

DEPARTMENT OF HEALTH AND HUMAN SERVICES**Food and Drug Administration****21 CFR Part 872****[Docket No. FDA-2024-N-3973]****Medical Devices; Dental Devices; Classification of the Radiofrequency Toothbrush****AGENCY:** Food and Drug Administration, HHS.**ACTION:** Final amendment; final order.

SUMMARY: The Food and Drug Administration (FDA or we) is classifying the radiofrequency toothbrush into class II (special controls). The special controls that apply to the device type are identified in this order and will be part of the codified language for the radiofrequency toothbrush's classification. We are taking this action because we have determined that classifying the device into class II (special controls) will provide a reasonable assurance of safety and effectiveness of the device. We believe this action will also enhance patients' access to beneficial innovative devices.

DATES: This order is effective September 5, 2024. The classification was applicable on September 17, 2020.

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SUPPLEMENTARY INFORMATION:**I. Background**

Upon request, FDA has classified the radiofrequency toothbrush as class II (special controls), which we have determined will provide a reasonable assurance of safety and effectiveness.

The automatic assignment of class III occurs by operation of law and without any action by FDA, regardless of the level of risk posed by the new device. Any device that was not in commercial distribution before May 28, 1976, is automatically classified as, and remains within, class III and requires premarket approval unless and until FDA takes an action to classify or reclassify the device (see 21 U.S.C. 360c(f)(1)). We refer to these devices as "postamendments devices" because they were not in

commercial distribution prior to the date of enactment of the Medical Device Amendments of 1976, which amended the Federal Food, Drug, and Cosmetic Act (FD&C Act).

FDA may take a variety of actions in appropriate circumstances to classify or reclassify a device into class I or II. We may issue an order finding a new device to be substantially equivalent under section 513(i) of the FD&C Act (see 21 U.S.C. 360c(i)) to a predicate device that does not require premarket approval. We determine whether a new device is substantially equivalent to a predicate device by means of the procedures for premarket notification under section 510(k) of the FD&C Act (21 U.S.C. 360(k)) and part 807 (21 CFR part 807).

FDA may also classify a device through "De Novo" classification, a common name for the process authorized under section 513(f)(2) of the FD&C Act (see also part 860, subpart D (21 CFR part 860, subpart D)). Section 207 of the Food and Drug Administration Modernization Act of 1997 (Pub. L. 105-115) established the first procedure for De Novo classification. Section 607 of the Food and Drug Administration Safety and Innovation Act (Pub. L. 112-144) modified the De Novo application process by adding a second procedure. A device sponsor may utilize either procedure for De Novo classification.

Under the first procedure, the person submits a 510(k) for a device that has not previously been classified. After receiving an order from FDA classifying the device into class III under section 513(f)(1) of the FD&C Act, the person then requests a classification under section 513(f)(2).

Under the second procedure, rather than first submitting a 510(k) and then a request for classification, if the person determines that there is no legally marketed device upon which to base a determination of substantial equivalence, that person requests a classification under section 513(f)(2) of the FD&C Act.

Under either procedure for De Novo classification, FDA is required to classify the device by written order within 120 days. The classification will be according to the criteria under section 513(a)(1) of the FD&C Act. Although the device was automatically placed within class III, the De Novo classification is considered to be the initial classification of the device.

When FDA classifies a device into class I or II via the De Novo process, the

device can serve as a predicate for future devices of that type, including for 510(k)s (see section 513(f)(2)(B)(i) of the FD&C Act). As a result, other device sponsors do not have to submit a De Novo request or premarket approval application to market a substantially equivalent device (see section 513(i) of the FD&C Act, defining "substantial equivalence"). Instead, sponsors can use the 510(k) process, when necessary, to market their device.

II. De Novo Classification

On August 22, 2019, FDA received Home Skinovations Ltd.'s request for De Novo classification of the ToothWave™. FDA reviewed the request in order to classify the device under the criteria for classification set forth in section 513(a)(1) of the FD&C Act.

We classify devices into class II if general controls by themselves are insufficient to provide reasonable assurance of safety and effectiveness, but there is sufficient information to establish special controls that, in combination with the general controls, provide reasonable assurance of the safety and effectiveness of the device for its intended use (see 21 U.S.C. 360c(a)(1)(B)). After review of the information submitted in the request, we determined that the device can be classified into class II with the establishment of special controls. FDA has determined that these special controls, in addition to the general controls, will provide reasonable assurance of the safety and effectiveness of the device.

Therefore, on September 17, 2020, FDA issued an order to the requester classifying the device into class II. In this final order, FDA is codifying the classification of the device by adding 21 CFR 872.6866.¹ We have named the generic type of device radiofrequency toothbrush, and it is identified as a device that consists of a handle containing a radiofrequency generator to deliver radiofrequency energy to a brush intended to be applied to the teeth. The device is intended to remove adherent plaque and food debris from the teeth to reduce tooth decay.

FDA has identified the following risks to health associated specifically with this type of device and the measures required to mitigate these risks in table 1.

