



Medtronic Simplera Sensor User Guide

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Medtronic Simplera Sensor User Guide



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Introduction

The Simplera sensor (MMT-5100J) with Bluetooth™* wireless technology is a component of the Medtronic personal continuous glucose monitoring (CGM) system.

The Simplera sensor converts small amounts of glucose from the interstitial fluid under the skin into an electronic signal. The sensor uses that signal to provide sensor glucose values to the Simplera app.

Intended use

The Simplera sensor is a single-patient, single-use component of a personal CGM system. It is intended to communicate with the Simplera app via Bluetooth Low Energy (BLE) to provide glucose information for diabetes management. It calculates glucose concentrations based on collected signals from the interstitial fluid and transmits glucose and device data to the networked device. The sensor is designed to replace fingerstick blood glucose (BG) readings for diabetes treatment decisions.

The Simplera system is intended for use in home and professional healthcare environments.

Indications for use

The Simplera sensor is indicated for the management of diabetes in persons ages 2 years and older.

Intended target population

The intended target population for the Simplera sensor includes children ages 2 years and older, adolescents and adults.

Intended users

The Simplera sensor is intended for personal use by individuals to assist in the management of their diabetes, or for use by parents/caregivers who assist these individuals with diabetes management.

Contraindications

The Simplera system has no known contraindications. For contraindications related to CGM, see the Simplera app user guide.

Intended clinical benefits

Although the Simplera sensor does not provide any therapy or treatment, the continuous glucose information provided by the sensor used in combination with the Simplera app can aid in diabetes management. The Simplera sensor benefits users by eliminating the discomfort associated with fingerstick glucose measurements used for calibration or confirmation of the information provided by the CGM system.

User safety

Warnings and precautions

Read this entire user guide before attempting to insert the Simplera sensor. The inserter portion of the sensor does not work the same way as other Medtronic insertion devices. The sensor is not inserted the same way as other Medtronic sensors. Failure to follow directions may result in improper insertion, pain, or injury.

Do not use the Simplera sensor adjacent to other electrical equipment that may cause interference with normal system operation. For more information on electrical equipment that may cause interference with normal system operation, see Exposure to magnetic fields and radiation, .

Do not use continuous glucose monitoring if hydroxyurea, also known as hydroxycarbamide, is taken. Hydroxyurea is used to treat certain diseases, such as cancer and sickle cell anemia. Hydroxyurea use results in higher sensor glucose readings compared to blood glucose readings. Taking hydroxyurea while using continuous glucose monitoring can result in inaccurate or missed alerts, and substantially higher sensor glucose readings in reports than actual blood glucose readings. Always check the label of any medication being taken to confirm if

hydroxyurea or hydroxycarbamide is an active ingredient. If hydroxyurea is taken, consult a healthcare professional. Use additional blood glucose meter readings to verify glucose levels.

Always consult a healthcare professional before using sensor glucose values to make treatment decisions if a medication that contains acetaminophen or paracetamol is taken while wearing the sensor. Medications that contain acetaminophen or paracetamol can falsely raise sensor glucose readings. The level of inaccuracy depends on the amount of acetaminophen or paracetamol active in the body and can differ for each person. Falsely elevated sensor readings can result in over-administration of insulin, which can cause hypoglycemia. Medications that contain acetaminophen or paracetamol include, but are not limited to, cold medicines and fever reducers. Check the label of any medications being taken to see if acetaminophen or paracetamol is an active ingredient. Use additional blood glucose meter readings to confirm blood glucose levels.

Always examine the Simplera sensor box for damage. If the sensor box is open or damaged, examine the sensor for damage. If the sensor is visibly damaged, discard the device to avoid possible contamination.

Do not use the Simplera sensor if any part of the device is damaged. If the device is damaged, discard the device to avoid possible contamination.

Do not use the Simplera sensor if the tamper band is broken, damaged, or missing from the device. The sensor is sterile and non-pyrogenic unless the device is damaged. If the tamper band is broken, damaged, or missing from the device, the sensor and the needle can be exposed to contamination. A sensor and needle exposed to contamination can cause insertion site infection if inserted into the body.

