

4.15 蛋学长精读 | 护牙指南：保持牙齿健康的方法



March 22nd 2025 【Science & technology】

Well **informed**: How to keep your teeth healthy

护牙指南：保持牙齿健康的方法

Tooth-brushing reigns **supreme**. But **fluoride** in tap water is a good safety-net

刷牙是护牙王道，但自来水中的氟化物也是牙齿健康的“安全网”

【1】Tap water across America has, for decades, been **fortified** with **fluoride**, a **negatively charged** ion of the **chemical** element fluorine, in order to **strengthen** the public's teeth. But a scientific review **published** in 2024 by America's National Toxicology Programme, an arm of the country's health department, suggested that high levels of **fluoride** are **associated** with lower IQ in children. Panda Foreign Magazine Intensive Reading: Respect for Originality, Piracy Must Be Punished

几十年来，美国各地的自来水一直添加氟化物（氟的阴离子）以强化公众牙齿健康。然而，美国卫生部门下属的国家毒理学计划2024年发布的一项科学评估显示，高氟摄入可能与儿童智商降低有关。

【2】Even though no **conclusive causal** link has been

中文导读

刷牙是护牙王道，但自来水中的氟化物也是牙齿健康的“安全网”

informed /ɪn'fɔ:md/ adj. 见多识广的, 有学问的, 有见识的, 知情的 v. 通知, 了解, 知会, 通告, 熟悉, 对...有影响 inform 的过去分词和过去式 They **informed** him that they wished reconciliation. 他们告诉他, 他们愿意和解。

brushing /'brʌʃɪŋ/ v. (用刷子) 刷净, 刷亮, 刷平顺, (用刷子) 抹, 涂, (用刷子或手) 拂, 掸, 擦掉 n. 刷牙; 刷牙; 拉绒; 扫[刷] 拢来的东西 brush 的现在分词 Dentists advise their patients to brush and floss regularly to prevent their teeth from decaying. 牙医建议他们的病人定期刷牙并用洁牙线剔牙, 以防止蛀牙。

supreme /su:'pri:m/ adj. 最高的, (级别或地位) 至高无上的, (程度) 很大的, 最大的 The nickname of "supreme gundog" is well earned. 因此为自己挣来了“最好的枪猎犬”的外号。

fluoride /'flʊəraɪd/ n. 氟化物 It is a proven fact that fluoride strengthens growing teeth. 氟化物可以强化生长中的牙齿, 这是已证明的事实。

1

fortified /'fɔ:tɪfaɪd/ v. 筑防御工事以防卫, (尤指) 筑城防御, (在物质或精神上) 加强, 增强, 增强(感觉或态度) fortify 的过去分词和过去式 Prayer **fortified** us during our crisis. 在关键时刻祈祷使我们变得坚强

negatively /'negətɪvli/ adv. 消极的, 否定地, 消极地, 负(阴性)地 Electrons are **negatively charged** with electricity, protons are positively charged. 电子是带负电荷的, 质子是带正电荷的。

charged /tʃɑ:dʒd/ adj. (粒子) 带电的; (形势) 紧张的, 引起强烈感情的 v. 收费; 起诉; 控告; (向...) 要价; 把... 记在账上; 在某人账上记入 Electrons are **negatively charged** with electricity, protons are **positively charged**. 电子是带负电荷的, 质子是带正电荷的。

chemical /'kemɪk(ə)l/ adj. 化学的; 化学作用的; 与化学有关的; 用化学方法制造的 n. 化学制品; 化学品 The **behavio(u)r of the chemicals** was unexpected. 这些药品变是出人意料。

strengthen /'streŋθ(ə)n/ v. 加强, 增强, 巩固 Their strength in defence counterbalances our strength in attack. 他们防卫的力量可抵消我们攻击的力量。

published /'pʌblɪʃt/ v. 出版, 发行, (在报刊) 发表, 刊登, 登载, (在互联网上) 发表, 公布 publish 的过去分词和过去式 The book was **published in association with** British Heritage. 这本书是与英国传统出版社联合出版的。

associated /ə'soʊʃɪətid/ adj. 有关联的, 相关的, 有联系的, (用于联合企业的名称) 联合的 v. 联想, 联系, 交往, (尤指) 混在一起, 表明支持, 表示同意 associate 的过去分词和过去式 Conceit is **associated with** stupidity and ignorance. 骄傲的朋友是愚蠢和无知。