¹ FDA notes that the "ACTION" caption for this final order is styled as "Final amendment; final order," rather than "Final order." Beginning in December 2019, this editorial change was made to

indicate that the document "amends" the Code of Federal Regulations. The change was made in accordance with the Office of Federal Register's (OFR) interpretations of the Federal Register Act (44

U.S.C. chapter 15), its implementing regulations (1 CFR 5.9 and parts 21 and 22), and the Document Drafting Handbook.

TABLE 1—RADIOFREQUENCY TOOTHBRUSH RISKS AND MITIGATION MEASURES

Identified risks to health	Mitigation measures
Thermal injury (mucosal or unintentional skin overheating/burn).	Non-clinical performance testing; Software validation, verification, and hazard analysis; Electrical safety testing; Electromagnetic compatibility (EMC) testing; and Labeling.
Adverse tissue reaction	Biocompatibility evaluation.
Mechanical injury to the oral cavity	Electrical safety testing, Non-clinical performance testing, and Labeling.
Electromagnetic interference or electrical shock	Electrical safety testing, Electromagnetic compatibility (EMC) testing, Battery safety testing, and Labeling.
Incorrect use or operation of the device causing harm or injury to the user.	Non-clinical performance testing, Usability evaluation, Use life testing, Electrical safety testing, and Labeling.
Gingival irritation or recession, tooth sensitivity or pain by failure to identify correct population and condition.	Label comprehension and self-selection study, and Labeling.

FDA has determined that special controls, in combination with the general controls, address these risks to health and provide reasonable assurance of safety and effectiveness. For a device to fall within this classification, and thus avoid automatic classification in class III, it would have to comply with the special controls named in this final order. The necessary special controls appear in the regulation codified by this order. This device is subject to premarket notification requirements under section 510(k) of the FD&C Act.

III. Analysis of Environmental Impact

The Agency has determined under 21 CFR 25.34(b) that this action is of a type that does not individually or cumulatively have a significant effect on the human environment. Therefore, neither an environmental assessment nor an environmental impact statement is required.

IV. Paperwork Reduction Act of 1995

This final order establishes special controls that refer to previously approved collections of information found in other FDA regulations and guidance. These collections of information are subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3521). The collections of information in part 860, subpart D, regarding De Novo classification have been approved under OMB control number 0910–0844; the collections of information in 21 CFR part 814, subparts A through E, regarding premarket approval, have been approved under OMB control number 0910–0231; the collections of information in part 807, subpart E, regarding premarket notification submissions, have been approved under OMB control number 0910–0120; the collections of information in 21 CFR part 820, regarding quality system regulation, have been approved under OMB control number 0910–0073; and the collections of information in 21 CFR

part 801, regarding labeling, have been approved under OMB control number 0910–0485.

List of Subjects in 21 CFR Part 872

Medical devices.

Therefore, under the Federal Food, Drug, and Cosmetic Act and under authority delegated to the Commissioner of Food and Drugs, 21 CFR part 872 is amended as follows:

PART 872—DENTAL DEVICES

■ 1. The authority citation for part 872 continues to read as follows:

Authority: 21 U.S.C. 351, 360, 360c, 360e, 360j, 360l, 371.

■ 2. Add § 872.6866 to subpart G to read as follows:

§ 872.6866 Radiofrequency toothbrush.

(a) *Identification.* A radiofrequency toothbrush is a device that consists of a handle containing a radiofrequency generator to deliver radiofrequency energy to a brush intended to be applied to the teeth. The device is intended to remove adherent plaque and food debris from the teeth to reduce tooth decay.

(b) *Classification.* Class II (special controls). The special controls for this device are:

(1) Non-clinical performance testing must demonstrate that the device performs as intended under anticipated conditions of use. The following performance characteristics must be tested, and detailed protocols must be provided for each test conducted:

(i) Validation of the radiofrequency performance specifications including output power, voltage output, radiofrequency, pulse cycle, waveform, and pulse duration;

(ii) Temperature performance testing to evaluate the temperature change of the device, structures of the oral cavity (including skin, tissue, and dental restorations), and toothpaste under worst-case conditions;

(iii) An assessment of mechanical output specifications and physical

properties including vibration frequency, tuft retention, brush head strength, and battery voltage; and

(iv) Use life and durability testing.

(2) A label comprehension and self-selection study must demonstrate that the intended user population can understand the package labeling and correctly choose the device for the indicated use.

(3) Usability performance evaluation must demonstrate that the user can safely and correctly use the device, based solely on reading the directions for use.

(4) The patient-contacting components of the device must be demonstrated to be biocompatible.

(5) Electrical safety, thermal safety, mechanical safety, battery safety, and electromagnetic compatibility (EMC) testing must be performed.

(6) Software verification, validation, and hazard analysis must be performed.

(7) Labeling must include:

(i) Information on how the device operates, including images or illustrations;

(ii) A detailed summary of the device technical specifications;

(iii) A warning which states that the use of this device is not a substitute for regular visits to a dentist for routine clinical care;

(iv) Instructions on how to clean and maintain the device; and

(v) The use life and disposal of the components of the device.

Dated: August 29, 2024.

Lauren K. Roth,

Associate Commissioner for Policy.

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