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# An Amazing Trend in the Number of Injectable Treatments in the Netherlands From 2016 to 2022

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Word on the street is that there is a rise in cosmetic injectable treatments (botulinum toxin A and soft tissue fillers) all around the world. However, objective data on the numbers of treatments performed annually are lacking. From a medico-social perspective view as well as from a safety perspective (incidence of adverse events) these numbers would be helpful in establishing the importance of this relatively new field of cosmetic medicine. To this point, questionnaires sent out by The Aesthetic Society have been restricted to their members.<sup>1,2</sup>

In 2016 and 2019 we published the results on the numbers of injectables treatments in the Netherlands based on a postal survey sent to all doctors and medical specialists who performed injectable treatments.<sup>3,4</sup> These doctors were identified with a Google Internet search, the Dutch Archive Data Care Register, and the membership lists of all professional specialty associations.

With the same methods to identify doctors who performed injectable treatments, we repeated the survey for the number of treatments performed in 2022. The search yielded a total of 470 eligible doctors. A total of 141 doctors responded (response rate of 30%), of whom 126 provided exact numbers and 14 gave estimates. Additional standard data editing procedures were followed to ensure responses met survey guidelines. All reported data values were analyzed for statistical reasonableness. Studies such as this often address outlying responses. Because outliers can distort statistical analyses, we removed an outlier that was ten times bigger than the highest number given.

Calculations of total numbers of botulinum toxin (BTX) and soft tissue filler treatments are presented in the [Table 1](#). The male to female ratio of injectable treated clients was 1:8, and the average age was 43.2 years. In general, the majority of treatments were performed in individuals between 18 and 70. Taking that into account, a total of 5,854,997 females and 5,916,694 males were eligible for treatment in the Netherlands, and considering the male to female ratio and the fact that treatments with BTX are usually given 2.50 times yearly and soft tissue fillers 1.56 times yearly (Velthuis et al, unpublished results), this would mean that in 2022 1 out of every 29 females ( $5,854,997 / (0.889 \times [558,720 / 2.50])$ ) was treated with BTX, and 1 out of every 35 ( $5,854,997 / (0.889 \times [294,737 / 1.56])$ ) with soft tissue fillers.<sup>5</sup>

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**Table 1.** Numbers of Botulinum Toxin A and Filler Treatments Reported in 2016 ( $n = 122$ , 37% response rate), 2019 ( $n = 99$ , 32% response rate), and 2022 ( $n = 141$ , 30% response rate) in the Netherlands

The Netherlands	Botulinum toxin			Fillers		
	2016	2019	2022	2016	2019	2022
Respondents	122	99	141	122	99	141
Number given	93,821	79,763	167,616	51,244	52,065	88,421
Number extrapolated	253,571	248,984	558,720	138,496	162,702	294,737
to 100% ( $\pm 20\%$ )	(237,867-269,275)	(229,734-268,234)	(543,937-573,503)	(129,866-147,126)	(147,889-177,514)	(287,795-301,678)
World			227,841,047			120,191,127

Physicians reported either factual or estimated numbers. The reported numbers were extrapolated to a 100% response. For estimates a 20% margin of uncertainty is given in brackets. The reported numbers for the world population were extrapolated from the numbers in the Netherlands.

In the 3-year period from 2019 till 2022 the number of filler treatments increased by 81%, whereas the increase between 2016 and 2019 was only 17%. The steep increase is in line with the rise in numbers of cosmetic clinics (93 in 2019 and 186 in 2022) in that same period and the rise in numbers of registered aesthetic physicians (83 in 2019 and 193 in 2022) who became members of the Dutch Society of Aesthetic Medicine.<sup>5</sup> The Aesthetic Society matches the increase between 2019 and 2022 in the number of filler treatments at 82%.<sup>1,2</sup> Our numbers illustrate that injectable treatments have become an integral part of the cosmetic routine of the Dutch female population. Making a very crude extrapolation of our numbers for the Netherlands to the numbers worldwide, we estimated that, for 4.8 billion males and females between the ages of 18 and 70 years, a total number of 120.2 million filler treatments and 227.9 million botulinum toxin treatments in 2022 would be applicable.

At the only specialized filler complication outpatient department in the Netherlands, at our university hospital we have treated in 2022 a total of 350 new patients with serious filler complications, representing the most severe adverse cases. Serious complications included vascular adverse events (14%), inflammation (23%), and nodules (63%). In the period between 2019 and 2022 the numbers of serious filler complications were stable at around 350 because we did not have more specialized doctors to run this department. The waiting list has grown to six months out. The real numbers of adverse events would be 3-fold (eg, 1050); on the calculated total number of 294,737 filler treatments, the incidence of mid-grade and serious adverse events would be around 0.03%. We were quite certain that not all moderate-severe to severe complications were referred to us and found it reasonable to assume that we might have seen only 50% of these. To avoid minimizing the incidence of filler complications we went one

step further and multiplied with 3 instead of 2. Based upon these numbers, we cannot but conclude that soft tissue filler injections for aesthetic purposes are safe. However, when an adverse event occurs, adequate treatment or referral to our special clinic is of utmost importance to reduce morbidity. The number of cosmetic injectable treatments have significantly increased and have become a significant important part of aesthetic medicine.

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