Do not use the Simplera sensor if the cap label is broken, damaged, or missing from the device. The sensor is sterile and non-pyrogenic unless the device is damaged. If the cap label is broken, damaged, or missing from the device, the sensor and the needle can be exposed to contamination. A sensor and needle exposed to contamination can cause insertion site infection if inserted into the body.

Do not unscrew or remove the Simplera sensor cap until the device is ready to be used.

Do not remove the cap and store the device for future use. The sensor is sterile and nonpyrogenic unless the cap is removed from the device or the tamper band is broken. If the cap is not on the device or the tamper band is broken, the sensor and the needle can be exposed to contamination. A sensor and needle exposed to contamination can cause insertion site infection if inserted into the body.

Do not remove the cap and place it back on the device. Placing the cap back on the device could cause damage to the needle, prevent a successful insertion, and cause injury.

Do not change or modify the Simplera sensor. Changing or modifying the sensor can result in improper insertion, pain, or injury.

Do not let children hold the Simplera sensor without adult supervision. Do not let children put any part of the sensor in their mouth. This product poses a choking hazard for young children that can result in serious injury or death.

Watch for bleeding at the insertion site on top of the Simplera sensor. If bleeding occurs, apply steady pressure with a sterile gauze pad or clean cloth placed on top of the sensor for up to three minutes. If bleeding continues, is significantly visible on top of the sensor, or if there is excessive pain or discomfort after insertion, follow these steps:

1. Remove the Simplera sensor and continue to apply steady pressure until the bleeding stops.
2. Dispose of the Simplera sensor. See Disposal, page 15.
3. Check the insertion site for redness, bleeding, irritation, pain, tenderness, or inflammation. If there is redness, bleeding, irritation, pain, tenderness, or inflammation, contact a healthcare professional.
4. Insert a new Simplera sensor in a different location.

Some skin care products, such as sunscreens and insect repellents, can damage the Simplera sensor. Do not allow skin care products to touch the sensor. Wash hands after using skin care products before touching the sensor. If any skin care products touch the sensor, immediately wipe the sensor with a clean cloth.

If a serious incident related to the device occurs, immediately report the incident to Medtronic and to the applicable competent authority with jurisdiction in their locale.

Exposure to magnetic fields and radiation

Do not expose the Simplera sensor to Magnetic Resonance Imaging (MRI) equipment, diathermy devices, or other devices that generate strong magnetic fields (for example, CT scan, or other types of radiation). Exposure to strong magnetic fields can cause the sensor to malfunction, result in serious injury, or be unsafe.

IEC 60601-1-2; Special EMC Precautions for Medical Electrical Equipment

1. Special Precautions regarding Electromagnetic Compatibility (EMC): This body worn device is intended to be operated within a reasonable residential, domestic, public or work environment where common levels of radiated “E” (V/m) or “H” fields (A/m) exist, such as cellular phones, Wi-Fi™*, Bluetooth wireless technology, electric can openers, microwave and induction ovens. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the provided instructions, may cause harmful interference to radio communications.
2. Portable and mobile RF communications equipment can affect medical electrical equipment. If you encounter RF interference from a mobile or stationary RF transmitter, move away from the RF transmitter that is causing the interference.
3. Be careful when using the Simplera sensor closer than 30 cm (12 in) to portable radio frequency (RF) equipment or electrical equipment. If the sensor must be used next to portable RF equipment or electrical equipment, observe the sensor to verify correct system operation. Degradation of the performance of the sensor could result.

Risks

General risks with Simplera sensor use include the following:

- Skin irritation or other reactions
- Bruising
- Discomfort
- Redness
- Bleeding
- Pain
- Rash
- Infection
- Raised bump
- Appearance of a small freckle-like dot where needle was inserted
- Allergic reaction
- Fainting secondary to anxiety or fear of needle insertion
- Soreness or tenderness
- Swelling at insertion site

- Sensor filament fracture, breakage, or damage
- Minimal blood splatter associated with sensor needle removal
- Residual redness associated with adhesive or tapes or both
- Scarring

Hazardous substances

For materials information such as compliance with European Union (EU) Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) regulation, EU Restriction of Hazardous Substances (RoHS) directive, and other product stewardship program requirements, please **visit** :

<http://www.medtronic.com/productstewardship>.

