

# A Novel Auto-mix Machine and Impression Materials Evaluated in General Practice

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## INTRODUCTION

The purpose of this practice-based evaluation was to assess the performance and handling of an automatic impression machine (Pentamix™ 3\*) and its associated polyether impression materials (Impregum™ Penta™ Soft Quick\*, and Impregum Penta H DuoSoft Quick\* with Impregum L DuoSoft Quick\*. [\*3M ESPE, Seefeld, Germany] by general dental practitioner (GDP) members of a UK-wide Practice-Based Research Group the PREP (Product Research and Evaluation by Practitioners).

The PREP Panel was established in 1993, has presently 33 members and has published over 50 papers (13 in peer-reviewed journals) reporting handling evaluations and clinical trials carried out by the Group.

## METHOD

Thirteen GDP members (two of whom were female) of average time since graduation 23 years (range 17-42 years), were chosen at random to receive a machine and packs of impression materials with full instructions for use over a ten-week period. A questionnaire was designed to evaluate their current impressing techniques, and the presentation, instructions, dispensing, ease of use and patient acceptability of the new machine and materials. Most responses were given on visual analogue scale (V A S).

## BACKGROUND INFORMATION

- Of the 13 evaluators, eleven (85%) reported that the number of impressions taken in a typical week was less than 10. The remaining 2 evaluators took between 10 and 15 per week.
- Main reasons for choice of impression materials were accuracy (consistent good results) and ease of use.
- 85% of evaluators generally took full arch impressions for crown & bridge work, and the same number used a simultaneous putty/wash technique.
- 92% (n=12) stated that less than 10% of their crown & bridge work required more than limited adjustment before seating in the mouth with the same number reporting that less than 10% had to be remade for reasons other than cosmetic.
- 69% (n=9) used either hand mixing or a 50ml cartridge hand dispenser to mix impression materials, with 4 (30%) using an automated device.



3M ESPE Pentamix 3

## RESULTS

### The impression materials

A total of 138 impressions were recorded (106 Impregum Penta H & L DuoSoft Quick and 32 Impregum Penta Soft Quick)

The **ease of use** (on a VAS where 1 = poor and 5 = excellent) was rated as follows:

	CURRENT MATERIALS	4.0	
1	EVALUATION MATERIALS	4.3	5

The **ease of removal** (on a VAS where 1 = very difficult and 5 = very easy) was rated as follows:

	CURRENT MATERIALS	3.7	
1	EVALUATION MATS	3.4	5

85% (n=9) of the evaluators rated the trial materials as excellent or good for **working & setting time**.

85% (n=9) also rated the **fit** of single units to be better or the same as with their previous material.

The same number would also recommend the new materials to colleagues.

## RESULTS

### The Auto-Mix machine

Following clinical use, the **ease of use** of the Pentamix 3 was rated (on a VAS where 1 = very difficult and 5 = very easy) as follows:

1	EASE OF USE	4.8	5
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When the evaluators were asked to rate the machine for a variety of attributes (on a VAS where 1 = very dissatisfied and 5 = very satisfied) the results were as follows:

	TIME TO FILL A TRAY	4.8	
	SIZE OF DEVICE	3.6	
	OVERALL CONVENIENCE	4.9	
	OVERALL SATISFACTION	4.5	
1	HOMOGENEOUS VOID FREE MIX	4.9	5
	REPRODUCIBLE MIXING QUALITY	5	
	CLEANLINESS, HYGIENE	4.8	
	LONGER WORKING TIME	4.3	
	EXACT DOSAGE	4.5	

85% (n =11) of evaluators would recommend the Pentamix 3 to colleagues.

## CONCLUSION

After an extensive evaluation by GDPs in which 138 impressions were taken, the new automix impression machine, and the associated material, received very good ratings and overall 85% of the evaluators would recommend both the machine and the impression materials to colleagues.

## ACKNOWLEDGEMENT

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