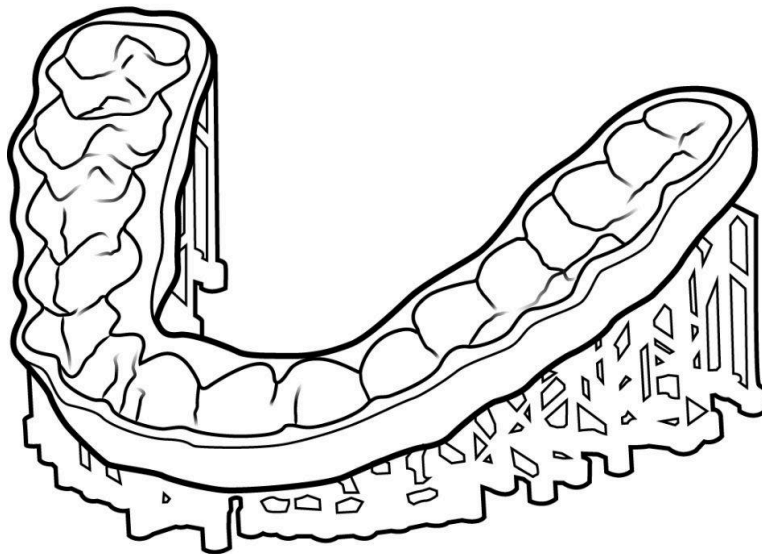


Workflow Guide:

3D Printing for Night Guards



With SprintRay 3D printing, you can provide night guards to more patients for a fraction of the cost of other fabrication methods. This guide will walk you through scanning, design, fabrication, preparation, and placement.

Resins compatible with this workflow:

- SprintRay NightGuard Flex or Firm 2
- SprintRay NightGuard Flex or Firm

Workflow at a Glance

1. Capture Data



Tools:
- Intraoral scanner

2. Get AI Design



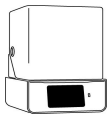
Tools:
- Computer with internet
- Patient data
- SprintRay account

3. Create Print Job



Tools:
- Computer with internet
- SprintRay account

4. 3D Print



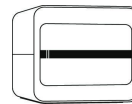
Tools:
- SprintRay 3D printer
- SprintRay NightGuard resin

5. Wash



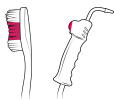
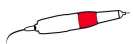
Tools:
- SprintRay wash device

6. Post Cure



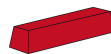
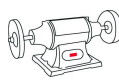
Tools:
- SprintRay cure device

7. Prepare and Deliver



Tools:
- Lab handpiece
- Scotchbrite wheel
- Steamer or soapy water & toothbrush

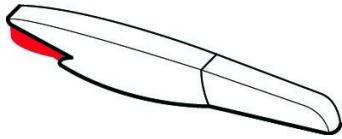
8. Finish and Polish



Tools:
- Dental lathe
- Hatho and Tripoli polishing compounds
- Pumice
- Soapy water and toothbrush

1. Capture Data

Tools



Intraoral scanner

1.1 Scan Upper, Lower, and Bite Scan

Perform a full upper and lower scan of the patient to capture their digital anatomy. Ensure there are no holes in your scan and capture as much surrounding tissue as possible.

SprintRay NightGuard AI can handle open or closed bite designs. If you're taking an open bite scan, we suggest opening the bite at least 1.5 millimeters. For a closed bite, scan the patient in a natural closed position.

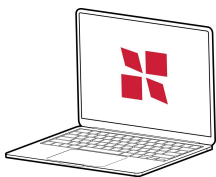
Export the scans as an STL with the upper and lower arch **in occlusion**. This is the default export style for most scanners and eliminates the need for a separate bite scan file.



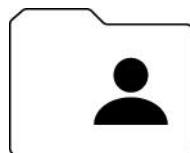
*If you're using an **iTero** scanner, select the option 'File Per Arch (Arches Oriented in Occlusion)' when exporting, or your scans will not work. [Learn How](#)*

2. Get AI Design

Tools



Computer with internet



Patient data



SprintRay account

2.1 Submit Treatment Request

Visit dashboard.sprintray.com and sign in or sign up for a SprintRay account. Select or add your patient, then choose the 'AI Nightguard' treatment type. Set the desired parameters, upload the patient files, and submit.



