



# Single-use Intra-oral Impression Syringes Evaluated by UK General Practitioners

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## INTRODUCTION

The purpose of this practice-based evaluation was to assess the handling of a new single use intra-oral impression syringe developed for use with both polyether and VPS materials (Impregum™ and Express™ 2 Intra-oral syringes (3M™ ESPE™, 3M Deutschland GmbH, Seefeld, Germany) by general dental practitioner (GDP) members of a UK-wide Practice-Based Research Group (P-BRG) the PREP (Product Research and Evaluation by Practitioners). The PREP Panel was established in 1993, has presently 35 members and has published over 50 papers (15 in peer-reviewed journals) reporting handling evaluations and clinical trials carried out by the group.

## METHOD

Fourteen GDP members of the PREP panel were chosen at random and (after determining operator preference) packs of either the Impregum or Express 2 intra-oral syringes, instructions, plus a questionnaire (designed to evaluate their current impressioning technique, and to rate the presentation, instructions, dispensing, ease of use and handling of the new delivery system) were distributed. Most responses were given on visual analogue scale (VAS).

## MATERIALS

This new single-use impression syringe is loaded with the amount of material required (for 2 to 4 units) direct from a standard 50ml hand-held cartridge.(Fig.1) The system is designed to be hygienic, economical and to allow easy & precise application.

## RESULTS

### Background Information

The majority of the evaluators (64%) took less than 10 impressions in a typical week, and all the evaluators stated they typically took full arch impressions with 50% using a putty/wash technique. The main reasons for choice of impression material were accuracy and ease of use. The **ease of use** of the currently used impression mixing syringe system was rated (on a VAS where 1 = difficult to use & 5 = easy to use) as follows:

## After clinical use of 3M ESPE Intra-oral Syringes

Ten evaluators used the Express 2 and three used the Impregum intra-oral impression syringes to take 198 impressions. 93% of evaluators stated the instructions were clear & well written.

When the evaluators were asked to rate the syringes on a variety of criteria the results were as tabulated below.

Criteria	Average score	Range
Overall ease of use	4.2	5 - 2
Size of device	4.3	5 - 3
Extrusion force	4.4	5 - 2
Mixing quality	4.3	5 - 3
Impression material waste	3.8	5 - 1
Suitability for intra-oral application	4.5	5 - 3
Ergonomics	4.3	5 - 2
Access to areas difficult to reach	4.2	5 - 2
Ease of intra-oral handling	4.3	5 - 3
Patient comfort	4.4	5 - 3
Hygiene	4.8	5 - 3
Overall convenience when working with the device	4.2	5 - 2
Design	4.2	5 - 3
Overall satisfaction	4.0	5 - 2



Fig. 1 Loading the Intra-oral Syringe



Fig. 2 Intra-oral Syringe ready for use

73% of the evaluators stated they would recommend the intra-oral syringes to colleagues.

## CONCLUSION

The new syringes achieved well above average ratings in all the criteria evaluated and was equal to the pre-trial impression mixing syringe for overall ease of use.

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