

Editorial

Early antibiotic exposure linked to childhood obesity

Simon Attard Montalto

Childhood obesity is a predisposing factor for adult obesity and both are major health problems in most countries, including Malta.¹⁻³ Moreover, the widespread and, often inappropriate, use of antibiotics has also long been cited as another health problem in Malta,⁴⁻⁵ usually in association with the increasing risk of antibiotic-resistance and the potential emergence of 'superbugs'. Yet both these problems - obesity and the overuse of antibiotics – are interlinked, whereby early exposure to antibiotics increases the risk of those children becoming overweight or obese. This association, although previously documented in various large studies overseas,⁶ is underappreciated locally. Yet the same association was reported in a smaller local study on 3-7 year olds in 2020, by Dr Marwa Khaled Grada at the University of Malta.⁷ Dr Grada showed a significant association between antibiotic use and increased childhood BMI ($p=0.001$), and, in this study, the use of antibiotics during infancy was found to be the best predictor of BMI.⁷

The pathophysiological link between early antibiotic exposure and obesity occurs through a mechanism arising from the alteration in gut microbiota,⁸⁻¹⁰ and subsequent alteration of the digestive mechanisms of the bowel with, for example, an increase in the absorption of short-chain fatty acids.¹¹ These alterations, if enacted during infancy, are then imprinted within the gastrointestinal working milieu and established for the remainder of childhood. In effect, children whose bowel microflora is repeatedly 'altered' by antibiotic exposure, are significantly more likely to change their bowel function to one that is obesogenic.

Although there is absolutely no doubt whatsoever that, when used appropriately, antibiotics save lives, there is equally no doubt that they are harmful if used inappropriately.

Cover Picture:

'Fear in Ukraine'

Acrylic on Canvas

By Stephanie Mizzi

Stephanie is a freelance writer and professional photographer. After her mother's sudden passing in 2018 she felt the urge to try her hand at painting. It helped her get through the grief and pain following her demise. She is also a qualified Personal Trainer and Spinning Instructor. In April 2022 she founded Artists for Ukraine, 20,000 Euros were collected in aid of Ukrainian Refugees in Malta. Following its success, she is now working on another project called Artists Inc. which will unite established artists along with new talent both to exhibit their work for charity and to promote new talent. She is also mother to 15-year-old Matthew.

Stephanie also has her own personal website:
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Malta, like many Mediterranean (and other) countries has a society *and* doctor-driven penchant for antibiotic over-use, mostly in the context of viral infections and as spurious ‘prophylaxis’ without any evidence-base.^{5,12,13} In 2022 in Malta, antibiotic prescriptions for children with simple colds/snuffles, viral infections, minor ailments, and to healthy individuals without a fever and “*just in case*” are routine and the *modus operandi* of many practitioners. Sadly, by encouraging obesity,

this over-reliant ‘blanket’ practice is creating more harm than is appreciated and harm that goes well beyond the encouragement of antibiotic resistance alone. Improved prescribing and a reduction in the injudicious use of antibiotics to small children will help reduce obesity later in life, presently the greatest nutritional and one of the greatest health care problems in the ‘modern’ era. Indeed, any measure taken to reduce obesity can only be welcome.

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