Allergens


The Simplera sensor contains nickel in stainless steel.

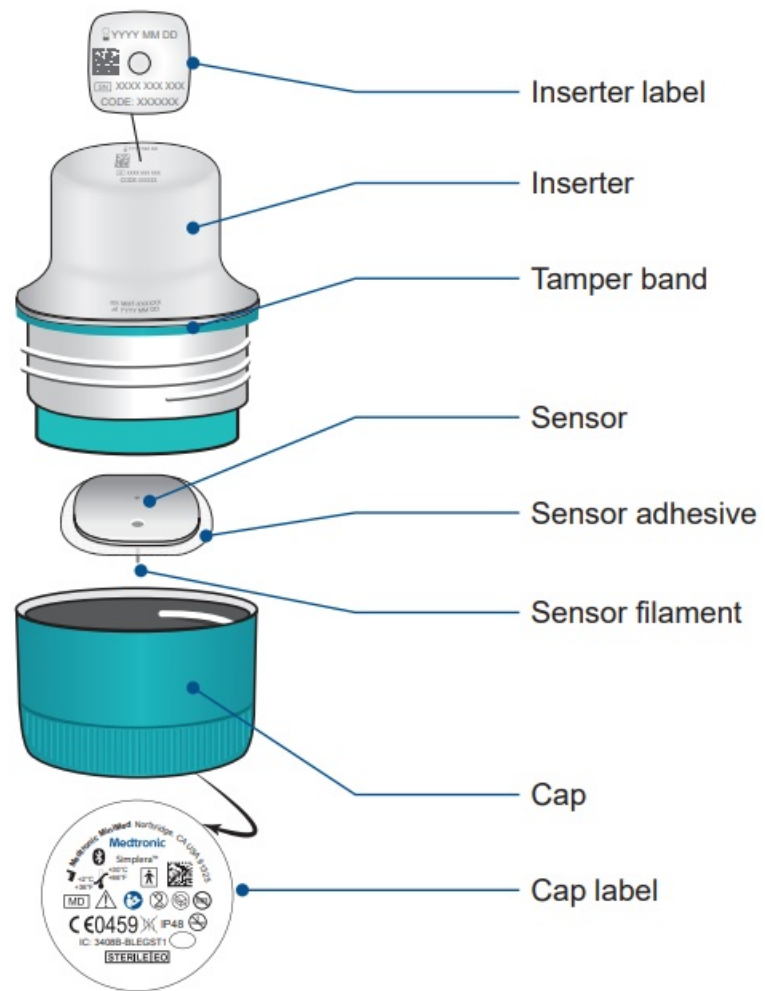
Reagents

The Simplera sensor contains two biological reagents: glucose oxidase, and human serum albumin (HSA).

Glucose oxidase is derived from *Aspergillus niger* and manufactured to meet industry requirements for extraction and purification of enzymes for use in diagnostic, immunodiagnostic, and biotechnical applications. The HSA used in the Simplera sensor consists of purified and dried albumin fraction V, derived from pasteurized human serum which is cross-linked via glutaraldehyde. Approximately 3 µg of glucose oxidase and approximately 10 µg of HSA are used to manufacture each sensor.