2

found, a growing number of cities are planning to end fluoridation, and specialised water filters, which remove any fluoride present, are flying off the shelves. Public - health experts caution that the evidence of harm is thin, and fluoridated tap water keeps teeth healthy. But is it really necessary?

尽管尚未发现确凿的因果关系，但越来越多的城市正计划停止自来水氟化处理，能过滤氟化物的专用滤水器也因此热销。

公共卫生专家警告称，氟化物有害的证据并不充分，含氟自来水仍能有效保护牙齿健康。但这真的有必要吗？

【3】One of **fluoride**'s main functions is to **strengthen** and restore **enamel**, the top layer of teeth. This is vital to help them resist the acids that form in the mouth when **bacteria ferment** the sugars in food and drink. Coating or **bathing** the teeth in **fluoride** - rich **substances** can thus directly protect the teeth while also introducing **fluoride** into the **saliva**. This has additional health **benefits**, as **fluoride** in **saliva** inhibits **bacterial metabolism**, reducing acid production and the growth of **plaque** on tooth **surfaces**. **fluoride** can also be effective when **swallowed**, making its way to the **saliva** via the **bloodstream**. (In children, **circulating fluoride** also enters the **enamel** of developing teeth.)

氟化物的主要功能之一是强化并修复牙釉质（牙齿的表层）。这对牙齿抵御细菌分解食物和饮料中的糖分产生的酸性物质至关重要。用含氟物质涂布或浸泡牙齿，既能直接保护牙釉质，又能使氟化物进入唾液。此外，这也有助于健康：唾液中的氟化物会抑制细菌代谢，从而减少酸性物质生成并抑制牙菌斑滋生。氟化物经吞咽后同样有效，可通过血液循环进入唾液。儿童摄入的氟化物还会进入发育中的牙釉质。

conclusive /kən'klu:siv/ adj.决定性的,确凿的,结论性的,不容置疑的 They had **conclusive** evidence of her guilt. 他们对她的罪行有确凿的证据。

causal /'kə:z(ə)l/ adj.因果关系的,前因后果的,原因的,表示因果关系的(连接词, 如because)n.表示原因的词[结构] a **causal** relationship between scarcity of goods and higher prices.食品匮乏与高价格的因果关系

specialised /'speʃəlaizd/ adj. 专门的, 特别的, 专科的, 特化的, 专化的 The Government zones land for **general** and **specialised** industrial use.为此, 政府划定土地作一般及特殊工业用途。

filters /'filtə/ n.滤波器,过滤器,滤光器,滤器,筛选(过滤)程序,滤声器v.过滤,(用程序)筛选,缓行filter的第三人称单数和复数 This metal net **filters** out the dirt.这个金属网滤掉污物。

experts /'ekspə:t/ n.专家,行家,能手expert的第三人称单数和复数 He is an **expert** in juvenile delinquency.他是研究青少年犯罪的专家。

3

enamel /'næm(ə)l/ n. 搪瓷; (牙齿的)珐琅质, 釉质; 珐琅; 瓷漆; 瓷釉; 搪瓷制品 vt. 给...上珐琅; 在...涂瓷漆 He collected coloured **enamel** bowls from Yugoslavia. 他藏有来自南斯拉夫的彩色搪瓷碗。

bacteria /bæk'tiəriə/ n.细菌bacterium的复数 The photosynthetic pigment in **bacteria** is bacteriochlorophyll.细菌光合作用的色素是细菌叶绿素。

ferment /fə'ment/ v.(使)发酵n.(政治或社会上的)动乱, 骚动, 纷扰

bathing /'beidiŋ/ n.(到海、河等中的)游泳, 畅游v.给...洗澡,洗澡bath的现在分词,bathe的现在分词 a **bathing** cap.一个游泳帽。

