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Correction: *Menthol levels in cigarettes from eight manufacturers*

The research letter “Menthol levels in cigarettes from eight manufacturers” reports concentrations of menthol in whole cigarettes from eight manufacturers in the United States. As our research has progressed, we have re-examined our results and have identified an error in the calculations that were used to determine the reported menthol concentrations. The analytical method used to quantitate menthol concentrations in whole cigarettes was originally developed for only unburned tobacco (eg, tobacco filler). When the method was applied to whole cigarettes, we discovered that we did not account for the mass of the tobacco (400 mg) that was used in the validation of the analytical method. Because the calibration curve originally used to quantitate menthol concentrations has units of $\mu\text{g/g}$, the cigarette mass was also applied incorrectly. As a result, the calibration curve and subsequent product menthol concentrations quantitated under the original conditions in $\mu\text{g/g}$ should have been adjusted by a factor of 0.4 to provide the correct concentration of menthol found in each cigarette product ($\mu\text{g/cig}$). Figure 1, has been revised to reflect the correct menthol concentrations from the different manufacturers. Table 1 contains the measured menthol concentration ranges for each manufacturer so that readers can see the measured menthol concentrations used to create figure 1. Because the calculation error applies to all products, relative concentration comparisons made in the manuscript between products remain unchanged.

The manuscript contains discussion on product comparisons that require modification. None of the measured menthol contents exceed 10 mg/cigarette. RJ Reynolds’ Capri Green has the least measured menthol content (1.31 mg/cigarette) among the tested menthol cigarettes. However, this lowest measured menthol is above the menthol perception threshold of 1 mg/g of tobacco [Ref six in original paper; Hopp R. Menthol: its origin, chemistry, physiology and toxicological properties. *Rec Adv Tobacco Sci* 1993;19:3–46]. Corrected menthol amounts are shown in table 2 below.

The analytical method remains fit for purpose. After investigation, the validation parameters and errors in reported menthol concentrations were found to be solely due to the mathematical issue discussed above. Overall, the conclusions of the manuscript are unaffected by the changes to reported menthol concentrations.