Download the Simplera app

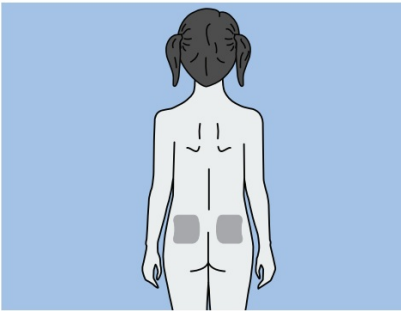
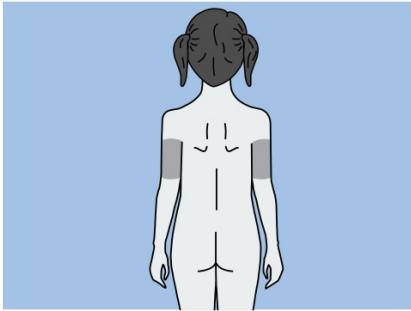

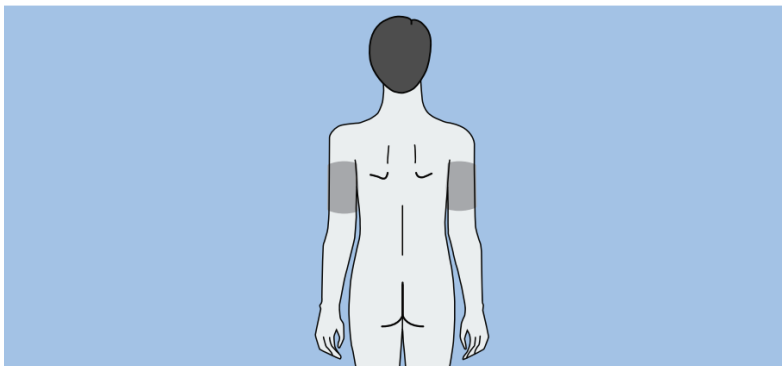


Search for and download the Simplera app  from the Apple™* App Store™* or the Google Play™* store on the supported mobile device.



Simplera sensor device components

Where to insert the Simplera sensor

The images that follow show insertion sites for ages 2 to 17 years, and ages 18 years and older. Choose an insertion site for the applicable age group. Target the shaded areas shown in the image, and make sure that the insertion site has a sufficient amount of fat.

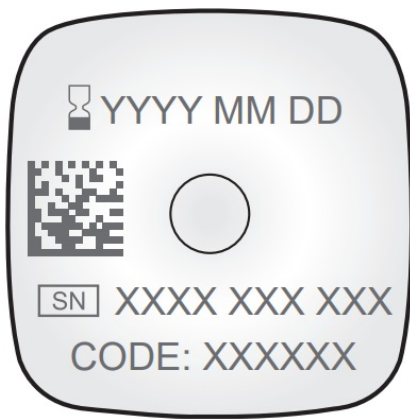
Ages 2 to 17 years		
<div></div>		
Back of upper arm		Upper buttock
	<p>Insertion on abdomen for ages 2 to 17 years has not been evaluated for accuracy. Note: Insertion into the upper buttocks should target the top-third of the buttocks area. Assistance from another person may be needed for sensor insertion into the back of the upper arm or the upper buttock. If assistance is not needed, a mirror may be helpful for self-insertion.</p>	
Ages 18 years and older		
<div></div>		
Back of upper arm		
		<p>Insertion on abdomen and upper buttocks for ages 18 years and older has not been evaluated for accuracy</p>

Inserting the Simplera sensor

Preparing for insertion

The Inserter label is on the top of the inserter.

1. Before insertion, perform the following steps:



a. Inspect the expiration date. Do not use an expired Simplera sensor.

b. Make note of the serial number (SN) and the CODE. Both numbers will be used later to pair the sensor with the Simplera app.

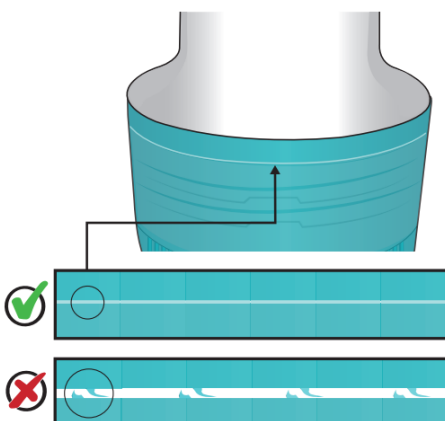
Note: The SN and CODE label is also on the inside of the Simplera sensor box lid.