substances /'sʌbstənsɪz/ n.物质,物品,东西,事实基础,根据,主旨,要点,实质,基本内容substance的复数

saliva /sə'laɪvə/ n.唾液 He wiped a dribble of **saliva** from his chin.他擦掉了下巴上的几滴水。

benefits /'benəfit/ n.优势,益处,成效,福利费(政府对失业者、病人等提供的补助金),(公司提供的)福利, 奖金,(保险公司支付的)给付, 保险金v.对(某人)有用,使受益,得益于,得利于benefit的第三人称单数和复数

bacterial /bæk'tiəriəl/ adj.细菌的,细菌引起的 **bacterial** photosynthesis细菌的光合成

metabolism /mɪ'tæbəlaɪz(ə)m/ n.新陈代谢 Their rate of **metabolism** may slow down.他们的新陈代谢率可能会降低。

plaque /plæk/ n.匾牌; (纪念性的)匾额; 牙斑; 纪念匾; 牙菌斑 The toothbrush gently removes **plaque** without damaging the gums. 这种牙刷可以温和去除牙菌斑而不损伤牙龈。

surfaces /'sʌ:fɪs/ n.表面,表层,面,水面,地面,液面,(家具的)顶面, 操作台v.升到水面,浮出水面,(隐藏或被掩盖一段时间后)露面, 重新出现, 显露, 被披露,醒来,起床surface的

【4】 Trace amounts of **fluoride** are **naturally** present in a **variety** of foods, including vegetables and **shellfish**. Higher **quantities** can be found in tea and coffee, whose plants **readily absorb fluoride** from soil. A cup of tea made with **distilled** water **contains** as much **fluoride** as anywhere between 100ml and two litres of fluoridated water, depending on a range of factors including the **variety** of tea and **composition** of the soil where the leaves were grown; a cup of brewed coffee prepared in the same way **contains** as much as 300ml of fluoridated water. Toothpastes, mouth **washes** and **fluoride gels** are also rich in the stuff.

多种食物天然含有微量氟化物，例如蔬菜和贝类。茶树和咖啡树容易从土壤中吸收氟化物，因此茶和咖啡的氟含量更高。

用蒸馏水泡制的一杯茶，氟含量相当于100毫升至2升含氟自来水（具体取决于茶叶品种和种植土壤成分等因素）；同样方法冲泡的一杯咖啡，氟含量相当于300毫升含氟自来水。牙膏、漱口水和含氟凝胶也富含这类成分。

【5】 Of all the ways of getting **fluoride** to teeth, **brushing** reigns **supreme**. Effective tooth - brushing means some of the **fluoride** present in **toothpaste** gets deposited directly onto the **enamel**, some ends up in **saliva** and some is **swallowed**. The **resulting** boost in **fluoride** levels far **exceeds** that produced by drinking fluoridated water. Panda Foreign Magazine Intensive Reading: Respect for Originality, Piracy Must Be Punished

在所有摄入氟化物的方式中，刷牙效果最佳。有效刷牙时，牙膏中的氟化物一部分直接附着在牙釉质表面，一部分融入唾液，还有一部分被吞咽下肚。这种方式带来的氟化物浓度提

第三人称单数和复数 **Apply the glue evenly over both surfaces.** 在两面均匀地涂上胶水。

swallowed /'swɒləʊd/ v. 吞下, 咽下, (由于紧张等) 做吞咽动作, 吞没, 淹没, 侵吞 **swallow** 的过去分词和过去式 **We swallowed the chocolates in one gulp, licking our lips.** 我们一口吞下了巧克力, 满意地咂着嘴。

bloodstream /'blʌdstri:m/ n. 体内循环的血液, 血流 **Red blood cells transport oxygen through the bloodstream.** 红细胞通过血液循环输送氧气。

circulating /'sə:kjuleitiŋ/ v. (液体或气体) 环流, 循环, 传播, 流传, 散布, 传送, 传递, 传阅 **adj. 运行的** **circulate** 的现在分词 **This magazine has a circulation of over 1000000.** 这份杂志的销售量超过了一百万份。

