By Greg Drevenstedt, PhD

Three Out of Four Labs Now Use 3D Printers:

New Results from NADL's Dental Technology Survey

After declining last year, the percentage of dental labs that report using 3D printers increased to 72 percent – the highest figure recorded since NADL began compiling survey data on this technology in 2014 (**Fig. 1**). Over the past 11 years, the proportion of dental labs using an in-house 3D printer in one or more production processes has increased nearly sevenfold, from 11 percent in 2014 to 72 percent in 2025.

Among dental labs surveyed in 2025 that do not currently use 3D printers, 30 percent plan to buy or lease a 3D printer within the next three years, down from 32 percent in 2024.

NADL Survey Program

Trends in 3D printer use have been measured in nationwide surveys conducted by NADL and Valmont Research, including the Materials and Equipment Survey (2014-2019) and the Dental Technology Survey (2019-2025). Invitations to complete online surveys are sent out via email. Data for the 2025 Dental Technology Survey was collected during an eight-week period from July 14 to September 2. A total of 363 responses were received, and the response rate was 9.0 percent. Over the past seven years, 2,835 responses to NADL's Dental Technology Survey have been analyzed.

"Digital dentistry is the future"

With three out of four dental labs using 3D printers as well as other digital technologies (CAD/CAM, design software, scanners, etc.), digital dentistry is a present reality as well as a future challenge. Because the technologies are evolving rapidly, lab owners, managers, and technicians must work hard to keep up. When asked to provide open-ended comments about dental lab technology, respondents wrote in comments such as "digital dentistry is the future," "3D printers are a necessity," "3D printers are constantly evolving and are getting better and faster," and "technology is changing fast," which were common themes.

Over the past seven years (2019-2025) an average of 93 percent of dental labs that use 3D printers reported that their digital manufacturing will "increase substantially" or "increase moderately" over the next three to five years. Furthermore, labs that report that more than 50 percent of their cases originate from intraoral scans increased from 12 percent in 2019 to 47 percent in 2025.

Just as overall use of 3D printing has increased over the past decade, so has the number of 3D-printed cases produced per day. The percentage of labs producing 10 or more cases using 3D printers increased from 52 percent in 2019 to 67 percent in 2025, and the percentage of labs producing 50 or more cases using 3D printers increased from 16 percent in 2019 to 27 percent in 2025.

3D-Printed Parts

By far the most widely produced 3D-printed applications or parts are models for crown and bridge. Between 2020 and 2025, an average of 75 percent of labs reported using 3D printers to produce C&B models (the 2019 survey's list of 3D-printed applications is not directly comparable with later surveys). Other applications commonly produced using 3D printers include models for removables (55 percent average), splints or nightguards (53 percent), temporary crown and bridge (45 percent), surgical guides (44 percent),