2. Inspect the cap label for damage before insertion.



Note: Do not use the Simplera sensor if the cap label is damaged or missing from the cap

3. Inspect the tamper band to make sure that it is not broken, damaged, or missing from the device.



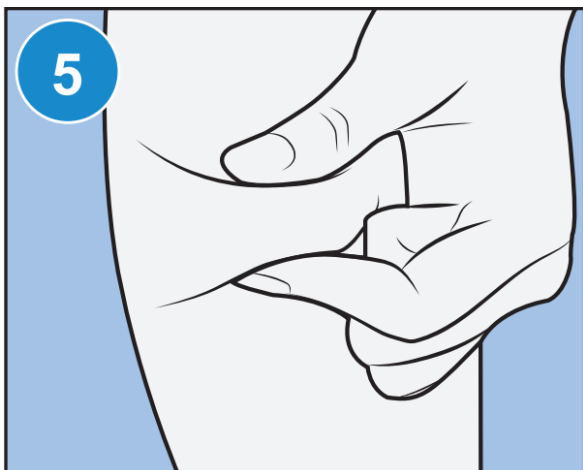
Note: Do not use the Simplera sensor if the tamper band is broken, damaged, or missing.

4. Wash hands thoroughly with soap and water.



Note: Wear gloves when inserting the Simplera sensor into another person to avoid accidental contact with patient blood. Minimal bleeding can occur.

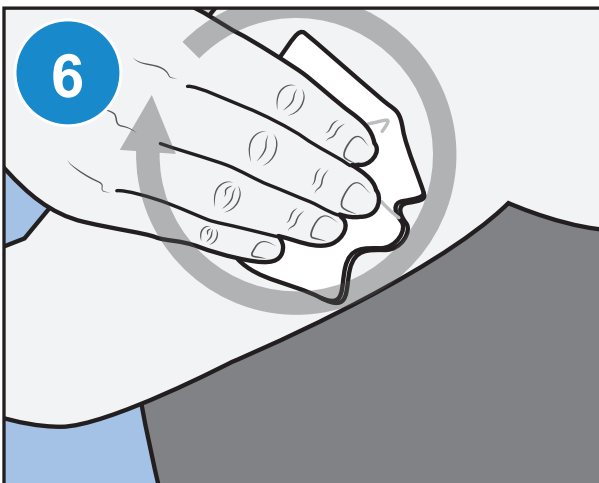
5. Choose an insertion site that has a sufficient amount of fat. For insertion sites see [Where to insert the Simplera sensor](#).



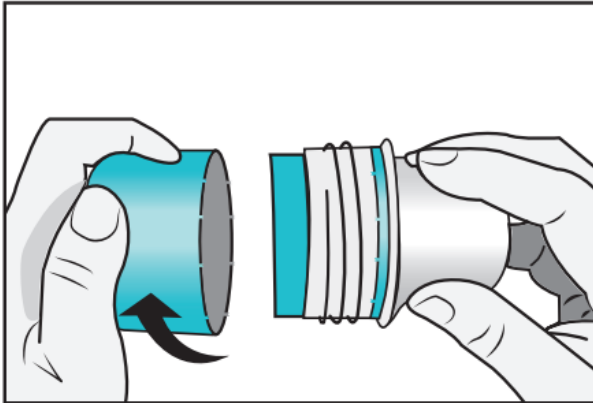
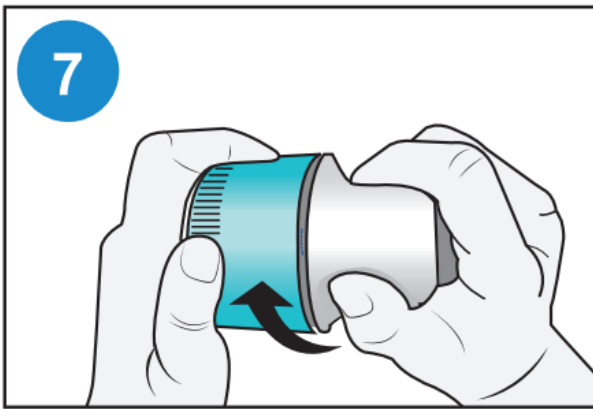
For the best sensor performance, and to avoid accidental sensor removal, do not insert the Simplera sensor into the following areas:

