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Integrated food policy and child obesity



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The escalating global burden of child obesity represents one of the most pressing public health challenges, with profound implications for lifelong health of children and for health system sustainability. A substantial body of evidence supports the implementation of policies that improve food environments and enable individuals and families to make healthier food choices. These measures include product reformulation, front-of-pack labelling, public education campaigns, restrictions on the marketing of unhealthy foods to children, and fiscal interventions such as taxes on unhealthy products.^{1,2} The pioneering Food Labelling and Advertising Law (FLAL) in Chile, which was introduced in 2016, is a comprehensive national policy package that incorporates several of these measures by combining mandatory warning labels, marketing restrictions, and school food regulations based on a common underlying nutrient profiling model.

The evaluation of the FLAL by Guillermo Paraje and colleagues³ in *The Lancet* provides timely and policy-relevant evidence of the effectiveness of comprehensive food environment interventions in arresting, and potentially reversing, this trend. It is a noteworthy

contribution to the literature given that most existing evidence has focused on individual food policies in isolation rather than examining how multiple policies interact when implemented as part of a coordinated strategy. This distinction is important because policies interact rather than operate independently, and their effects are likely to be mutually reinforcing. In the absence of robust empirical evidence demonstrating the nature and scale of policy interaction effects, policy makers face ongoing resistance from powerful food industry actors arguing that such interventions are unwarranted, disproportionate, and economically damaging.⁴

The study by Paraje and colleagues³ used a quasi-experimental cohort difference-in-differences design applied to a large national administrative dataset of 321 597 Chilean children aged 4-6 years attending public and publicly subsidised schools nationwide between 2012 and 2017. Children were followed from pre-kindergarten through to first grade, with exposure to the first phase of the FLAL varying by birth cohort. Analyses were stratified by sex and several socio-economic indicators (eg, maternal education, school

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type, and urban or rural location), enabling exploration of differences in policy effects across groups. The primary outcome was a binary indicator of excess weight, analysed using logistic regression models. Statistically significant reductions were found in the probability of excess weight among children exposed to the policy. After 18 months of exposure, girls experienced a 2.85% reduction (95% CI -0.0407 to -0.0163) and boys a 2.40% reduction (-0.0358 to -0.0122) compared with their unexposed counterparts. Even shorter exposure (6 months) was associated with measurable declines. A dose-response pattern was observed, with longer exposure yielding larger effects, supporting the plausibility of a causal effect. Although the magnitude of the observed effects is modest, the outcomes are encouraging at the population level given that even small shifts in weight trajectories during early childhood can influence obesity risk later in life.⁵

Several study limitations warrant consideration. First, anthropometric data were collected by school staff rather than clinical professionals, potentially introducing measurement error. Second, the analysis is restricted to short-term outcomes in early childhood; longer-term impacts remain unknown. Third, the sample excludes children attending private schools, which could limit generalisability and underestimate socioeconomic gradients. Fourth, the absence of ethnicity data precludes assessment of impacts across racial or ethnic groups. Fifth, as with all difference-in-differences designs, causal inference relies on assumptions—particularly parallel trends—that cannot be fully verified. Finally, because the multiple policy components were implemented together, their individual effects could not be disentangled.

The heterogeneity of effects reported in the study warrants careful consideration. Stronger impacts among children from more advantaged backgrounds, such as those with more educated mothers or attending subsidised urban schools, highlight the challenge of ensuring public policies deliver equitable benefits. Structural interventions might need to be complemented with targeted strategies that better support families, schools, and communities in addressing disparities in access, understanding, and capacity to act on nutrition information.⁶ Without such efforts, there is a risk that well intentioned policies could inadvertently widen health inequalities. However, evidence of substantial product reformulation and reductions in purchases of

products high in nutrients of concern (ie, sugars, sodium, saturated fat, and/or energy) following implementation of the FLAL holds promise for broad-based benefits of the policy for children during the longer term.⁷⁻⁹

The Chilean experience raises important questions about the optimal design of specific policy components, especially in the context of global momentum towards implementing interpretive front-of-pack labelling systems. Although warning labels like those implemented in the FLAL have shown effectiveness, alternative interpretive formats (eg, spectrum labels such as the Nutri-score) have been found in experimental conditions to offer additional advantages in helping consumers compare products and identify healthier options.^{10,11} As countries start to mandate spectrum labels, such as Australia's initiation of the process to mandate the Health Star Rating,¹² there is the opportunity to build on Chile's success and further refine labelling approaches through comparative evaluation.¹³

In a policy environment in which industry opposition constitutes a formidable obstacle to the implementation of health-promoting policies,⁴ high-quality, real-world evidence is crucial. The analysis of the FLAL by Paraje and colleagues³ is based on rare longitudinal data providing much-needed evidence of the potential for a comprehensive policy approach to produce measurable reductions in child obesity. By adopting a systems lens to assess the ability of coordinated nutrition policies to reduce excess weight in children at a national level, the results of the research strengthen the case for governments to move beyond incremental, single-policy approaches and to instead implement comprehensive, integrated strategies to improve food environments. In particular, the results highlight the potential for policy suites, including mandatory warning labels and marketing restrictions on unhealthy foods and minimum standards of school food, to produce meaningful outcomes. Ongoing monitoring of child obesity in Chile will be crucial for assessing the long-term effectiveness of this approach.

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Cardiometabolic multiple long-term conditions: a tractable focus for a field challenged by heterogeneity?

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The growing number of people living with multiple long-term conditions (MLTC) is one of the defining challenges facing health care globally.¹ Research in this field has challenged the single-disease framework that has traditionally dominated service design and research focus. But progress in MLTC research has been hampered by methodological inconsistency, definitional imprecision, and the difficulty of designing effective interventions for highly heterogeneous MLTC populations.^{2,3} These limitations have prompted calls to shift focus to narrower and potentially more tractable common clusters of conditions with a disproportionate impact on outcomes such as mortality, quality of life, and health service use.⁴ In this new *Lancet Series*, the authors propose cardiometabolic MLTC as precisely such a cluster: a coherent subset of conditions whose shared social and biological determinants provide the opportunity for better understanding of common mechanisms and interventions with benefits across multiple conditions.^{5–7}

The first *Series* paper by Kamlesh Khunti and colleagues focuses on the epidemiology of cardiometabolic MLTC,⁵ describing their association with early-life social and environmental risk factors, and their tendency to accumulate in recognisable trajectories driven

by sustained cardiometabolic stress and structural inequalities. This pattern makes cardiometabolic conditions an important contributor to early-onset MLTC, particularly among socioeconomically disadvantaged and minority ethnic populations.

The second *Series* paper by Lee-Ling Lim and colleagues explores the biological mechanisms underpinning cardiometabolic MLTC.⁶ Insulin resistance, ectopic fat deposition, chronic inflammation, and oxidative stress are all pathways through which cardiometabolic conditions co-occur and exert mutual influence—with gut health, environmental exposures, and sociocultural context shaping individual vulnerability. Crucially, many of these effects are biologically ingrained early in life, and advances in multiomic profiling herald an era of personalised risk prediction and therapeutic discovery.

Taken together, the distinct epidemiology and shared biology of cardiometabolic MLTC provide a strong rationale for a joined-up approach to care. Indeed, as the third *Series* paper by Jonathan Valabhji and colleagues shows,⁷ there is already evidence to support targeting cardiometabolic MLTC simultaneously. The most promising evidence across cardiometabolic MLTC is for newer pharmacological agents such as SGLT2 inhibitors and GLP-1 receptor agonists. Individual