Spain). Some of the risks and problems associated with nature deprivation have reached epidemic proportions in children and adolescents. Historically, the artificial separation of humanity from the rest of living beings on planet Earth and its non-living components (a sunset or sunrise, a view of mountains ...) has hindered the incorporation of CN as a key element in the health of humans and the planet Earth.

Recent studies on the global burden of diseases evinced that the main causes of death and of years of chronic poor health are 100% preventable and associated with the deterioration and pollution of ecosystems.⁵ As physicians, we should prescribe nature more frequently and explore these aspects in our offices, asking about the number, type and duration of experiences in nature and promoting a relationship with nature as a means to improve health and counteract or reduce the effects of exposure to environmental pollutants.

The GRSIA is a collaborative network founded at the initiative of the CSMA that involves institutions, businesses, corporations, community-based organizations and excellence centres that chose to work together through the development of partnerships to root the health of the young into biodiversity and the health of the planet in cities in a series of shared goals (Fig. 1).⁶ Through a structured exchange of knowledge, the creation of new capabilities and a global multidisciplinary collaborative approach, we promote transformational leadership in EH.

We aspire to become an international referent in "nature prescribing" to foster self-care, lead by example and inspire change in individuals. Partnerships between scientific societies, official institutions and the community give rise to more resilient health care systems, promoting mechanisms for adaptation to climate change and adding nature-based interventions to the portfolio of health care services.

References

1. Frumkin H, Bratman GN, Breslow SJ, Cochran B, Kahn PH Jr, Lawler JJ, et al. Nature contact and human health: a research agenda. *Environ Health Perspect.* 2017;125:075001.
2. Fyfe-Johnson AL, Hazlehurst MF, Perrins SP, Bratman GN, Thomas R, Garrett KA, et al. Nature and children's health: a systematic review. *Pediatrics.* 2021;148:e2020049155.
3. Ortega-García JA, Tellerías L, Ferris-Tortajada J, Boldo E, Campillo-López F, van den Hazel P, et al. Amenazas, desafíos y oportunidades para la salud medioambiental pediátrica en Europa, América Latina y el Caribe. *An Pediatr.* 2019;90:124.e1–11.
4. White MP, Alcock I, Grellier J, Wheeler BW, Hartig T, Warber SL, et al. Spending at least 120 minutes a week in nature is associated with good health and wellbeing. *Sci Rep.* 2019;9:7730.
5. Institute for Health Metrics and Evaluation [Accessed 18 May 2022]. Available from: 2019 Global Burden of Disease results tool; 2020 <http://ghdx.healthdata.org/gbd-resultstool>
6. Alianza Global para Renaturalizar la Salud de la infancia y la Adolescencia. [Accessed 18 May 2022]. Available from: https://pehsu.org/wp/?page_id=2787.

Juan Antonio Ortega-García^{a,b,*},
Concepción Martínez-Gómez^{a,c}, Albert Bach^{a,d},
Laura Benítez-Rodríguez^{a,e}, Rebeca Ramis^{a,f},
en representación de la Alianza GRSIA

^a *Alianza Global para Renaturalizar la Salud de la Infancia y Adolescencia (GRSIA), Comité Salud Medioambiental, Asociación Española de Pediatría, Spain*

^b *Unidad de Salud Medioambiental Pediátrica PEHSU-Murcia, Environment & Human Health Lab, IMIB-Arrixaca, Hospital Clínico Universitario Virgen de la Arrixaca, Universidad de Murcia, Murcia, Spain*

^c *Contaminación Marina, Instituto Español de Oceanografía (IEO-CSIC), Centro Oceanográfico de Murcia, San Pedro del Pinatar, Murcia, Spain*

^d *Environment & Human Health (EH2) Lab, Centro de Ciència y Tecnologia Forestal de Catalunya, Solsona, Lleida, Spain*

^e *SEO BirdLife, Sociedad Española de Ornitología, Spain*

^f *Area de Epidemiología Ambiental y del Cáncer, Instituto de Salud Carlos III, Madrid, Spain*

* Corresponding author.

E-mail address: ortega@pehsu.org (J.A. Ortega-García).