- muscle, tough skin, or scar tissue
- areas that are constrained by clothing or accessories
- areas subjected to rigorous movement during exercise

6. Clean the insertion site with alcohol. Allow the insertion site to air dry.



7. Unscrew the cap from the inserter, breaking the tamper band.



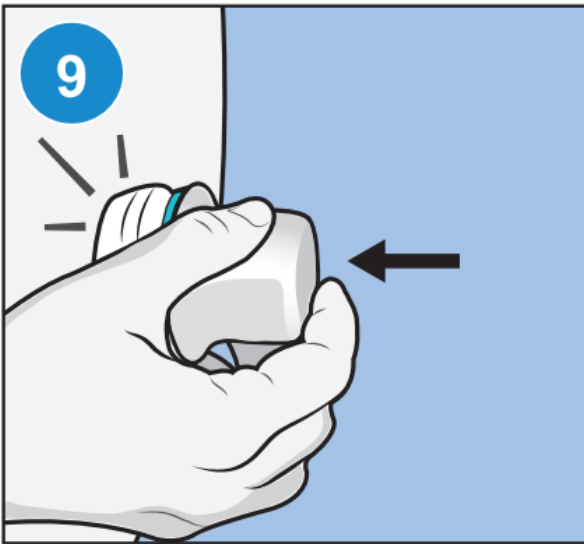
Note: Do not use the Simplera sensor if the tamper band is broken, damaged, or missing from the device.

