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3M Oral Care

Impression Troubleshooting Guide

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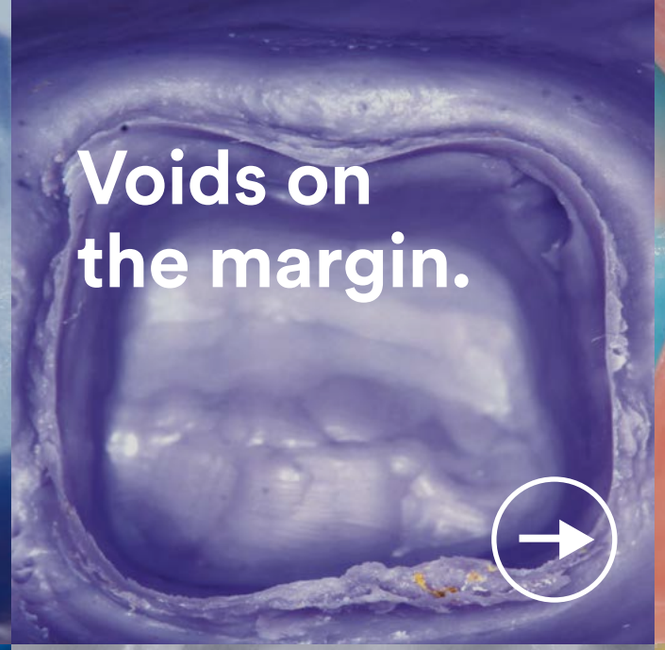
Causes and Solutions.

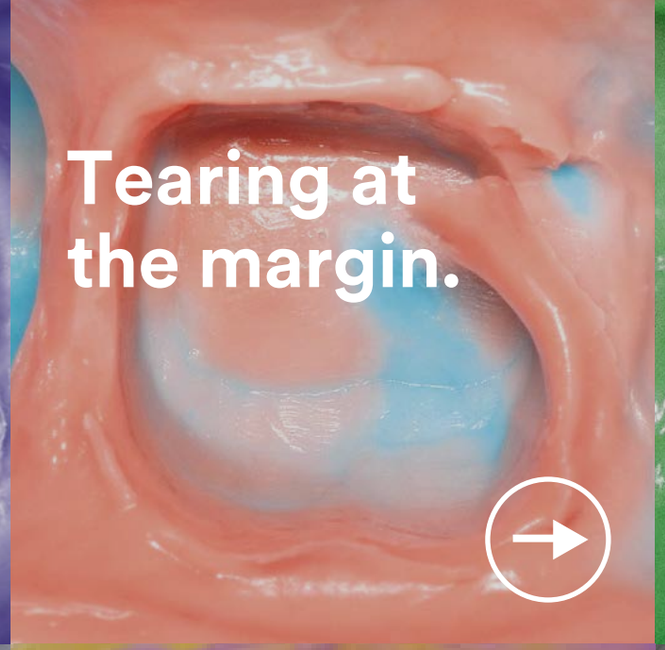
This trouble shooting guide helps identify common impression problems, determine potential causes and provide solutions to get your impression procedure under control.

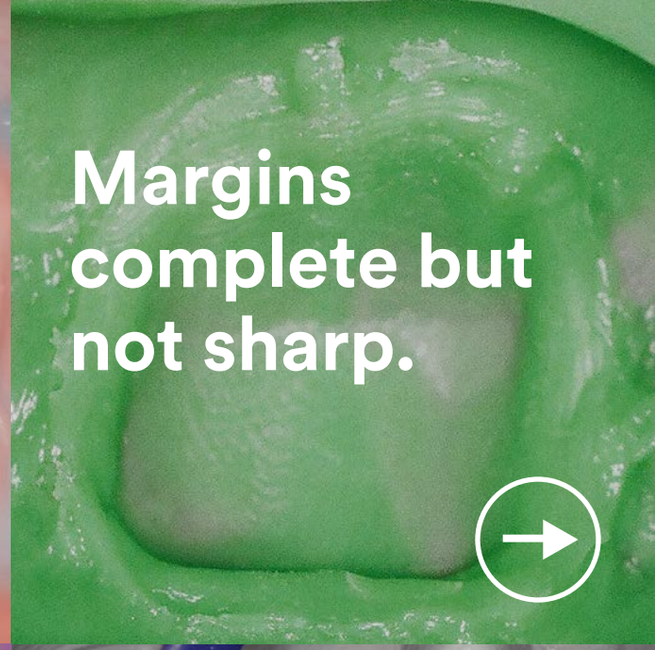
10 Golden Rules.

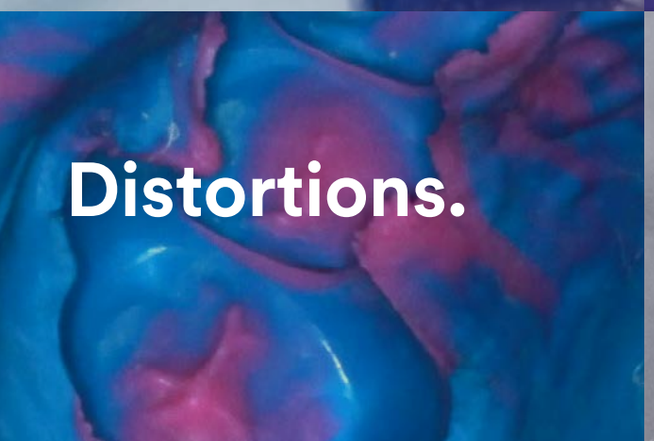
For perfect impressions.


Incomplete reproduction of preparation margins.


Voids on the margin.


Tearing at the margin.


Margins complete but not sharp.

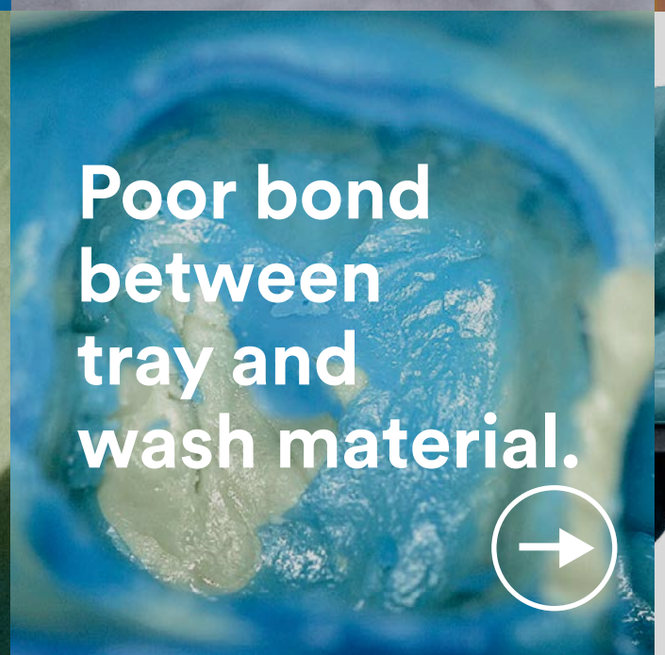

Distortions.

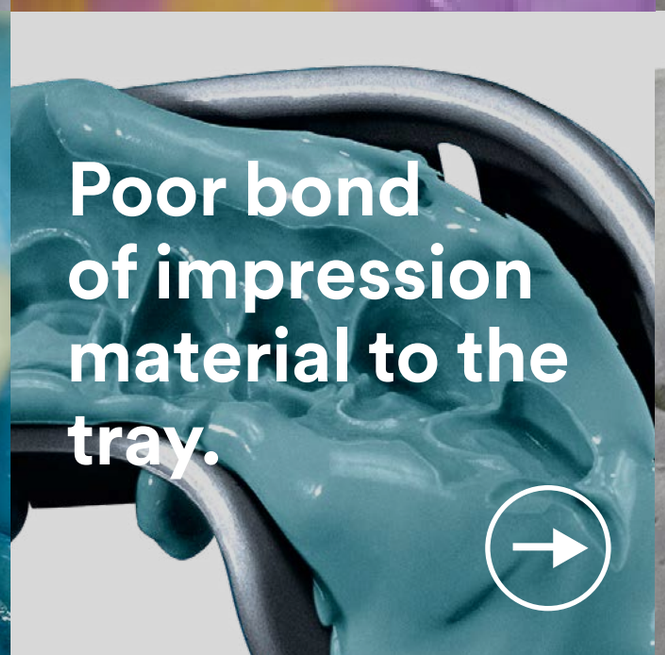

Facial-oral flow defects.

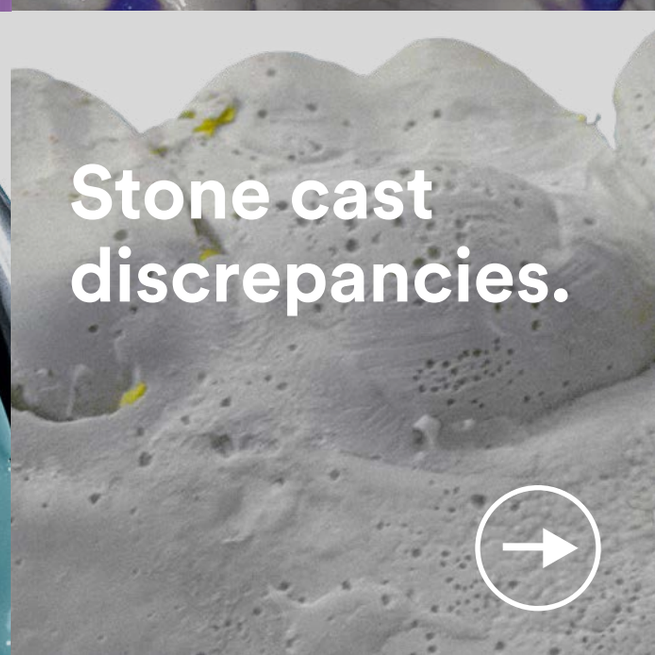

Show-through of tray.


Wash material displaced.

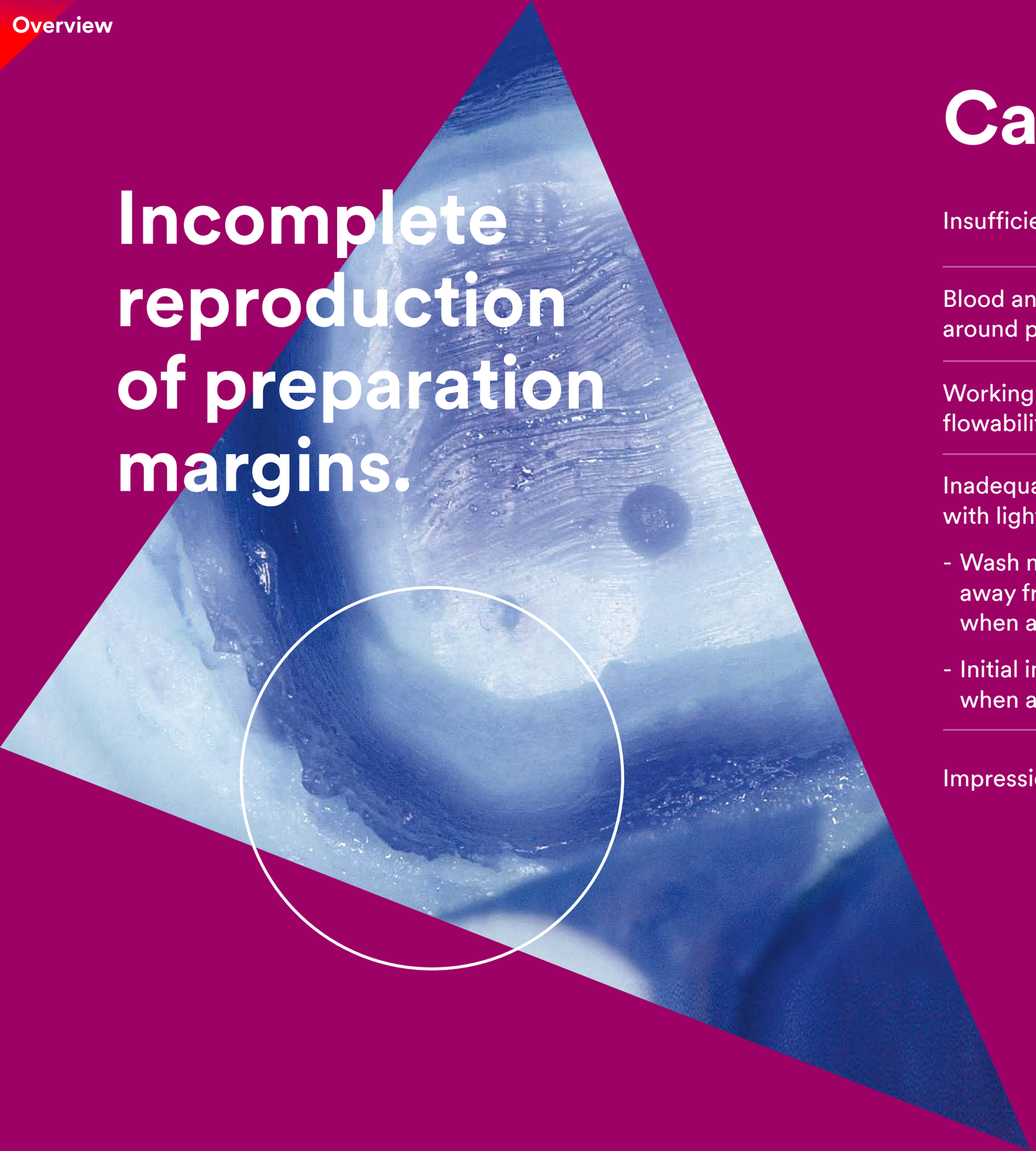

Impression material not completely set.


Poor bond between tray and wash material.


Poor bond of impression material to the tray.


Stone cast discrepancies.

Incomplete reproduction of preparation margins.



Causes

Insufficient retraction

Blood and saliva contamination around preparation

Working time exceeded, flowability already impaired

Inadequate coverage of marginal area with light body impression material:

- Wash material displaced/washed away from preparation margins when applying 1-step technique
- Initial impression not sufficiently carved when applying 2-step technique

Impression material has low tear resistance

Incomplete reproduction of preparation margins.

Solutions

Insufficient retraction

What to do.

Retract gingival tissue to entirely capture the prepared area. Retraction cords as well as retraction pastes are suitable.

3M™ ESPE™ Retraction Capsule supports your impression work with excellent gingiva retraction with or without cord and hemostasis.

How to use 3M™ ESPE™ Retraction Capsule

View full technique guide for **3M™ ESPE™ Retraction Capsule**

Incomplete reproduction of preparation margins.

Solutions

Blood and saliva contamination around preparation

What to do.

Rinse and dry the prepared area and stop any bleeding by using appropriate retraction technique and a hemostatic agent. Liquids or pastes based on aluminum chloride, aluminum sulfate, or iron sulfate are suitable hemostatic agents.

3M™ ESPE™ Retraction Capsule supports your impression work with excellent gingiva retraction with or without cord and hemostasis.

3M™ ESPE™ Retraction Capsule: How it works

View full technique guide for **3M™ ESPE™ Retraction Capsule**

Incomplete reproduction of preparation margins.

Solutions

Working time exceeded, flowability already impaired

What to do.

Select material with sufficient working time (i.e. regular set instead of fast set). Make a choice depending on the individual situation and preference of material. Do not exceed working times given in the instructions for use. In case of 3M ESPE Dental materials follow given intra-oral syringing times for wash materials.

Pay attention to storage temperature. Working times are reduced due to higher temperatures of the product, while intra-oral setting times might be longer if the temperature of the product is lower.

Impregum™ Soft Polyether Impression Material offers a very long working time with constant flow. And, polyether impression material is less temperature sensitive in its setting reaction than VPS materials.

Imprint™ 4 VPS Impression Material offers both a fast and a regular setting material. Select Quick Set for 1 to 2 unit cases and Regular Set for cases that involve 3 or more units.

Incomplete reproduction of preparation margins.

Solutions

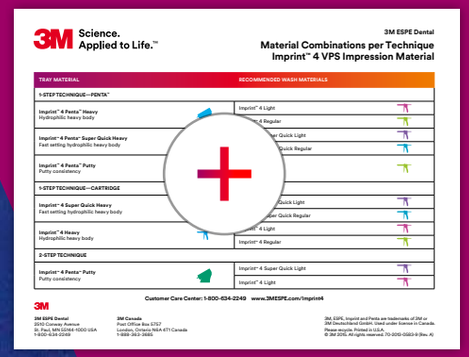
Inadequate coverage of marginal area with light body impression material

What to do.

Use wash material liberally on preparation and abutments.

- *When using 1-step technique:* Avoid high viscosity contrast between tray and wash material. Especially, when using putty materials combine them with a high viscosity wash material. In general, follow manufacturers' recommendations for material combinations.
- *When using 2-step technique:* Carve tray material before applying wash material or use foil as spacer.

View recommended material combinations for **Imprint™ 4 VPS Impression Materials** and **Impregum™ Polyether Impression Materials:**



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Material Combinations per Technique
Imprint™ 4 VPS Impression Material

TRAY MATERIAL	RECOMMENDED WASH MATERIALS
1-STEP TECHNIQUE—PENTA™	
Imprint™ 4 Penta™ Heavy Hydrophilic heavy body	Imprint™ 4 Light Imprint™ 4 Regular
Imprint™ 4 Penta™ Super Quick Heavy Fast setting hydrophilic heavy body	Imprint™ 4 Super Quick Light Imprint™ 4 Super Quick Regular
Imprint™ 4 Penta™ Putty Putty consistency	
1-STEP TECHNIQUE—CARTRIDGE	
Imprint™ 4 Super Quick Heavy Fast setting hydrophilic heavy body	Imprint™ 4 Super Quick Light Imprint™ 4 Super Quick Regular
Imprint™ 4 Heavy Hydrophilic heavy body	Imprint™ 4 Light Imprint™ 4 Regular
2-STEP TECHNIQUE	
Imprint™ 4 Penta™ Putty Putty consistency	Imprint™ 4 Super Quick Light Imprint™ 4 Light

Customer Care Center: 1-800-634-2249 www.3MESPE.com/imprint4

3M

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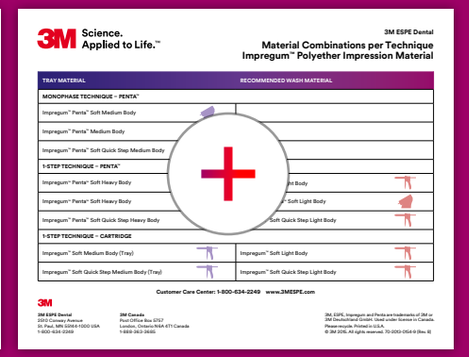

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Material Combinations per Technique
Impregum™ Polyether Impression Material

TRAY MATERIAL	RECOMMENDED WASH MATERIAL
MONOPHASE TECHNIQUE – PENTA™	
Impregum™ Penta™ Soft Medium Body	
Impregum™ Penta™ Medium Body	
Impregum™ Penta™ Soft Quick Step Medium Body	
1-STEP TECHNIQUE – PENTA™	
Impregum™ Penta™ Soft Heavy Body	Body
Impregum™ Penta™ Soft Heavy Body	Soft Light Body
Impregum™ Penta™ Soft Quick Step Heavy Body	Soft Quick Step Light Body
1-STEP TECHNIQUE – CARTRIDGE	
Impregum™ Soft Medium Body (Tray)	Impregum™ Soft Light Body
Impregum™ Soft Quick Step Medium Body (Tray)	Impregum™ Soft Quick Step Light Body

Customer Care Center: 1-800-634-2249 www.3MESPE.com

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Incomplete reproduction of preparation margins.

Solutions

Impression material has low tear resistance

What to do.

Let the material *completely set* prior to removal of the impression and use impression material with sufficient tear resistance.

All 3M ESPE Dental precision impression materials offer clinically proven tear resistance.

Highly detailed impressions made with Impregum™ Polyether Impression Material (left) and Imprint™ 4 VPS Impression Material (right).

View working and setting times of **Imprint™ 4 VPS Impression Materials** and **Impregum™ Polyether Impression Materials:**

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3M ESPE Dental

Portfolio Overview
Imprint™ 4 VPS Impression Material

PRODUCT	DISPENSING SYSTEM	VISCOSITY LOW–HIGH	SETTING VERSION	MAXIMUM WORKING TIME (23°C/73°F)	MAXIMUM INTRA-ORAL SYRINGING TIME (23°C/73°F)	INTRA-ORAL SETTING TIME (37°C/98°F)
TRAY MATERIALS						
Imprint™ 4 Penta™ Putty				1:30	–	2:30
Imprint™ 4 Penta™ Heavy Imprint™ 4 Heavy					–	2:00
Imprint™ 4 Penta™ Super Quick Heavy Imprint™ 4 Super Quick Heavy					–	1:15
WASH MATERIALS						
Imprint™ 4 Light			Regular Set	–	1:00	2:00
Imprint™ 4 Super Quick Light			Fast Set	–	0:35	1:15
Imprint™ 4 Regular			Regular Set	–	1:00	2:00
Imprint™ 4 Super Quick Regular			Fast Set	–	0:35	1:15

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3M ESPE Dental

Portfolio Overview
Impregum™ Polyether Impression Material

PRODUCT	DISPENSING SYSTEM	VISCOSITY LOW–HIGH	SETTING VERSION	WORKING TIME* AT 23°C/74°F MIN:SEC	TOTAL SETTING TIME** MIN:SEC
TRAY AND MONOPHASE MATERIALS					
Impregum™ Penta™ Soft Heavy Body			Regular Set	2:30	6:00
Impregum™ Penta™ Soft Medium Body			Regular Set	2:45	6:00
Impregum™ Penta™ Medium Body			Regular Set	2:45	6:00
Impregum™ Soft Medium Body (Tray)			Regular Set	1:45	6:00
Impregum™ Penta™ Soft Quick Step Heavy Body			Fast Set	1:00	4:00
Impregum™ Penta™ Soft Quick Step Medium Body			Fast Set	1:00	4:00
Impregum™ Soft Quick Step Medium Body (Tray)			Fast Set	1:00	4:00
WASH MATERIALS					
Impregum™ Penta™ Soft Light Body			Regular Set	3:15	6:30
Impregum™ Soft Light Body			Regular Set	2:00	5:30
Impregum™ Soft Quick Step Light Body			Fast Set	1:00	4:00

*Working time includes mixing time.
**Time includes working time.

Voids on the margin.

Causes

- Blood and saliva contamination around preparation
- Improper syringe technique
- Working time exceeded, flowability already impaired
- Air bubbles in elastomer syringe or intra-oral syringe
- Tray not seated properly
- Storage at elevated temperature

Voids on the margin.

Solutions

Blood and saliva contamination around preparation

What to do.

Rinse and dry the prepared area properly and stop any bleeding by using appropriate retraction/hemostatic agents. Liquid hemostatic agents and pastes based on aluminum chloride, aluminum sulfate or iron sulfate are suitable.

3M™ ESPE™ Retraction Capsule supports your impression work with excellent gingiva retraction with or without cord and hemostasis.

3M™ ESPE™ Retraction Capsule: How it works

View full technique guide for **3M™ ESPE™ Retraction Capsule**

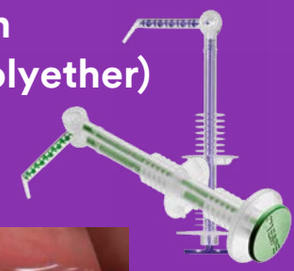
Voids on the margin.

Solutions

Improper syringe technique

What to do.

Keep the mix tip permanently immersed in the paste to avoid the formation of air bubbles. Apply a liberal amount of wash material into the sulcus. Start from the bottom up and cover the whole abutment tooth with syringing material. Always keep the tip in close proximity to the surface.



3M™ ESPE™ Intra-oral Syringes Green (for VPS materials) and Purple (for polyether) are easy to handle and give better control of the syringing process.

Tips for syringing

View full technique guide for **3M™ ESPE™ Intra-oral Syringe Green/Purple**

Voids on the margin.

Solutions

Working time exceeded, flowability already impaired

What to do.

Select material with sufficient working time (i.e. regular set instead of fast set). Make a choice depending on the individual situation and preference of material. Do not exceed working times given in the instructions for use. In case of 3M ESPE Dental materials follow given intra-oral syringing times for wash materials.

Pay attention to storage temperature. Working times are reduced due to higher temperatures of the product, while intra-oral setting times might be longer if the temperature of the product is lower.

Impregum™ Soft Polyether Impression Material offers a very long working time with constant flow. And, polyether impression material is less temperature sensitive in its setting reaction than VPS materials.

Imprint™ 4 VPS Impression Material offers both a fast and a regular setting material. Select Quick Set for 1 to 2 unit cases and Regular Set for cases that involve 3 or more units.

Voids on the margin.

Solutions

Air bubbles in elastomer syringe or intra-oral syringe

What to do.

Bleed cartridge prior to loading syringe.

Keep flow of material consistent. Do not stop and start while loading the syringe.

How to load 3M™ ESPE™ Intra-Oral Syringe Green/Purple

View full technique guide for **3M™ ESPE™ Intra-oral Syringe Green/Purple**

Voids on the margin.

Solutions

Tray not seated properly

TIPS!

What to do.

Slowly (approx. 5 seconds) insert the loaded tray into the mouth *parallel to the long axes* of the prepared teeth, and hold it in place without applying pressure.

Maxillary arch: Seat the impression straight up. Make sure the handle is aligned with the patient‘s midline. Always hold the impression tray in the premolar area for stability.

Mandibular arch: Seat the impression straight down over the arch while pulling out the patient‘s cheek. Make sure the tray handle is aligned with the patient‘s midline. Apply passive pressure in the premolar areas with your thumbs for stability.

Voids on the margin.

Solutions

Tray not seated properly

TIPS!

Apply passive pressure while holding the impression tray in place.

Never ask the patient to hold the tray.

Never ask the patient to bite down on the tray.

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patient's midline. Always hold the impression tray in the premolar area for stability.

Mandibular arch: Seat the impression straight down over the arch while pulling out the patient's cheek. Make sure the tray handle is aligned with the patient's midline. Apply passive pressure in the premolar areas with your thumbs for stability.

Voids on the margin.