AI Design is great for most cases, but choose the manual design option if your treatment needs special attention

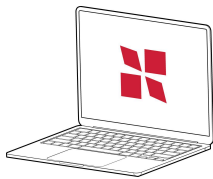
2.2 Review and Approve Design

SprintRay AI will design the night guard in a few minutes. You'll receive an email notification when it's ready. Review and approve the file from your Cloud Design dashboard.

If the AI design doesn't satisfy your requirements, switch to a manual design for human intervention.

3. Create Print Jobs

Tools



Computer with internet
access



SprintRay account

3.1 Import into RayWare


Once the night guard design has been approved, the 'Add To Print Job' button on the Cloud Design treatment page will automatically generate a build platform in [RayWare Cloud](#).

RayWare Setup Details

Job Type	Occlusal Guard
Material	SprintRay NightGuard Flex or Firm 2
Thickness	100 microns
Orientation	Intaglio facing away from the build platform, oriented at a ~25-degree angle from the anterior

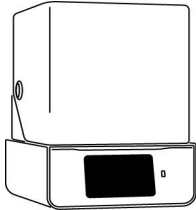
3.2 Queue to Printer

Once you're happy with your print setup, select the 'Send to Queue' button, then choose the printer you'd like to use for this print job.

 *You can also use the 'Print Now' button, but thoroughly inspect your printer before you start printing.*

4. 3D Print

Tools

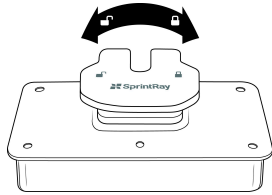


SprintRay 3D printer

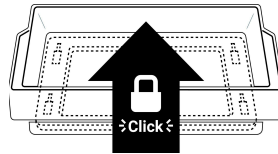


SprintRay NightGuard resin

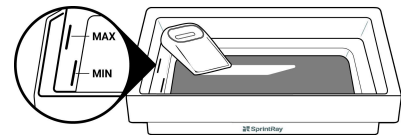
4.1 Prepare and Start the Print Job



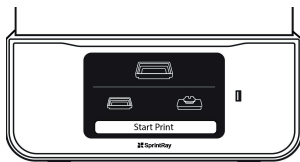
A) Check that the platform is clean, locked, and ready



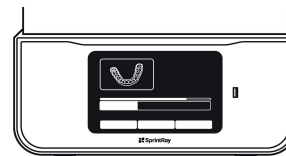
B) Install the resin tank and make sure it's fully seated



C) Fill the tank with NightGuard resin, then stir



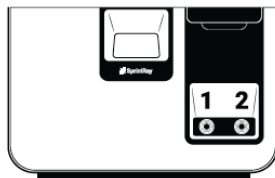
D) Go to the queue and press 'Start Print'



E) Monitor progress on the touchscreen or SprintRay Cloud.

