

## LETTER TO THE EDITOR

# Upward trend in number of injectable treatments in the Netherlands 2016–2019

To the editor

Little is known about the incidence of injectable cosmetic treatments and adverse events associated with these treatments. The American Society of Aesthetic Plastic Surgery (ASAPS) and the International Society of Aesthetic Plastic Surgery (ISAPS) provide numbers on injectable treatments, but the data are from their members only and the response rates are low (5%).<sup>1,2</sup> Therefore, these results cannot be extrapolated to a general population.

In 2016, we published the results on the number of injectable treatments in the Netherlands based on a postal survey sent to all doctors in the country who performed injectable treatments.<sup>3</sup> To identify these doctors, we used Google Internet Search, Dutch Archive Data Care Register, and membership lists of all professional specialty associations.

Using this same method, we repeated the survey for the number of treatments performed in 2019. The search yielded a total of 305 eligible doctors. A total of 99 doctors responded (response rate of 32%), of whom 63 (64%) provided exact numbers and 26 (26%) gave estimates. We used the same method to estimate the total number of treatments. Total numbers of botulinum toxin (BTX) and soft tissue filler treatments are presented in Table 1. The male/female ratio was 1:8, and the average age was 43.2 years. Since the scientific societies of all professional specialty associations recommend treating only persons between 18 and 70 years of age, a total of 5.907.190<sup>4</sup> women and 5.934.277<sup>4</sup> men were eligible for treatment in the Netherlands. Considering the male/female ratio and the fact that treatments with BTX are usually given twice yearly and soft tissue fillers once yearly (Velthuis et al., unpublished results), this would mean that in 2019 one out of every 53 women (5.907.190/(0.888 × 124.494)) were treated with BTX, and one out of every 41 (5.907.190/0.888 × 162.702) with soft tissue fillers.

The numbers in 2016 and 2019 are remarkably consistent, suggesting that they could represent the actual numbers in the general Dutch population. In this 3-year period, the number of filler treatments increased by 12%, whereas BTX treatments diminished slightly. This is in line with the international data from ASAPS and ISAPS.

Our estimate that 1 out of every 41 women has undergone filler treatment was surprising, as this makes filler treatments one of the

most popular aesthetic medical intervention in terms of annual frequency. We expect these numbers to be similar to those in other Western countries or even slightly higher, thanks to the influence of Dutch Calvinism.<sup>5</sup> The popularity of filler treatments in Asia and Latin America might be even higher.

Our department holds consultation hours for filler complications, is based in the center of the Netherlands, and can be reached within a two-hour car drive from every place in the country. Although we acknowledge that not every side effect will be referred to our clinic, almost all serious ones are. The most serious adverse events are vascular adverse events (VAE), which we see almost twice every month.<sup>6</sup> Given the calculated total number of treatments, VAE occur in 0.014%. During the last 5 years, the mean number of referred patients with other adverse events from hyaluronic acid fillers was 50 and for BTX it was 5. Hence, the calculated risk for serious HA filler complication is 0.03% and for botulinum toxin 0.002%.

Cosmetic injectable treatments have become an important part of aesthetic medicine and entail very low risks of serious adverse events.

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The authors declare no financial interest in the subject relevant to the manuscript. This study has no involvement of study sponsors.

## CONFLICT OF INTEREST

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## AUTHOR CONTRIBUTIONS

T.D., P.V. and L.B. performed the research. T.D., P.V., R.S. and B.L. designed the research study. D.Z., L.B., R.S. and B.L. contributed essential reagents or tools. T.D., P.V. and D.Z. analyzed the data. T.D., P.V., D.Z., R.S. and B.L. wrote the paper.

## ETHICAL APPROVAL

Research concerning anonymously non-traceable data does not require approval by an ethics committee according to Dutch law (WMO).

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Botulinum Toxin	Response (Calculating Factor)	Number Given	Number Extrapolated TO 100% (+/-20%)
<b>2019</b>			
Factual N = 63	Treatments (x1)	48.875	152.734
Estimate N = 26	Treatments (x1)	30.800	96.250 (77.000–115.500)
Netherlands		Total 2019	<b>248.984</b> (229.734–268.234)
Europe		Total 2019	<b>10.851.806</b>
<b>2016</b>			
Factual N = 60	Treatments (x1)	64.769	175.052
Estimate N = 62	Treatments (x1)	29.052	78.529 (62.815–94.223)
		Total 2016	<b>253.571</b> (237.867–269.275)
<b>Fillers</b>	<b>Response (Calculating Factor)</b>	<b>Number Given</b>	<b>Number Extrapolated TO 100% (+/-20%)</b>
<b>2019</b>			
Factual N = 63	Treatments (x1)	28.365	88.640
Estimate N = 26	Treatments (x1)	23.700	74.062 (59.249 – 88.874)
Netherlands		Total 2019	<b>162.702</b> (147.889 – 177.514)
Europe		Total 2019	<b>7.091.261</b>
<b>2016</b>			
Factual N = 60	Treatments (x1)	35.278	95.345
Estimate N = 62	Treatments (x1)	15.966	43.151 (34.521 – 51.981)
		Total 2016	<b>138.496</b> (129.866–147.126)

Note: For estimates, a 20% margin of uncertainty is given in brackets. European numbers are extrapolated from the number of inhabitants (18–70 years of age) in Europa in 2019.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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