Insertion

8. Place the inserter on top of the prepared insertion site.

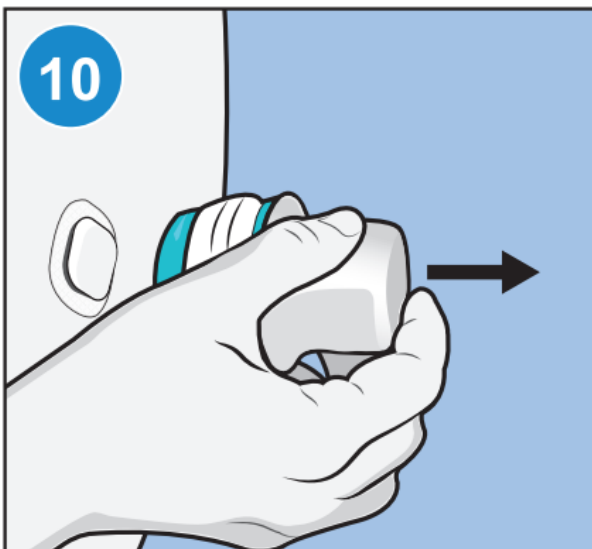


9. Press the inserter firmly against the body until there is a click.

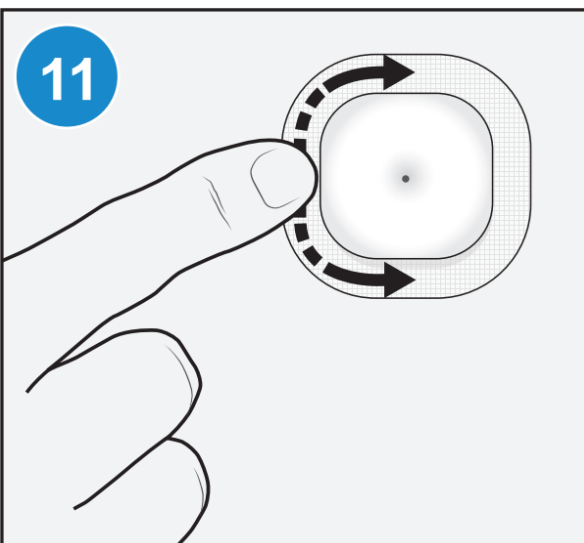


After insertion

10. Gently pull the inserter straight from the body.

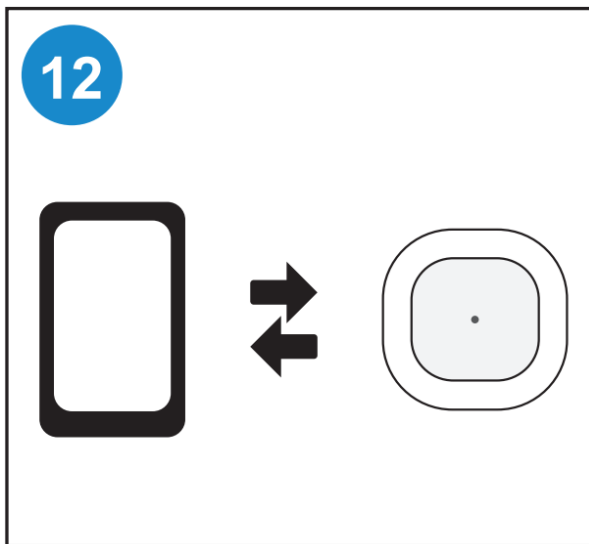


11. Smooth down the sensor adhesive with a finger to ensure the sensor stays on the body for the entire duration of use.



Note: Use over-the-counter tape if desired for additional adhesion.

12. Pair the Simplera sensor with a compatible display device.



Note: The SN and CODE are required to pair the sensor with a compatible display device. For details on how to pair the sensor with a compatible display device and the Simplera app, see the Simplera app user guide.

Bathing and swimming

While on the body, the Sensor is protected against continuous immersion in water at a depth of 2.4 meters (8 feet) for up to 30 minutes. Shower and swim without removing the sensor.

Removing the Simplera sensor

To remove the Simplera sensor:

1. Gently peel the sensor adhesive away from the body.
2. Dispose of the Simplera sensor in accordance with all local laws and regulations. For additional information, see Disposal, .

Simplera sensor wireless communication Quality of service

The Simplera sensor connects to a compatible display device via a Bluetooth lowenergy technology network. The sensor sends glucose data and system-related alerts to the compatible display device, which verifies the integrity of received data after wireless transmission. The quality of the connection is in accordance with the Bluetooth Specification v4.2.

Data security

The Simplera sensor is designed to only accept radio frequency (RF) communications from a recognized and linked compatible display device. The sensor must be paired with the display device before the display device accepts information from the sensor.


The compatible display device ensures data security via proprietary means and data integrity using error checking processes, such as cyclic redundancy checks.

Traveling by air

The Simplera sensor is safe for use on commercial airlines.

Changes or modifications not expressly approved by Medtronic could void the user's authority to operate the equipment.

Guidance and manufacturer's declaration

Guidance and manufacturer's Declaration-Electromagnetic Emissions			
Emissions Test	Compliance	Electromagnetic Environment Guidance	
RF emissions CISPR 11	CISPR 11 Group1, Class B	The transmitter uses RF energy only for system communications. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.	
Guidance and manufacturer's Declaration-Electromagnetic Immunity			
Immunity Test	IEC 60601-1-2 Test Level	IEC 60601-1-2 Compliance Level	Electromagnetic Environment Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2, ±4, ±8, ±15 kV air	±8 kV contact ±2, ±4, ±8, ±15 kV air	For use in a typical domestic, commercial, or hospital environment.
Power frequency magnetic field IEC 61000-4-8	30 A/m	30 A/m	For use in a typical domestic, commercial, or hospital environment.
Proximity magnetic fields IEC 61000-4-39, Table 11	IEC 60601-1-2, Table 11	IEC 60601-1-2, Table 11	For use in a typical domestic, commercial, or hospital environment.
Guidance and manufacturer's Declaration-Electromagnetic Immunity			
Immunity Test	IEC 60601-1-2 Test Level	IEC 60601-1-2 Compliance Level	Electromagnetic Environment Guidance
Proximity fields from RF wireless communications equipment	IEC 60601-1-2, Table 9	IEC 60601-1-2, Table 9	For use in a typical domestic, commercial, or hospital environment. Portable and mobile RF communications equipment should be used no closer to any part of the transmitter than the recommended separation distance of 30 cm (12 in). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol: 
Radiated RF electromagnetic fields IEC 61000-4-3	10 V/m 80 MHz to 2.7 GHz 80% AM at 1 kHz	10 V/m 80 MHz to 2.7 GHz 80% AM at 1 kHz	
Note : These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption, and reflection from structures, objects and people.			