4

naturally /'nætʃ(ə)rəli/ adv. 自然地; 自然而然地; 合理地; 天然地; 理所当然地; 顺理成章地; 天生地; 当然地 **The country is abundant in natural resources.** 这个国家天然资源丰富。

variety /və'raɪəti/ n. (同一事物的) 不同种类, 多种式样, 变化, 多样化, 多变性, (植物、语言等的) 变种, 变体, 异体, 品种, 综艺节目 **This variety of tomato outgrows all others.** 这种品种的西红柿长得比所有其他品种快。

shellfish /'ʃelfɪʃ/ n. 贝类, 水生有壳动物 **The idea of eating raw shellfish nauseates me.** 我一想到吃生贝就恶心。

quantities /'kwɒntəti/ n. 数量, 数额, 数目, 量, 大量, 大批, 众多, 大宗 **quantity** 的复数 **Mathematics is the science of pure quantity.** 数学是纯粹研究数量的科学。

readily /'redɪli/ adv. 便利地, 快捷地, 轻而易举地, 欣然地, 乐意地 **The audience reacted readily to his speech.** 观众对他的讲演立即起了反应。

absorb /əb'sɔ:b/ vt. 吸收, 使并入, 吞并, 同化, 理解, 掌握, 吸引全部注意力, 吸收 (热、光、能等), 减轻作用, 耗费, 耗去, 承受, 承担, 对付 **The company will absorb all the costs.** 公司将负担一切费用。

distilled /dɪs'tɪld/ v. 蒸馏, 用蒸馏法提取, 用蒸馏法制造 (酒等), 吸取... 的精华, 提炼, 浓缩 **distil** 的过去分词和过去式 **When water is used this must be distilled water or spring water; never tap water.** 用水的时候必须是蒸馏水或泉水, 绝不能用自来水。

contains /kən'teɪnz/ v. 包含, 含有, 容纳, 控制, 克制, 抑制 (感情), 防止... 蔓延 (或恶化) **contain** 的第三人称单数 **The water contains high amounts of magnesium.** 这水含有大量的镁。

composition /kəm'pəʒɪʃ(ə)n/ n. 作文, 成分, (化学) 构成, 组合方式, (音乐、艺术、诗歌的) 作品, 作曲, 创作, 作曲艺术, (绘画、摄影的) 构图 **My composition has not been completed yet.** 我的作文还未写完。

washes /'wɒʃɪz/ v. 洗, 洗涤, 洗澡, 洗脸, 洗手, 耐洗, 洗后不退色 (或破损) **wash** 的第三人称单数

gels /dʒelz/ n. 凝胶, 冻胶, 胶滞体 (尤指用于头发或护肤的产品) v. 有效; 胶凝; 胶化; 起作用; 形成胶体; 结为一体; 联手共事; 显得更明确; 变得更清楚 **gel** 的第三人称单数和复数 **The product is filemot gel with vegetal fragrance.** 本品为黄褐色凝胶, 有植物气味。

5

升，远超饮用含氟水的效果。

【6】 In a report **published** in 2006, America's National Research Council **estimated** the typical amounts of **fluoride** ingested daily from tooth - **brushing** across different **segments** of the population. The Economist **calculates** that, for six - to 12 - year - olds, the figure is equivalent to somewhere between 300ml and 450ml of water fluoridated to the national standard. For **toddlers** and young children it is between 150ml and 300ml; for adults it is around 150ml. 美国国家研究委员会2006年发布的一份报告显示，不同人群每日通过刷牙摄入的氟化物量存在差异。《经济学人》计算发现，6至12岁儿童通过刷牙摄入的氟化物量，相当于300至450毫升符合国家标准的含氟水；幼儿和学龄前儿童为150至300毫升；成人为约150毫升。

【7】 **fluoride** mouth **washes**, as well as the **fluoride** - rich **gels** and varnishes that **dentists** apply to teeth, also offer big **fluoride** boosts, but are used less often. An evidence review **conducted** in Britain in 2004 found that they offer only **modest** additional protection to those already **regularly brushing** their teeth.

