

Briefing for the Citizen Participation and Public Petitions Committee on petition [PE2115: Ensure NHS dental patients have the option of white composite fillings for the treatment of molar teeth](#), lodged by Paul Aaron

Brief overview of issues raised by the petition

The petitioner is calling on the Scottish Parliament to urge the Scottish Government to ensure white composite fillings are available as a treatment option for registered NHS dental patients, specifically when treating molar teeth.

An overview of how NHS dental services work, and recent reforms in Scotland is available in the SPICe Spotlight blog, '[NHS Dental Services in Scotland – Braced for change](#)'.

The petitioner has included a report from the [World Health Organisation, \(WHO\) published in 2009](#) and referenced research carried out by Kings College London in 2017 (unable to locate research findings).

Background

Dental amalgam is widely used in dentistry for restoring and repairing decayed teeth. It is a compound of mercury and silver-based alloys. So called '[composite](#)' fillings are made from resin based material which have been [developing over many decades](#), and problems with the different formulations have arisen and been addressed, such as shrinkage and cracking when used in clinical settings. However, [the article suggests that research into materials is very much ongoing](#), but that the discovery of different properties doesn't always translate into clinical use.

Many people choose or prefer composite fillings because they can be coloured to match the existing teeth. [Because the material is also designed to bond to teeth in a way that amalgam doesn't, more of the natural tooth can be preserved.](#) With amalgam fillings, the base of the filling needs to be wider than the neck in order to hold the filling in place.

While there have been advances in composite materials, amalgam is still longer lasting, and restorations can be carried out much more quickly than for composite fillings.

Because healthcare, including dentistry, is a devolved matter, the Scottish Government would be free to change the advice to dentists on the materials used in fillings, and specifically what dentists providing NHS treatment could claim for. Currently they can only claim a fee for [treatment items listed in the reformed Statement of Dental Remuneration \(Determination 1\)](#). In practice, the four UK nations work closely together through the Chief Dental Officers and the British Dental Association on policy. That said, NHS dental services are organised differently in each of the nations.

The use of composite/resin materials in NHS dental services in Scotland

According to [NHS National Services Scotland, the health board that is responsible for paying dentists for NHS treatment](#):

- “Amalgam fillings should not normally be provided for:
 - patients under 15 years age
 - retained deciduous (first or ‘baby’) teeth
 - patients who are pregnant or breastfeeding
 - patients where there is a letter from secondary care recommending amalgam should not be used due to specific medical needs.
- If, in the clinical judgement of the dentist, resin cannot be provided for these patients, then alternative materials may be used in exceptional circumstances. The reasoning should be noted and recorded in the patient record.
- Amalgam fillings must not be used in incisors or canines.” (front teeth)

However, other than in these specified situations, amalgam is the normal restorative material to be used in most people over 15 years of age in permanent back teeth (molars) when receiving NHS treatment.

Environmental concerns over the use of mercury amalgam

Minimata Convention on Mercury

This is [a global agreement, established by the United Nations Environment Programme](#) which aims to “protect the [sic] human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds”. It entered into force in August 2017, and as of February 2021 had been ratified by 127 governments. Nine measures were proposed, including the phasing down of the use of amalgam in dentistry. However, [the convention](#) covers all sources of mercury, supply, manufacturing processes, storage emissions, waste and contamination. Part II, Article 4

paragraph 3 of the convention refers to the measures agreed to phase out dental amalgam.

The Convention has produced a [short fact sheet on mercury emissions](#).

European Union ban on the use of amalgam

[The European Parliament has voted to ban dental amalgam from 1 January 2025](#) (five years earlier than expected). This follows on from agreements reached on the Minamata Convention. On 30 May 2024, the European Council adopted a regulation to completely ban the use of dental amalgams and to prohibit manufacturing, import and export of other mercury-added products. This is in addition to the current ban on the use of amalgam in children under 15 and pregnant or breastfeeding women.

Exceptions will apply if the use of amalgam is deemed necessary by the dental practitioner for clinical reasons relating to particular patients. The exporting of amalgam will be prohibited from 1 January 2025 and the ban on manufacturing and import into the EU will apply from 1 July 2026.

Cochrane Review of amalgam vs composite resin fillings

[The Cochrane Library, which conducts systematic reviews of research published a review, considering a comparison of direct composite resin fillings versus amalgam fillings in molars in August 2021.](#)

[The Cochrane review notes](#) that “composite resin materials may have potential for toxicity to human health and the environment”, despite them being a more aesthetic alternative to amalgam, with improved mechanical properties in recent years.

The review concludes:

“Low-certainty evidence suggests that fillings made of resin composite lead to higher failure rates and secondary caries risk than amalgam restorations. The international commitment to reducing mercury will increasingly restrict the use of amalgam fillings, but there are still many parts of the world where it is the material of choice for the restoration of posterior teeth with proximal caries. Safety data is very limited for both types of filling material, but very low-certainty evidence suggests there may be no clinically important differences in the safety profile of composite resin and amalgam dental restorations.”

Some of the materials used in composite materials might be toxic or some people might be hypersensitive to them, for example [methacrylates](#). Because the materials haven't been in use for so long as amalgam, and the formulations are under constant development, it will be some time before there is certainty about any risks.

The [main arguments set out in the WHO paper](#) in favour of phasing out the use of amalgam fillings relate to the health and environmental implications of mercury used in amalgams, which can either be released into the bloodstream of the patient, inhaled by dentists or released into the environment. The benefits of using amalgam are also given: it has been widely used for over 150 years, it is highly durable, easy to use and fillings can be done quickly (compared with composite fillings).

British Dental Association (BDA) position

Following the ban announced by the European Union, the [BDA issued an open letter to all four of the UK Chief Dental Officers](#). They are extremely concerned about the ban arguing that the additional costs of “more expensive and time-consuming alternatives is only a further blow to the financial viability of NHS dentistry”.

Parliamentary questions

[Paul Sweeney MSP asked about the use of composite fillings in a written question on 8 August 2024.](#)

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August 21 2024

The purpose of this briefing is to provide a brief overview of issues raised by the petition. SPICe research specialists are not able to discuss the content of petition briefings with petitioners or other members of the public. However, if you have any comments on any petition briefing you can email us at spice@parliament.scot

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