Is there a place for Tooth Mousse in the prevention and treatment of early tooth decay?

Despite significant improvements in oral health over the past forty years, tooth decay remains one of the most common health problems worldwide. The level of tooth decay found in low income and socially-disadvantaged areas remains a public health issue. Routine oral care strategies such as tooth-brushing with fluoride toothpaste and using other fluoride products, limiting the frequency of eating refined carbohydrates and protecting teeth by the placement of fissure sealants have been the mainstay of tooth decay prevention to date. However, there is a constant search for new strategies and technologies to improve oral health. One such technology currently gaining popularity is casein phosphopeptide-amorphous calcium phosphate – or CPP-ACP for short.

A systematic literature review was carried out to assess all the available studies published in English on Tooth Mousse® for the prevention and treatment of early tooth decay. Tooth Mousse® is a product containing the active ingredient CPP-ACP - derived from the milk protein casein. Whilst traditional decay-preventing products – such as fluorides and fissure sealants have a wealth of clinical research to support their ongoing use – the newer products such as Tooth Mousse® have a more limited evidence base.

A broad search of the literature (Medline via OvidSP, EMBASE, PREMEDLINE and Cochrane Database of Systematic Reviews) identified 172 unique articles on CPP-ACP. These records were screened and only those relating to the use of Tooth Mousse® and Tooth Mousse Plus® (the fluoride-containing variant) in human clinical studies were selected. The resulting 12 studies were analysed for effectiveness of the products in the management of tooth decay. Most studies were short-term – with only 2 studies longer than 6-months duration and 8 out of the 12 studies had 65 or less participants.

Three studies related to prevention and 9 to treatment or regression of early decay. Two of the 3 prevention studies were large clinical trials in populations of pre-school children. These studies found no benefits in the use of Tooth Mousse® over standard tooth-brushing with either a child-strength or adult-strength fluoride toothpaste. The third prevention study – in a very small group of teenagers with fixed braces showed a benefit for the use of Tooth Mousse® compared to the control group. However, it must be noted that neither of the groups were using fluoride toothpaste as part of their standard oral care routine. Therefore, the overall findings of this review did not show any significant benefits for the use of Tooth Mousse® products over brushing with fluoride toothpaste for the prevention of early decay.

With regard to treatment of early decay – most studies (7) were carried out in patients undergoing orthodontic treatment with fixed braces. In this select group of the population – the findings of the studies were spit - 4 in favour of Tooth Mousse® and 3 showing no benefit over tooth-brushing with fluoride toothpaste. The two remaining treatment studies reporting on early decay in young adults were of very short duration (? 1 month) with low participant numbers. One study showed a benefit for the use of Tooth Mousse® over tooth-brushing with fluoride toothpaste. The final study was more difficult to assess as it was unclear whether fluoride-containing toothpaste was used by the participants. However, those using the Tooth Mousse® products did show some benefit in regression of the early decay lesions.

The conclusions of this review were that currently there is a lack of evidence to support the use of Tooth Mousse® products over routine oral care using fluoride toothpaste for the prevention of early tooth decay. There is a tendency towards a benefit for the use of Tooth Mousse® products for the treatment of early decay in people undergoing orthodontic treatment with fixed braces – but the quality of the research is limited. Further well-designed clinical studies are required before the widespread use of Tooth Mousse® products can be recommended for the management of tooth decay in the general population.

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