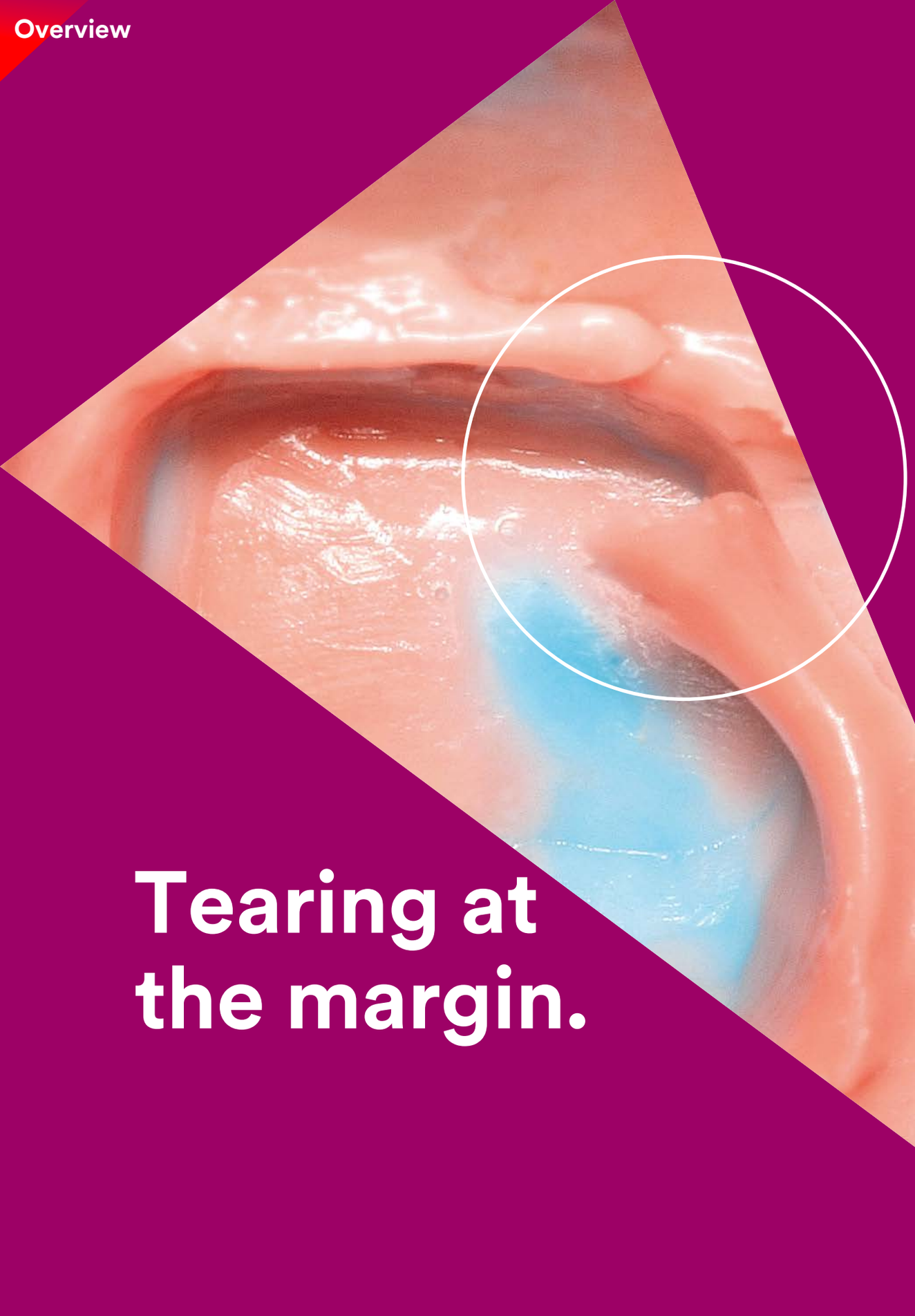
Solutions

Storage at elevated temperature

What to do.

Store impression material at room temperature. Usually, times given in the manufacturers' instructions for use are valid for a storage temperature of 23 °C/74 °F. Working times are reduced due to higher temperatures of the product, while intra-oral setting times might be longer if the temperature of the product is lower.

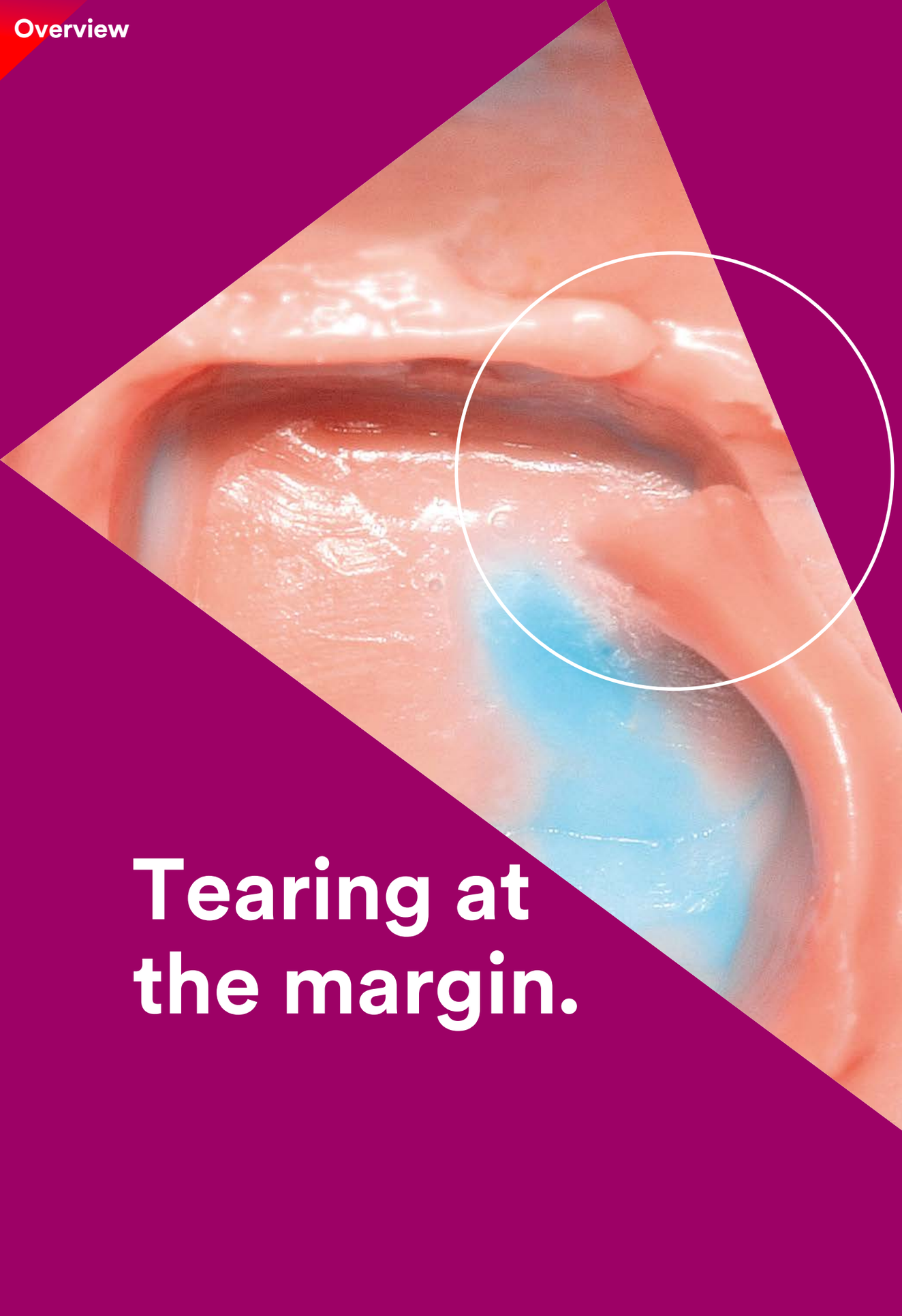
Due to its lower temperature sensitivity, **Impregum™ Soft Polyether Impression Material** is less affected by fluctuations in storage temperature than VPS materials.



Tearing at the margin.

Causes

- Insufficient retraction
- Inhibition of setting due to use of acidic retraction materials/hemostatic agents like aluminum or ferric salts
- Smear layers from custom temporary, provisional cements (acrylics) or core build-up present
- Inadequately mixed materials
- Premature removal of the impression
- Inhibition of setting of VPS impression materials due to contact with sulfur from latex gloves
- Impression material has low tear resistance
- Expired impression material



Tearing at the margin.

Solutions

Insufficient retraction

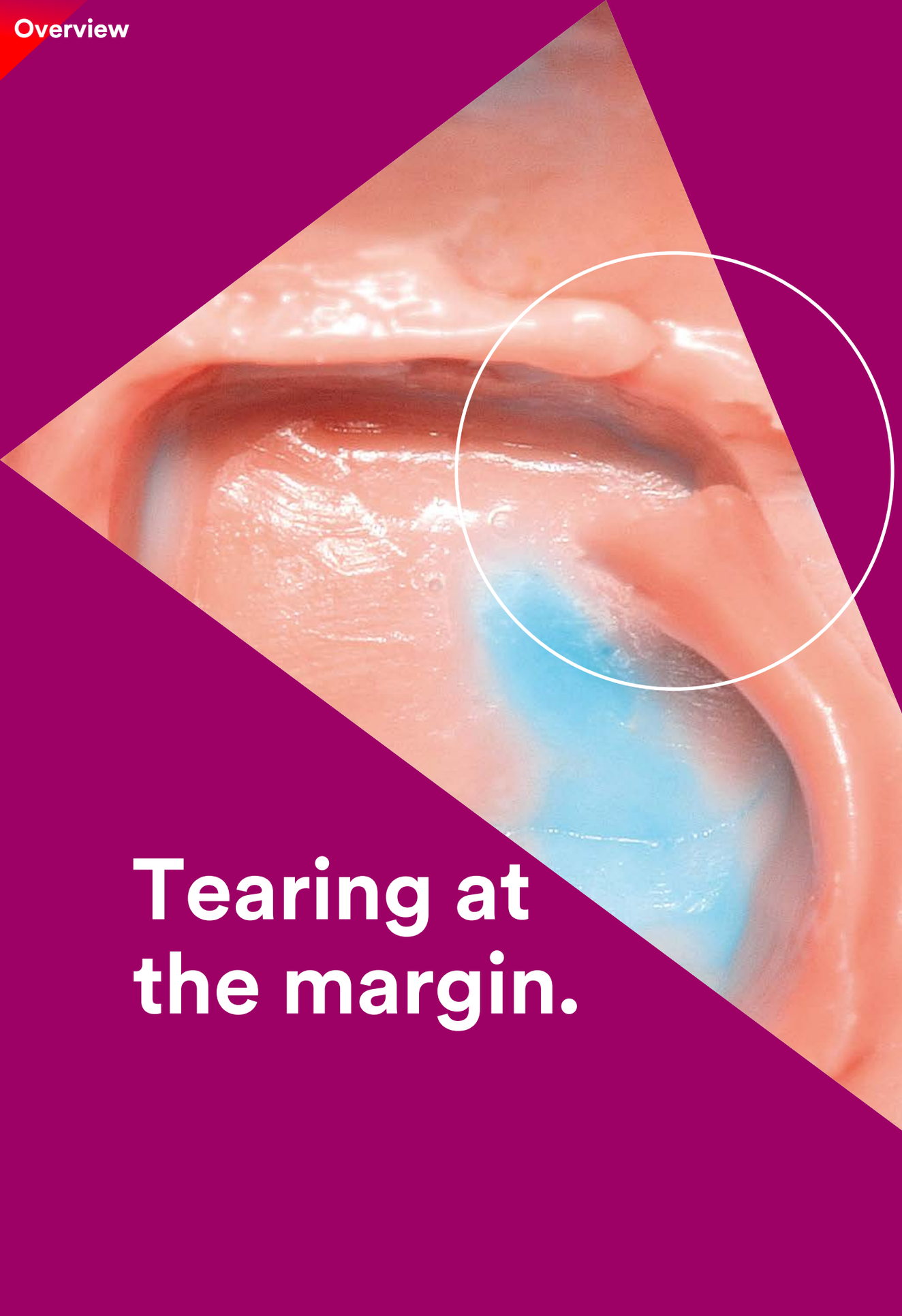
What to do.

Retract gingival tissue to entirely capture the prepared area. Retraction cords as well as retraction pastes are suitable.

3M™ ESPE™ Retraction Capsule supports your impression work with excellent gingiva retraction with or without cord and hemostasis.

How to use 3M™ ESPE™ Retraction Capsule

View full technique guide for **3M™ ESPE™ Retraction Capsule**



Tearing at the margin.

Solutions

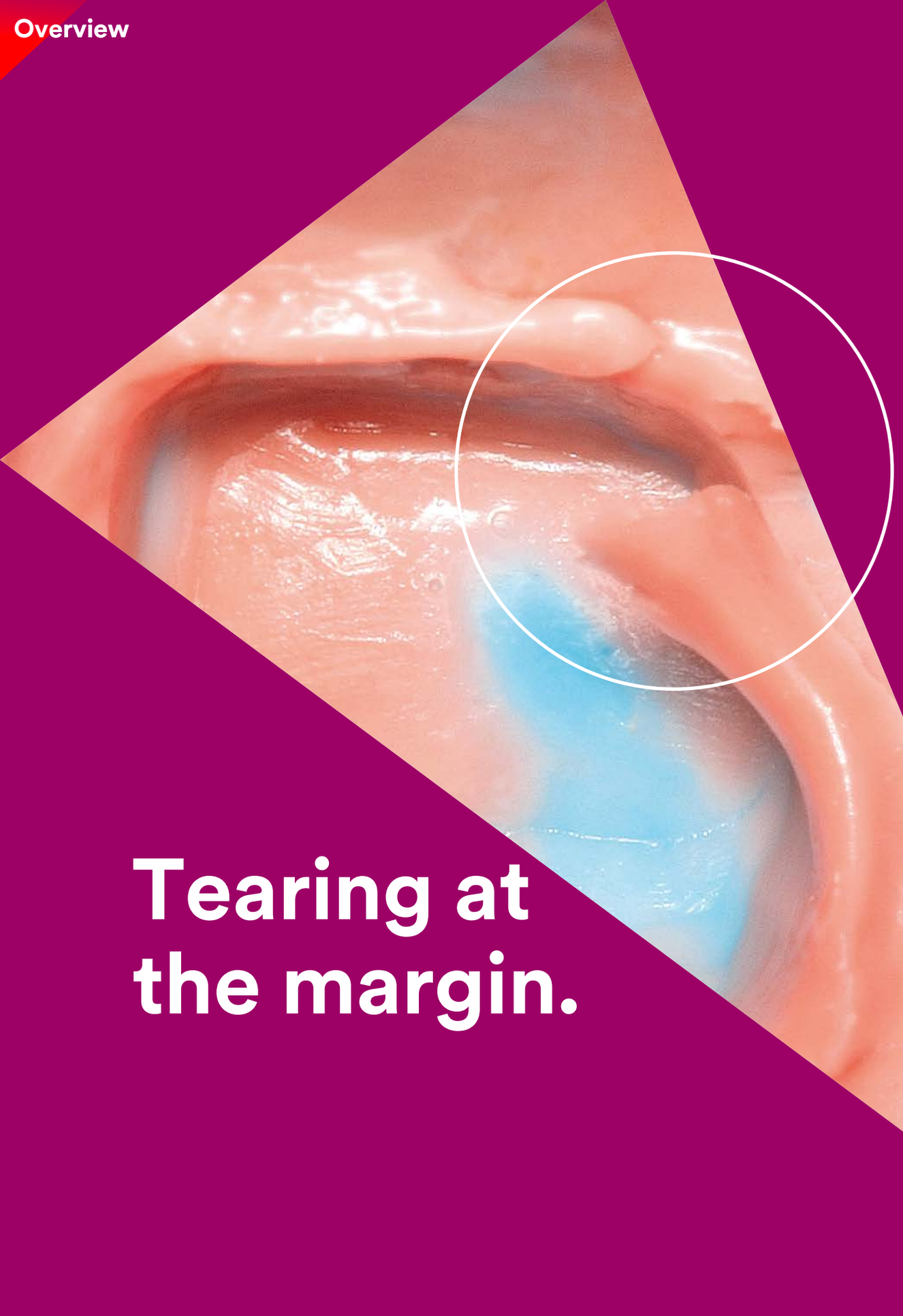
Inhibition of setting due to use of acidic retraction materials/hemostatic agents like aluminum or ferric salts

What to do.

Thoroughly rinse preparation with water and dry before taking the impression.

Rinse and dry preparation

View full technique guide for **3M™ ESPE™ Retraction Capsule**



Tearing at the margin.

Solutions

Smear layers from custom temporary, provisional cements (acrylics) or core build-up present

What to do.

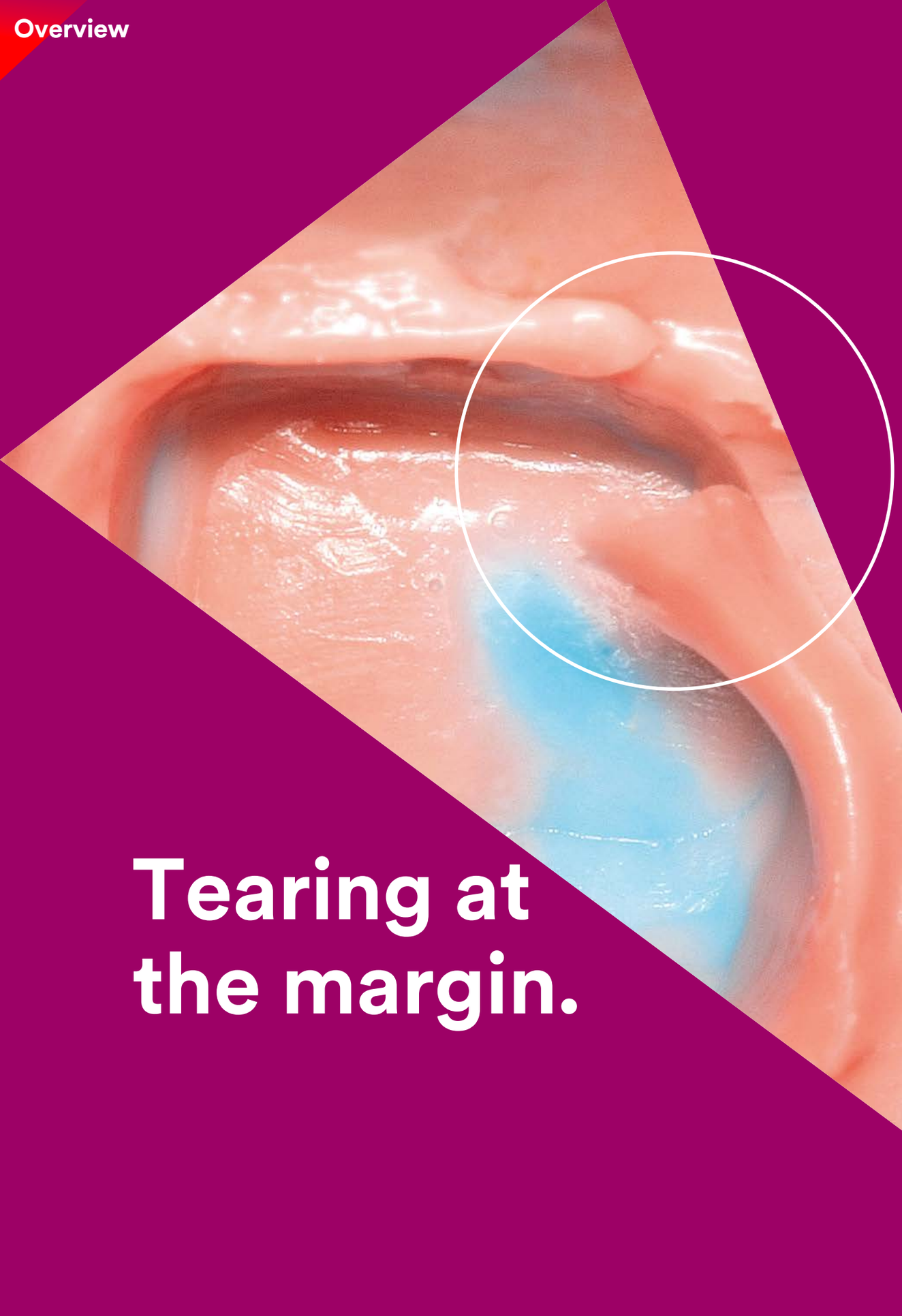
Smear layers from acrylates (e.g. core build-up or temporary materials) can inhibit the setting of impression materials.

When core build-up and final impression are made in one appointment:

- Be sure to remove the smear layer completely prior to impression taking with alcohol/by polishing. Check surrounding teeth and tissue for any residue.

When the temporary and final impressions are made in one appointment:

- Fabricate the provisional after taking the final impression or remove the air-inhibited layer on the exposed preparation with alcohol before taking the final impression.
- Do not use impressions already used to fabricate the provisional for subsequent precision impression taking.
- If a temporary is removed prior to impression taking: Remove all residues of cement and clean the abutment tooth. In case of a core build-up remove the air-inhibition layer on the exposed preparation with alcohol before taking the final impression.



Tearing at the margin.

Solutions

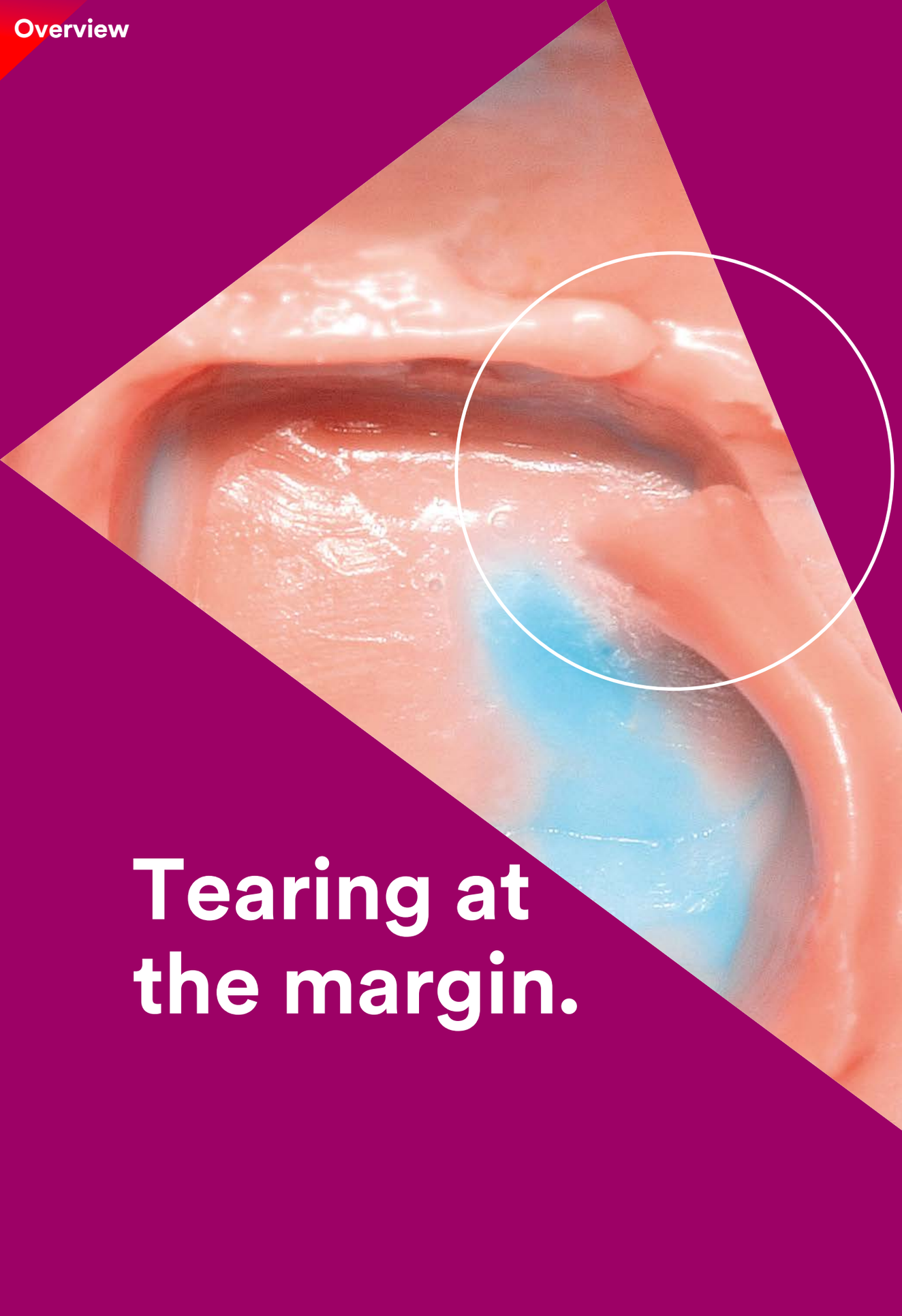
Inadequately mixed materials

What to do.

Bleed cartridge before applying the mix tip to ensure even dispensing. Then *use the mix tips recommended by the manufacturer* and dispense a pea-sized amount onto a mix pad prior to use.

Bleed syringe

View full technique guide for
3M™ ESPE™ Intra-oral Syringe Green/Purple



Tearing at the margin.

Solutions

Premature removal of the impression

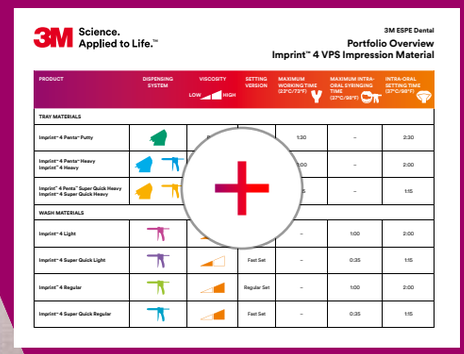
What to do.

Follow manufacturer´s instructions for intra-oral setting time and make sure that the impression material has *completely set before removal.*

Store impression material at room temperature. Usually, times given in the manufacturer's instructions for use are valid for a storage temperature of 23 °C/74 °F.

Working times are reduced due to higher temperatures of the product, while intra-oral setting times might be longer if the temperature of the product is lower.

