什麼牙膏一定要含氟?!

Research Looks at the Efficacy of Fluoride Concentration in Toothpaste

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齲齒是世界各地所有年齡段的人普遍存在的問題。齲齒不僅會引起不適，還會浪費時間和金錢。在美國，有 92%的成年人經歷了與齲齒有關的痛苦和費用。

經過多年的科學研究證明，**氟化物可預防齲齒**，1956 年含氟牙膏進入了美國市場。儘管含氟牙膏已成為 60 多年來個人口腔衛生的標準產品，**但有關劑量依賴性、安全性和有效性的問題仍然存在。**

Cochrane Reviews 在 2019 年 3 月發表了一篇系統信文獻回顧文章(systematic review)，在不同氟化物濃度的牙膏對於齲齒預防的成效。分析了 1955 年至 2014 年發布的 96 項研究，來自 65,335 名使用含氟濃度為 0 至 2400ppm 牙膏刷牙的牙科患者(兒童和成人）的數據。

關於氟化物對牙齒健康的影響的研究始於 1909 年，由 Frederick McKay 博士發起。經過多年的研究，政府官員開始實施使用氟化物改善牙齒健康問題的想法。密西根州的大急流市(Grand Rapids, MI)官員於 1945 年率先於該市的飲用水中添加氟化物。

1956 年，寶潔公司（Proctor Gamble）發行了第一支含氟牙膏，打入了美國市場。如今，全世界數十億人依靠含氟牙膏來預防齲齒。在美國，牙膏通常包括氟化鈉，氟磷酸鈉或氟化亞錫的氟化物。

在美國銷售的牙膏中，超過95％含有氟化物。典型的非處方牙膏含有1000-1500ppm的氟化物，但也有其他濃度。沒有最低濃度水平，但每個國家都確定其最大允許氟化物濃度。由於存在氟中毒的可能性，高濃度牙膏通常需要開處方。在美國，處方強度含氟量的濃度可以至 5000 ppm。

過量攝入氟化物會導致仍在形成牙齒的兒童（尤其是 6 歲以下的兒童）引起氟中毒，儘管大多數情況下會導致輕度症狀，但氟中毒會導致牙釉質點蝕和隨後的染色。含氟量較低的兒童牙膏可以在市面上買到，雖然不同製造商之間的濃度有所不同，但其中一些含氟量濃度低至 250 ppm。

但是，**研究表明，即使是兒童中，使用含氟濃度低於 550 ppm 的牙膏刷牙也不能減少齲齒的發生。用低濃度含氟牙膏刷牙等同於使用非含氟牙膏刷牙。**

使用含氟牙膏比用非含氟牙膏刷牙能更有效地預防齲齒。在兒童和成人中，結果均表明，與**使用非含氟牙膏刷牙相比，使用含氟牙膏刷牙可使齲齒的發生率降低約 24％。**

較高的氟化物濃度可對牙齒提供更好的保護。**在兒童和青少年中，使用含氟量 1450 至 1500 ppm 牙膏刷牙比使用含氟量 1000 至 1250 ppm 牙膏減少齲蝕的程度更大，這表明較高的濃度更有效。**

然而，增加氟化物的量甚至更高並沒有帶來額外的好處。**當兒童使用含氟量 1700 至 2200 ppm 或 2400 至 2800 ppm 的牙膏刷牙時，新齲齒病變的數量與使用含氟量 1450 至 1500 ppm 牙膏的刷牙者相似。**

鼓勵患者使用含氟牙膏刷牙。透過闡明高濃度含氟牙膏在預防齲齒方面的潛在益處，這項最新的分析改進了以往的研究。

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Dental caries is a ubiquitous problem around the globe for people of all ages. Cavities not only cause discomfort, though. They also consume time and money. In the US, 92% of adults have experienced the pain and expense associated with dental cavities.

After years of scientific research demonstrated the effectiveness of fluoride in preventing dental decay, fluoride-fortified toothpaste hit the American market in 1956. While fluoride toothpaste has been the standard personal oral-hygiene product for over 60 years, questions linger regarding dose-dependent health, safety, and effectiveness.

Cochrane Reviews published a systematic review in March 2019 to determine how effectively fluoride prevents dental caries when fluoride concentrations in toothpaste vary. Ninety-six studies released between 1955 to 2014 were analyzed. The 96 studies included data from 65,335 dental patients (both children and adults) who brushed their teeth with toothpaste containing fluoride in concentrations ranging from 0 to 2400 parts per million fluoride (ppm F).

Background

The investigation into the effect of fluoride on dental health began in 1909 with Dr. Frederick McKay. After years of research, government officials began implementing the idea of using fluoride to improve dental health. Officials in Grand Rapids, MI were the first to add fluoride to the city's drinking water in 1945.

In 1956, Proctor Gamble released the first fluoride-fortified toothpaste to hit the American market. Today, billions of people around the world rely on fluoride toothpaste as their first step in defending against cavities and dental decay. In the US, toothpastes typically include the fluoride compounds of sodium fluoride, sodium monofluorophosphate, or stannous fluoride.

Over 95% of toothpastes sold in the US contain fluoride. Typical over-the-counter toothpastes contain 1000 – 1500 parts per million of fluoride, although other concentrations are available. No minimum concentration level exists, but each country determines its own maximum-allowable fluoride concentration. High-concentration toothpastes typically require a prescription because of the potential for fluorosis. In the US, prescription-strength fluoride concentrations can contain 5000 ppm F.

Excessive fluoride intake can cause fluorosis in children whose teeth are still forming, especially under the age of 6. Fluorosis can cause pitting of the enamel and subsequent staining, although most cases result in mild symptoms. Children's toothpaste containing lower concentrations of fluoride are available over the counter. While concentrations vary among manufacturers, some contain levels as low as 250 ppm F.

However, research shows that, even in children, brushing with concentrations under 550 ppm does not reduce the incidence of dental decay. Brushing with low-concentration fluoride toothpaste offers the same effects as brushing with non-fluoride toothpaste.

Results

Using a fluoride toothpaste is more effective in preventing dental decay than brushing with a non-fluoride toothpaste. In both children and adults, results indicated that brushing with a fluoride toothpaste reduced the incidence of new dental caries by approximately 24% when compared to brushing with non-fluoride toothpaste.

Higher concentrations of fluoride offer greater protection. In children and adolescents, brushing with 1450 to 1500 ppm F toothpaste reduced the amount of new decay more than using a 1000 to 1250 ppm F toothpaste, indicating that the higher concentrations are more effective.

Increasing the amount of fluoride even higher showed no extra benefits, however. When children brushed their teeth with either a 1700 to 2200 ppm or 2400 to 2800 ppm fluoride, the number of new carious lesions was similar to those who brushed with a 1450 to 1500 ppm toothpaste.

Final Notes

Encouraging patients to brush regularly with fluoride toothpaste should continue. This recent analysis improves upon past research by elucidating the potential benefits of higher-concentration fluoride toothpaste in preventing dental caries.

文章來源：https://www.todaysrdh.com/research-looks-at-the-efficacy-of-fluoride-concentration-in-toothpaste/