How Deadly is a Can of Coke?

Amelia Milton

Natural Sciences (Life and Physical Sciences), School of Biological Sciences, University of Leicester 14/03/2025

Abstract

Many articles and posts online claim that "you lose 12 minutes of your life every time you drink a Coke". This paper will see whether this statistic is as scary as it sounds by calculating how much life a person who drinks Coke daily could lose and how accurate this claim is based on current research.

Keywords: Internet; Biology; Health; Coca Cola

Introduction

A popular "fun fact" on the internet is that every time you drink a can of Coke, you lose 12 minutes of your life. Figure 1 shows an example of an X post claiming this with 602.3k views [1]. These posts are extremely popular; for instance, one Daily Loud post claiming this has 4.5 million views and 37k likes [2].



Figure 1 – Image of an X post claiming a can of Coke can take 12 minutes of your life [1].

The contents of these posts are not pulled out of thin air and are based on a study by the University of Michigan [3]. Being based on a reliable scientific source can make these claims seem scary, is Coca-Cola really so deadly? This paper will calculate how significant this loss of life is, as well as looking into this study to see how reasonable this claim is and whether it is just online fear-mongering.

How Long Will You Live?

Assuming this claim is correct and a person loses 12 minutes of their life every time they drink a Coke, an

approximate decrease in lifespan can be calculated. For a person who drinks a can of Coke every day, they will lose 4383 minutes of their life yearly:

 $12mins \times 365.25 \ days = 4383 \ mins \ per \ year$

This amounts to 73.05 hours or 3.04 days. Dividing by the number of days in a year, it can be found that for each year you consume one Coke daily, you lose 1/120 years. The lifespan, X, lost by a person who has consumed a Coke daily since the age of 16 can be calculated using the UK life expectancy, Y, for men (79) and women (83) (for 2021-2023) [4]. This can then be used to find the new number of years lived, Z. Since the new lifespan plus the life lost is the life expectancy:

$$Y = Z + X$$

Since 1/120 of a year is lost per year of daily Coke drinking:

$$X = \frac{1}{120}(Z - 16).$$

Putting together, factorising and rearranging for Z:

$$Y = Z + \frac{1}{120}(Z - 16),$$

$$Y = Z + \frac{1}{120}Z - \frac{16}{120'},$$

$$Y + \frac{16}{120} = Z\left(1 + \frac{1}{120}\right),$$

$$Z = \frac{Y + (16/120)}{1 + (1/120)}.$$

For a man, Y = 79:

$$Z = \frac{79 + (16/120)}{1 + (1/120)} = 78.48 \text{ years}$$

$$X = \frac{1}{120}(78.48 - 16) = 0.52 \text{ years lost}$$

For a woman, Y = 83 therefore, using the same method, the new lifespan, Z = 82.45 and the life lost, X = 0.55. As you can see for a person who would live to the UK life expectancy but has drunk Coke daily since the age of 16, an estimate of only 0.52-0.55 years of their life would be lost from Coke consumption alone. This decrease in lifespan is not as drastic or as scary as implied by posts and articles using this statistic.

Where Does this Statistic Come From?

The article referenced in the posts is a study by the University of Michigan called "Small targeted dietary changes can yield substantial gains for human health and the environment". The paper quantifies the marginal health effects of 5853 foods into healthy life gained or lost (HENI value) as well as assessing the environmental impacts of these foods [3].

The HENI value was calculated by assessing the composition of different foods and whether they contained any of 15 dietary risk components, Figure 2. These risk components were based on their contribution to different diseases, as shown in Figure 2, with SSBs being sugar-sweetened beverages.





The 12 minutes lost statistic comes from a supplementary data table of the paper. However, this data table does not mention Coke specifically and instead just unspecified "soft drink, cola". Whilst this could include Coke, there are also many other brands

of cola that this data would be collected from, as different brands were studied.

From this data table, the mean HENI value per serving of cola is 12 minutes lost, based on a variety of different cola drinks. However, the paper also specifies that these cola drinks only include sugarsweetened ones. Therefore, the Diet Coke shown in Figure 1 is actually not included in the statistic and would have a different unknown HENI value.

Is it really this simple?

The HENI value considers complex health impacts and diseases to create a simple minute value. However, these values do not take into account overall diet, genetic susceptibility to disease, pre-existing health conditions, and activity levels, all of which can impact susceptibility to disease. The interplay of many different factors can make long term effects hard to predict and simplify within a simple value.

How do Sugary Drinks Cause Disease?

In the paper, the dietary risk factor associated with Coke is its high sugar content, which can cause weight gain. This is further stated in the paper - "the association between SSBs and health outcomes is 100% mediated via body mass index". This means that the potential health impacts caused by Coke can be mitigated by maintaining a healthy body weight. Malik et al. [5] compared the effects of SSBs and artificially sweetened beverages (ASBs) and also found that SSBs being high in calories can cause weight gain and obesity, leading to adiposity diseases such as cardiovascular diseases, type 2 diabetes and some cancers [5]. This again means that health conditions from SSBs can be minimised by drinking in moderation and maintaining a healthy weight.

Conclusion

Overall, the statistic "you lose 12 minutes of your life every time you drink a Coke" is not as scary as it sounds. If this statistic was completely accurate the life lost from drinking Coke would still be minimal. However, this statistic is an approximation based on the sugar content of Coke and doesn't consider other lifestyle and genetic factors that can impact a person's susceptibility to disease. As well as this, SSBs are mainly considered unhealthy due to their high calorie content which can lead to weight gain and obesity, causing adiposity diseases. Overall, a person who drinks Coke in moderation, whilst being active and eating healthily is unlikely to lose minutes of their life when drinking a Coke.

References

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