View working and setting times of **Imprint™ 4 VPS Impression Materials** and **Impregum™ Polyether Impression Materials:**



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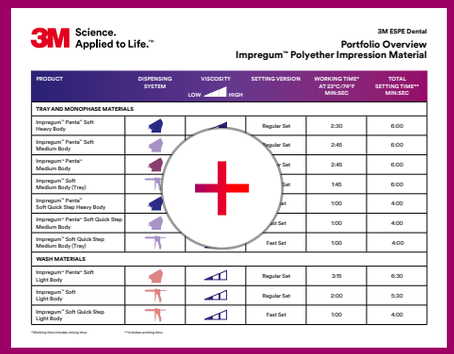
Portfolio Overview
Imprint™ 4 VPS Impression Material

PRODUCT	DISPENSING SYSTEM	VISCOSITY LOW–HIGH	SETTING VERSION	MAXIMUM WORKING TIME (23°C/73°F)	MAXIMUM INTRA-ORAL SETTING TIME (37°C/98°F)	INTRA-ORAL SETTING TIME (37°C/98°F)
TRAY MATERIALS						
Imprint™ 4 Penta™ Putty				1:30	–	2:30
Imprint™ 4 Penta™ Heavy Imprint™ 4 Heavy				1:00	–	2:00
Imprint™ 4 Penta™ Super Quick Heavy Imprint™ 4 Super Quick Heavy				0:45	–	1:15
WASH MATERIALS						
Imprint™ 4 Light				–	1:00	2:00
Imprint™ 4 Super Quick Light			Fast Set	–	0:35	1:15
Imprint™ 4 Regular			Regular Set	–	1:00	2:00
Imprint™ 4 Super Quick Regular			Fast Set	–	0:35	1:15



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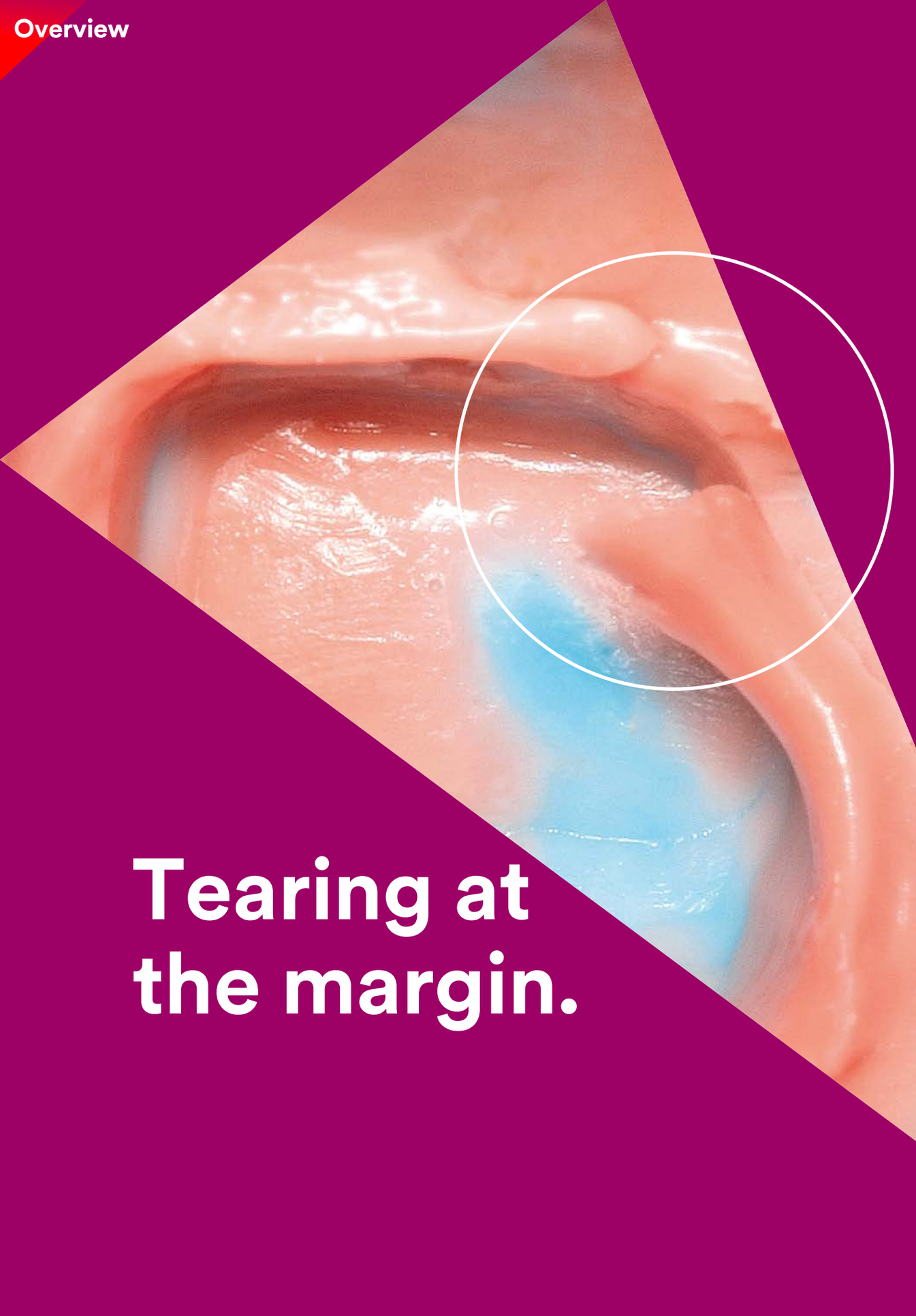
3M ESPE Dental
Portfolio Overview
Impregum™ Polyether Impression Material

PRODUCT	DISPENSING SYSTEM	VISCOSITY LOW–HIGH	SETTING VERSION	WORKING TIME* AT 23°C/74°F MIN:SEC	TOTAL SETTING TIME** MIN:SEC
TRAY AND MONOPHASE MATERIALS					
Impregum™ Penta™ Soft Heavy Body			Regular Set	2:30	6:00
Impregum™ Penta™ Soft Medium Body			Regular Set	2:45	6:00
Impregum™ Penta™ Medium Body			Fast Set	2:45	6:00
Impregum™ Soft Medium Body (Tray)			Fast Set	1:45	6:00
Impregum™ Penta™ Soft Quick Step Heavy Body			Fast Set	1:00	4:00
Impregum™ Penta™ Soft Quick Step Medium Body			Fast Set	1:00	4:00
Impregum™ Soft Quick Step Medium Body (Tray)			Fast Set	1:00	4:00
WASH MATERIALS					
Impregum™ Penta™ Soft Light Body			Regular Set	3:15	6:30
Impregum™ Soft Light Body			Regular Set	2:00	5:30
Impregum™ Soft Quick Step Light Body			Fast Set	1:00	4:00

*Working time includes mixing time.
**Includes working time.



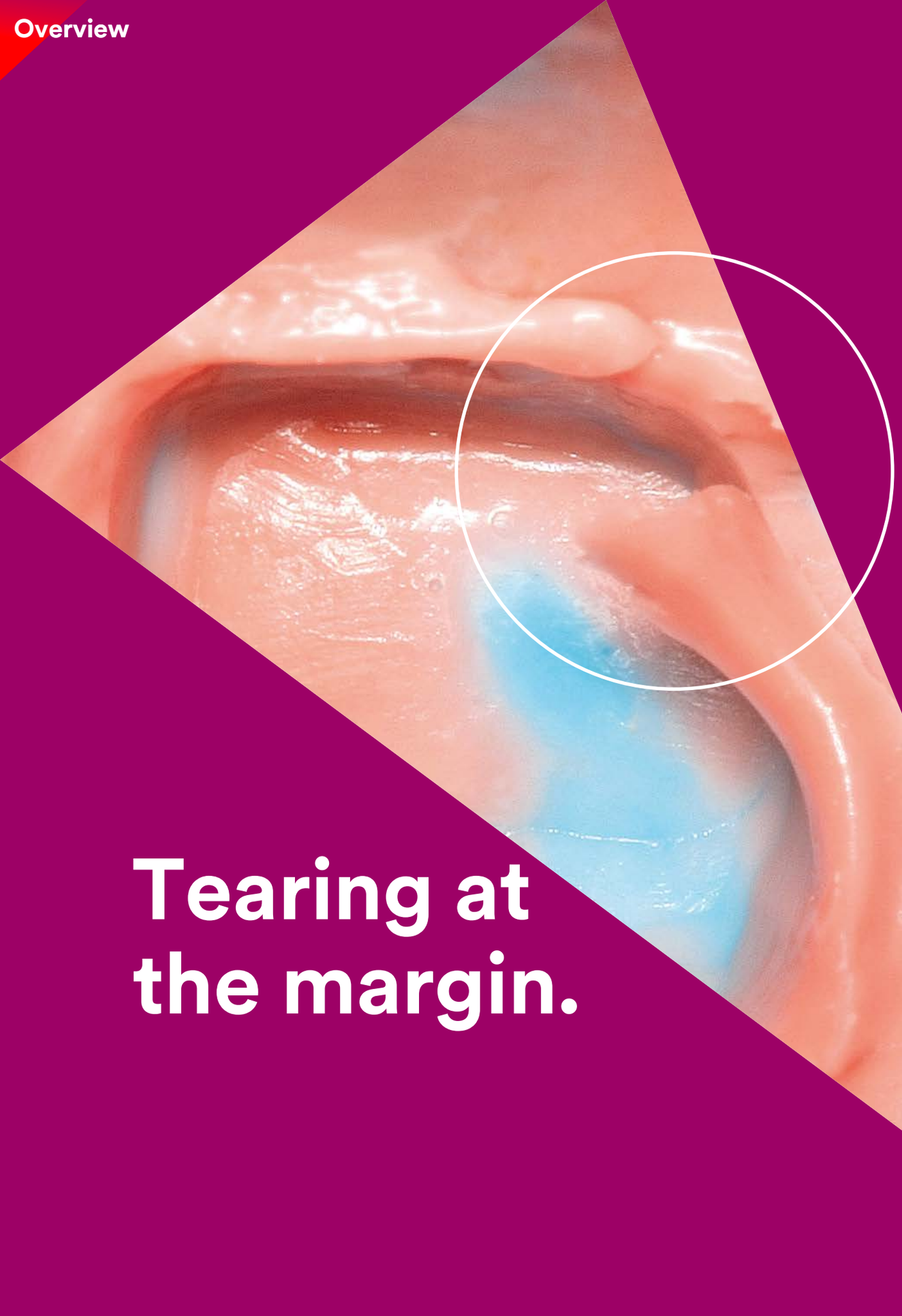
Tearing at the margin.

Solutions

Inhibition of setting of VPS impression materials due to contact with sulfur from latex gloves

What to do.

Use gloves which *do not contain traces of sulfur,* e.g. nitrile gloves.



Tearing at the margin.

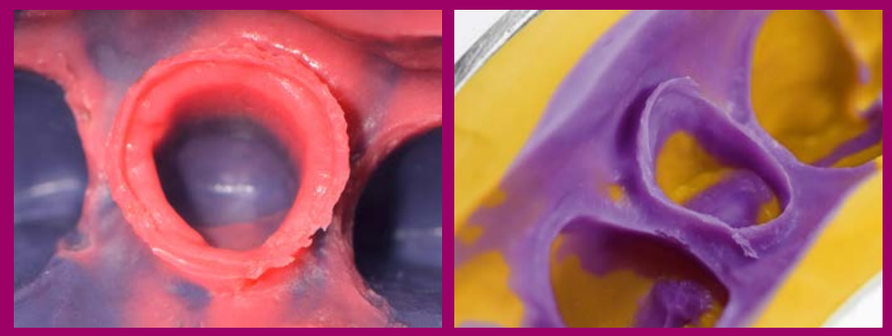
Solutions

Impression material has low tear resistance

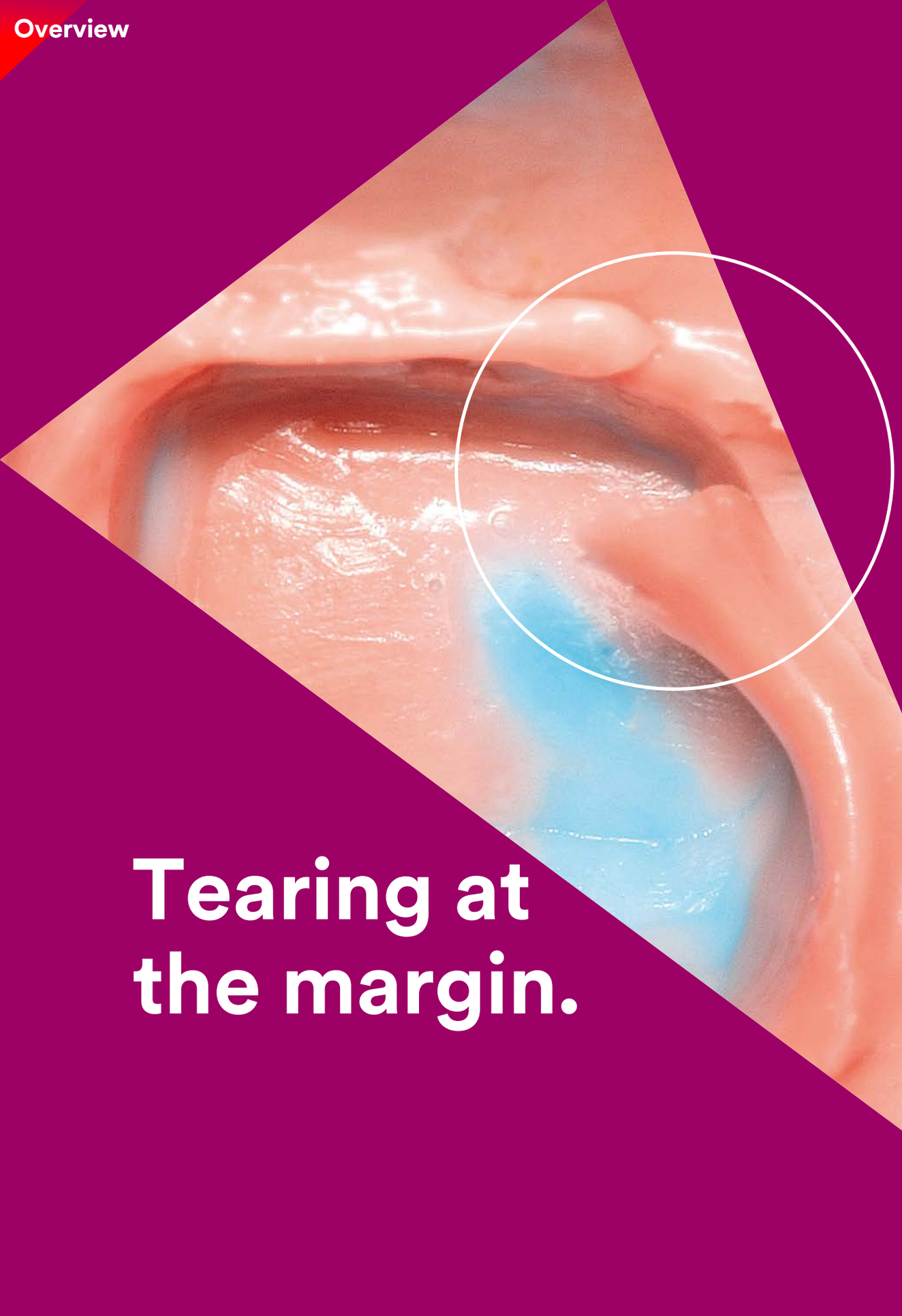
What to do.

Let the material *completely set* prior to removal of the impression and use impression material with sufficient tear resistance.

All 3M ESPE Dental precision impression materials offer clinically proven tear resistance.



Highly detailed impressions made with Impregum™ Polyether Impression Material (left) and Imprint™ 4 VPS Impression Material (right).



Tearing at the margin.

Solutions

Expired impression material

What to do.

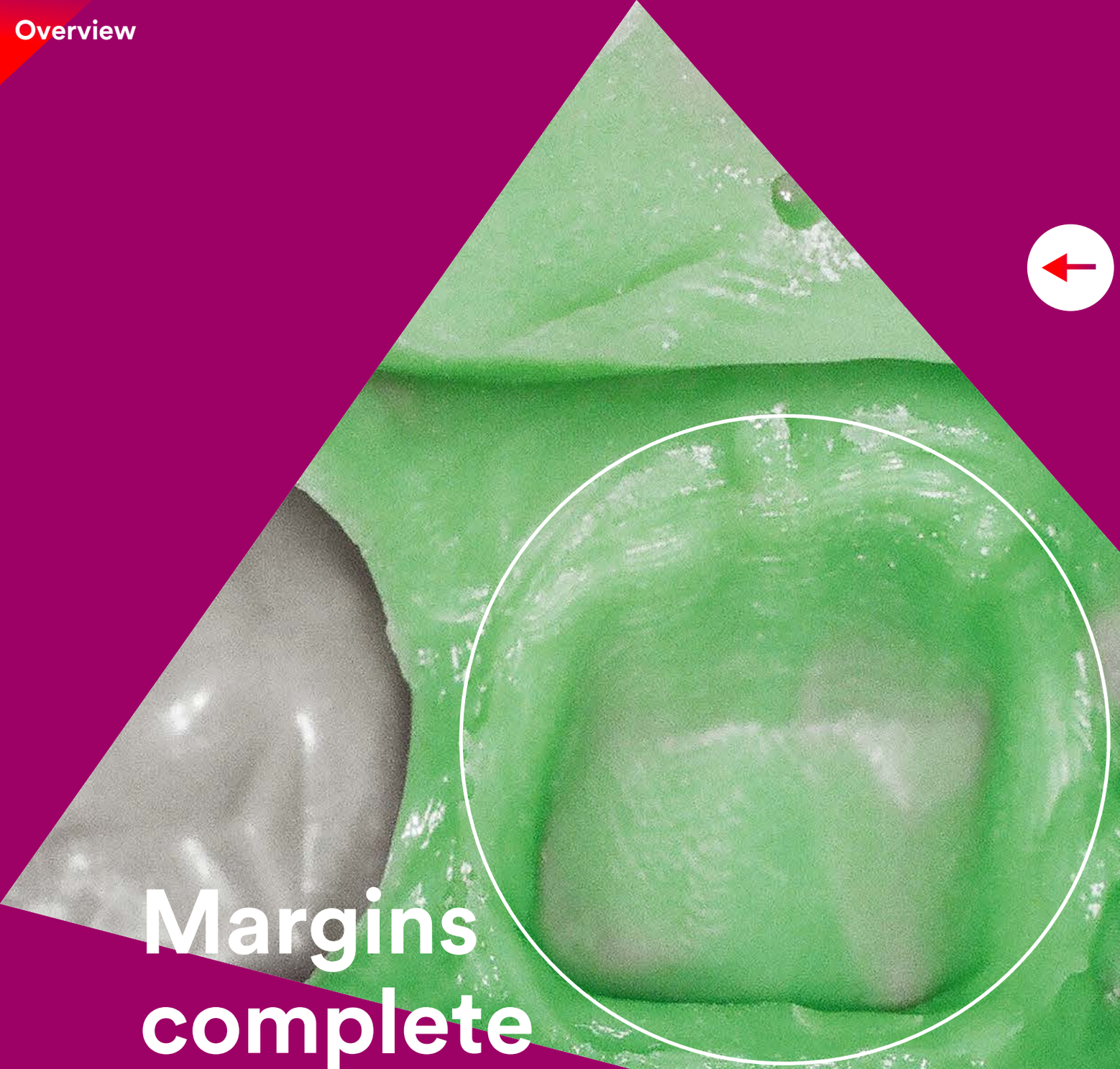
Do not use expired impression material.

Follow defined storage conditions for materials given in the instructions for use for full shelf life.

Causes

- Thick blood/saliva pooled around the preparation
- Insufficient retraction
- Inhibition of setting due to use of acidic retraction materials/hemostatic agents like aluminum or ferric salts
- Inhibition of setting of VPS impression materials due to contact with sulfur from latex gloves
- Working time exceeded, flowability already impaired
- Impression material stored at too low temperature
- Incorrect storage conditions of the final impression
- Inadequate disinfection

Margins complete but not sharp.



Margins complete but not sharp.

Solutions

Thick blood/saliva pooled around the preparation

What to do.

Rinse and dry the prepared area and stop any bleeding by using appropriate retraction technique and a hemostatic agent. Liquids or pastes based on aluminum chloride, aluminum sulfate, or iron sulfate are suitable hemostatic agents.

3M™ ESPE™ Retraction Capsule supports your impression work with excellent gingiva retraction with or without cord and hemostasis.

3M™ ESPE™ Retraction Capsule: How it works

View full technique guide for **3M™ ESPE™ Retraction Capsule**

Solutions

Insufficient retraction

What to do.

Retract gingival tissue to entirely capture the prepared area. Retraction cords as well as retraction pastes are suitable.

3M™ ESPE™ Retraction Capsule supports your impression work with excellent gingiva retraction with or without cord and hemostasis.

How to use 3M™ ESPE™ Retraction Capsule

View full technique guide for **3M™ ESPE™ Retraction Capsule**

Margins complete but not sharp.

Solutions

Inhibition of setting due to use of acidic retraction materials/hemostatic agents like aluminum or ferric salts

What to do.

Thoroughly rinse preparation with water and dry before taking the impression.

Rinse and dry preparation

View full technique guide for **3M™ ESPE™ Retraction Capsule**

Margins complete but not sharp.

Solutions

Inhibition of setting of VPS impression materials due to contact with sulfur from latex gloves

What to do.

Use gloves which *do not contain traces of sulfur,* e.g. nitrile gloves.

Margins complete but not sharp.

Solutions

Working time exceeded,
flowability already impaired

What to do.

Select material with sufficient working time (i.e. regular set instead of fast set). Make a choice depending on the individual situation and preference of material. Do not exceed working times given in the instructions for use. In case of 3M ESPE Dental materials follow given intra-oral syringing times for wash materials.

Pay attention to storage temperature. Working times are reduced due to higher temperatures of the product, while intra-oral setting times might be longer if the temperature of the product is lower.

Impregum™ Soft Polyether Impression Material offers a very long working time with constant flow. And, polyether impression material is less temperature sensitive in its setting reaction than VPS materials.

Imprint™ 4 VPS Impression Material offers both a fast and a regular setting material. Select Quick Set for 1 to 2 unit cases and Regular Set for cases that involve 3 or more units.

Margins complete but not sharp.

Solutions

Impression material stored
at too low temperature

What to do.

Temperature influences the viscosity.
Store impression material at room temperature.
Lower temperatures might lead to higher viscosities.

Margins complete but not sharp.

Solutions

Incorrect storage conditions
of the final impression

What to do.

After disinfection *rinse impressions with water and dry before sending it to the lab.*

Store impressions at room temperature and away from direct sunlight.

Margins complete but not sharp.

Solutions

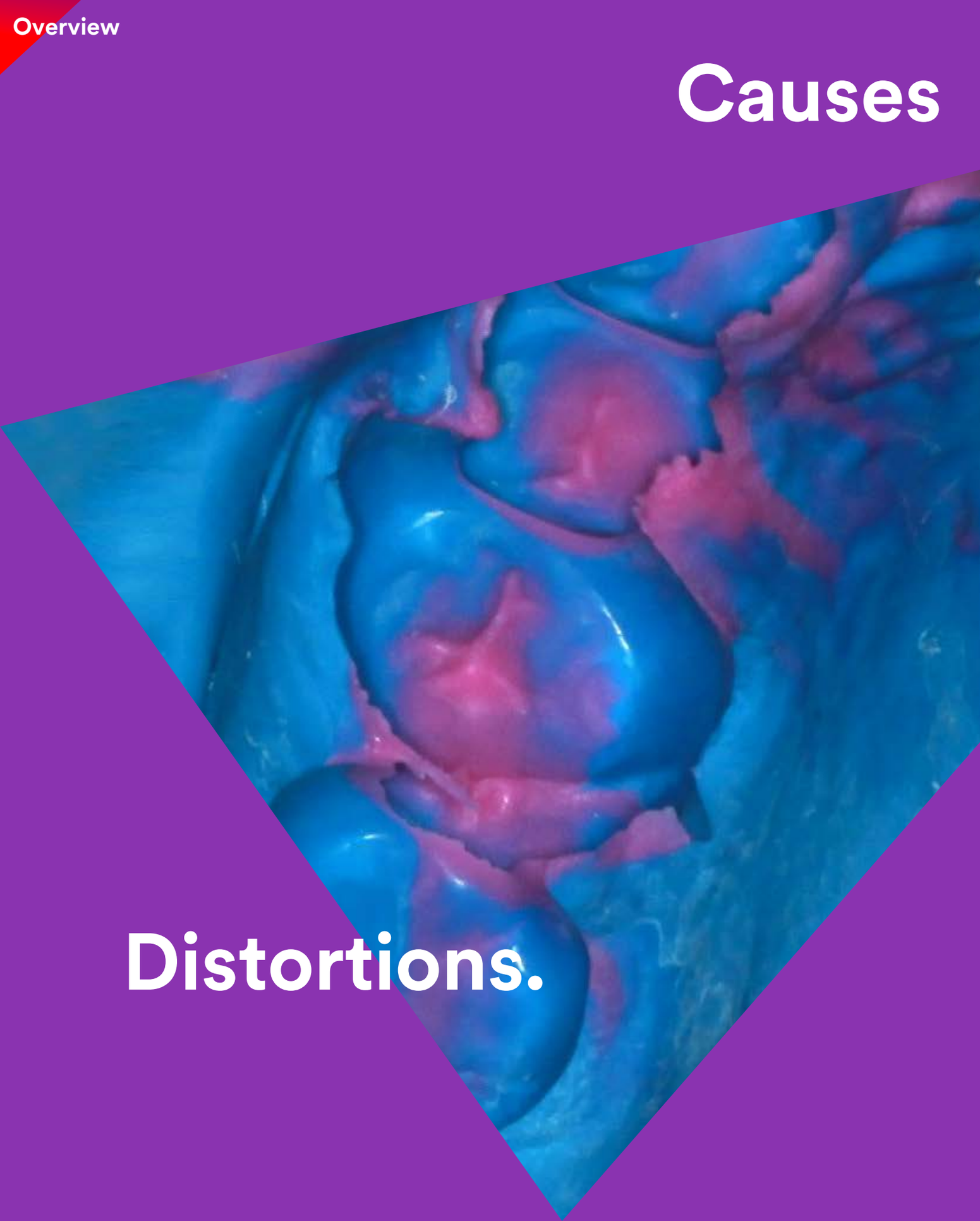
Inadequate disinfection

What to do.

Use recommended disinfectants.
Follow the manufacturers' instructions for use.
Do not exceed the immersion time.

Margins complete but not sharp.

Distortions.



Causes

- Working time exceeded, flowability already impaired
- Lack of support/insufficient stabilization of the tray by operator during the initial phase of polymerization
- Distortions during impression removal
- Delamination of impression material and tray
- Selected impression tray is too flexible
- The combination of the tray and impression material is not appropriate

2-step technique:

- Delamination of tray and wash material
- A high viscosity wash material can displace the tray material which has already set
- Tray material used is too flexible and distortion occurs during second impression
- Local distortions due to insufficient carving
- Detachment of tray material from tray during carving

Distortions.

Solutions

Working time exceeded, flowability already impaired

What to do.

Select material with sufficient working time (i.e. regular set instead of fast set). Make a choice depending on the individual situation and preference of material. Do not exceed working times given in the instructions for use. In case of 3M ESPE Dental materials follow given intra-oral syringing times for wash materials.

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Imprint™ 4 VPS Impression Material offers both a fast and a regular setting material. Select Quick Set for 1 to 2 unit cases and Regular Set for cases that involve 3 or more units.

Distortions.