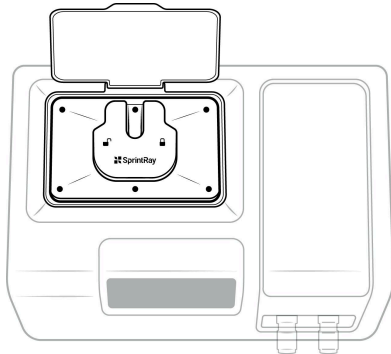
5. Wash

Tools

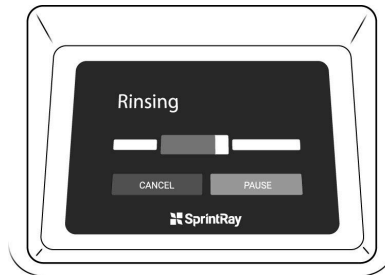


SprintRay wash device

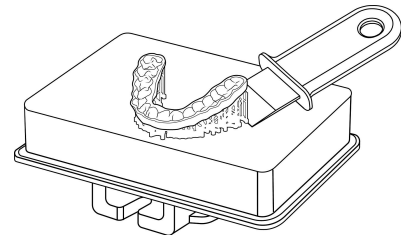
5.2 Wash the Night Guard



A) Transfer the build platform to your SprintRay wash device



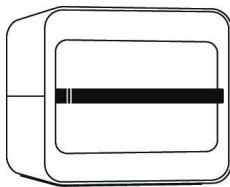
B) Run a standard cleaning cycle



C) Remove the night guard from the build platform

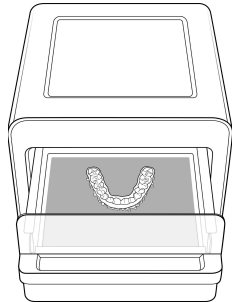
6. Post Cure

Tools

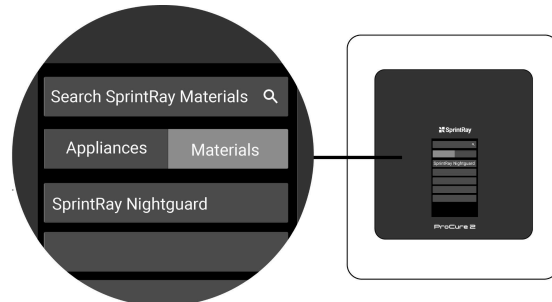


SprintRay curing device

6.2 Cure



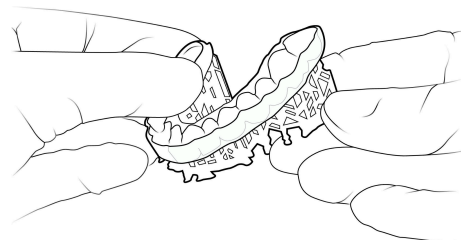
A) Place the night guard in your SprintRay curing device



B) Select the resin you printed with, then start the curing job

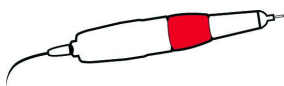
6.2 Remove Supports

Twist the supports away from the night guard to remove. Don't worry if small support nubs are left on the guard, you'll remove them in the next step.



7. Post Process and Try-in

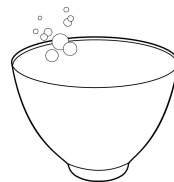
Tools



Lab handpiece



Abrasive wheels



Bowl of soapy water

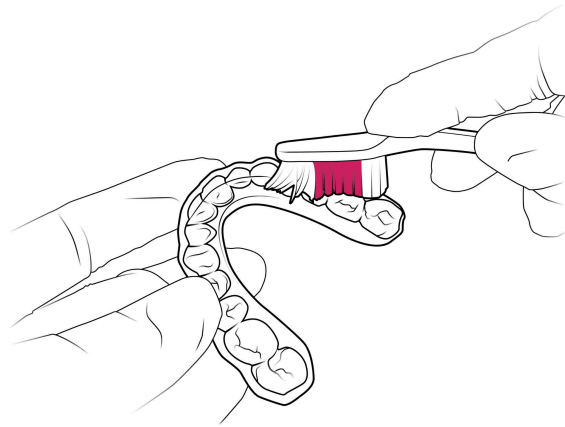


Toothbrush

7.1 Smoothen and Polish

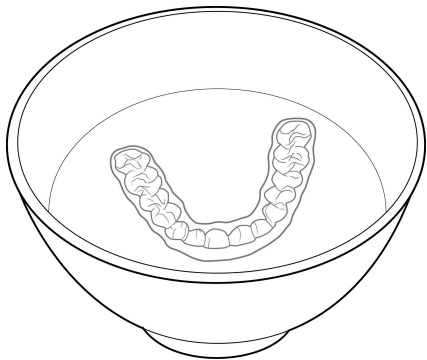


A) Use low RPM with an abrasive wheel or carbide bur to remove any stumps from supports. Use 10,000-12,000 RPM.