Radiated power

Effective radiated power (ERP)	1.53 mW (1.85 dBm)
Effective isotropic radiated power (EIRP)	2.51 mW (4.00 dBm)

Maintenance

Operation

Operating temperature range	2°C to 40°C (36°F to 104°F)
Air pressure range	70.33 kPa to 106.17 kPa (10.2 psi to 15.4 psi)
Operating relative humidity (RH) range	15% to 95%

Storage

CAUTION: Do not freeze the Simplera sensor, or store it in direct sunlight, extreme temperatures, or high humidity. These conditions may damage the device.

Room temperature storage range	2°C to 30°C (36°F to 86°F)
Relative humidity (RH) storage range	Up to 95% relative humidity

Simplera sensor life of use

The Simplera sensor can be used one time and has a maximum life of up to 170 hours (seven days). The 170-hour life span of the sensor begins within 30 minutes after insertion.

CAUTION: Do not use the sensor if there is a sudden rise in sensor temperature. When operating the sensor in air temperatures of 40°C (104°F), under certain fault conditions, the temperature of the sensor may briefly rise up to 50°C (121°F). If there is a sudden rise in temperature or the sensor becomes hot or uncomfortable, remove and discard the sensor.

Disposal

Disposal requirements for electronic equipment, batteries, sharps and potential biohazardous materials differ based on location. Confirm disposal requirements for electronic equipment, batteries, sharps, and potential biohazardous materials with local laws and regulations.

The used inserter contains a needle which has been in contact with blood or other bodily fluids.

The used sensor contains a battery and has been in contact with blood or other bodily fluids.

Disposal of the battery in any receptacle that could be exposed to extreme heat may cause the battery to ignite and result in serious injury.

Do not dispose of any component of this product with household waste or recyclables.

Dispose of the inserter and sensor in accordance with local laws and regulations.

Open Source Software (OSS) disclosure

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www.medtronicdiabetes.com/ossnotices.

Assistance

Contact the local representative or refer to the local Medtronic website for assistance.










Refer to the Medtronic Diabetes International Contacts list in this user guide for contact information.










For definitions of the symbols displayed in the Simplera sensor and package labels, see










www.medtronicdiabetes.com/symbols-definitions.


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Icon table

	Authorized representative in the European Community
	Authorized representative/responsible party in the United Kingdom
	Batch code
	Bluetooth TM * wireless technology
	Catalogue number
CE 0459	Conformité Européenne (European Conformity). This symbol means that the device fully complies with applicable European Union Acts.
	Date of manufacture
	Do not re-use
	Do not use if package is damaged
(5x)	Five sensors per container/package
	Consult instructions for use

	Fragile, handle with care
IP48	Protected against effects of continuous immersion in water at a depth of 2.4 meters (8 feet) for up to 30 minutes
	Keep dry
	Magnetic Resonance (MR) unsafe
	Manufacturer
	Non-pyrogenic
(1 x)	One per container/package
	Recyclable, contains recycled content
	Single sterile barrier system
STERILE EO	Sterilized using ethylene oxide treatment
	Storage humidity upper limit
<div> <div>+2°C</div> <div>+36°F</div> <div>  </div> <div> <div>+30°C</div> <div>+86°F</div> </div> </div>	Storage temperature limits

	Type BF applied part
	Use-by date
	Caution: consult instructions for use for important warnings or precautions not found on the label
	Serial Number
	Medical Device
CODE : XXX-XXX	Sensor pairing code
	Contains human blood or plasma derivatives
	Contains biological material of human origin
	Unique Device Identifier (UDI)
	Date of Manufacture and Manufactured in the United States

	Do not re-sterilize
	Manufacturing site
	Importer



M028478C005_2

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