Solutions

Lack of support/insufficient stabilization of the tray by operator during the initial phase of polymerization

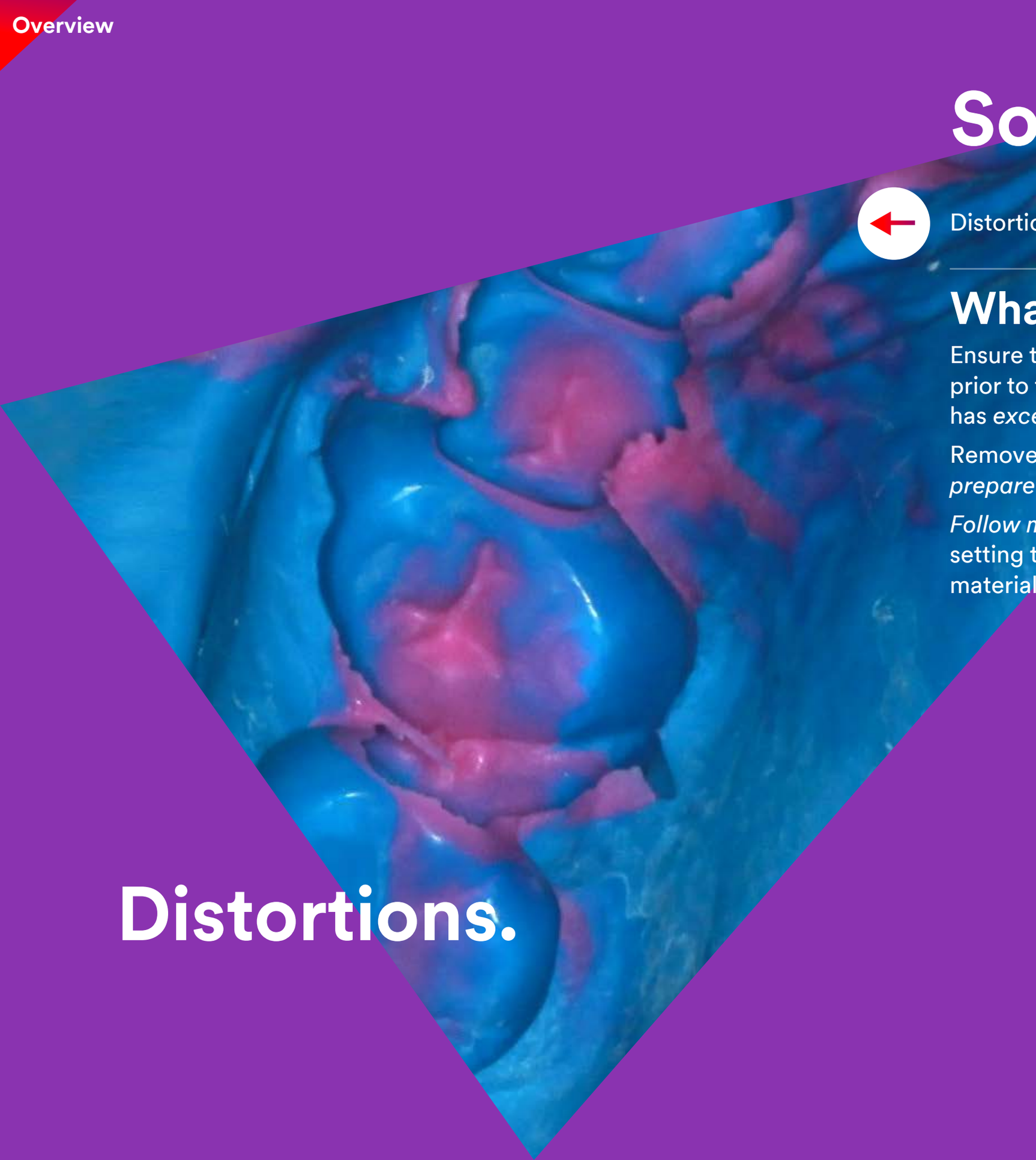
What to do.

Support tray until impression material is sufficiently set. Stabilize the tray after seating, avoid any movements. When taking an impression of the *upper jaw,* you can easily find support on the chin or cheek bone of the patient.

With impressions of the *lower jaw* it is recommended to support the tray on the mandibula.

Patients should close their mouth as much as possible without biting down on the tray to avoid deformation of the mandibula and, thus, errors in the impression. Do not try to correct the position of the tray after insertion.

3M ESPE Dental´s Imprint™ 4 VPS Impression Material has the fastest intra-oral setting time which means less time for unintended movements.



Distortions.

Solutions

Distortions during impression removal

What to do.

Ensure the impression tray is the *proper size* prior to taking the impression and the material has *excellent elastomeric properties.*

Remove the impression *along the axis of the prepared tooth.*

Follow manufactureŕ s instructions for intra-oral setting time and make sure that the impression material has *completely set before removal.*

Distortions.

Solutions

Delamination of impression material and tray

What to do.

Use tray adhesive for all types of impression trays and apply adhesive on bottom and on inner sides of the tray, including gauze of dual-arch trays.

Alternatively use **3M™ ESPE™ Impression Trays:** With their integrated self-retentive fleece strip, the application of a tray adhesive is not needed – saving valuable preparation time.

Distortions.

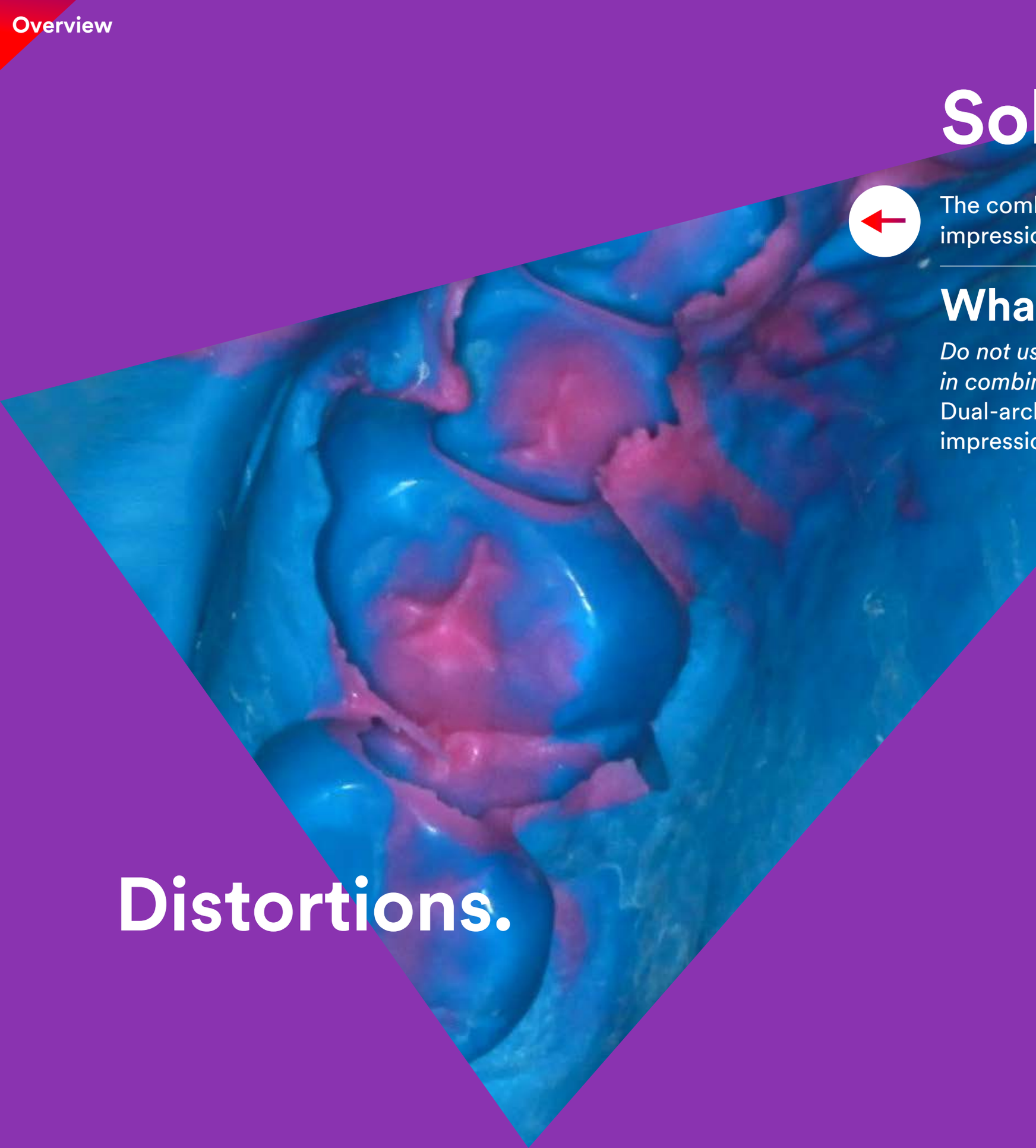
Solutions

Selected impression tray is too flexible

What to do.

Use rigid trays. When using dual-arch trays, impression materials with low flexibility and high shore hardness are beneficial to stabilize the impression.

Both **Impregum™ Polyether Impression Material** and **Imprint™ 4 VPS Impression Material** offer heavy-body material options that are suitable to be used with dual-arch trays.



Distortions.

Solutions

The combination of the tray and impression material is not appropriate

What to do.

Do not use highly viscous putty materials in combination with flexible plastic trays. Dual-arch trays can be deformed during impression taking.

Distortions.

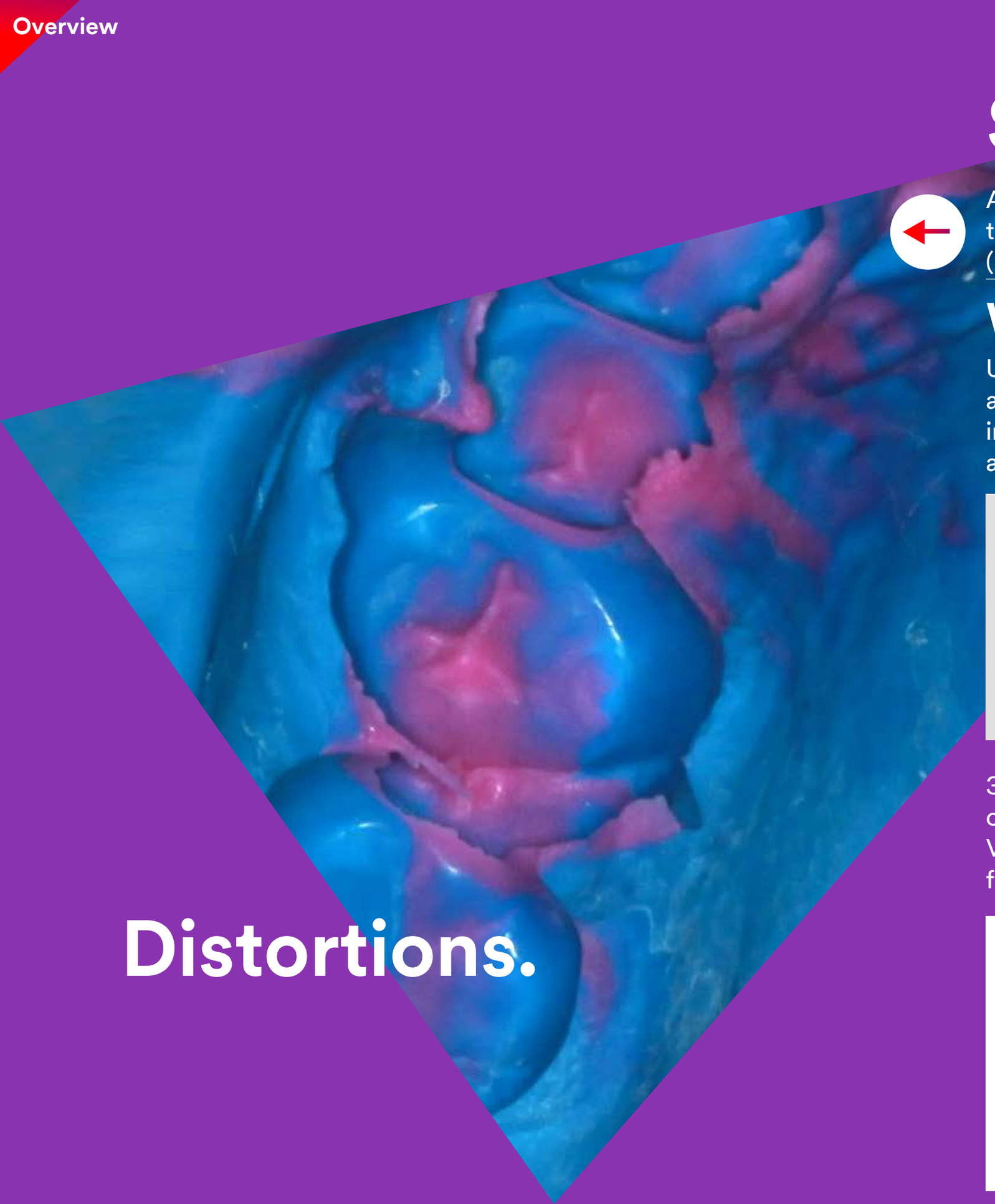
Solutions

Delamination of tray and wash material (2-step technique)

What to do.

Clean the initial impression with plenty of water (or alcohol) and air. During this procedure, saliva has to be removed completely from the impression.

Dry thoroughly before taking the second impression. Do not forget to clean and dry after try-in of first impression.



Distortions.

Solutions

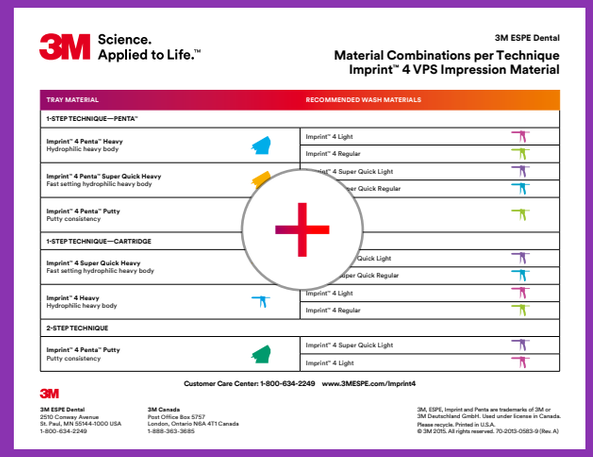
A high viscosity wash material can displace the tray material which has already set (2-step technique)

What to do.

Use low viscosity wash materials which are able to form very thin layers. Carve the first impression with tray material properly before applying wash material.

All interfering areas have been cut with a scalpel to enable easy re-insertion. Also channels are carved in order to allow excess wash material to be displaced.

3M ESPE Dental gives recommendations for optimized impression material combinations. View recommended material combinations for **Imprint™ 4 VPS Impression Material:**



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Material Combinations per Technique
Imprint™ 4 VPS Impression Material

TRAY MATERIAL	RECOMMENDED WASH MATERIALS
1-STEP TECHNIQUE—PENTA™	
Imprint™ 4 Penta™ Heavy Hydrophilic heavy body	Imprint™ 4 Light Imprint™ 4 Regular
Imprint™ 4 Penta™ Super Quick Heavy Fast setting hydrophilic heavy body	Imprint™ 4 Super Quick Light Imprint™ 4 Super Quick Regular
Imprint™ 4 Penta™ Putty Putty consistency	
1-STEP TECHNIQUE—CARTRIDGE	
Imprint™ 4 Super Quick Heavy Fast setting hydrophilic heavy body	Imprint™ 4 Super Quick Light Imprint™ 4 Super Quick Regular
Imprint™ 4 Heavy Hydrophilic heavy body	Imprint™ 4 Light Imprint™ 4 Regular
2-STEP TECHNIQUE	
Imprint™ 4 Penta™ Putty Putty consistency	Imprint™ 4 Super Quick Light Imprint™ 4 Light

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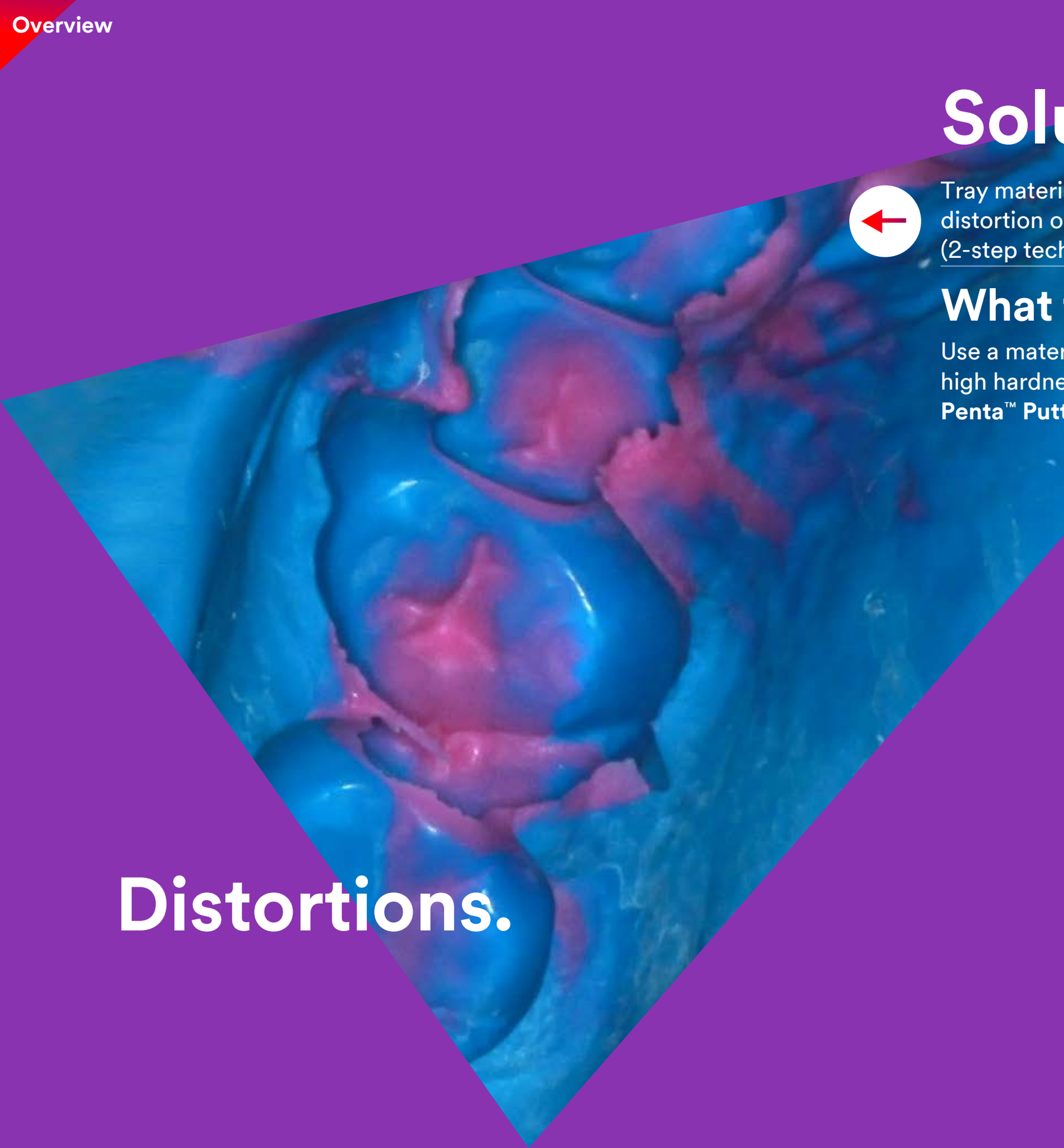


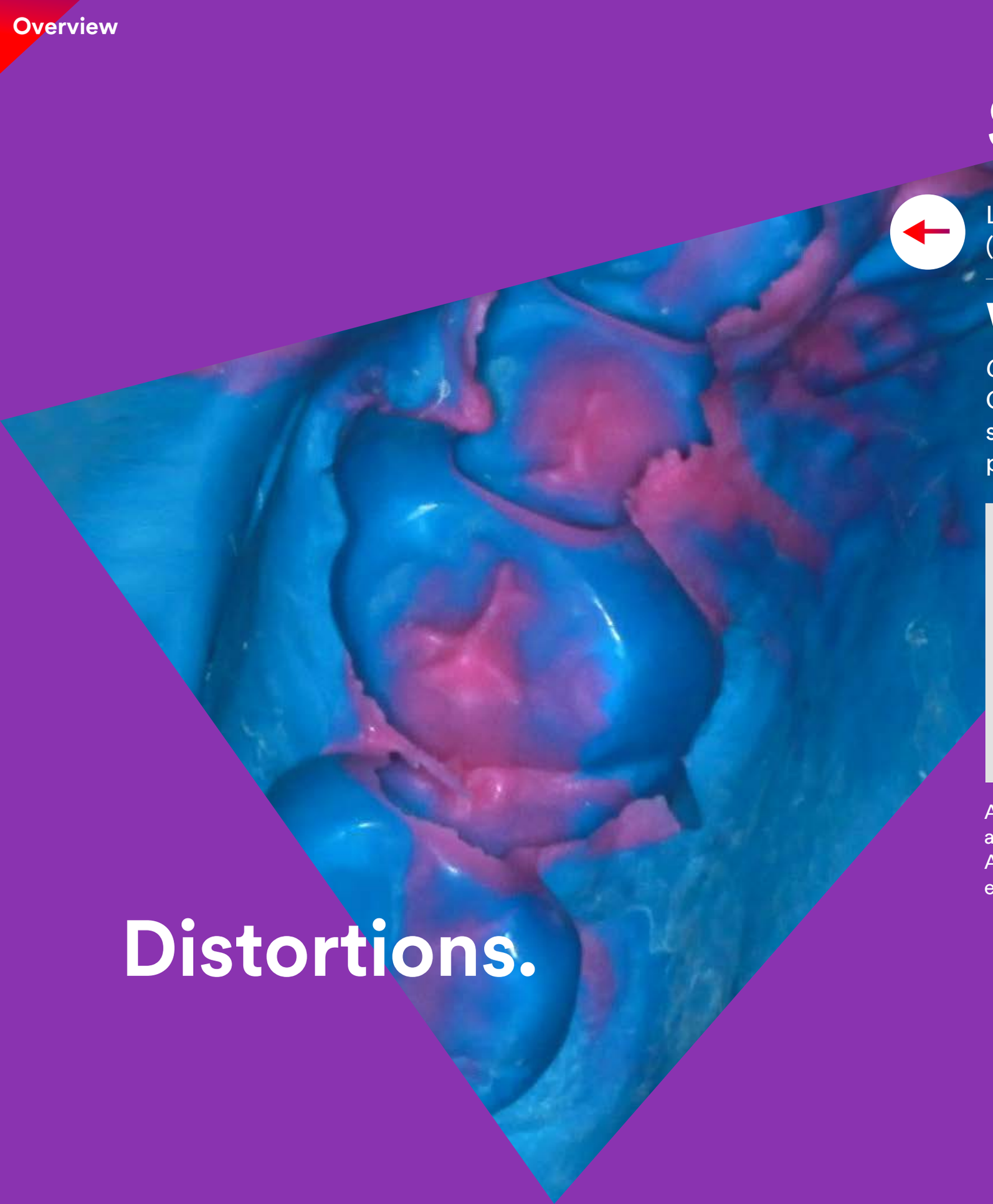
Distortions.

Solutions

Tray material used is too flexible and distortion occurs during second impression (2-step technique)

What to do.

Use a material with low flexibility and high hardness after set, e.g. **Imprint™ 4 Penta™ Putty VPS Impression Material.**



Distortions.

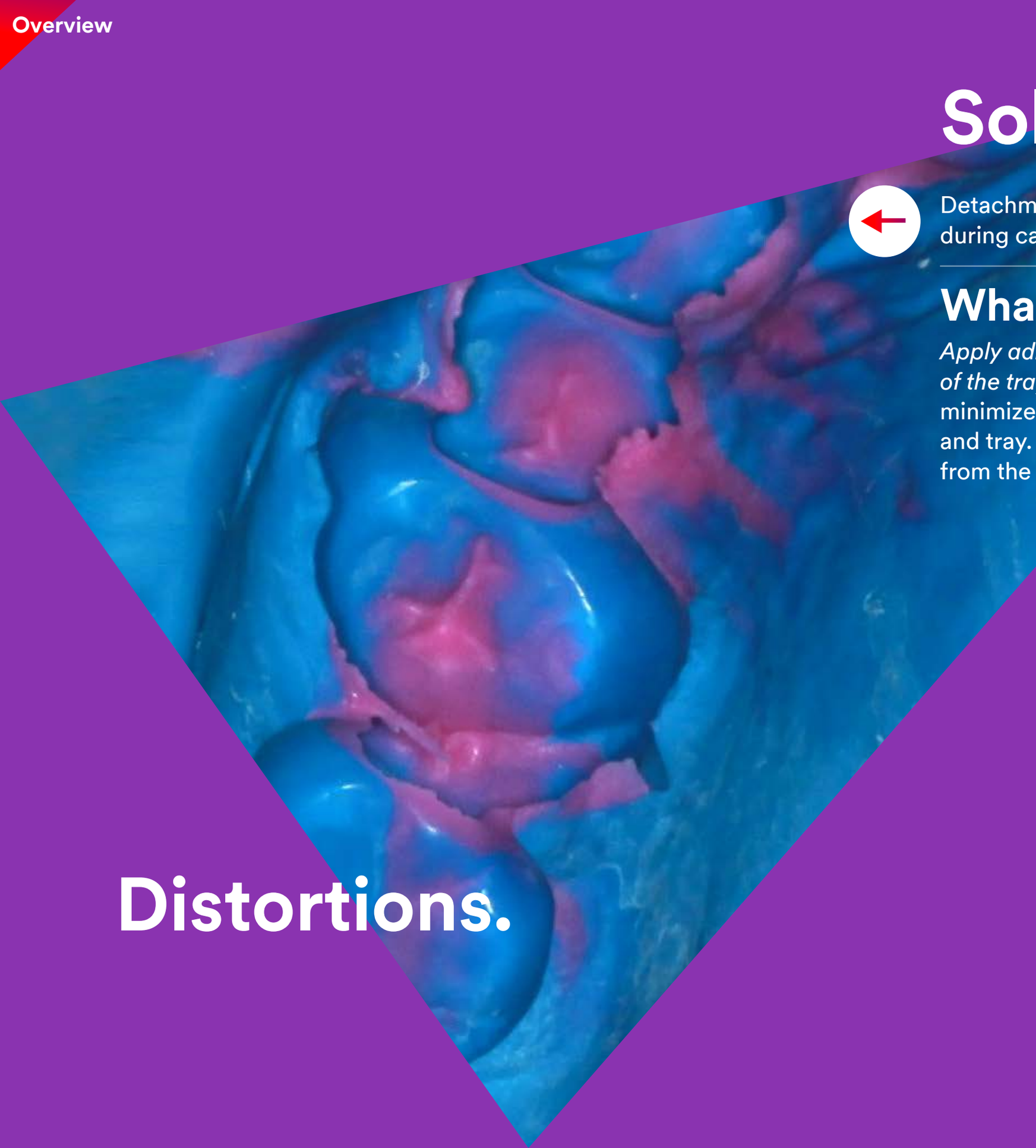
Solutions

Local distortions due to insufficient carving (2-step technique)

What to do.

Carve the tray material properly.
Check repositioning prior to taking the second impression. Apply controlled pressure by slow and straight tray insertion.

All interfering areas have been cut with a scalpel to enable easy re-insertion. Also channels are carved in order to allow excess wash material to be displaced.



Distortions.

Solutions

Detachment of tray material from tray during carving (2-step technique)

What to do.