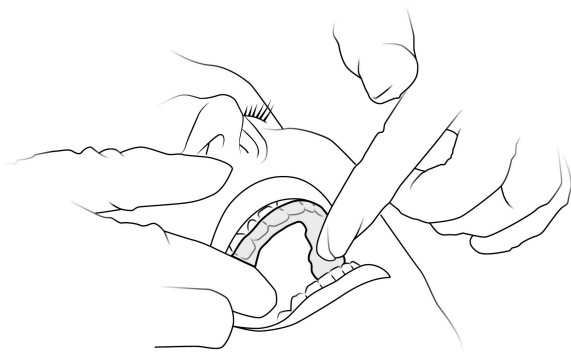


B) Use a steamer or rinse the night guard with warm soapy water. Brush with a toothbrush to remove residue.

7.2 Patient Try-in and Adjustment



A) Soak the guard in a bowl of warm water no hotter than 50°C for 15 seconds to soften.



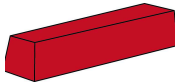
B) Seat the guard and let the patient try the appliance. Adjust contacts chairside.

8. Finish and Polish

Tools



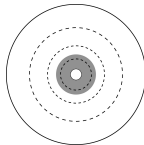
Hatho beige



Tripoli polish



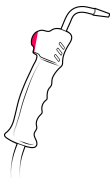
Dental lathe



Muslin wheels



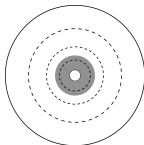
Pumice



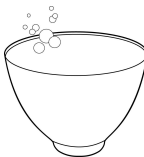
Steamer
(optional)



Hatho pink
(optional)



Cotton buff
wheel (optional)



Bowl of soapy
water



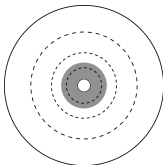
Toothbrush

Pre-polish with Pumice

Use a muslin wheel and pumice on a dental lathe with firm, consistent pressure. Reach all areas of the guard. Keep the wheel damp and the pumice flowable.



