

Tobacco, nicotine and e-cigarettes: Protecting children in South Africa

A piece of health legislation that is pivotal for the health of children in South Africa (SA) is currently before parliament: the draft Control of Tobacco Products and Electronic Delivery Systems Bill 2018.^[1] We outline why further control of tobacco and nicotine is important for the health of children in SA, and why the legislation deserves the strong support of all those who seek to promote the best interests of children in this country.

Tobacco and nicotine have multiple negative effects on children. These are mediated not only through primary, secondary and tertiary smoking, but children are also affected by tobacco and nicotine as a result of:

- the morbidity and premature mortality of about half of their parents and close relatives who smoke^[2,3]
- the diverting of scarce household resources away from children
- environmental degradation brought on by tobacco-related agriculture, cigarette manufacture^[4] and waste from tobacco and nicotine products^[5]
- their susceptibility to experimentation during childhood and adolescence.

Environmental tobacco from cigarettes is the main means by which harm is done to children by tobacco and nicotine. Secondary smoking is mediated by environmental tobacco smoke (ETS) being inhaled by children and pregnant women, but tertiary smoking, through tobacco smoke residues on clothes, furniture and other objects, also detrimentally affects children's respiratory tracts.^[6] The relative risk of respiratory tract infection is 1.5 in children exposed to ETS;^[7] the relative risk of acute otitis media is 1.7.^[8] Pneumonia, the most common post-neonatal cause of death and reason for admission to hospital in children aged 5 years and below in SA, is twice as likely in children exposed to ETS.^[9]

Asthma, the most common long-term condition in children, can be unmasked by ETS exposure.^[10] Through epigenetic factors, smoking in previous generations increases the likelihood of a genetic propensity to asthma manifesting as the disease in a child.^[11] Children living with adult smokers have asthma that is more difficult to control than those living in tobacco-free households.^[12]

Women who smoke or inhale ETS during pregnancy run the risk of stillbirth or delivering a low birth-weight baby.^[13] Infants of mothers who smoked during pregnancy have lower lung function at birth and impaired lung growth in early life,^[14] potentially increasing their susceptibility to respiratory tract illnesses.^[15] Evidence suggests that these exposures also reduce cognitive abilities in children^[16] and increase their cancer risk.^[17]

Tobacco and nicotine are thus the cause of significant health costs during childhood, costs which are not sufficiently recognised in the face of the epidemic of adult tobacco-related diseases, but which have lifelong consequences for children. Tackling ETS exposure antenatally and through childhood is a child health priority. This should focus not only on the enormous challenge of reducing the burden of adult smoking, but also on preventing another generation of tobacco and nicotine addicts.

In SA, 37% of men and 7% of women smoke regularly, with higher percentages in the Western and Northern Cape provinces, particularly among women (25% and 18% respectively).^[18]

While SA has made strides in recent years in reducing tobacco harms in the country,^[19] the harmful effects of tobacco and nicotine on children and the continuing widespread use of tobacco, and

increasing use of nicotine in the form of e-cigarettes, in SA demand a more forceful and focused response than current laws and their enforcement have achieved. As a signatory to the World Health Organization Framework Convention on Tobacco Control,^[20] SA is obliged to reduce tobacco harms in the country.

The draft Control of Tobacco Products and Electronic Delivery Systems Bill 2018 promises significant progress on tobacco and nicotine control in SA. Specifically, the legislation will benefit children through strengthened controls on:

- the display and sale of tobacco and nicotine products. Specifically, tobacco and nicotine products cannot be displayed in commercial premises. Plain packaging will be introduced.
- environmental tobacco exposure. Much wider powers are given to limit smoking in public spaces. Smoking in public indoor spaces such as restaurants and bars is prohibited. No-one travelling in a vehicle in which a child (up to 18 years of age) is present may smoke.
- access to information about and regulation of the contents of tobacco and nicotine products.
- all forms of tobacco and nicotine produced by the tobacco industry.