Apply adhesive on bottom and on inner sides of the tray. Use a sharp carving instrument to minimize stress at the interface of tray material and tray. Otherwise, tray material could detach from the tray unnoticed and causes deformation.

Facial-oral flow defects.

Causes

- Working time exceeded, flowability already impaired
- Impression tray does not support the flow of impression material
- Insufficient amount of impression material used
- Too fast tray insertion
- Tray repositioning after seating

Facial-oral flow defects.

Solutions

Working time exceeded, flowability already impaired

What to do.

Select material with sufficient working time (i.e. regular set instead of fast set). Make a choice depending on the individual situation and preference of material. Do not exceed working times given in the instructions for use. In case of 3M ESPE Dental materials follow given intra-oral syringing times for wash materials.

Pay attention to storage temperature. Working times are reduced due to higher temperatures of the product, while intra-oral setting times might be longer if the temperature of the product is lower.

Impregum™ Soft Polyether Impression Material offers a very long working time with constant flow. And, polyether impression material is less temperature sensitive in its setting reaction than VPS materials.

Imprint™ 4 VPS Impression Material offers both a fast and a regular setting material. Select Quick Set for 1 to 2 unit cases and Regular Set for cases that involve 3 or more units.

Facial-oral flow defects.

Solutions

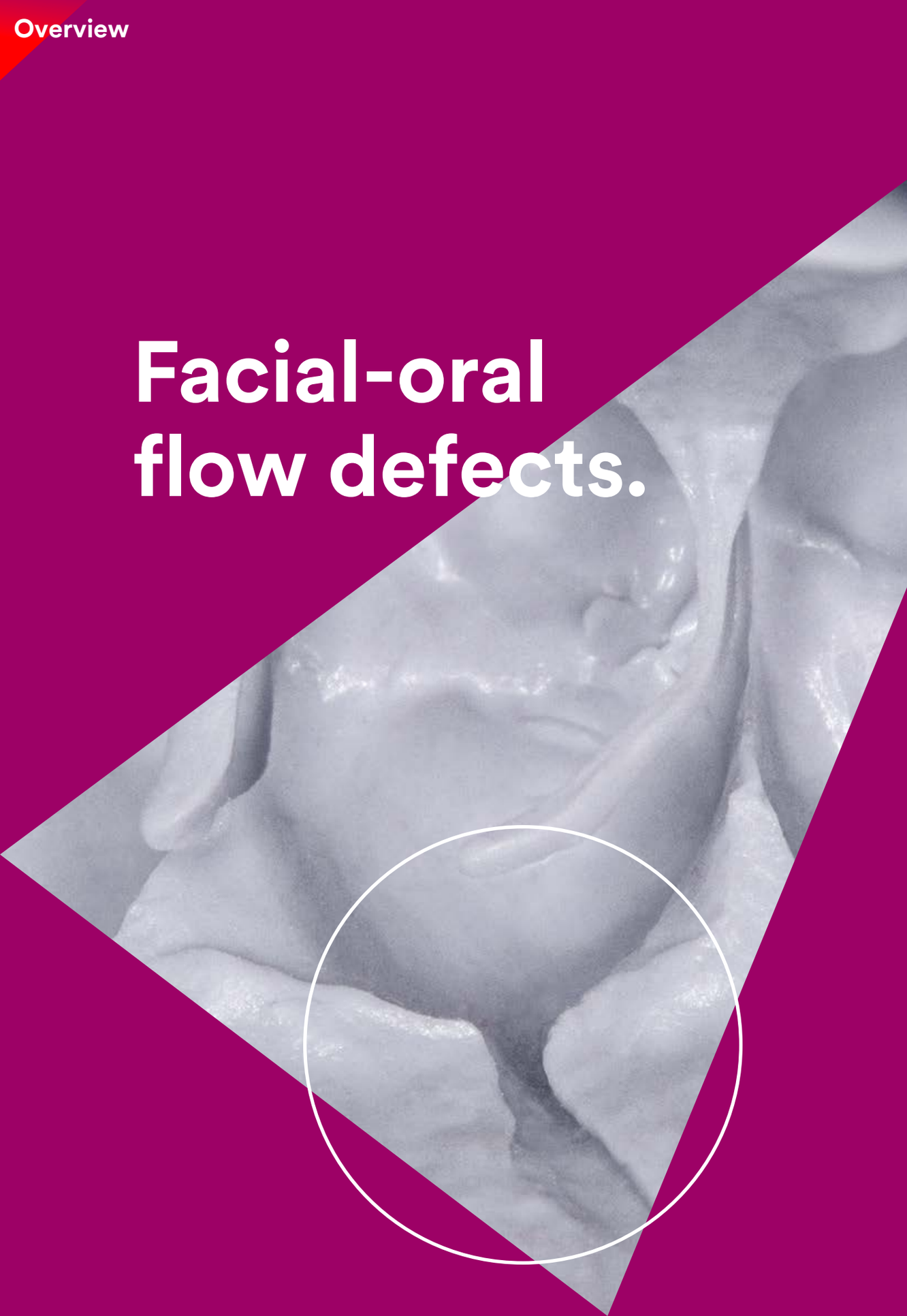
Impression tray does not support the flow of impression material

What to do.

Use rigid trays with correct size. If necessary, apply facial/oral, occlusal or dorsal stops.

Use **3M™ ESPE™ Impression Trays** (or custom trays) that support the flow of the impression material. Their directed flow design minimizes flow defects and distal voids to improve impression accuracy.

Facial-oral flow defects.



Solutions

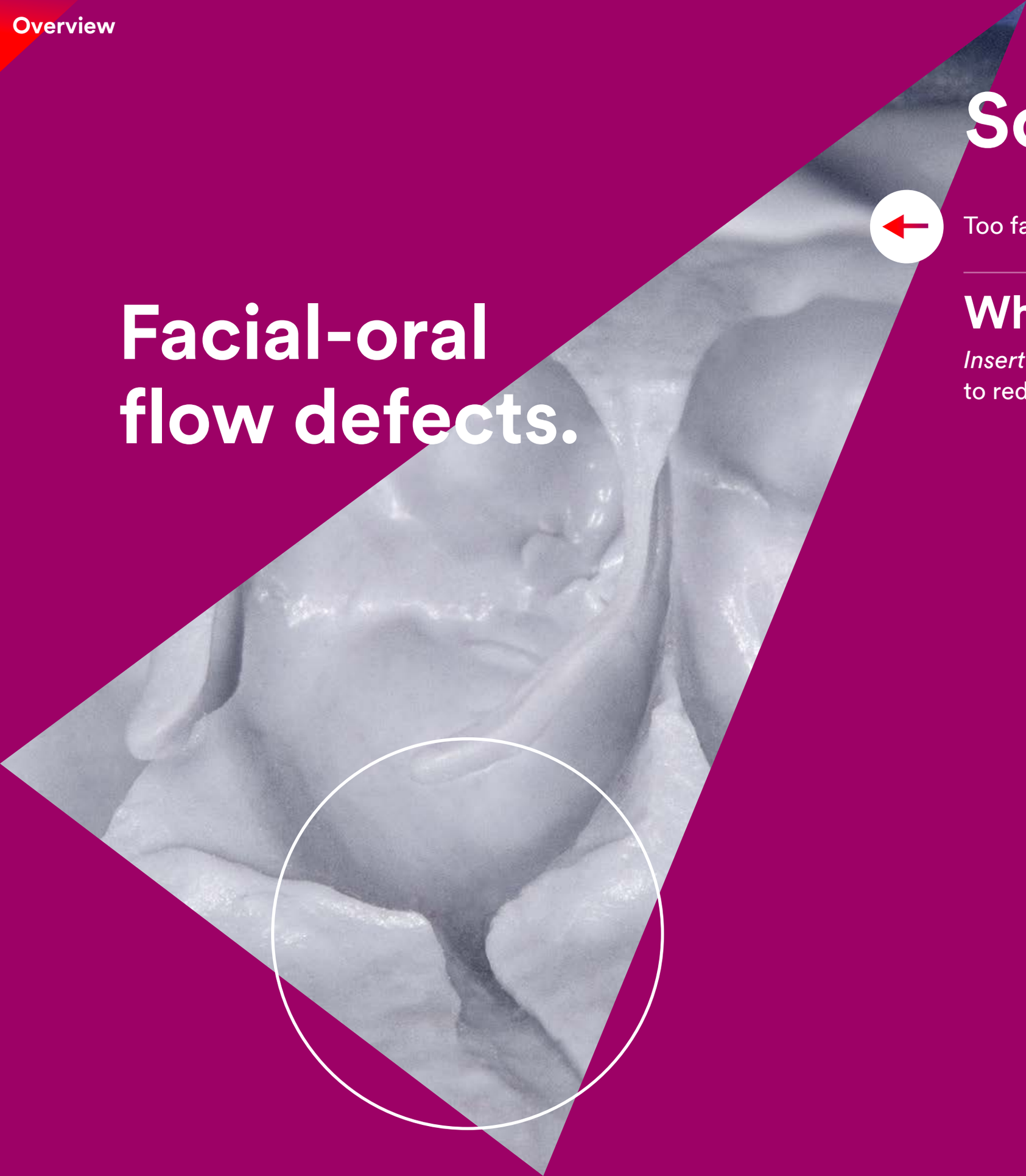
Insufficient amount of impression material used

What to do.

Do not underfill the tray. Use sufficient material to create a back flow effect. If required, block out the palatal area of the tray.

Tray filling using Pentamix™ Lite Automatic Mixing Unit

Facial-oral flow defects.



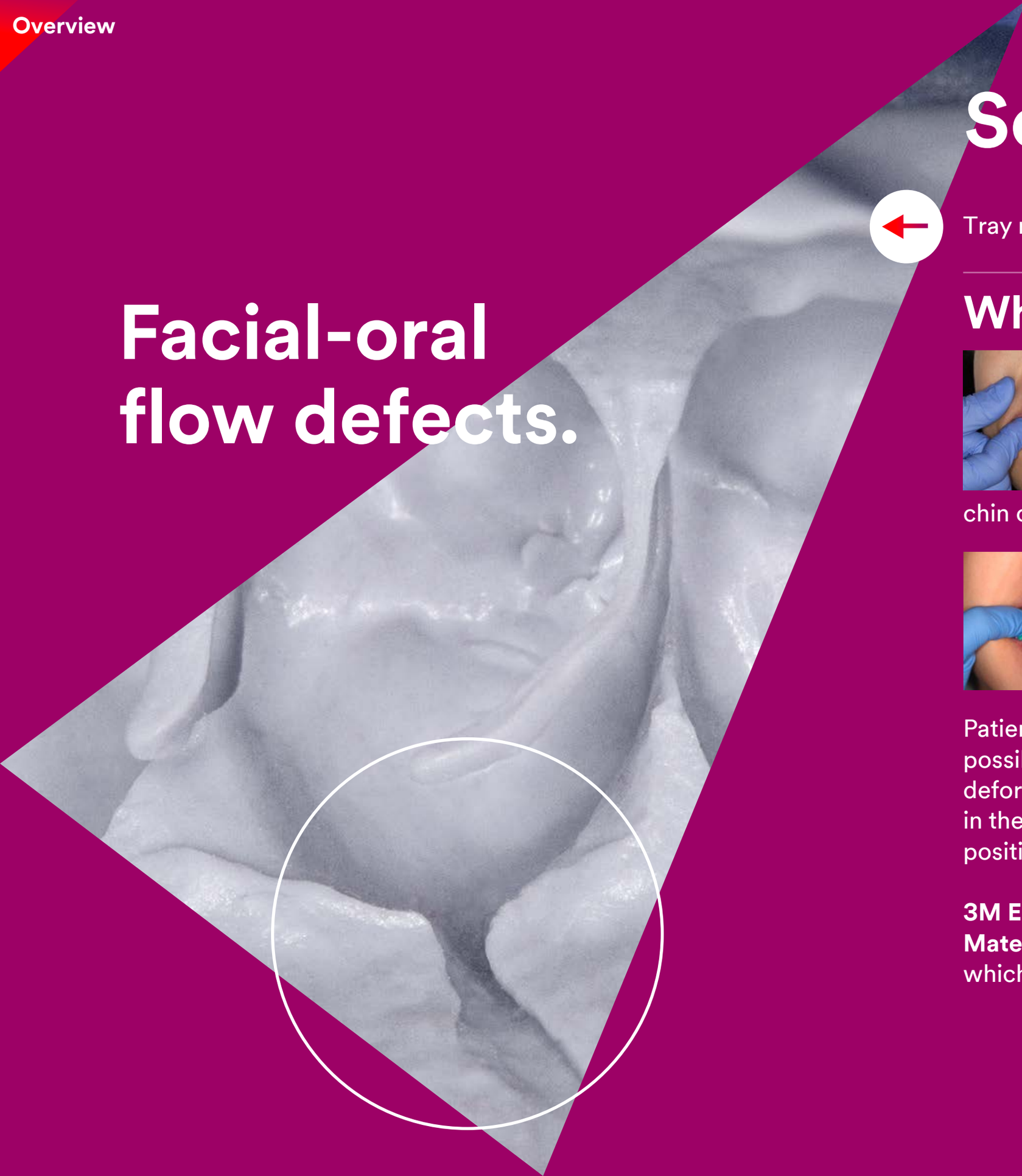
Solutions

Too fast tray insertion

What to do.

Insert the tray slowly, taking at least 5 seconds, to reduce flow defects.

Facial-oral flow defects.



Solutions

Tray repositioning after seating

What to do.

Stabilize the tray after seating, avoid any movements. When taking an impression of the *upper jaw,* you can easily find support on the chin or cheek bone of the patient.

With impressions of the lower jaw it is recommended to support the tray on the mandibula.

Patients should close their mouth as much as possible without biting down on the tray to avoid deformation of the mandibula and, thus, errors in the impression. Do not try to correct the position of the tray after insertion.

3M ESPE Dental´s Imprint™ 4 VPS Impression Material has the fastest intra-oral setting time which means less time for unintended movements.

Show-through of tray.

Causes

- Tooth or tissue contact with impression tray
- Too much pressure applied upon seating of the tray
- Lack of support of the tray by operator during the initial phase of polymerization
- Insufficient amount of impression material used

Solutions

Tooth or tissue contact with impression tray

What to do.

Use stock trays with correct size or custom trays. If necessary, apply facial/oral, occlusal or dorsal stops.

Use **3M™ ESPE™ Impression Trays** that support the flow of the impression material. Their directed flow design minimizes flow defects and distal voids to improve impression accuracy.

Show-through of tray.

Show-through of tray.

Solutions

Too much pressure applied upon seating of the tray

What to do.

Apply controlled pressure upon seating the tray and hold it in place without exerting additional pressure to avoid contact between teeth/tissue and bottom of tray.

Maxillary impression: Place index and middle fingers in the premolar area for stability. Never hold impression by the handle. Bring arms to your side to give more support.

Mandibular impression: Always line up tray handle to the patient's midline. Hold tray with thumbs and take fingers under the patient's chin to stabilize the impression. Remember impression materials are spongy and can lift if not stabilized.

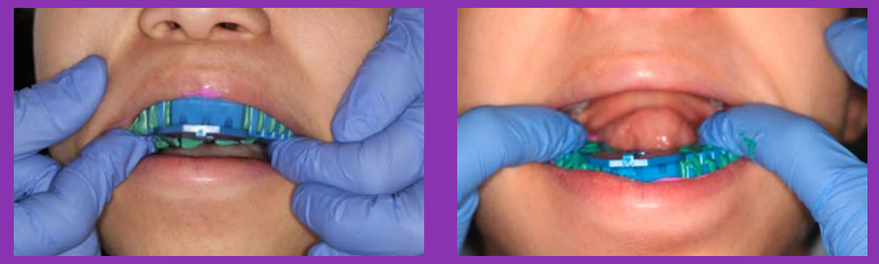
Show-through of tray.

Solutions

Lack of support of the tray by operator during the initial phase of polymerization

What to do.

Support tray until impression material is sufficiently set. Stabilize the tray after seating, avoid any movements. When taking an impression of the *upper jaw,* you can easily find support on the chin or cheek bone of the patient.



With impressions of the *lower jaw* it is recommended to support the tray on the mandibula.

Patients should close their mouth as much as possible without biting down on the tray to avoid deformation of the mandibula and, thus, errors in the impression. Do not try to correct the position of the tray after insertion.

3M ESPE Dental´s Imprint™ 4 VPS Impression Material has the fastest intra-oral setting time which means less time for unintended movements.

Show-through of tray.

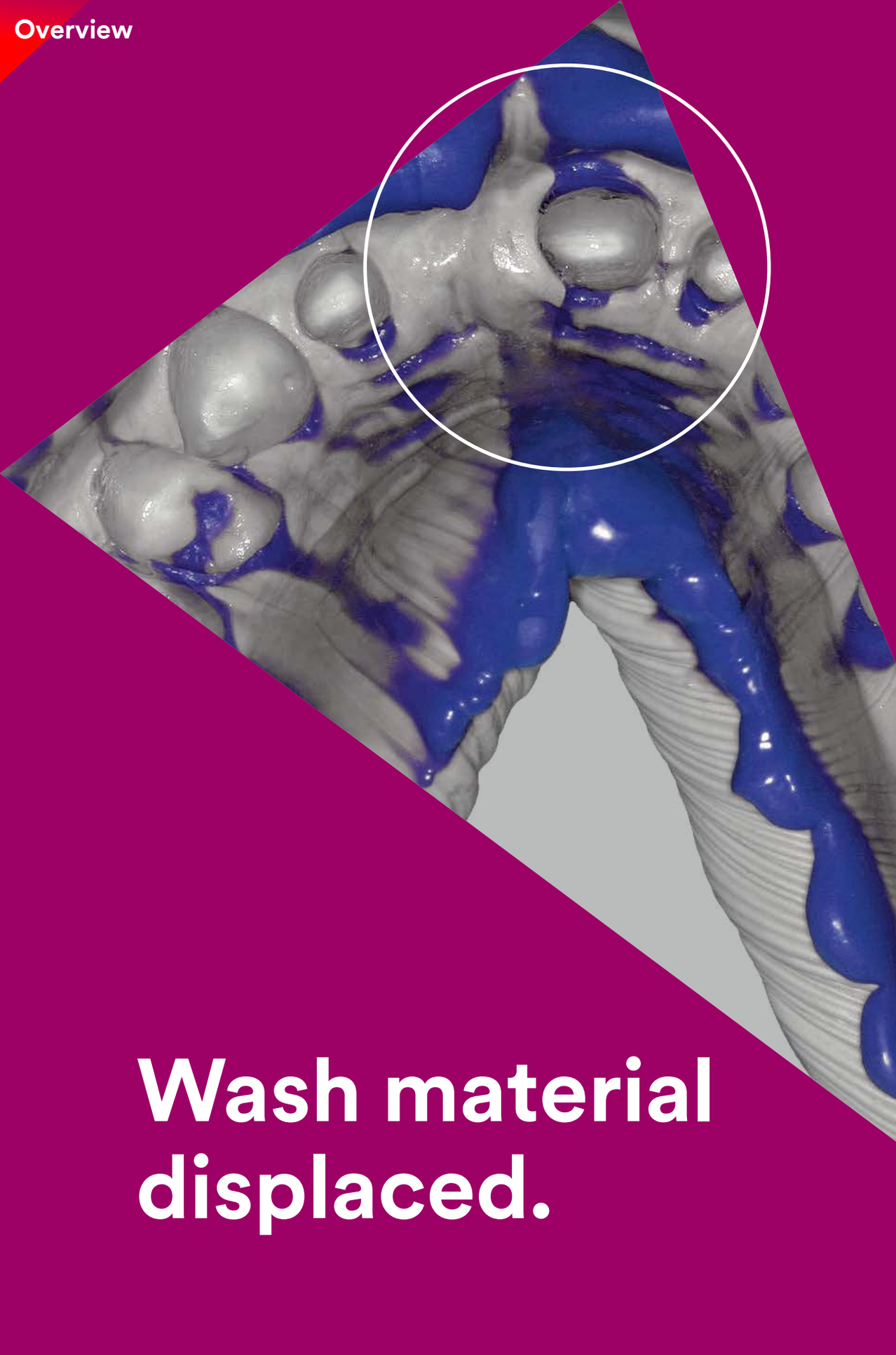
Solutions

Insufficient amount of impression material used

What to do.

Do not underfill the tray. Use sufficient material to create a back flow effect. If required, block out the palatal area of the tray.

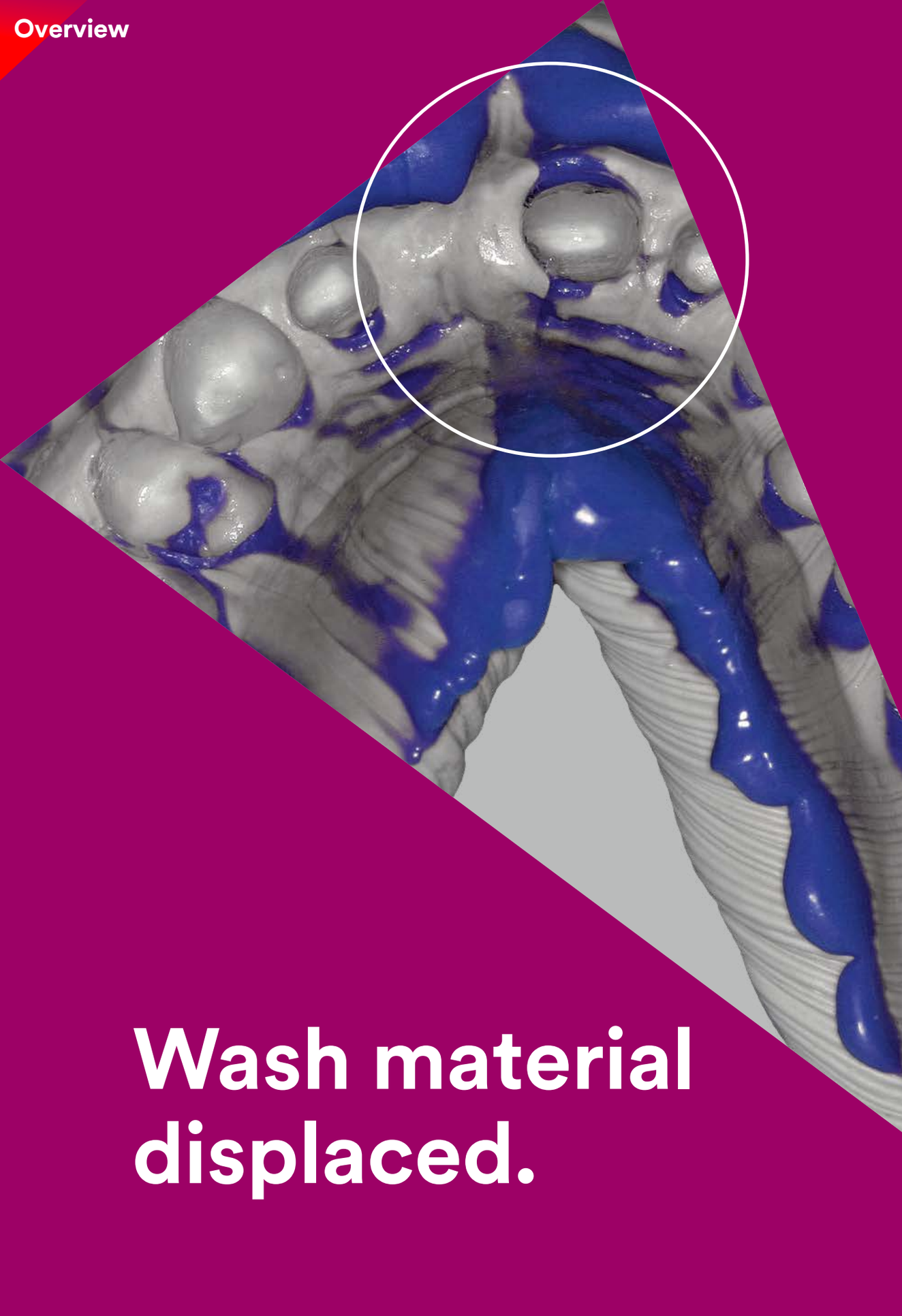
Tray filling using Pentamix™ Lite Automatic Mixing Unit



Causes

- Insufficient amount of wash material applied
- Contrast in viscosity between tray and wash material too high
- Working time of tray material exceeded, viscosity already impaired

Wash material displaced.



Wash material displaced.

Solutions

Insufficient amount of wash material applied

What to do.

Use wash material liberally on preparation and abutments.

Tips for syringing

View full technique guide for
3M™ ESPE™ Intra-oral Syringe Green/Purple

Wash material displaced.

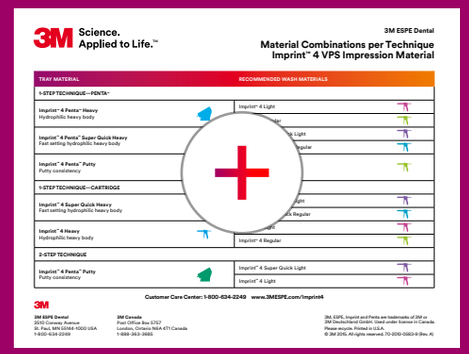
Solutions

Contrast in viscosity between tray and wash material too high

What to do.

Avoid high viscosity contrast between tray and wash material. Especially, when using putty materials combine them with a high viscosity wash material. In general, follow manufacturers' recommendations for material combinations.

All 3M ESPE Dental impression materials are offered in well aligned consistencies. View recommended material combinations here:



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Material Combinations per Technique
Imprint™ 4 VPS Impression Material

TRAY MATERIAL	RECOMMENDED WASH MATERIALS
1-STEP TECHNIQUE—PENTA™	
Imprint™ 4 Penta™ Heavy Hydrophilic heavy body	Imprint™ 4 Light
Imprint™ 4 Penta™ Super Quick Heavy Fast setting hydrophilic heavy body	Imprint™ 4 Super Quick Light
Imprint™ 4 Penta™ Putty Putty consistency	Imprint™ 4 Regular
1-STEP TECHNIQUE—CARTRIDGE	
Imprint™ 4 Super Quick Heavy Fast setting hydrophilic heavy body	Imprint™ 4 Super Quick Light Imprint™ 4 Super Quick Regular
Imprint™ 4 Heavy Hydrophilic heavy body	Imprint™ 4 Regular
2-STEP TECHNIQUE	
Imprint™ 4 Penta™ Putty Putty consistency	Imprint™ 4 Super Quick Light Imprint™ 4 Light

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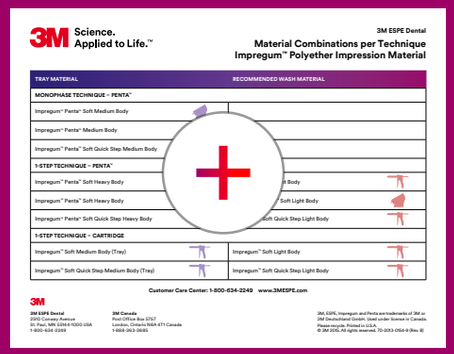

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Material Combinations per Technique
Impregum™ Polyether Impression Material

TRAY MATERIAL	RECOMMENDED WASH MATERIAL
MONOPHASE TECHNIQUE – PENTA™	
Impregum™ Penta™ Soft Medium Body	
Impregum™ Penta™ Medium Body	
Impregum™ Penta™ Soft Quick Step Medium Body	
1-STEP TECHNIQUE – PENTA™	
Impregum™ Penta™ Soft Heavy Body	Soft Light Body
Impregum™ Penta™ Soft Heavy Body	Soft Light Body
Impregum™ Penta™ Soft Quick Step Heavy Body	Soft Quick Step Light Body
1-STEP TECHNIQUE – CARTRIDGE	
Impregum™ Soft Medium Body (Tray)	Impregum™ Soft Light Body
Impregum™ Soft Quick Step Medium Body (Tray)	Impregum™ Soft Quick Step Light Body

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Wash material displaced.