含氟漱口水以及牙医用于牙齿的含氟凝胶和氟漆，同样能显著增加氟摄入量，但使用频率不高。英国2004年的一项证据评估显示，对已养成刷牙习惯的人群而言，这些产品仅能提供适度的额外保护。

【8】 In this environment, fluoridated water still has a place. In a country the size of America, tooth - **brushing** and access to **dental** care differ widely even between **adjacent** neighbourhoods. For the sake of those without good **dental hygiene** and, therefore, who are most at risk of tooth **decay**, this safety - net

toothpaste /'tu:θpeɪst/ n. 牙膏 **Instead, many experts recommend simply spitting out excess toothpaste.** 因此，许多专家建议只要把多余的牙膏（泡沫）吐掉即可。
resulting /rɪ'zʌlt/ v. (因...)发生, (随...)产生 **result** 的现在分词 **The results of this experiment don't correlate with the results of earlier ones.** 这次试验的结果与以往试验的结果毫不相干。
exceeds /ɪk'si:dz/ v. 超过(数量), 超越(法律、命令等)的限制 **exceed** 的第三人称单数

6

estimated /'estɪmeɪtɪd/ v. 估算; 估价 **adj.** 估计的; 预计的; 估算的 **estimate** 的过去分词和过去式 **His arrogance lowered him in her estimation.** 他的妄自尊大降低了他在她心目中的位置。
segments /'seɡmənt/ n. 部分, 份, 片, 段, (柑橘、柠檬等的) 瓣, 弓形, 圆缺 **v.** 分割, 划分 **segment** 的第三人称单数和复数 **The company dominates this segment of the market.** 这家公司控制着这一部分市场。
calculates /'kælkjuleɪt/ v. 计算, 核算, 预测, 推测 **calculate** 的第三人称单数
toddlers /'tɒdlə/ n. 学步的儿童, 刚学会走路的孩子 **toddler** 的复数 **The hyperactive toddler is a real handful.** 这个还在学走路的却极其活跃的小孩真是难以控制

7

dentists /'dentɪst/ n. 牙科医生, 牙科诊所 **dentist** 的复数 **Dentists advise their patients to brush and floss regularly to prevent their teeth from decaying.** 牙医建议他们的病人定期刷牙并用洁牙线剔牙，以防止蛀牙。
conducted /kən'dʌktɪd/ v. 组织, 安排, 实施, 执行, 指挥 (歌唱或音乐演奏), 带领, 引导, 为(某人)导游 **conduct** 的过去分词和过去式
modest /'mɒdɪst/ **adj.** 适中的, 些许的, 一般的; 不太大(或太贵、太重要等)的, 谦虚的, 谦逊的, 庄重的, 朴素的, 不性感的 **He became conceited after only modest success.** 他在小有成就之后变得自负起来。
regularly /'regjələli/ **adv.** 有规律地, 经常, 间隙均匀地, 均匀地, 匀称地 **Dentists advise their patients to brush and floss regularly to prevent their teeth from decaying.** 牙医建议他们的病人定期刷牙并用洁牙线剔牙，以防止蛀牙。

8

dental /'dent(ə)l/ **adj.** 牙齿的, 牙科的, 齿音的 **n.** 齿音 **It is true that dental work is expensive.** 确实看牙很贵
adjacent /ə'dʒeɪs(ə)nt/ **adj.** 相邻, 邻近的, 与...毗连的 **These young students live in adjacent rooms.** 这些年轻的学生住在毗连的房间里。
hygiene /'haɪdʒi:n/ n. 卫生 **Poor hygiene led to high mortality among children.** 卫生条件很差，导致了儿童的死亡率很高。
decay /dɪ'keɪ/ v. 衰退, (使)腐烂, (建筑、地方等)破败, 衰败, (力量、影响等)衰弱, 衰减 **n.** 腐烂, 腐朽, (社会、机构、制度等的)衰退, 衰落 **Dentists advise their patients to brush and floss regularly to prevent their teeth from decaying.**

should be **dismantled** with caution.

