

Be a better surgeon: Two-minute suture challenge

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INTRODUCTION

Can you perform 10 interrupted sutures with one thread, cutting your own sutures in less than 2 minutes, without the help of a nurse? Suturing is the most fundamental skill for every surgeon, across all surgical specialties¹ and one of the earliest technique a surgeon acquires. This study was conducted to challenge the residents to improve their suturing skills and speed. Recording improvement, measuring and standardizing the time needed to complete 10 interrupted sutures on their own. To analyze and draw conclusions of how to perfect and improve the efficiency of interrupted suturing

METHOD

Four plastic surgery residents participated in a suturing task that tested their speed and efficiency in performing 10 simple interrupted sutures on an 8 cm incision of multi-layered tested silicon foam without assistance. The participants used a 4/0 nylon thread, 45 cm long, 3/8 19 mm cutting needle (Dermalon, Covidien), and surgical instruments (needle holder, forceps and scissors). The task was to tie four knots in each suture and cut the remaining threads quickly, while performing the best suture alignment possible. The participants perform this task twice – once using a 2.5 X loupe magnifier and the other without.

RESULTS

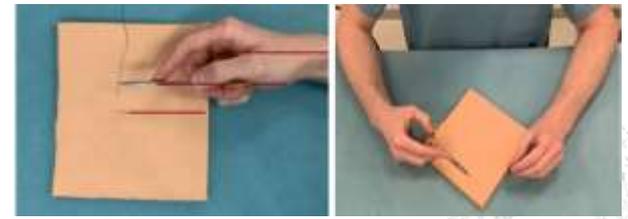
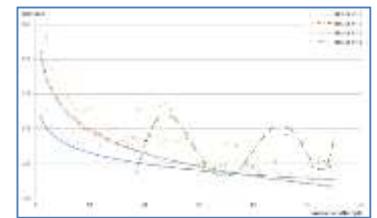
Four residents participated in a total of 65 sessions over 67 weeks. Initial and best times recorded were significantly faster by Wilcoxon ($p < 0.001$). The times with the loupes were slower ($p < 0.001$). The goal of performing 10 sutures in less than 3 minutes was reached after an average of 10 weeks (range 4-15 weeks) without loupes and 15 weeks (range 8-20 weeks) with loupes Performance time was recorded and curves were plotted for all participants with and without surgical loupes. Using the logarithmic model $y = a + b \ln x$, we found a significant fit to describe the scatterplots of 3 of the 4 participants: naked eyes ($P < 0.001$) and when using loupes ($P < 0.001$; Figure 1).

OBJECTIVES

In this study, we found that the learning curve of the residents followed a logarithmic curve. This strongly supports the idea that practicing the ideal technique improves efficiency and productivity.

Residents starting and best records in table 1.

	Resident 1	Resident 2	Resident 3	Resident 4
Initial result – no loupes	3.41 min	6.57 min	5.28 min	3.16 min
Best result – no loupes	1.52 min	2.10 min	2.14 min	2.24 min
Initial result – loupes	3.58 min	8.07 min	6.33 min	4.05 min
Best result – loupes	2.12 min	2.46 min	2.24 min	2.32 min



CONCLUSIONS

Practice has a logarithmically positive effect on residents' technique. Improving the speed of the surgeon is crucial for patient well-being and better OR utilization.