Solutions

Working time of tray material exceeded, viscosity already impaired

What to do.

Select material with sufficient working time (i.e. regular set instead of fast set). Make a choice depending on the individual situation and preference of material. Do not exceed working times given in the instructions for use. In case of 3M ESPE Dental materials follow given intra-oral syringing times for wash materials.

Pay attention to storage temperature. Working times are reduced due to higher temperatures of the product, while intra-oral setting times might be longer if the temperature of the product is lower.

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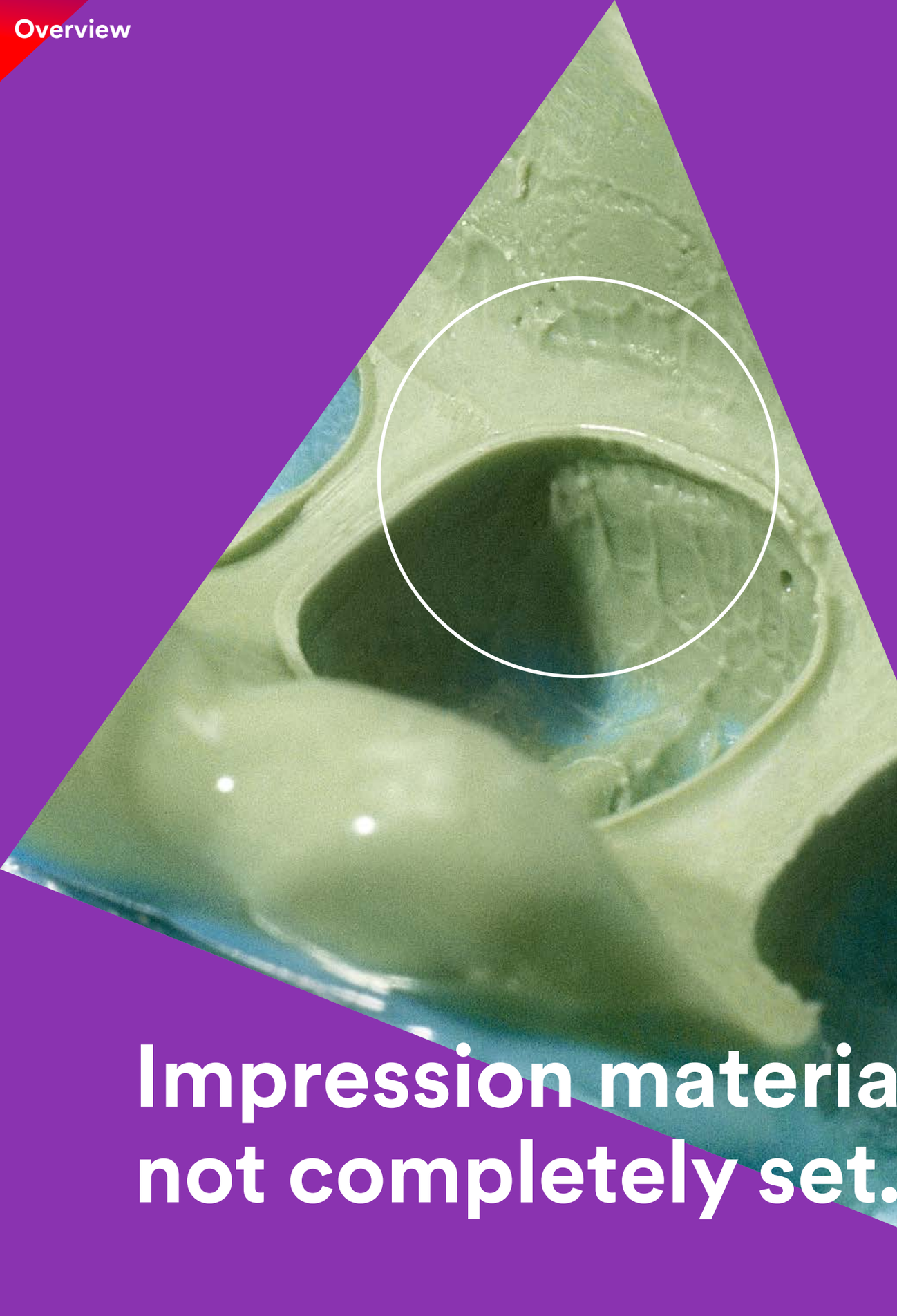
Imprint™ 4 VPS Impression Material offers both a fast and a regular setting material. Select Quick Set for 1 to 2 unit cases and Regular Set for cases that involve 3 or more units.



Impression material not completely set.

Causes

- Inadequately mixed material
- Inhibition of setting due to use of acidic retraction materials/hemostatic agents like aluminum or ferric salts
- Inhibition of setting of VPS impression materials due to contact with sulfur from latex gloves
- Smear layers from custom temporary, provisional cements (acrylics) or core build-up present
- Premature removal from the mouth
- Impression material stored at too low temperature
- Expired impression material

Impression material not completely set.

Solutions

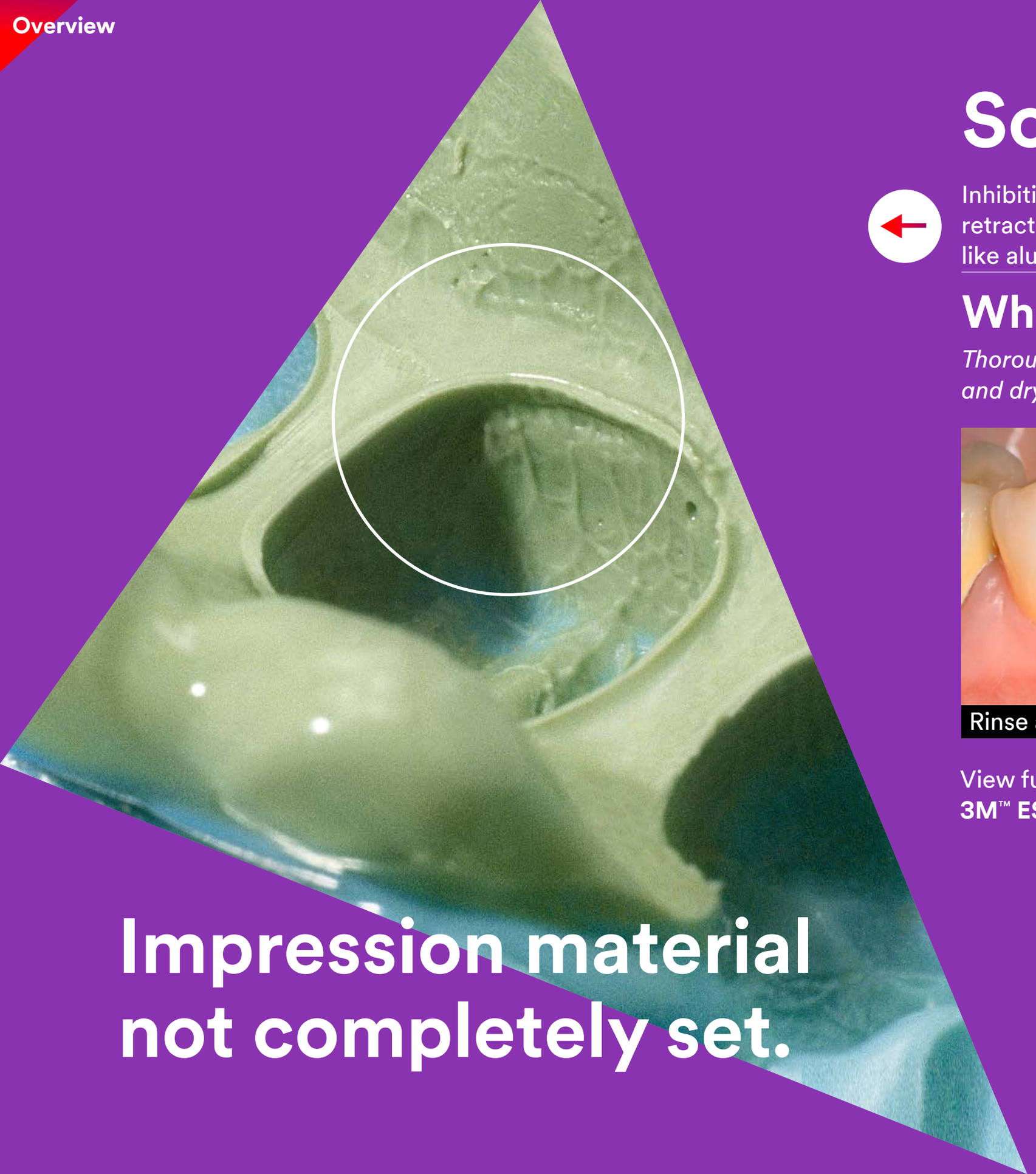
Inadequately mixed material

What to do.

Bleed cartridge before applying the mix tip to ensure even dispensing. Then *use the mix tips recommended by the manufacturer* and dispense a pea-sized amount onto a mix pad prior to use.

Bleed syringe

View full technique guide for
3M™ ESPE™ Intra-oral Syringe Green/Purple



Impression material not completely set.

Solutions

Inhibition of setting due to use of acidic retraction materials/hemostatic agents like aluminum or ferric salts

What to do.

Thoroughly rinse preparation with water and dry before taking the impression.

Rinse and dry preparation

View full technique guide for **3M™ ESPE™ Retraction Capsule**

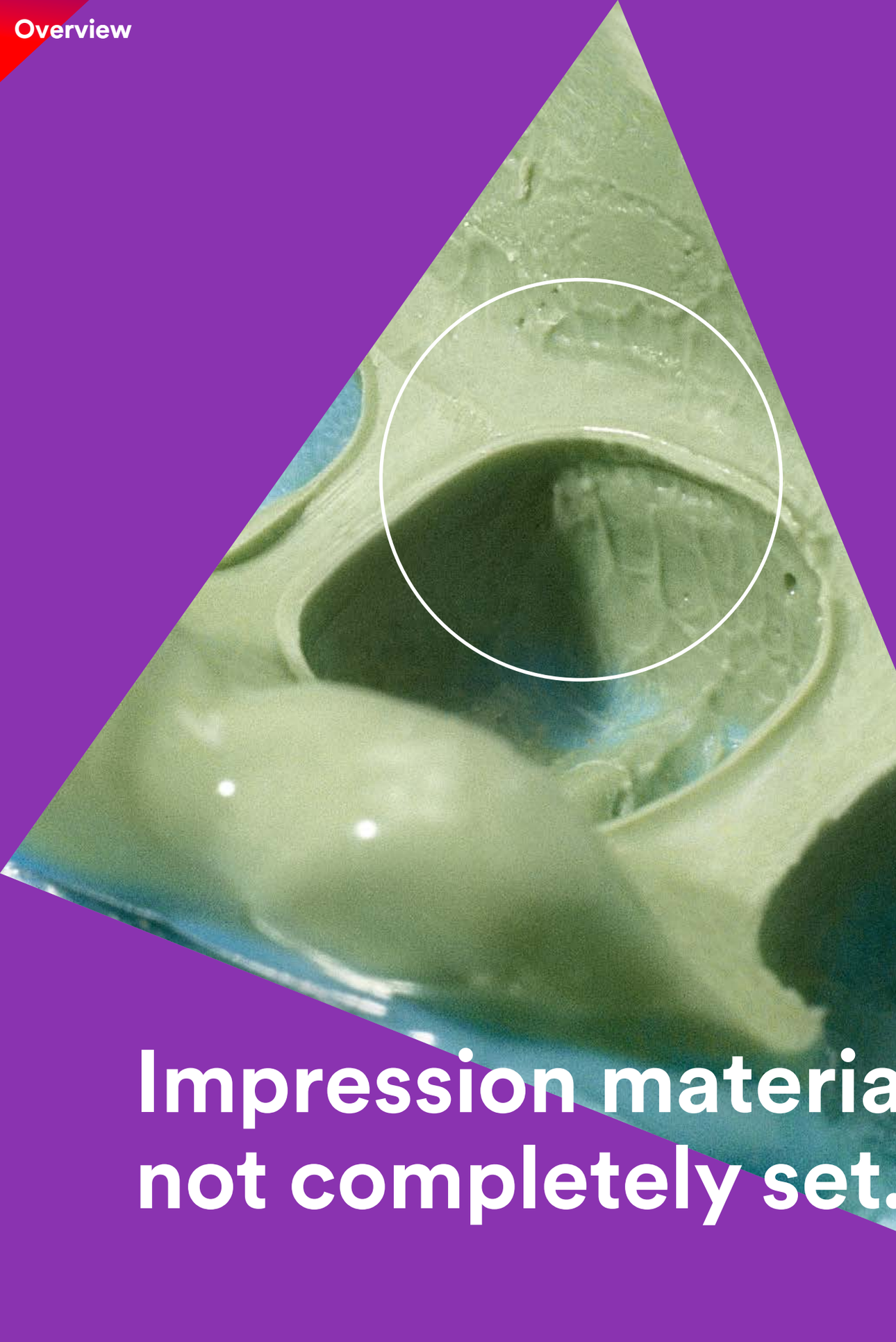
Impression material not completely set.

Solutions

Inhibition of setting of VPS impression materials due to contact with sulfur from latex gloves

What to do.

Use gloves which *do not contain traces of sulfur,* e.g. nitrile gloves.



Impression material not completely set.

Solutions

Smear layers from custom temporary, provisional cements (acrylics) or core build-up present

What to do.

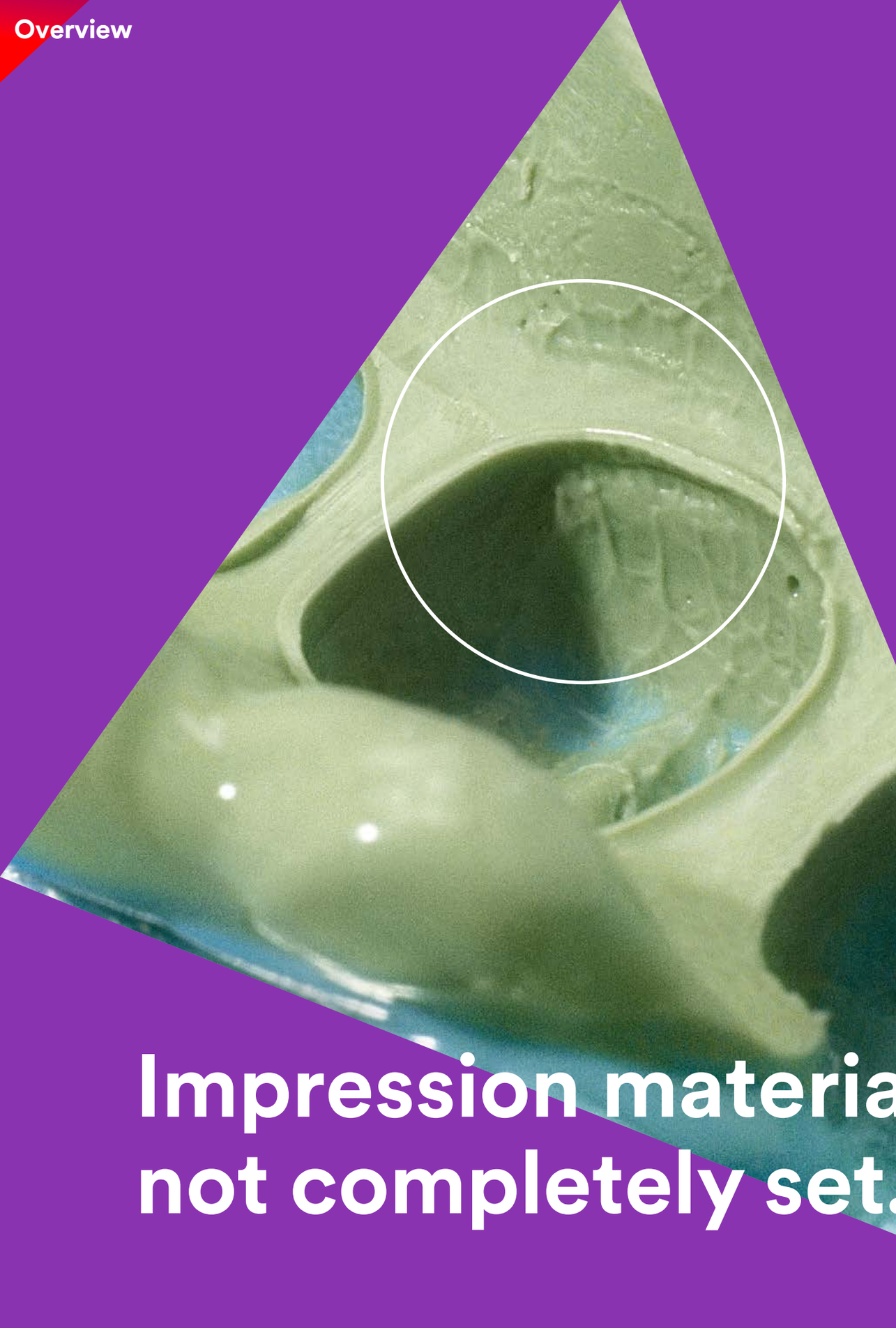
Smear layers from acrylates (e.g. core build-up or temporary materials) can inhibit the setting of impression materials.

When core build-up and final impression are made in one appointment:

- Be sure to remove the smear layer completely prior to impression taking with alcohol/by polishing. Check surrounding teeth and tissue for any residue.

When the temporary and final impressions are made in one appointment:

- Fabricate the provisional after taking the final impression or remove the air-inhibited layer on the exposed preparation with alcohol before taking the final impression.
- Do not use impressions already used to fabricate the provisional for subsequent precision impression taking.
- If a temporary is removed prior to impression taking: Remove all residues of cement and clean the abutment tooth. In case of a core build-up remove the air-inhibition layer on the exposed preparation with alcohol before taking the final impression.



Impression material not completely set.

Solutions

Premature removal from the mouth

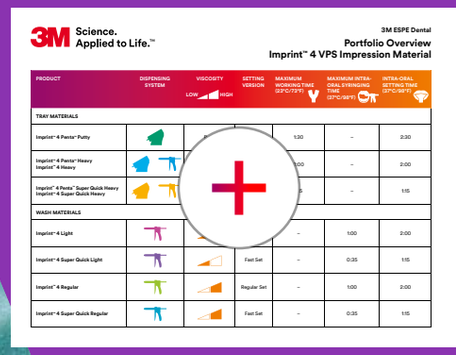
What to do.

Follow manufacturer´s instructions for intra-oral setting time and make sure that the impression material has *completely set before removal.*

Store impression material at room temperature. Usually, times given in the manufacturer's instructions for use are valid for a storage temperature of 23 °C/74 °F.

Working times are reduced due to higher temperatures of the product, while intra-oral setting times might be longer if the temperature of the product is lower.

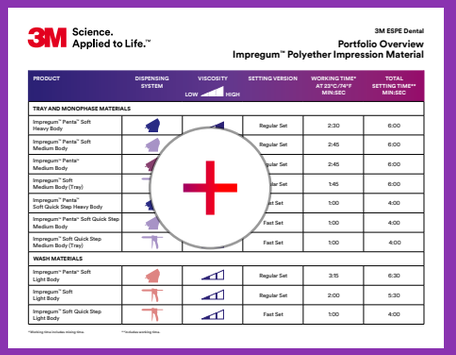
View working and setting times of **Imprint™ 4 VPS Impression Materials** and **Impregum™ Polyether Impression Materials:**



3M Science. Applied to Life.™

3M ESPE Dental
Portfolio Overview
Imprint™ 4 VPS Impression Material

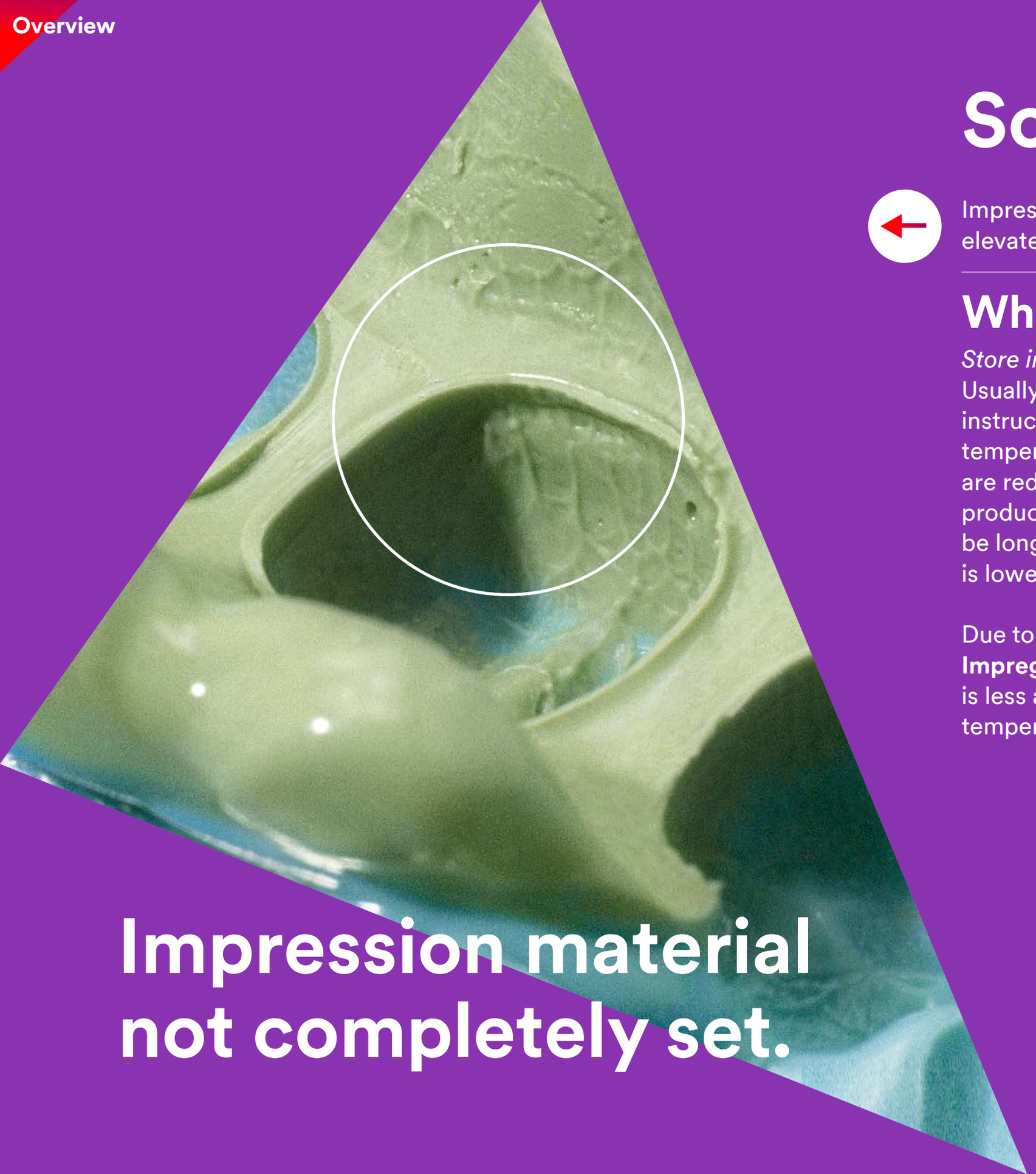
PRODUCT	DISPENSING SYSTEM	VISCOSITY LOW–HIGH	SETTING VERSION	MAXIMUM WORKING TIME 23°C/73°F	MAXIMUM INTRA-ORAL EYEINGING TIME 23°C/73°F	INTRA-ORAL SETTING TIME 23°C/36°F
TRAY MATERIALS						
Imprint™ 4 Penta™ Putty				1:30	–	2:30
Imprint™ 4 Penta™ Heavy Imprint™ 4 Heavy				1:00	–	2:00
Imprint™ 4 Penta™ Super Quick Heavy Imprint™ 4 Super Quick Heavy				0:45	–	1:15
WASH MATERIALS						
Imprint™ 4 Light				–	1:00	2:00
Imprint™ 4 Super Quick Light			Fast Set	–	0:35	1:15
Imprint™ 4 Regular			Regular Set	–	1:00	2:00
Imprint™ 4 Super Quick Regular			Fast Set	–	0:35	1:15



3M Science. Applied to Life.™

3M ESPE Dental
Portfolio Overview
Impregum™ Polyether Impression Material

PRODUCT	DISPENSING SYSTEM	VISCOSITY LOW–HIGH	SETTING VERSION	WORKING TIME* AT 23°C/74°F MIN:SEC	TOTAL SETTING TIME** MIN:SEC
TRAY AND MONOPHASE MATERIALS					
Impregum™ Penta™ Soft Heavy Body			Regular Set	2:30	6:00
Impregum™ Penta™ Soft Medium Body			Regular Set	2:45	6:00
Impregum™ Penta™ Medium Body			Regular Set	2:45	6:00
Impregum™ Soft Medium Body (Tray)			Regular Set	1:45	6:00
Impregum™ Penta™ Soft Quick Step Heavy Body			Regular Set	1:00	4:00
Impregum™ Penta™ Soft Quick Step Medium Body			Fast Set	1:00	4:00
Impregum™ Soft Quick Step Medium Body (Tray)			Fast Set	1:00	4:00
WASH MATERIALS					
Impregum™ Penta™ Soft Light Body			Regular Set	3:15	6:30
Impregum™ Soft Light Body			Regular Set	2:00	5:30
Impregum™ Soft Quick Step Light Body			Fast Set	1:00	4:00



Impression material not completely set.

Solutions

Impression material stored at elevated or too low temperature

What to do.

Store impression material at room temperature. Usually, times given in the manufacturers' instructions for use are valid for a storage temperature of 23 °C/74 °F. Working times are reduced due to higher temperatures of the product, while intra-oral setting times might be longer if the temperature of the product is lower.

Due to its lower temperature sensitivity, **Impregum™ Soft Polyether Impression Material** is less affected by fluctuations in storage temperature than VPS materials.

Impression material not completely set.

Solutions

Expired impression material

What to do.

Do not use expired impression material.

Follow defined storage conditions for materials given in the manufacturers' instructions for use for full shelf life.