Figure 1

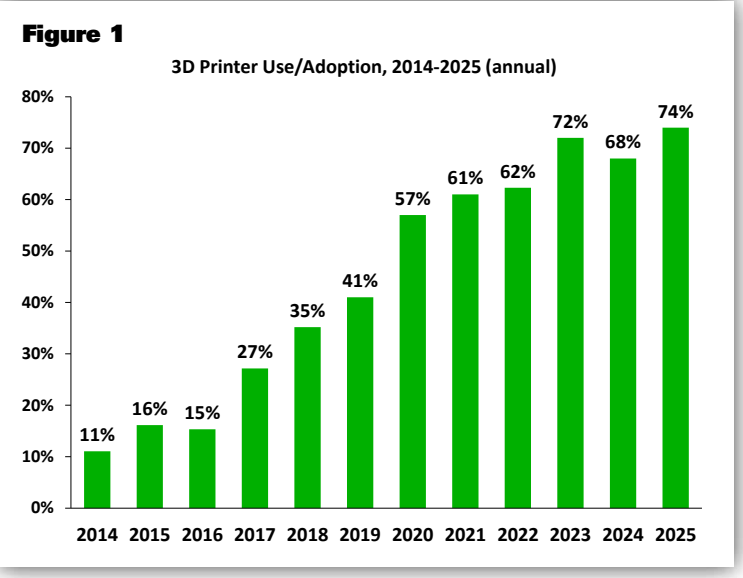


Figure 2

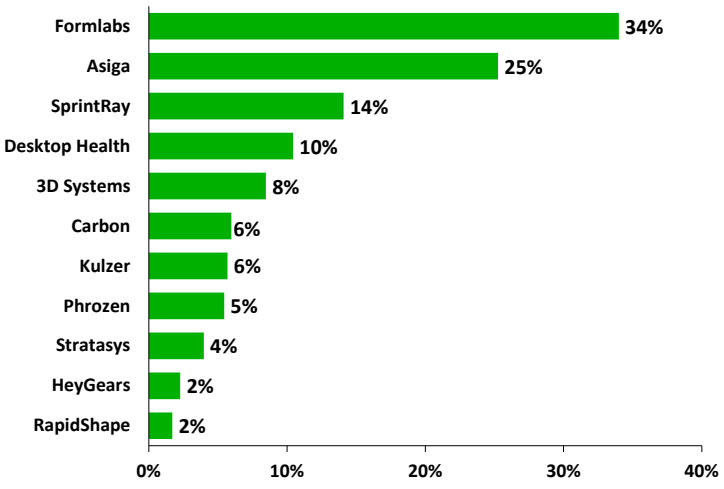
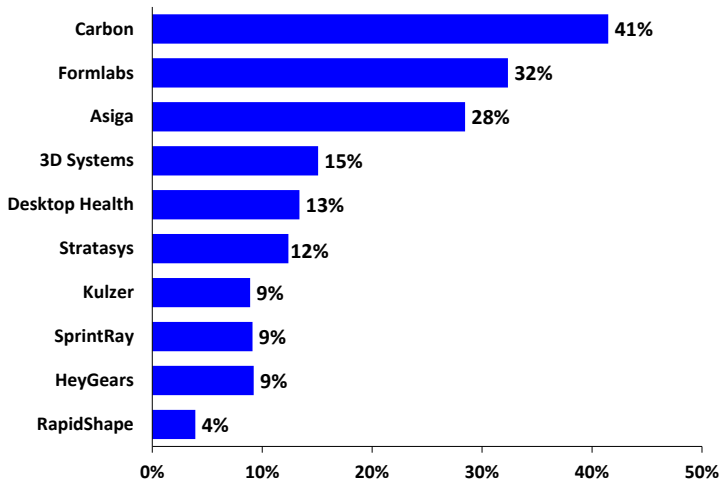


Figure 3



impression trays (35 percent), base and teeth for dentures (34 percent), and models for clear aligners (33 percent).

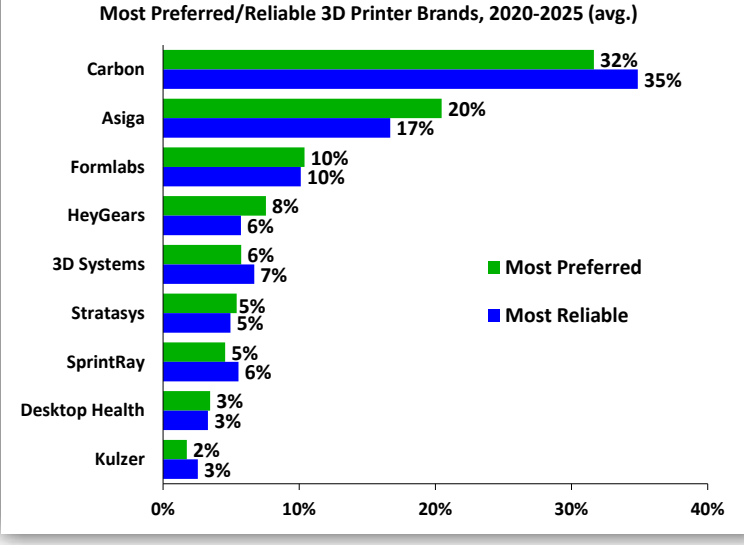
3D Printer Brands

Each annual survey asked respondents to report which 3D printers are used in their labs, and they could select multiple brands. With data pooled for the 2019-2025 seven-year period (2,835 responses), among small labs with less than 10 employees the leading 3D printer brands are: Formlabs (34 percent), Asiga (25 percent), SprintRay (14 percent), Desktop Health (10 percent), 3D Systems (8 percent), Carbon (6 percent), Kulzer (6 percent), Phrozen (5 percent), Stratasys (4 percent), RapidShape (2 percent), and HeyGears (2 percent) (**Fig. 2**).

Among larger labs with 10 or more employees (and therefore higher volumes of production), there is a different ranking for the most widely used brands. Carbon is the most common brand (41 percent), followed by Formlabs (32 percent), Asiga (28 percent), 3D Systems (15 percent), Desktop Health (13 percent), Stratasys (12 percent), Kulzer (9 percent), SprintRay (9 percent), HeyGears (9 percent), and RapidShape (4 percent) (**Fig. 3**).