Importantly, the Bill provides controls over e-cigarettes and other electronic nicotine products for the first time in SA. Evidence suggests that these products can provide a conduit to smoking of tobacco products and threaten to increase levels of nicotine addiction.^[21] Given the highly addictive properties of nicotine, its ability to alter the function of young brains permanently and the propensity of adolescents to experiment, these controls are needed. The toxicity of the fumes to children from these products is not yet clear. However, increasing evidence points to both nicotine and the aerosols from these products resulting in significant harm, including pulmonary inflammation, impaired immunity and reduced lung function.^[22] Ingestion of the fluids used in e-cigarettes is harmful, even fatal, to children.^[23]

One aspect of the bill requires strengthening, we believe. The bill provides an opportunity to introduce the tobacco-free generation (TFG) concept^[24] into SA legislation and social mores. TFG takes as its starting points that:

- most people who take up nicotine and/or tobacco do so at a young age, largely through peer pressure, before they understand the implications for their health and the health of those around them; and
- there is no age after which it is acceptable to start smoking or using tobacco.

The addictive properties of nicotine make it difficult to quit the habit once started. TFG proposes that anyone born after a date specified in regulations associated with tobacco control legislation may never be sold tobacco- and nicotine-containing products by any vendor.^[24] Providing a future date for this proscription allows time for the idea to be taken on board by society and to become normative.^[24] The TFG approach has entered statute books in Singapore and Tasmania, and is being considered in other jurisdictions.

The constitutional rights of children and adolescents to life, clean environments and health are continuously violated by the broad negative effects of tobacco and nicotine in SA. Their best interests demand that this legislation be passed undiluted, and strengthened by the inclusion of TFG clauses.

A T R Westwood, A Vanker, D Gray

Department of Paediatrics and Child Health, Faculty of Health Sciences, University of Cape Town, and Red Cross War Memorial Children's Hospital, Cape Town, South Africa
anthony.westwood@uct.ac.za

