



# Charcoal-Based Dental Products in Clinical Practice: An Update

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## Introduction

Charcoal dentifrices and powders are classified as fashionable oral hygiene products of the modern age. They are primarily used for tooth brushing and extrinsic stains removal and, it is entitled as 'tooth whitening'. The popularity of these charcoal-based products is increasing in many countries across the globe. Many patients these days are concerned about using charcoal-based dentifrices and powders for whitening effects and other benefits. However, it's often advisable not to use charcoal-based dentifrices as the strength of evidence to support claims by the manufactures is relatively low [1].

## Overview

The efficacy of whitening toothpaste is controversial and questionable. Whitening toothpaste often increases the risk of wearing the dental structure and may cause disappointments for patients if the cosmetic outcomes are not achieved. Nevertheless, a dilemma has been associated with the use of activated charcoal for a whitening effect. It was stated that activated charcoal has no scientific proof, 96% of commercially available activated charcoal toothpaste claim to potentially whiten teeth only in their marketing strategies [2]. However, there is no formal clinical evidence that supports that activated charcoal effectively whitens teeth. Moreover, the Food and Drug Administration (FDA) has approved activated charcoal for many health issues. Currently, the American Dental Association (ADA) has not approved any activated charcoal products for oral health.

The whitening effect of charcoal exists in its porosity, while it's considered as highly abrasive in nature. Due to the, it's high abrasive property, it's recommended to use it with extreme caution when brushing the substance onto the tooth surface. Therefore, it's recommended to consult a dental professional before performing any whitening procedure [3].

On the other hand, toothbrushes have been marketed claiming lesser bacterial contamination due to the presence of activated

charcoal. The study showed the number of Colony Forming Units (CFUs) in charcoal toothbrushes was substantially found less in comparison with non-charcoal toothbrushes after 1 week of usage. Thus, the charcoal-infused tooth bristles can be relatively considered a new product to prevent bacterial contamination [4]. However, the results revealed by the literature review showed insufficient clinical and laboratory data to substantiate the efficacy and safety claims of charcoal and charcoal-based dentifrices or products. Well-designed studies and appropriate sample size studies are required to establish a well-defined conclusive evidence [5].

## Conclusion

Dental Clinicians should advise their patients to be cautious when using charcoal and charcoal-based dentifrices or other products available in the market with unproven claims of efficacy and safety.

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