More than half of dental labs use only one brand of 3D printer, but the percentage of single-brand labs has decreased from

Figure 4



62 percent in 2019 to 55 percent in 2025. Labs that use more than one brand of 3D printer were asked to select the most preferred brand and the most reliable brand. With responses pooled over the 2020-2025 period (**Fig. 4**), the most preferred brands are Carbon

Figure 5

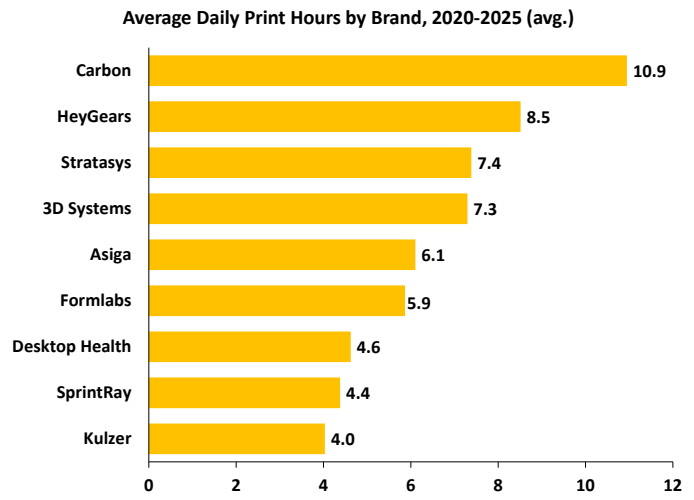
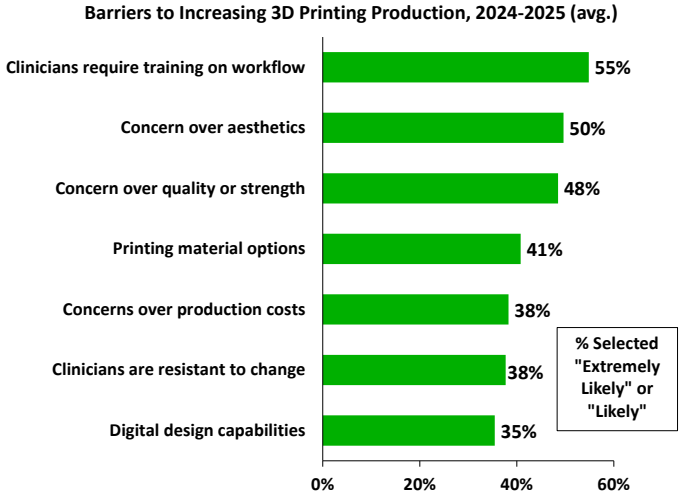


Figure 6



(32 percent), Asiga (20 percent), and Formlabs (10 percent), while all other brands were most preferred by less than 10 percent of labs. The most reliable brands are Carbon (35 percent), Asiga (17 percent), and Formlabs (10 percent).

Starting in 2020, the annual surveys asked respondents to provide the average daily print hours for each brand of 3D printer used in their lab. With responses pooled over the 2020-2025 six-year period, the average daily print hours are as follows: Carbon (10.9), HeyGears (8.5), Stratasys (7.4), 3D Systems (7.3), Asiga (6.1), Formlabs (5.9), Desktop Health (4.6), SprintRay (4.4), and Kulzer (4.0) (**Fig. 5**).

Labs use 3D printers to increase productivity and to improve the quality and consistency of restorations. Many labs would like to use their 3D printers more, but they face challenges in doing so. In 2024 and 2025, the surveys asked respondents to rate the degree to which certain factors are barriers to increasing 3D printing production. They rated the factors on a five-point scale, from "extremely unlikely" to "extremely likely."

The three leading barriers, based on the percentage of respondents who selected "likely" or "extremely likely," are "Clinicians are resistant to change from traditional workflows" (55 percent), "Concern over aesthetics and/or ability to characterize" (50 percent), and "Concern over quality or strength" (48 percent) (**Fig. 6**).

The Future: Automation & AI

3D printing is constantly evolving. In recent years automation processes have emerged, and more labs are bringing the power of artificial intelligence (AI) to bear on their workflows.

In response to a new question in the 2025 Dental Laboratory Technology Survey – *Has your lab adopted any form of 3D printing workflow automation in the past 12 months? Examples include automated nesting software, automated print turnover systems, or automated part washing solutions.* – 22 percent of dental labs answered "Yes." When asked to provide examples, written responses included "AI design," "AI nesting," "automated nesting," "CADflow to prepare our models for printing," "Carbon printers have been automated to print overnight unattended," "model production automation," and other similar comments.

Dental labs continue to embrace 3D printing and the myriad ways it can improve their business. In the words of one respondent, "We're witnessing a transformation that empowers labs to deliver restorations with unprecedented accuracy, efficiency, and customization. The future of dental lab technology lies not just in automation, but in interoperability, education, and trust. It's no longer just about making teeth — it's about building confidence, restoring lives, and shaping the future of dentistry through precision, purpose, and people." **JDT**

About the Author

Greg Drevenstedt, PhD, is principal and project director at Valmont Research, a market research and consulting firm that has conducted surveys for NADL since 2005. He received his PhD in Demography from the University of Pennsylvania. When not crunching numbers, he's exploring backroads on a motorcycle.