



Adolescent smoking

It is disappointing to see articles such as the one by André Gervais and colleagues¹ that are based on the old mantra that nicotine is very addictive and that it makes its victims “feel nauseated or ill” (as stated in the article), not to mention the airway burning and coughing it produces. Fundamentally, to be addictive a substance must give a pleasurable experience, not a noxious one. Gervais and colleagues report that mental addiction in adolescents sometimes occurs even before the initiation of smoking; this is more evidence that the primary forces of smoking addiction are psychosocial, not chemical. These kids are susceptible because of what smoking does for them socially and psychologically, not physically. This reality is absent from the article.

As a clinician, I commonly see smokers suddenly make up their minds to quit when there are no longer any psychological or social benefits to continuing smoking. They then experience no withdrawal symptoms, which is what one would expect when a noxious substance is removed. Similarly, I see many patients who do not experience any withdrawal symptoms over long hours spent in places where they cannot smoke, such as in their workplace, but they have cravings as soon as they are in an environment in which smoking is permitted.

It is the current bias to find a biological explanation for everything, but until we start recognizing the psychosocial factors that are the major forces

behind smoking addiction, we will continue to disempower our patients and fail miserably in dealing with the greatest epidemic of preventable deaths in the history of humanity.

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1. Gervais A, O'Loughlin J, Meshefedjian G, et al. Milestones in the natural course of onset of cigarette use among adolescents. *CMAJ* 2006;175(3): 255-61.

DOI:10.1503/cmaj.1060178

André Gervais and colleagues have rightly pointed out that smoking prevention programs targeted to youth have little or no long-term impact on cigarette use because of our incomplete understanding of how and why young people start to smoke.¹ Recent developments in the field of chronobiology, however, have enhanced our under-

standing of the initiation of smoking in adolescents.²

The chronotype (the timing of rest and activity) is regulated by a biological clock that varies considerably from person to person. Genetic differences and environmental influences contribute to the distribution of chronotypes in a given population. Work schedules interfere considerably with most people's sleep preferences. Adolescents are late chronotypes;³ this group shows the largest differences in sleep timing between work and free days. This discrepancy between social and biological time has been called social jet lag. Recent research has revealed that a significant and striking direct relation exists between social jet lag and smoking.² Therefore, adolescents are at a greater risk of initiating cigarette use than are people in other age groups. We believe that simple behavioural means of adapting social and biological time would largely prevent the initiation of smoking in adolescents and could also

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play an important role as a smoking cessation strategy.

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DOI:10.1503/cmaj.1060179

[Two of the authors respond:]

Nicotine addiction in children and adolescents is not the old mantra; it is a new mantra that has emerged over the last 5 years with accumulating evidence that novice smokers can experience symptoms of nicotine dependence early in the smoking onset process. Indeed, until recently, it was generally believed that young people could experiment with cigarettes without experiencing cravings or withdrawal symptoms. Our analysis documents that classic symptoms of dependence, such as cravings and symptoms of withdrawal, occur rapidly after the first puff, before the development of tolerance (i.e., the disappearance of the initial adverse effects, such as nausea and dizziness) and well before regular weekly or daily cigarette use.¹

We agree with Preston that our paper did not incorporate perceived social benefits of smoking into the description of the natural course of smoking onset. However, current conceptualizations of dependence do take into account the fact that young people weigh the benefits of smoking early in the preparation and experimentation phases of smoking. Future studies on the natural course of onset should perhaps incorporate the evolution of per-

ceived benefits in relation to the appearance of symptoms of dependence and intention to quit.

We agree that our finding that mental addiction can occur even before the first puff may reflect the fact that some people are more susceptible or attracted to smoking because of perceived benefits. However, the onset of mental addiction was closely aligned in many of our subjects with the onset of physical addiction; in reality, it may be impossible to distinguish mental addiction from physical addiction.

For every smoker who quits without experiencing withdrawal symptoms, there are many more who relapse. Randomized controlled trials demonstrate that relief of withdrawal symptoms through nicotine replacement therapy doubles quit rates, providing empirical evidence for the role of nicotine in dependence.^{2,3} One could argue that underestimating the biological underpinnings of dependence, and instead relying solely on the notion that dependence is psychological, may underlie the failure of many quit attempts. Smokers who fail in their attempt to quit smoking may become even more disempowered when they are blamed for not having enough willpower to quit.

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DOI:10.1503/cmaj.1060240

Controlling cervical cancer

There has been striking progress in research into cervical cancer prevention. According to a CMAJ news article by Alicia Priest, a vaccine against human papillomavirus types 6 and 18 is about to be introduced in Canada.¹ As Priest notes in the article, fears have been expressed that administration of the vaccine to young girls might increase sexual promiscuity.² Moreover, there are concerns about how comfortable young women, parents and health care providers will be about discussing the vaccine.³

Despite the availability of the vaccine, policy-makers should not abandon more cost-effective methods of controlling the burden of cervical cancer,⁴ such as regular Papanicolaou screening and health education regarding the risk factors for human papillomavirus infection and the clinical problems and long-term complications associated with the infection. These methods have yet to be effectively implemented in some countries.⁵

After the vaccine is introduced, it will be a few years before a reduction in cervical cancer incidence is detectable. In the meantime, it is important to maintain the existing screening programs and to study the acceptability of the vaccine and the feasibility of the programs to administer it.

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