在此背景下，含氟自来水仍有其存在价值。像美国这样幅员辽阔的国家，即使相邻社区之间，居民的刷牙习惯和牙科护理条件也参差不齐。对于那些缺乏良好口腔卫生习惯，因而最易患龋齿的群体而言，撤销这一“安全网”必须慎之又慎。

今日词汇

status ['steɪtəs, 'stæ-]

n. 地位、身份；重视；情形、状况

考研出现次数：10+

考频：★★

考点回顾

阅读考点真题例句：

[例] However, the Justices said that Arizona police would be allowed to verify the legal status of people who come in contact with law enforcement. (2013年英语一37题)

[译] 然而，大法官们称，亚利桑那州警察可以检查涉及法律执行事宜之人的法律身份。

完形考点真题例句：

[例] Theories focusing on the role of society suggest that children commit crimes in response to their failure to rise above their socioeconomic status, or as a rejection of middle-class values.

(2004英语一完形)

[译] 强调社会因素的理论认为，儿童犯罪，是因为他们未能如愿地提高自己的社会经济地位，或者是因为排斥中产阶级的价值观。

②长难句

原文：Even though no conclusive causal link has been found, a growing number of cities are planning to end fluoridation, and specialised water filters, which remove any fluoride present, are flying off the shelves.

分析：“Even though no conclusive causal link has been found”为让步状语从句，表明尽管尚未找到确凿因果关系这一情况。句子主干部分包含两个并列句，“a growing number of cities are planning to end fluoridation”和“specialised water filters...are flying off the shelves”。“which remove any fluoride present”为定语从句，修饰先行词“specialised water filters”，解释这类滤水器的功能。在从句中，“which”做主语，“remove”做谓语，“any fluoride present”做宾语。

译文：尽管尚未发现确凿的因果关系，但越来越多的城市正计划停止自来水氟化处理，能过滤氟化物的专用滤水器也因此热销。

原文：Effective tooth - brushing means some of the fluoride present in toothpaste gets deposited directly onto the enamel, some ends up in saliva and some is swallowed.

分析：“Effective tooth - brushing”是句子主语，“means”为谓语，其后“some of the fluoride present in toothpaste gets deposited directly onto the enamel, some ends up in saliva and some is swallowed”为宾语从句，在宾语从句中包含三个并列分句，描述牙膏中氟化物的不同去向。

译文：有效刷牙时，牙膏中的氟化物一部分直接附着在牙釉质表面，一部分融入唾液，

牙医建议他们的病人定期刷牙并用洁牙线剔牙，以防止蛀牙。

dismantled /dis'mæntld/ v. 拆开，拆卸(机器或结构)，(逐渐)废除，取消dismantle的过去分词和过去式

①短语

1. 原文：Tap water across America has, for decades, been fortified with fluoride, a negatively charged ion of the chemical element fluorine, in order to strengthen the public's teeth.

词典：be fortified with 添加；强化；用.....加强

例句：The breakfast cereal is fortified with vitamins and minerals.

这种早餐麦片添加了维生素和矿物质。

2. 原文：But a scientific review published in 2024 by America's National Toxicology Programme, an arm of the country's health department, suggested that high levels of fluoride are associated with lower IQ in children.

词典：be associated with 与.....有关联；与.....相关

例句：Smoking is associated with an increased risk of heart disease.

吸烟与心脏病风险增加有关。

3. 原文：Even though no conclusive causal link has been found, a growing number of cities are planning to end fluoridation, and specialised water filters, which remove any fluoride present, are flying off the shelves.

词典：fly off the shelves 畅销；一售而空

例句：The new edition of the best - seller flew off the shelves within a week.

这本畅销书的新版本一周内就售罄了。

4. 原文：Fluoride can also be effective when swallowed, making its way to the saliva via the bloodstream.

词典：make one's way to 前往；到达；进入

例句：The news made its way to every corner of the town.