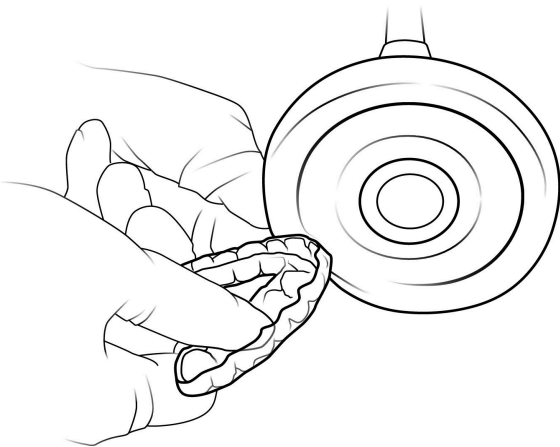
Dental lathe



Muslin
wheel

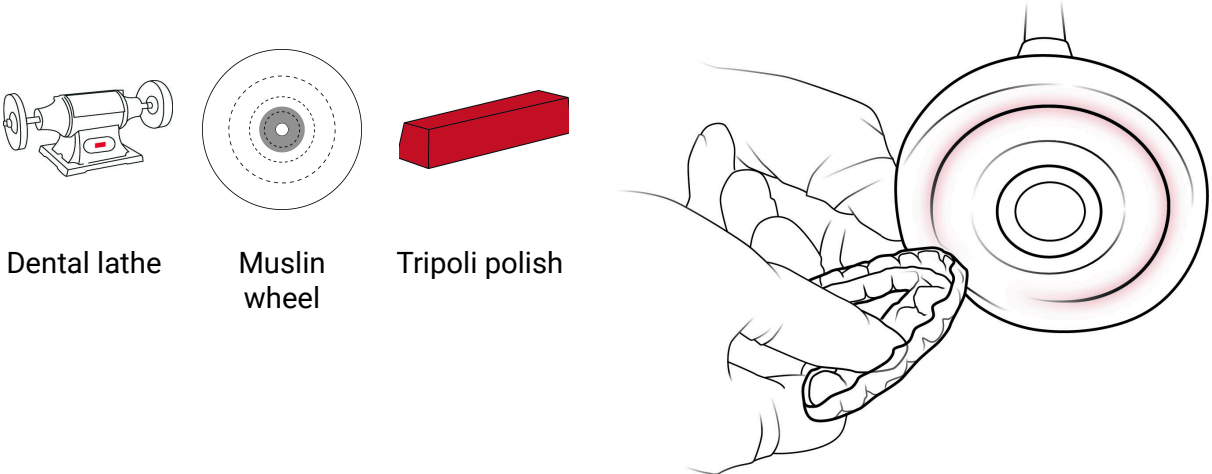


Pumice



Polish with Tripoli

Use a fresh muslin wheel and Tripoli. Use firm and consistent pressure, reaching all areas of the guard. Once finished, apply again and repeat using light pressure.



Dental lathe

Muslin wheel

Tripoli polish

High Shine

Use a fresh muslin wheel and Hatho beige. Use firm and consistent pressure, reaching all areas of the guard. Achieve a uniform shine across the full appliance.



Dental lathe

Muslin wheel

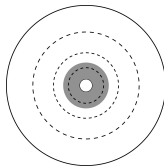
Hatho beige

High Gloss (Optional)

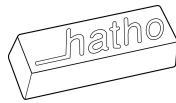
Use a cotton buff wheel and Hatho pink. Use consistent pressure, reaching all areas of the guard until you achieve a mirror finish.



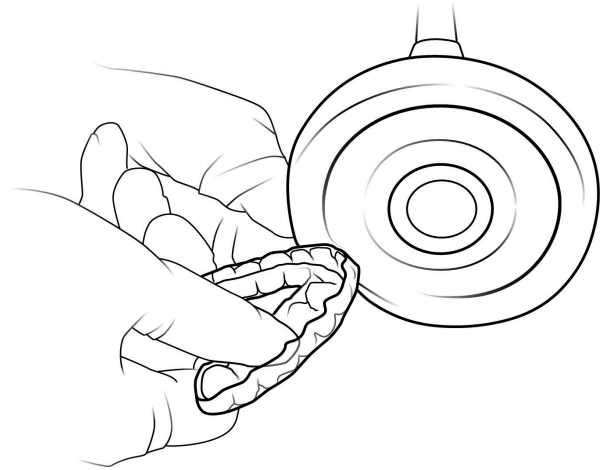
Dental lathe



Cotton buff wheel

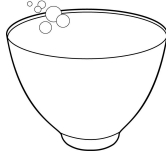


Hatho pink



Clean

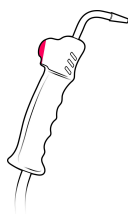
Use a toothbrush with warm soapy water and/or a steamer to disinfect the guard before delivering it to the patient.



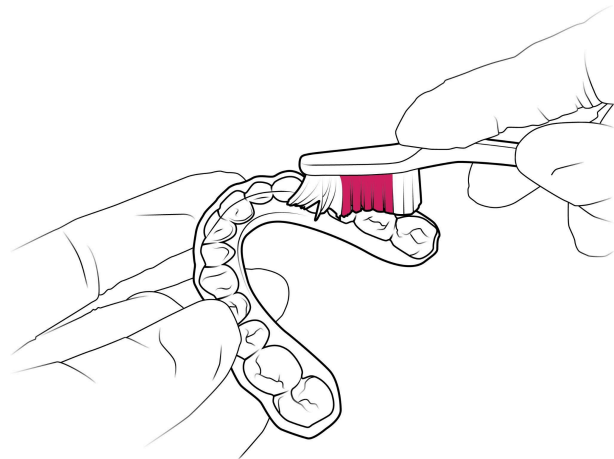
Bowl of soapy water



Toothbrush



Steamer



Your night guard is now ready for delivery.