Poor bond between tray and wash material.

Causes

- Working time exceeded
- Initial impression not completely cleaned and dried (2-step technique)
- Sulfur or acrylic contamination of set initial impression (2-step technique)
- Relining of impression to correct defect in the impression

Poor bond between tray and wash material.

Solutions

Working time exceeded

What to do.

Select material with sufficient working time (i.e. regular set instead of fast set). Make a choice depending on the individual situation and preference of material. Do not exceed working times given in the instructions for use. In case of 3M ESPE Dental materials follow given intra-oral syringing times for wash materials.

Pay attention to storage temperature. Working times are reduced due to higher temperatures of the product, while intra-oral setting times might be longer if the temperature of the product is lower.

Impregum™ Soft Polyether Impression Material offers a very long working time with constant flow. And, polyether impression material is less temperature sensitive in its setting reaction than VPS materials.

Imprint™ 4 VPS Impression Material offers both a fast and a regular setting material. Select Quick Set for 1 to 2 unit cases and Regular Set for cases that involve 3 or more units.

Poor bond between tray and wash material.

Solutions

Initial impression not completely cleaned and dried (2-step technique)

What to do.

Clean the initial impression with plenty of water (or alcohol) and air. During this procedure, saliva has to be removed completely from the impression.

Dry thoroughly before taking the second impression. Do not forget to clean and dry after try-in of first impression.

Poor bond between tray and wash material.

Solutions

Sulfur or acrylic contamination of set initial impression (2-step technique)

What to do.

Use gloves which *do not contain traces of sulfur,* e.g. nitrile gloves.

Do not use impressions already used to fabricate the provisional restoration for subsequent precision impression taking.

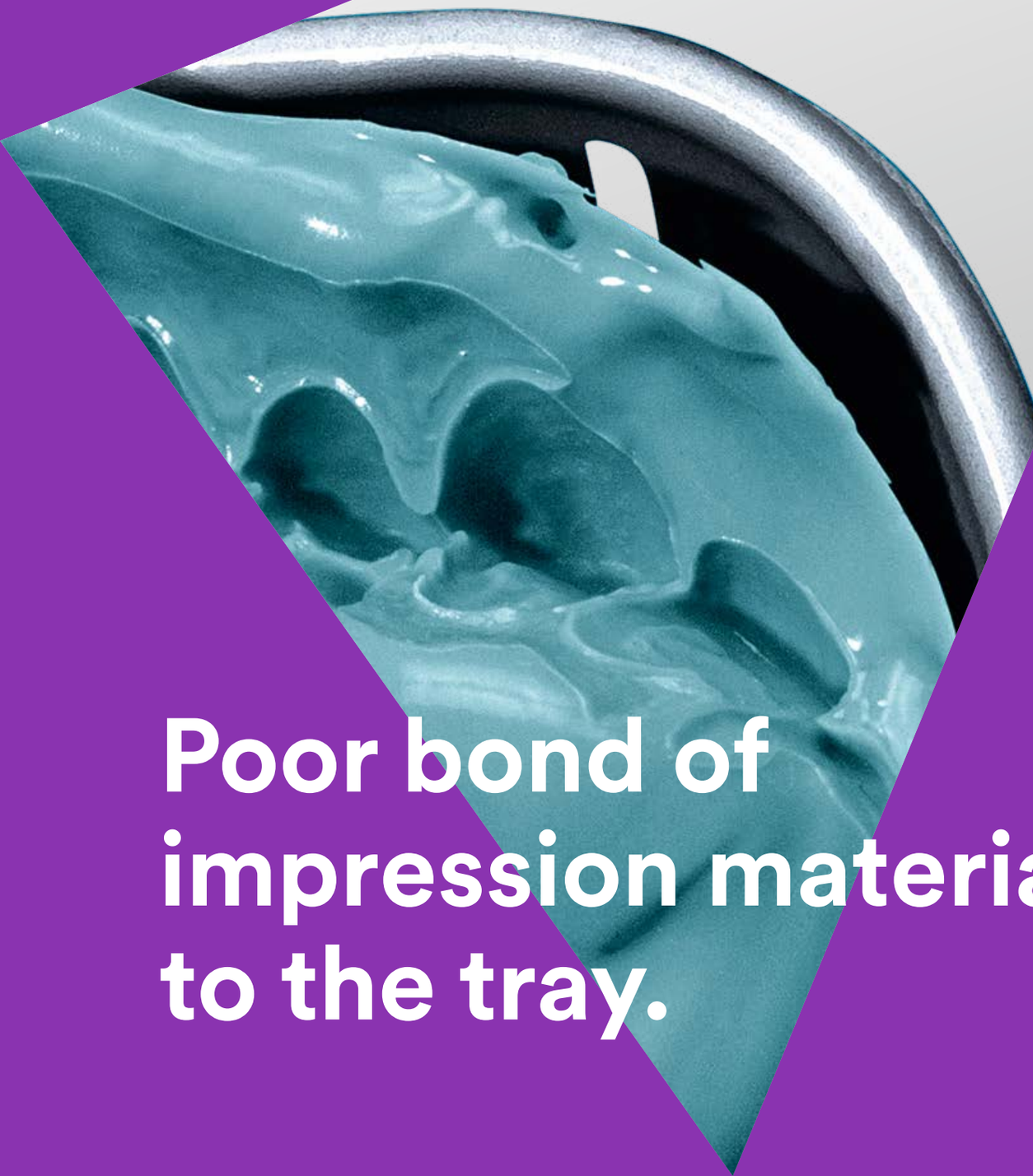
Poor bond between tray and wash material.

Solutions

Relining of impression to correct defect in the impression

What to do.

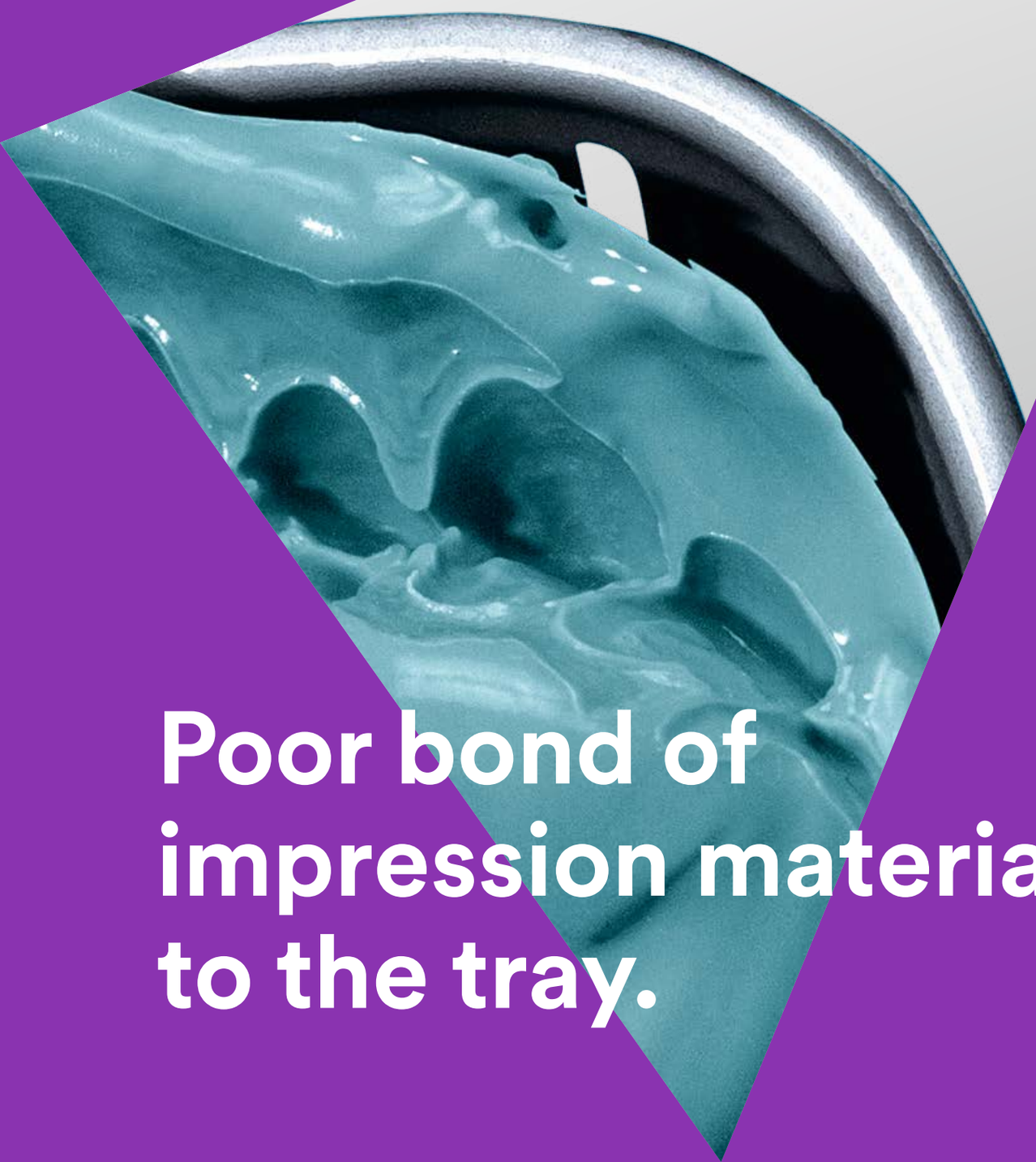
Do not try to reline impressions.
This can lead to distortions and poor bond between new wash material and set material.
Repeat the impression instead.



Poor bond of impression material to the tray.

Causes

- No tray adhesive used
- Inadequate layer of tray adhesive
- Smear layer on custom trays
- Tray distortion upon removal
- Detachment of tray material from tray during carving (2-step technique)



Poor bond of impression material to the tray.

Solutions

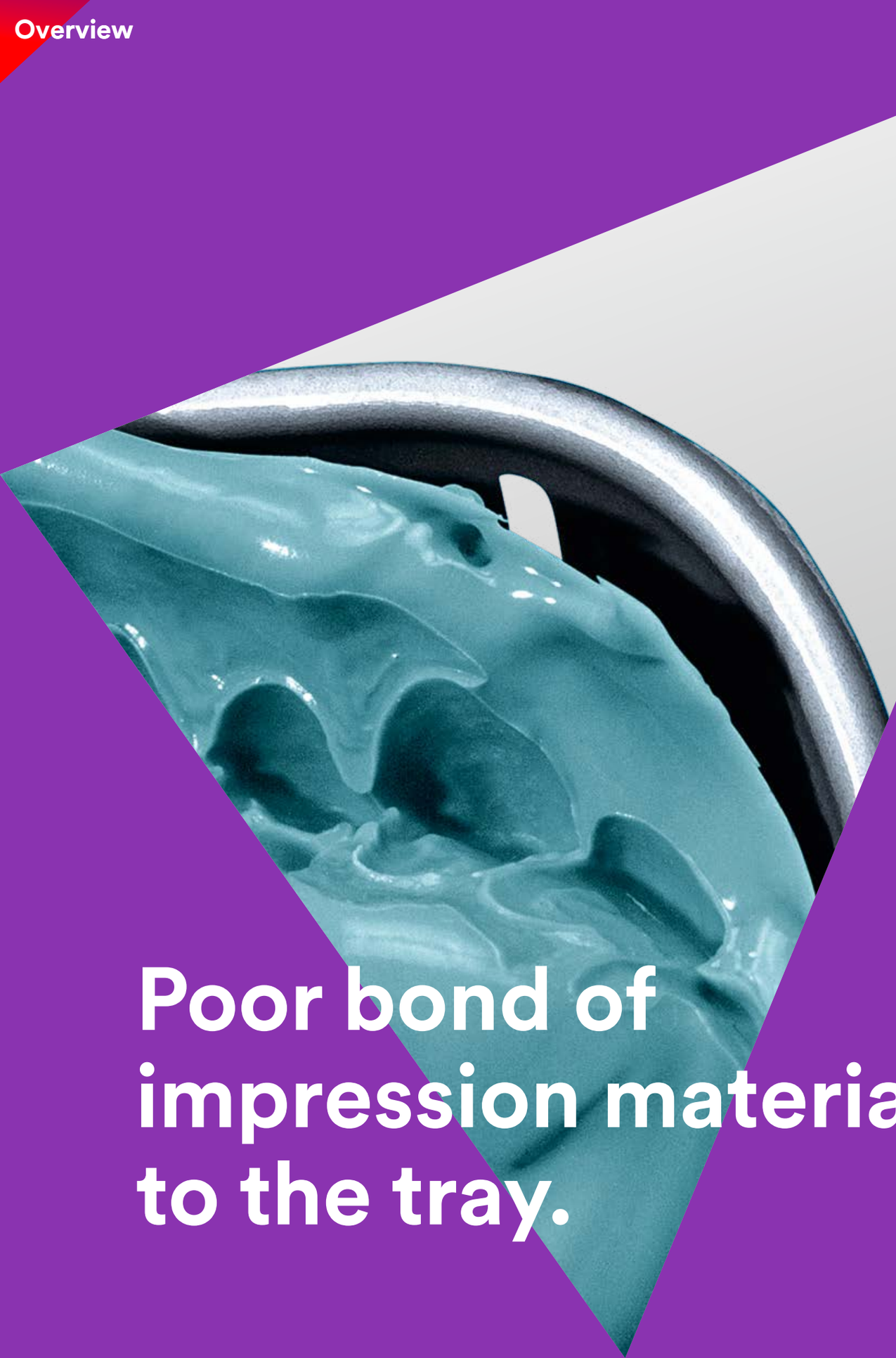
No tray adhesive used

What to do.

Use tray adhesive for all types of impression trays and apply adhesive on bottom and on inner sides of the tray, including gauze of dual-arch trays.

Polyethers and VPS impression materials have different and specific tray adhesives. Make sure that the proper tray adhesive is being used for the impression material.

Alternatively use **3M™ ESPE™ Impression Trays:** With their integrated self-retentive fleece strip, the application of a tray adhesive is not needed – saving valuable preparation time.



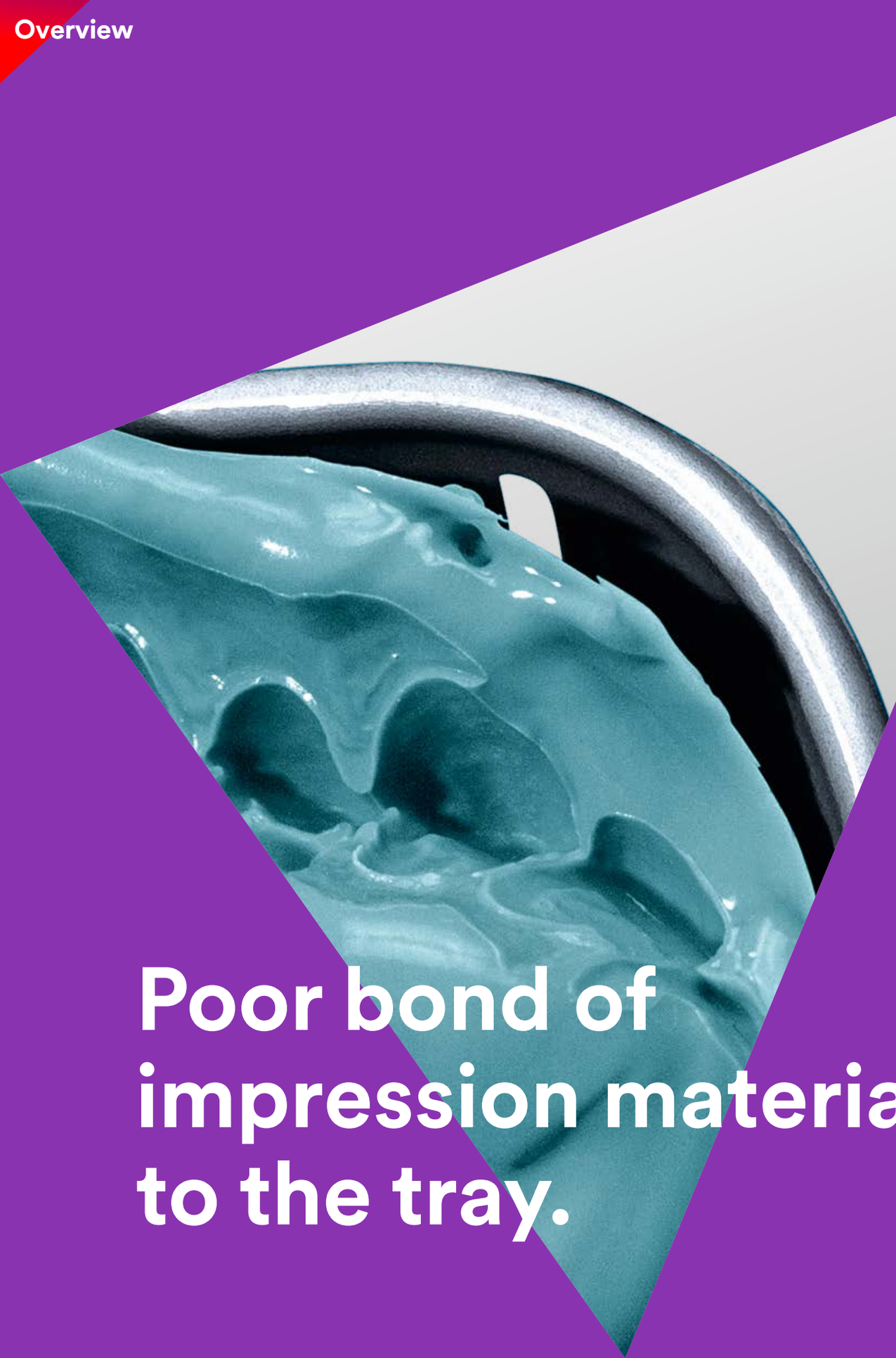
Poor bond of impression material to the tray.

Solutions

Inadequate layer of tray adhesive

What to do.

Follow manufacturer`s instructions for use for application and drying time.



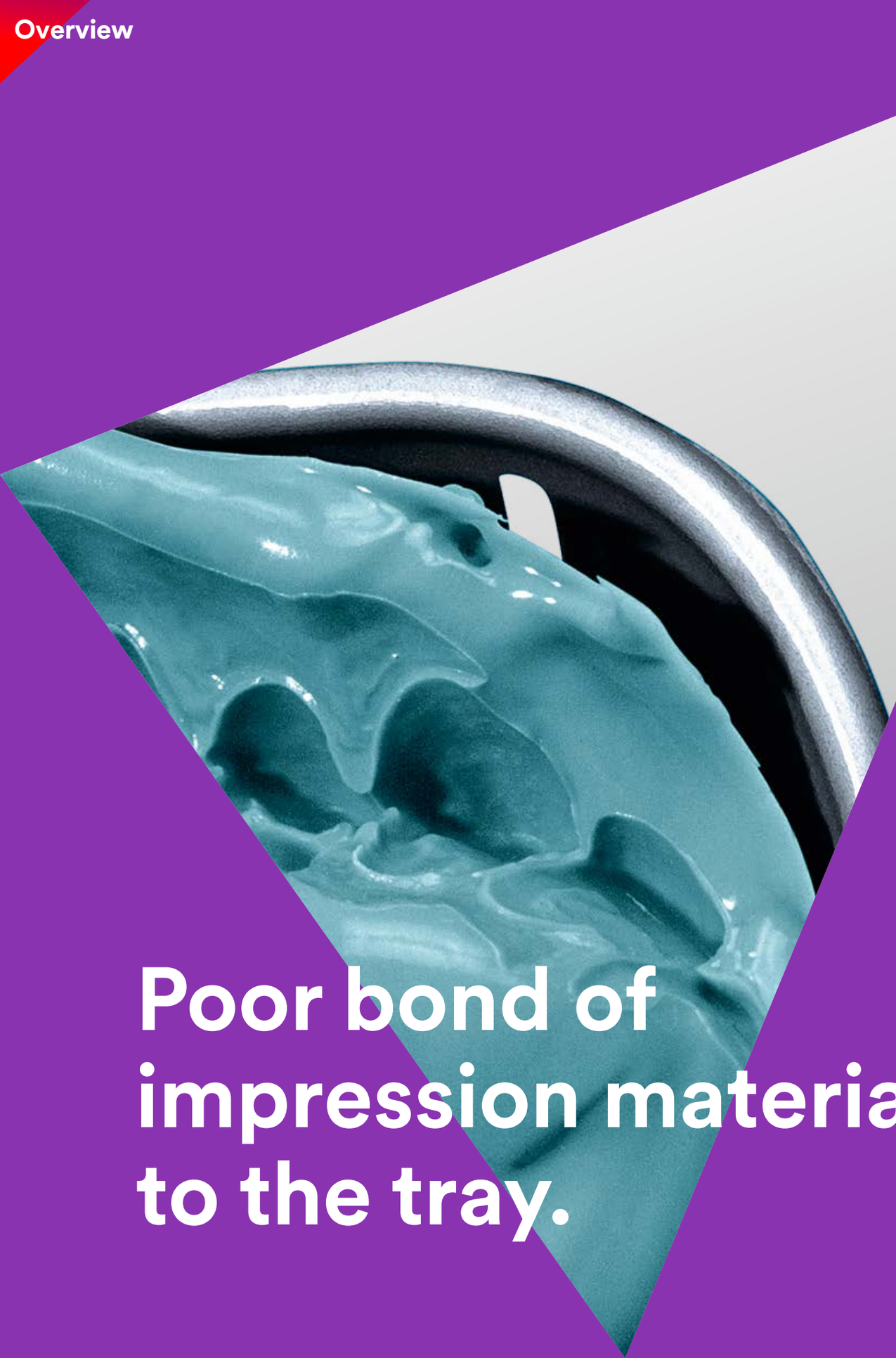
Poor bond of impression material to the tray.

Solutions

Smear layer on custom trays

What to do.

Remove smear layer with *acetone, grinding instruments or sandblast.* Always make sure to clean trays after mouth try-in.



Poor bond of impression material to the tray.

Solutions

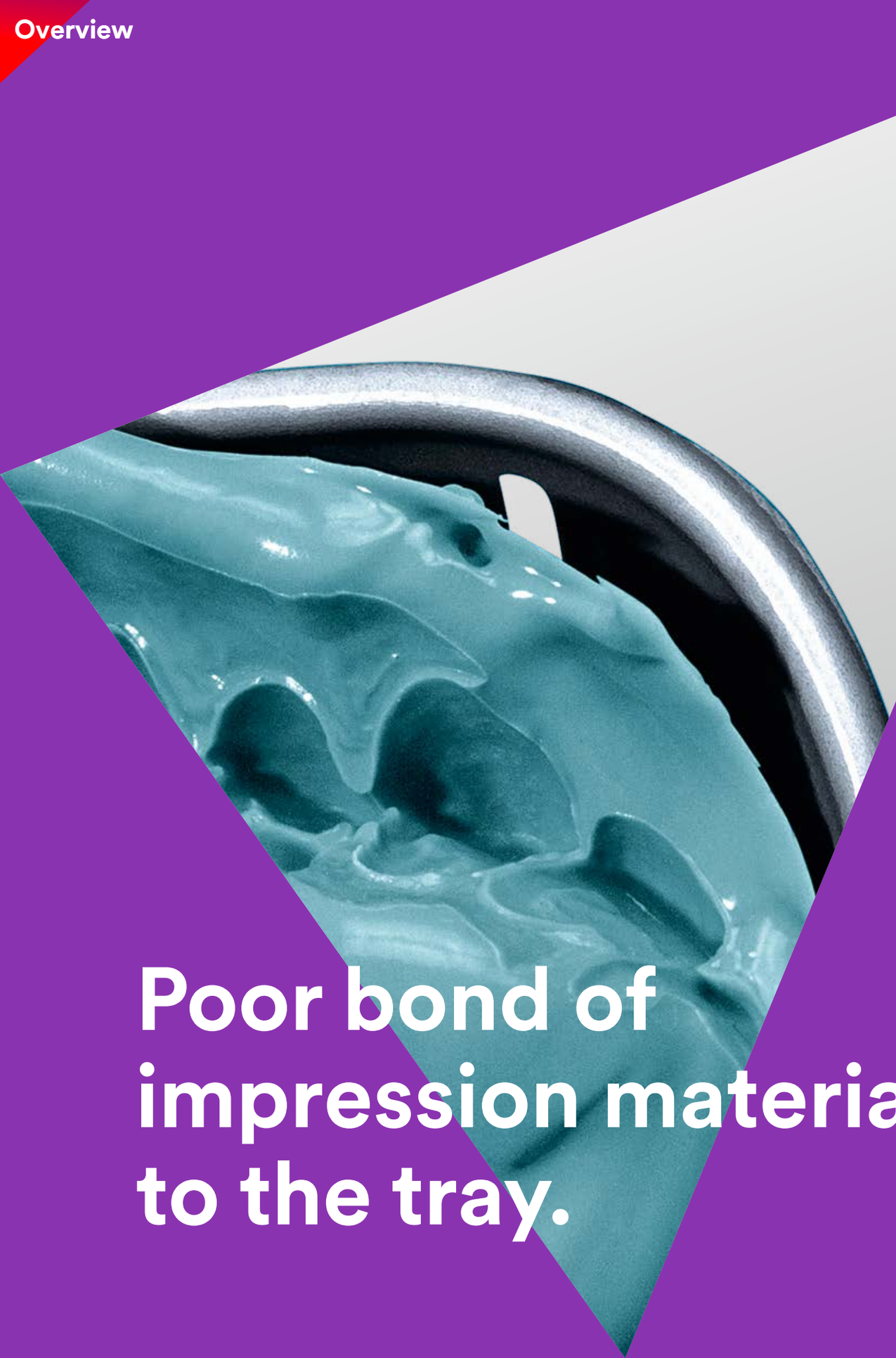
Tray distortion upon removal

What to do.

Use *stiff and rigid trays* and make sure the tray fits well.

Ensure the impression tray is the *proper size* prior to taking the impression.

Remove the impression *along the axis of the prepared tooth.*



Poor bond of impression material to the tray.

Solutions

Detachment of tray material from tray during carving (2-step technique)

What to do.

Apply adhesive on bottom and on inner sides of the tray. Use a sharp carving instrument to minimize stress at the interface of tray material and tray. Otherwise, tray material could detach from the tray unnoticed and causes deformation.

Stone cast discrepancies.

Causes

- Outgassing of hydrogen when using VPS impression materials
- Bump/swelling in gypsum model
- Cast not made according to preparation guidelines and lacks detail

Stone cast discrepancies.

Solutions

Outgassing of hydrogen when using VPS impression materials

What to do.

Follow manufacturer´s instructions for use on minimum waiting time to pour cast.

Stone cast discrepancies.