- South Africa. Draft Control of Tobacco Products and Electronic Delivery Systems Bill, No. B475, 2018.
- Wipfli HL, Samet JM. Second-hand smoke's worldwide disease toll. *Lancet* 2011;377(9760):101-102. [https://doi.org/10.1016/S0140-6736\(10\)61922-8](https://doi.org/10.1016/S0140-6736(10)61922-8)
- Öberg M, Jaakkola MS, Woodward A, Peruga A, Prüss-Ustün A. Worldwide burden of disease from exposure to second-hand smoke: A retrospective analysis of data from 192 countries. *Lancet* 2011;377(9760):139-146. [https://doi.org/10.1016/S0140-6736\(10\)61388-8](https://doi.org/10.1016/S0140-6736(10)61388-8)
- Novotny TE, Bialous SA, Burt L, et al. The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption. *Bull World Health Organ* 2015;93(12):877-880. <https://doi.org/10.2471/BLT.15.152744>
- Healton CG, Cummings MK, O'Connor RJ, Novotny TE. Butt really? The environmental impact of cigarettes. *Tobacco Control* 2011;20(Suppl 1). <https://doi.org/10.1136/tc.2011.043729>
- Acuff L, Fristoe K, Hamblen J, Smith M, Chen J. Third-hand smoke: Old smoke, new concerns. *J Community Health* 2016;41(3):680-687. <https://doi.org/10.1007/s10900-015-0114-1>
- Jones LL, Hashim A, McKeever T, Cook DG, Britton J, Leonardi-Bee J. Parental and household smoking and the increased risk of bronchitis, bronchiolitis and other lower respiratory infections in infancy: Systematic review and meta-analysis. *Respiratory Res* 2011;12:5. <https://doi.org/10.1186/1465-9921-12-5>
- Jones LL, Hassanien A, Cook DG, Britton J, Leonardi-Bee J. Parental smoking and the risk of middle ear disease in children: A systematic review and meta-analysis. *Arch Pediatrics Adolescent Med* 2012;166(1):18-27. <https://doi.org/10.1001/archpediatrics.2011.158>
- Le Roux DM, Myer L, Nicol MP, Zar HJ. Incidence and severity of childhood pneumonia in the first year of life in a South African birth cohort: The Drakenstein Child Health Study. *Lancet Glob Health* 2015;3(2):e95-e103. [https://doi.org/10.1016/S2214-109X\(14\)70360-2](https://doi.org/10.1016/S2214-109X(14)70360-2)
- Mitchell EA, Beasley R, Keil U, Montefort S, Odhiambo J, Group IPTS. The association between tobacco and the risk of asthma, rhinoconjunctivitis and eczema in children and adolescents: Analyses from Phase Three of the ISAAC programme. *Thorax* 2012;67(11):941-949. <https://doi.org/10.1023/A:1015500508261>
- Magnus MC, Haberg SE, Karlstad O, Nafstad P, London SJ, Nystad W. Grandmother's smoking when pregnant with the mother and asthma in the grandchild: The Norwegian Mother and Child Cohort Study. *Thorax* 2015;70(3):237-243. <https://doi.org/10.1136/thoraxjnl-2014-206438>
- Wang Z, May SM, Charoenlap S, et al. Effects of secondhand smoke exposure on asthma morbidity and health care utilisation in children: A systematic review and meta-analysis. *Ann Allergy Asthma Immunol* 2015;115(5):396-401 e392. <https://doi.org/10.1016/j.anai.2015.08.005>
- Leonardi-Bee J, Britton J, Venn A. Secondhand smoke and adverse fetal outcomes in nonsmoking pregnant women: A meta-analysis. *Pediatrics* 2011;127(4):734-741. <https://doi.org/10.1542/peds.2010-3041>
- Gray D, Willemse L, Visagie A, et al. Determinants of early-life lung function in African infants. *Thorax* 2017;72(5):445-450. <https://doi.org/10.1136/thoraxjnl-2015-207401>
- Gray DM, Turkovic L, Willemse L, et al. Lung function in African infants in the Drakenstein Child Health Study. Impact of lower respiratory tract illness. *Am J Respir Crit Care Med* 2017;195(2):212-220. <https://doi.org/10.1164/rccm.201601-0188OC>
- Yolton K, Khoury J, Xu Y, et al. Low-level prenatal exposure to nicotine and infant neurobehavior. *Neurotoxicol Teratol* 2009;31(6):356-363. <https://doi.org/10.1016/j.ntt.2009.07.004>
- John EM, Savitz DA, Sandler DP. Prenatal exposure to parent's smoking and childhood cancer. *Am J Epidemiol* 1991;133(2):123-132. <https://doi.org/10.1093/oxfordjournals.aje.a115851>
- National Department of Health, Statistics South Africa, South African Medical Research Council, ICF. South Africa Demographic and Health Survey 2016: Key indicators. Pretoria: NDoH, Stats SA, SAMRC, ICF, 2017.
- Reddy P, James S, Sewpaul R, et al. A decade of tobacco control: The South African case of politics, health policy, health promotion and behaviour change. *S Afr Med J* 2013;103(11):835-840. <https://doi.org/10.7196/SAMJ.6910>
- World Health Organization. Parties to the WHO Framework Convention on Tobacco Control. http://www.who.int/fctc/signatories_parties/en (accessed 10 August 2018).
- Schraufnagel DE. Electronic cigarettes: Vulnerability of youth. *Pediatr Allergy Immunol Pulmonol* 2015;28(1):2-6. <https://doi.org/10.1089/ped.2015.0490>
- Ferkol TW, Farber HJ, La Grutta S, et al. Electronic cigarette use in youths: A position statement of the Forum of International Respiratory Societies. *Eur Respir J* 2018;51(5):1800278. <https://doi.org/10.1183/13993003.00278-2018>
- Miller A. Nicotine poisoning increase due to e-cigs. *CMAJ* 2014;186(10):e367. <https://doi.org/10.1503/cmaj.109-4818>
- Berrick AJ. The tobacco-free generation proposal. *Tob Control* 2013;22(Suppl 1):S22-S26. <https://doi.org/10.1136/tobaccocontrol-2012-050865>

S Afr J Child Health 2019;13(1):4-5. DOI:10.7196/SAJCH.2019.v13i1.1639