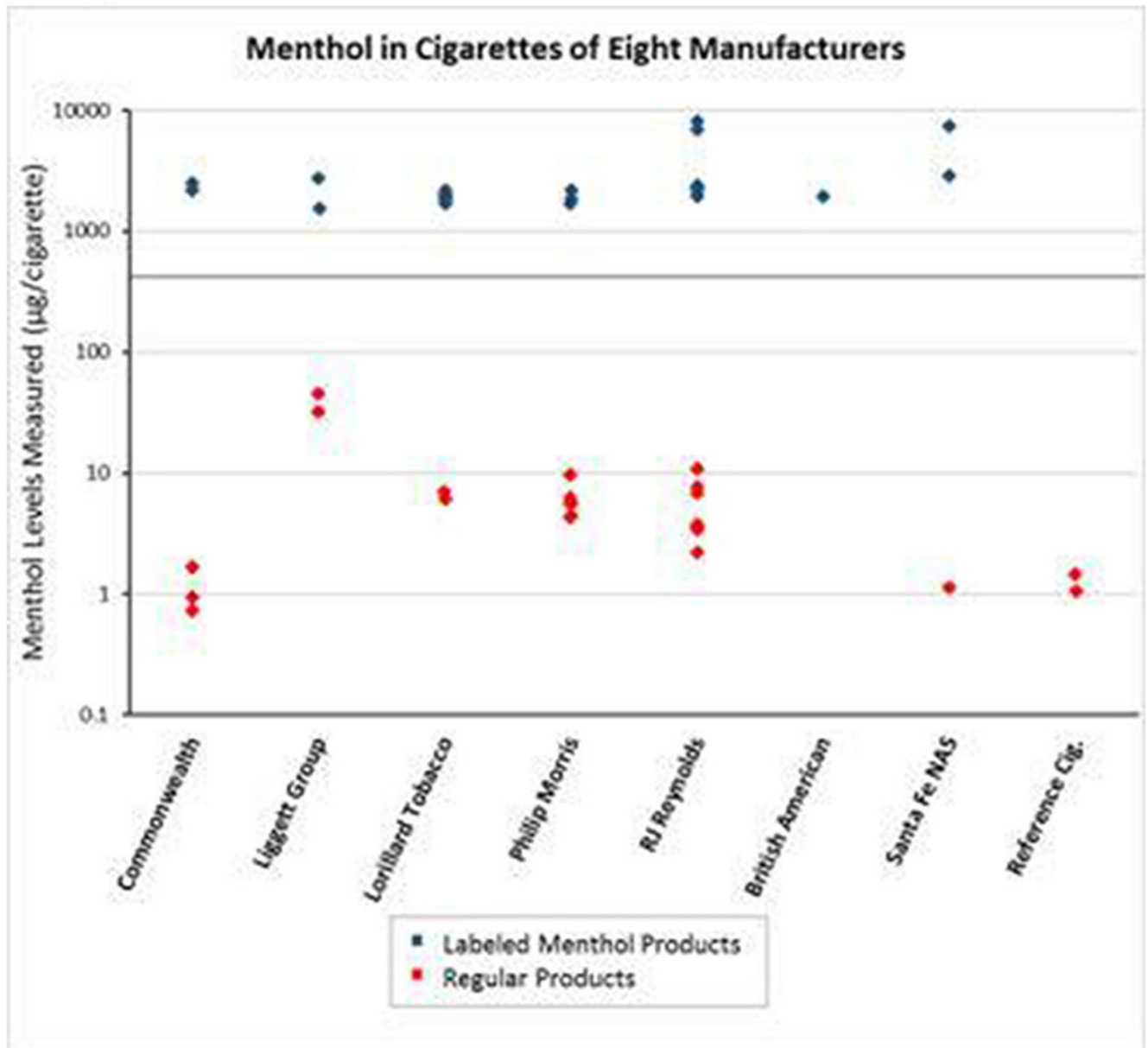


Figure 1.

Measured menthol content in cigarette products from eight manufacturers. each point represents the mean of seven replicate measurements ($n=7$). The perceptible level of menthol is about 1 mg/g in tobacco, which is approximated (based on an average tobacco weight of 0.75 g/cigarette) in the figure as a black line.

Table 1

Manufacturer	Menthol concentration range (µg/cig)	No. products
Commonwealth	0.552 to 2233	5
Liggett Group	30.8 to 2562	4
Lorillard Tobacco	5.22 to 2346	9
Philip Morris	3.64 to 1685	9
RJ Reynolds	1.92 to 7366	13
British American	1898	1
Santa Fe NAS	1.18 to 8341	3
Reference Cig.	0.864 to 1.404	2

Table 2

Manufacturer	Brand name	Original menthol mean/cig (µg/cig)	Corrected menthol mean/cig (µg/cig)
British American Tobacco	Dunhill Dark Green Menthol	4745.8	1898.31
Commonwealth	USA Gold Red Regular	1.4	0.55
Commonwealth	Fortuna Red Regular	1.8	0.73
Commonwealth	Rave Red Regular	3.1	1.24
Commonwealth	Fortuna Green Menthol	4624.3	1849.72
Commonwealth	Rave Green Menthol	5583.3	2233.30
Liggett	Pyramid Red Regular	77.1	30.85
Liggett	Pyramid Blue Regular	109.5	43.79
Liggett	Pyramid Gold Menthol	3712.5	1484.99
Liggett	Eve Turquoise Menthol	6405.7	2562.26
Lorillard	Newport Gold Regular	13.0	5.22
Lorillard	Maverick Red Regular	14.8	5.92
Lorillard	Newport Gold Menthol	3593.4	1437.36
Lorillard	Newport Green Menthol	3783.4	1513.36
Lorillard	Maverick Green Menthol	4388.8	1755.51
Lorillard	Newport Gold Menthol	4456.0	1782.40
Lorillard	Newport Green Menthol	4866.9	1946.75
Lorillard	Newport Green Menthol	5208.5	2083.40
Lorillard	Newport Gold Menthol	5865.6	2346.26
Natural American Spirit	Natural American Spirit Yellow Mellow	2.9	1.18
Natural American Spirit	Natural American Spirit Dark Green Menthol	7894.4	3157.76
Natural American Spirit	Natural American Spirit Light Green Menthol	20 853.2	8341.28
Philip Morris	Saratoga Filters Regular	12.0	4.80
Philip Morris	Marlboro Silver Regular	12.9	5.14
Philip Morris	Marlboro Blue Menthol	3420.8	1368.30
Philip Morris	Marlboro Other Menthol	4063.2	1625.29
Philip Morris	Marlboro Other Menthol	4213.5	1685.39
Phillip Morris	Parliament Blue Regular	9.1	3.64
Phillip Morris	Basic Red Regular	12.3	4.91
Phillip Morris	Benson & Hedges Gold Regular	14.2	5.70
Phillip Morris	Marlboro Red Label Regular	20.2	8.07
RJ Reynolds	Winston Red Regular	4.8	1.93
RJ Reynolds	Doral Gold Regular	7.9	3.15
RJ Reynolds	Pall Mall Red Regular	8.0	3.21
RJ Reynolds	Camel Filters Turkish Domestic	8.3	3.32
RJ Reynolds	Carlton Other Regular	12.6	5.03
RJ Reynolds	Doral Red Regular	16.5	6.62

Manufacturer	Brand name	Original menthol mean/cig (µg/cig)	Corrected menthol mean/cig (µg/cig)
RJ Reynolds	More Filters Regular	25.6	10.23
RJ Reynolds	Capri Green Menthol	3268.7	1307.50
RJ Reynolds	Doral Other Menthol	3939.8	1575.93
RJ Reynolds	Kool Filters Menthol	4868.5	1947.38
RJ Reynolds	More Filters Menthol	5063.1	2025.24
RJ Reynolds	Camel Crush Menthol	15 476.5	6190.60
RJ Reynolds	Camel Crush Menthol	18 415.8	7366.33
University of Kentucky	1R5F Research Regular	2.2	0.86
University of Kentucky	3R4F Research Regular	3.5	1.40