这消息传遍了小镇的每个角落。

5. 原文：Trace amounts of fluoride are naturally present in a variety of foods, including vegetables and shellfish.

词典：be present in 存在于.....中

例句：Certain chemicals are present in the soil in small quantities.

土壤中存在少量特定化学物质。

6. 原文：Toothpastes, mouth washes and fluoride gels are also rich in the stuff.

词典：be rich in 富含；有大量的.....

例句：Nuts are rich in protein and healthy fats.

还有一部分被吞咽下肚。

③写作技巧

原文：Even though no conclusive causal link has been found, a growing number of cities are planning to end fluoridation, and specialised water filters, which remove any fluoride present, are **flying off the shelves**.

尽管尚未发现确凿的因果关系，但越来越多的城市正计划停止自来水氟化处理，能过滤氟化物的专用滤水器也因此热销。

“fly off the shelves”意思是“畅销；一售而空”，该短语通过生动的形象，描绘出商品销售速度之快，如同从货架上快速飞落一般，让读者直观感受到商品受欢迎的程度。在写作描述商品销售情况时，相较于简单的“sell well”，“fly off the shelves”使表达更加鲜活，富有画面感。类似的替换表达有“sell like hot cakes”“be in great demand”“sell out quickly”等。

例句：

The newly released smartphone is selling like hot cakes.

新发布的智能手机十分畅销。

These limited-edition sneakers are in great demand.

这些限量版运动鞋需求量极大。

The popular book sold out quickly after its launch.

这本畅销书一经推出就迅速售罄。

④背景知识

氟化物（Fluoride）：氟元素的阴离子形式，在牙齿健康领域应用广泛。长期以来，美国在自来水中添加氟化物，旨在强化公众牙齿健康。氟化物能强化并修复牙釉质，帮助牙齿抵御口腔内细菌分解食物糖分所产生的酸性物质，还能抑制细菌代谢，减少酸性物质生成和牙菌斑滋生。除自来水外，多种食物如蔬菜、贝类，以及茶、咖啡中都天然含有氟化物，牙膏、漱口水等口腔护理产品也富含氟化物。

牙釉质（Enamel）：牙齿最外层的组织，对牙齿健康至关重要。它不仅是牙齿的第一道防线，能抵御咀嚼过程中的物理磨损，还能隔绝口腔内的酸性物质和细菌，防止牙齿受到腐蚀。氟化物可以通过与牙釉质发生反应，增强其结构稳定性，从而起到预防龋齿的作用。在牙釉质发育阶段，摄入适量氟化物，有助于形成更坚固的牙釉质；对于已形成的牙釉质，氟化物能修复其早期损伤。

坚果富含蛋白质和健康脂肪。

7. 原文：Effective tooth - brushing means some of the fluoride present in toothpaste gets deposited directly onto the enamel, some ends up in saliva and some is swallowed.

词典：end up in最终处于；以……告终

例句：If you continue like this, you'll end up in prison.

如果你继续这样下去，最终会进监狱。

8. 原文：In this environment, fluoridated water still has a place.

词典：have a place有一席之地；有存在价值

例句：Traditional handicrafts still have a place in modern society.

传统手工艺品在现代社会仍有一席之地

⑤段落大意

【1】加氟争议：美国自来水长期加氟护牙，新研究却暗示高氟可能降低儿童智商

【2】行动分歧：因果关系未定论，部分城市计划停加氟，除氟滤水器热销

【3】护牙机制：氟化物能强化和修复牙釉质，通过多种方式助力牙齿健康

【4】自然摄取：不少食物天然含氟，茶和咖啡因植物特性氟含量相对较高

【5】效果优势：刷牙时氟化物多途径作用，护牙效果优于饮用含氟水

【6】摄入数据：不同年龄段人群，通过刷牙摄入氟化物的量有所不同

【7】辅助方式：含氟漱口水等能提升氟摄入量，但对常刷牙者额外效果欠佳

【8】价值考量：含氟自来水对口腔卫生欠佳人群仍有重要的护牙价值