Solutions

Bump/swelling in gypsum model

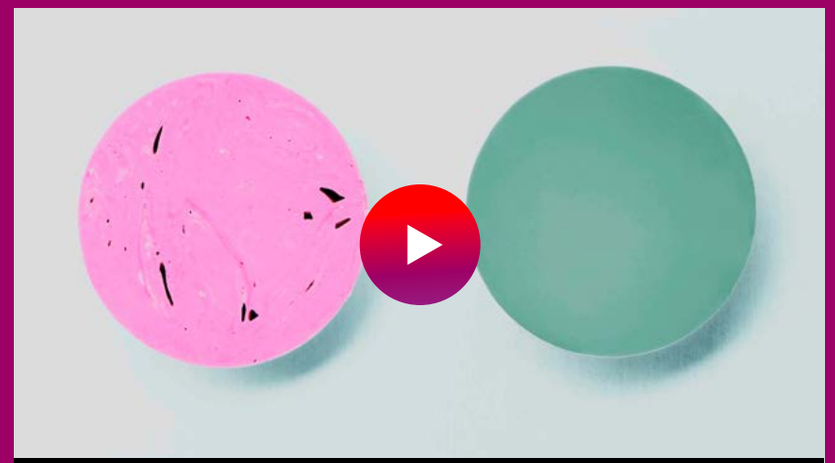
What to do.

Can occur through invisible voids under the surface of the impression. Thoroughly inspect the impression to avoid undetected voids.

Automatic mixing of impression materials with the **Pentamix™ Lite** or **Pentamix™ 3 Mixing Unit** guarantees homogeneous and void-free mixing results.

Pentamix™ 3
Automatic Mixing Unit

Pentamix™ Lite
Automatic Mixing Unit



Automatic mixing of impression materials with Pentamix™ Lite Mixing Unit

Stone cast discrepancies.

Solutions

Cast not made according to preparation guidelines and lacks detail

What to do.

Provide all relevant information to the dental lab:
Impression material used including fabrication date, additional surfactants for pouring if needed, etc.

10 Golden Rules.

For perfect impressions.

01. Choose appropriate tray/wash material
viscosities and material class according to impression technique and indication. Use properly fitting, rigid, and sturdy impression trays.

02. Ensure adequate retraction
and, if necessary, stop any bleeding to achieve a clean and dry situation. If retraction agents are used, rinse and dry thoroughly.

03. Thoroughly apply tray adhesive
... and let dry appropriately to make sure that the impression material will not be detached upon tray removal. Alternatively use a 3M™ ESPE™ Impression Tray. Due to its integrated self-retentive fleece strip a tray adhesive is not needed.

04. Assure a uniform and homogeneous mix
of the impression material. Fill the tray sufficiently with the impression material. With all Penta™ materials and materials in Garant™ cartridges from 3M ESPE Dental proper automatic mixing is guaranteed.

05. Use gloves
that do not inhibit the setting of the impression material. Latex gloves can inhibit the setting of VPS impression materials, use nitrile gloves instead.

06. Keep the tip immersed
in the material at all times during intra-oral syringing of the wash material to avoid entrapping air.

07. Slowly insert the loaded tray
into the mouth parallel to the long axes of the prepared teeth. Apply controlled pressure upon seating the tray to avoid contact between teeth/tissue and bottom of tray. Stay within working time of tray and wash material. Hold the tray in place without exerting pressure and avoid any movements that could shift the position of the tray and may lead to distortions.

08. When removing the tray
from the mouth avoid unilateral rotation. Follow the setting times indicated in the manufacturer´s instructions for use before removing the impression.

09. Check preparation margins
and make sure that margins are captured entirely and properly. The following appearances may lead to inaccurate results: voids, tears, material distortions, flow defects, detachment from tray, delamination between heavy and light body, shine-through of tray.

10. Disinfect impression properly
and according to the manufacturer's instructions for use. Rinse impression with water before and after disinfection and dry before sending it to the lab.

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of the impression material. Fill the tray sufficiently with the impression material. With all Penta™ materials and materials in Garant™ cartridges from 3M ESPE Dental proper automatic mixing is guaranteed.

05. Use gloves
that do not inhibit the setting of the impression material. Latex gloves can inhibit the setting of VPS impression materials, use nitrile gloves instead.

06. Keep the tip immersed
in the material at all times during intra-oral syringing of the wash material to avoid entrapping air.

07. Slowly insert the loaded tray
into the mouth parallel to the long axes of the prepared teeth. Apply controlled pressure upon seating the tray to avoid contact between teeth/tissue and bottom of tray. Stay within working time of tray and wash material. Hold the tray in place without exerting pressure and avoid any movements that could shift the position of the tray and may lead to distortions.

08. When removing the tray
from the mouth avoid unilateral rotation. Follow the setting times indicated in the manufacturer´s instructions for use before removing the impression.

09. Check preparation margins
and make sure that margins are captured entirely and properly. The following appearances may lead to inaccurate results: voids, tears, material distortions, flow defects, detachment from tray, delamination between heavy and light body, shine-through of tray.

10. Disinfect impression properly
and according to the manufacturer's instructions for use. Rinse impression with water before and after disinfection and dry before sending it to the lab.

10 Golden Rules.

For perfect impressions.

01. Choose appropriate tray/wash material
viscosities and material class according to impression technique and indication. Use properly fitting, rigid, and sturdy impression trays.

02. Ensure adequate retraction
and, if necessary, stop any bleeding to achieve a clean and dry situation. If retraction agents are used, rinse and dry thoroughly.

03. Thoroughly apply tray adhesive
... and let dry appropriately to make sure that the impression material will not be detached upon tray removal. Alternatively use a 3M™ ESPE™ Impression Tray. Due to its integrated self-retentive fleece strip a tray adhesive is not needed.

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Customer Care Center: 1-800-634-2249 www.3MESPE.com/impressionsolutions

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London, Ontario N6A 4T1 Canada
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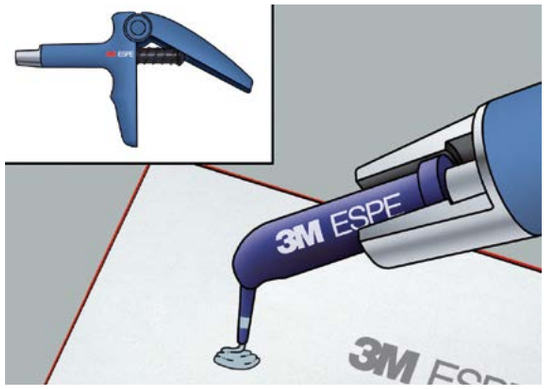
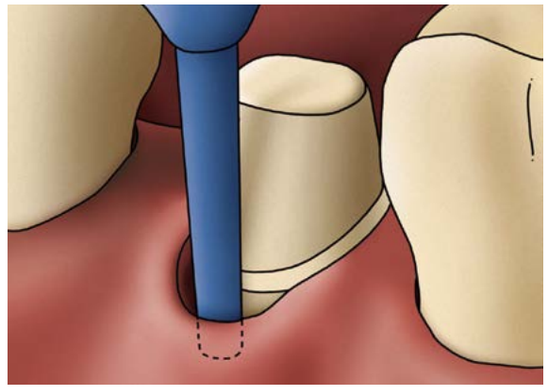
Appendix

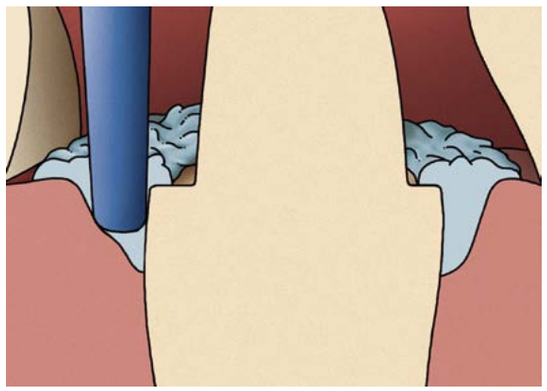
3M™ ESPE™ Retraction Capsule



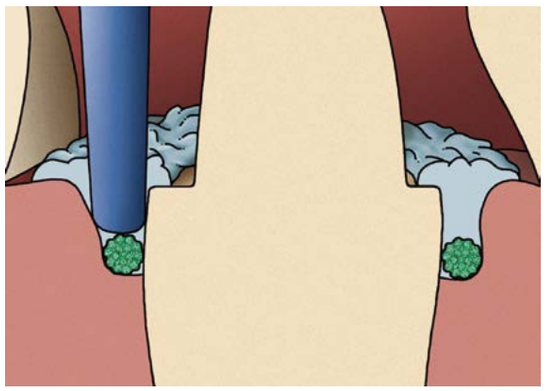
Remove a retraction capsule from the blister and insert into dispenser (fits into most composite dispensers). Extrude a small amount of paste and discard.



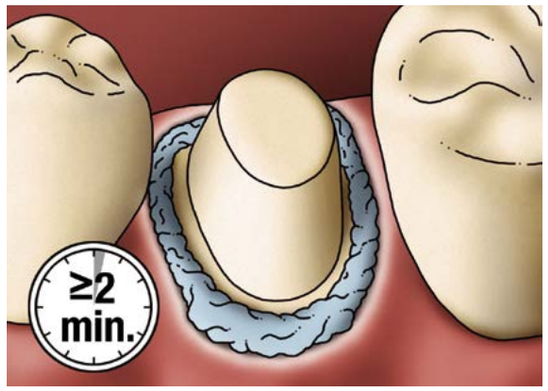
Insert retraction capsule tip into the sulcus.



Slowly and steadily, inject astringent retraction paste into sulcus. Completely fill the sulcus.



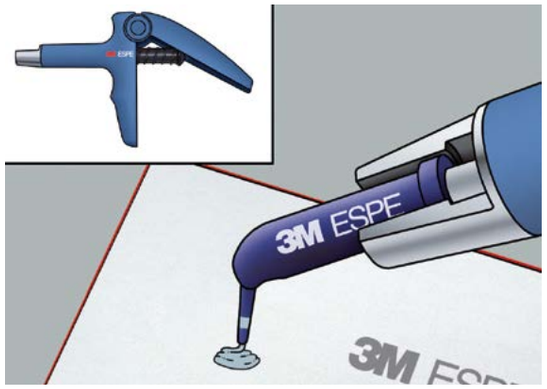
Optional: procedure with cords.
For more gingival deflection, the astringent retraction paste can be used in combination with retraction cords.



Leave astringent retraction paste on for a minimum of 2 minutes.

Completely remove astringent retraction paste with air-water spray and suction.

3M™ ESPE™ Retraction Capsule



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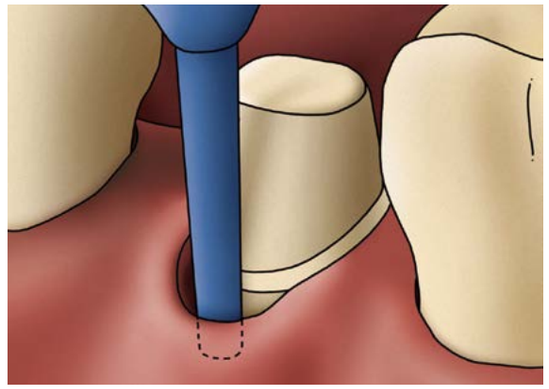

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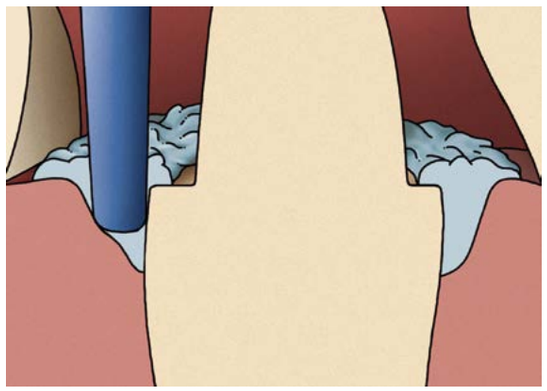

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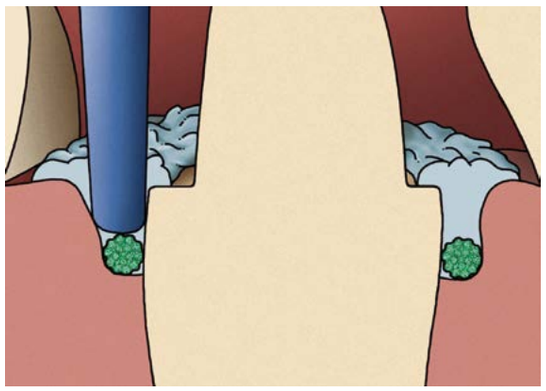

Optional: procedure with cords.
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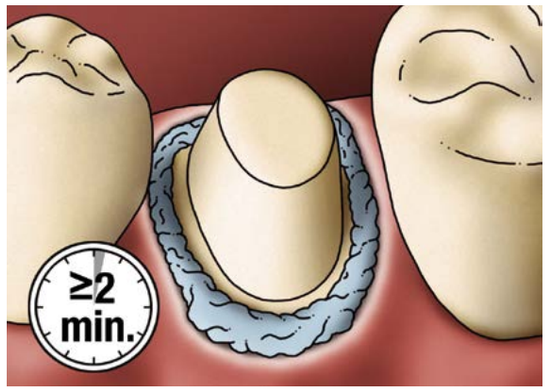

Leave astringent retraction paste on for a minimum of 2 minutes.

Completely remove astringent retraction paste with air-water spray and suction.

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Material Combinations per Technique
Imprint™ 4 VPS Impression Material

TRAY MATERIAL	RECOMMENDED WASH MATERIALS
1-STEP TECHNIQUE—PENTA™	
Imprint™ 4 Penta™ Heavy Hydrophilic heavy body	Imprint™ 4 Light Imprint™ 4 Regular
Imprint™ 4 Penta™ Super Quick Heavy Fast setting hydrophilic heavy body	Imprint™ 4 Super Quick Light Imprint™ 4 Super Quick Regular
Imprint™ 4 Penta™ Putty Putty consistency	Imprint™ 4 Regular
1-STEP TECHNIQUE—CARTRIDGE	
Imprint™ 4 Super Quick Heavy Fast setting hydrophilic heavy body	Imprint™ 4 Super Quick Light Imprint™ 4 Super Quick Regular
Imprint™ 4 Heavy Hydrophilic heavy body	Imprint™ 4 Light Imprint™ 4 Regular
2-STEP TECHNIQUE	
Imprint™ 4 Penta™ Putty Putty consistency	Imprint™ 4 Super Quick Light Imprint™ 4 Light

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Material Combinations per Technique
Impregum™ Polyether Impression Material

TRAY MATERIAL	RECOMMENDED WASH MATERIAL
MONOPHASE TECHNIQUE – PENTA™	
Impregum™ Penta™ Soft Medium Body	
Impregum™ Penta™ Medium Body	
Impregum™ Penta™ Soft Quick Step Medium Body	
1-STEP TECHNIQUE – PENTA™	
Impregum™ Penta™ Soft Heavy Body	Impregum™ Soft Light Body
Impregum™ Penta™ Soft Heavy Body	Impregum™ Penta™ Soft Light Body
Impregum™ Penta™ Soft Quick Step Heavy Body	Impregum™ Soft Quick Step Light Body
1-STEP TECHNIQUE – CARTRIDGE	
Impregum™ Soft Medium Body (Tray)	Impregum™ Soft Light Body
Impregum™ Soft Quick Step Medium Body (Tray)	Impregum™ Soft Quick Step Light Body

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Portfolio Overview
Imprint™ 4 VPS Impression Material

PRODUCT	DISPENSING SYSTEM	VISCOSITY (LOW – HIGH)	SETTING VERSION	MAXIMUM WORKING TIME (23°C/73°F)	MAXIMUM INTRA-ORAL SYRINGING TIME (37°C/98°F)	INTRA-ORAL SETTING TIME (37°C/98°F)
TRAY MATERIALS						
Imprint™ 4 Penta™ Putty		Putty	Regular Set	1:30	–	2:30
Imprint™ 4 Penta™ Heavy **Imprint™ 4 Heavy**		Heavy Body	Regular Set	2:00	–	2:00
Imprint™ 4 Penta™ Super Quick Heavy **Imprint™ 4 Super Quick Heavy**		Heavy Body	Fast Set	1:15	–	1:15
WASH MATERIALS						
Imprint™ 4 Light			Regular Set	–	1:00	2:00
Imprint™ 4 Super Quick Light			Fast Set	–	0:35	1:15
Imprint™ 4 Regular			Regular Set	–	1:00	2:00
Imprint™ 4 Super Quick Regular			Fast Set	–	0:35	1:15

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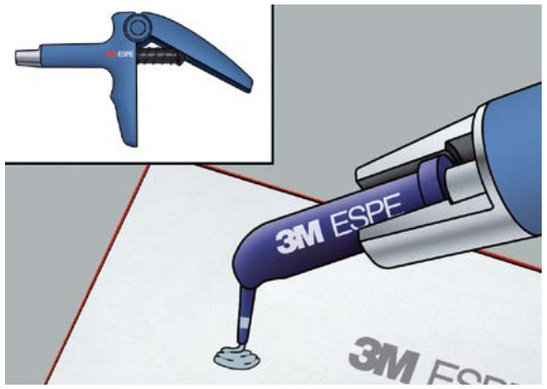
Portfolio Overview
Impregum™ Polyether Impression Material

PRODUCT	DISPENSING SYSTEM	VISCOSITY LOW ▁▃▅ HIGH	SETTING VERSION	WORKING TIME* AT 23°C/74°F MIN:SEC	TOTAL SETTING TIME** MIN:SEC
TRAY AND MONOPHASE MATERIALS					
Impregum™ Penta™ Soft Heavy Body			Regular Set	2:30	6:00
Impregum™ Penta™ Soft Medium Body			Regular Set	2:45	6:00
Impregum™ Penta™ Medium Body			Regular Set	2:45	6:00
Impregum™ Soft Medium Body (Tray)			Regular Set	1:45	6:00
Impregum™ Penta™ Soft Quick Step Heavy Body			Fast Set	1:00	4:00
Impregum™ Penta™ Soft Quick Step Medium Body			Fast Set	1:00	4:00
Impregum™ Soft Quick Step Medium Body (Tray)			Fast Set	1:00	4:00
WASH MATERIALS					
Impregum™ Penta™ Soft Light Body			Regular Set	3:15	6:30
Impregum™ Soft Light Body			Regular Set	2:00	5:30
Impregum™ Soft Quick Step Light Body			Fast Set	1:00	4:00

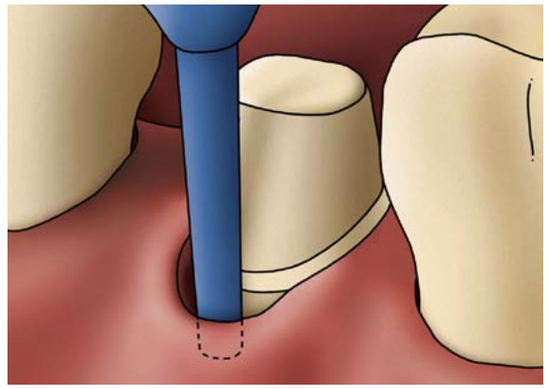
*Working time includes mixing time.

**includes working time.

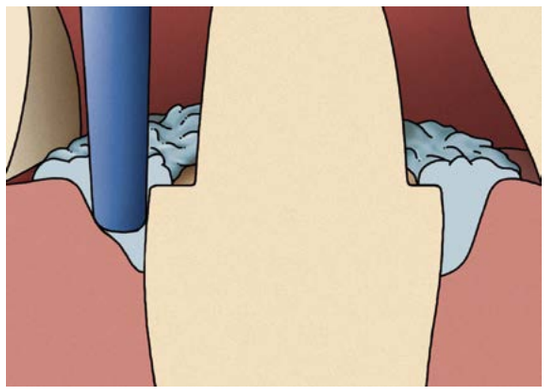
3M™ ESPE™ Retraction Capsule



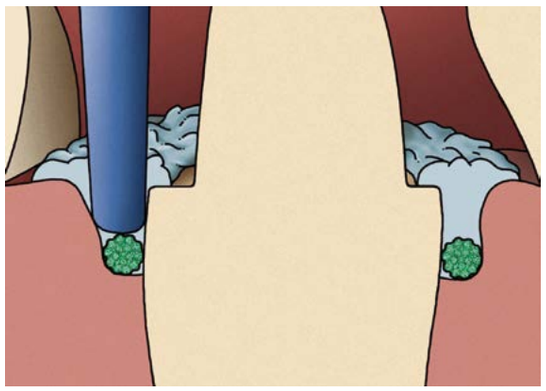
Remove a retraction capsule from the blister and insert into dispenser (fits into most composite dispensers). Extrude a small amount of paste and discard.



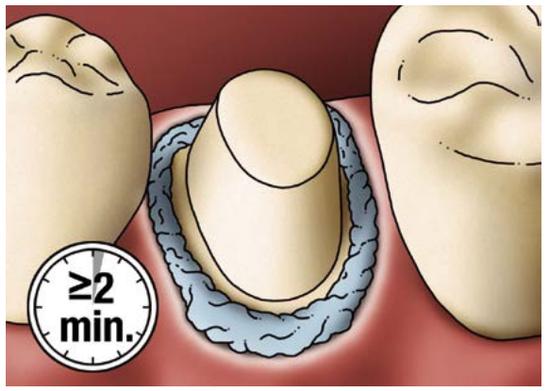
Insert retraction capsule tip into the sulcus.



Slowly and steadily, inject astringent retraction paste into sulcus. Completely fill the sulcus.



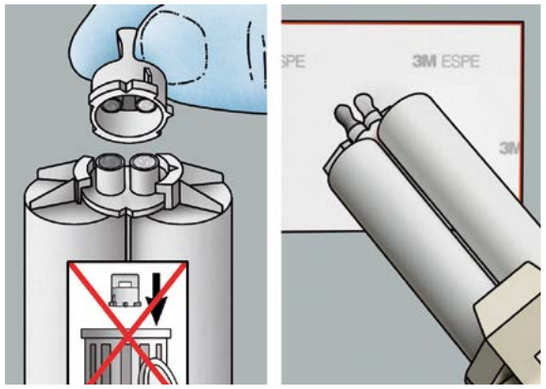
Optional: procedure with cords.
For more gingival deflection, the astringent retraction paste can be used in combination with retraction cords.

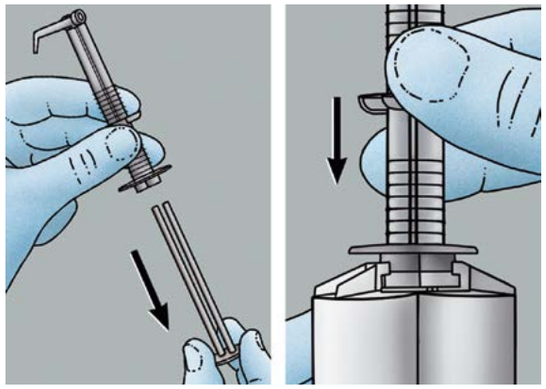


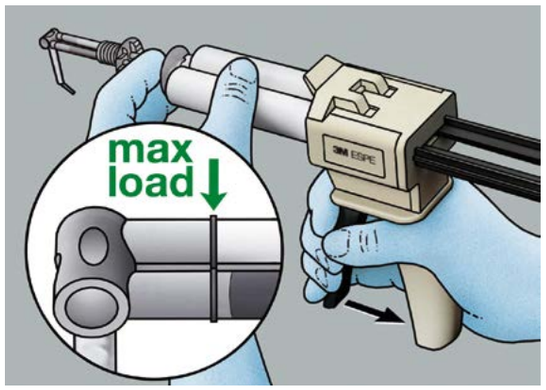
Leave astringent retraction paste on for a minimum of 2 minutes.

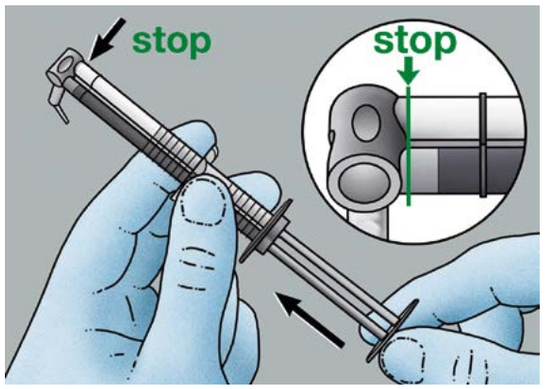
Completely remove astringent retraction paste with air-water spray and suction.

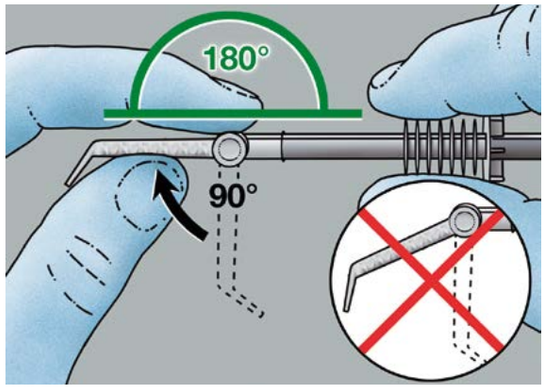
3M™ ESPE™ Intra-oral Syringe Green/Purple

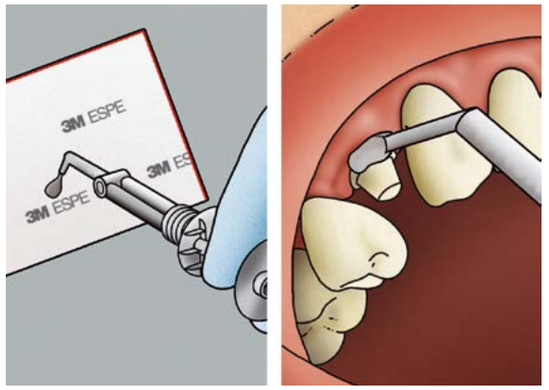




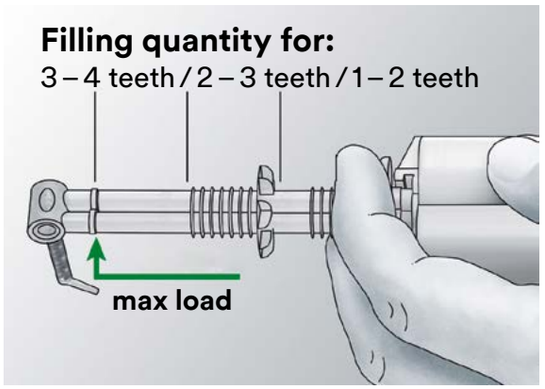


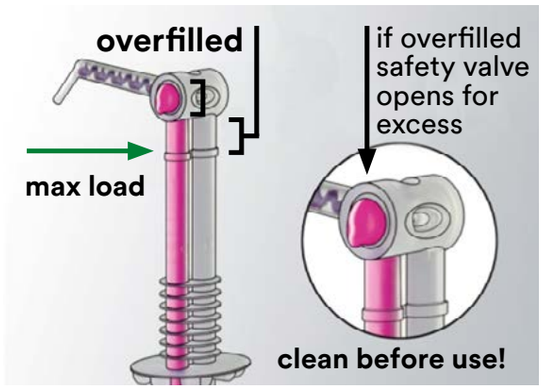




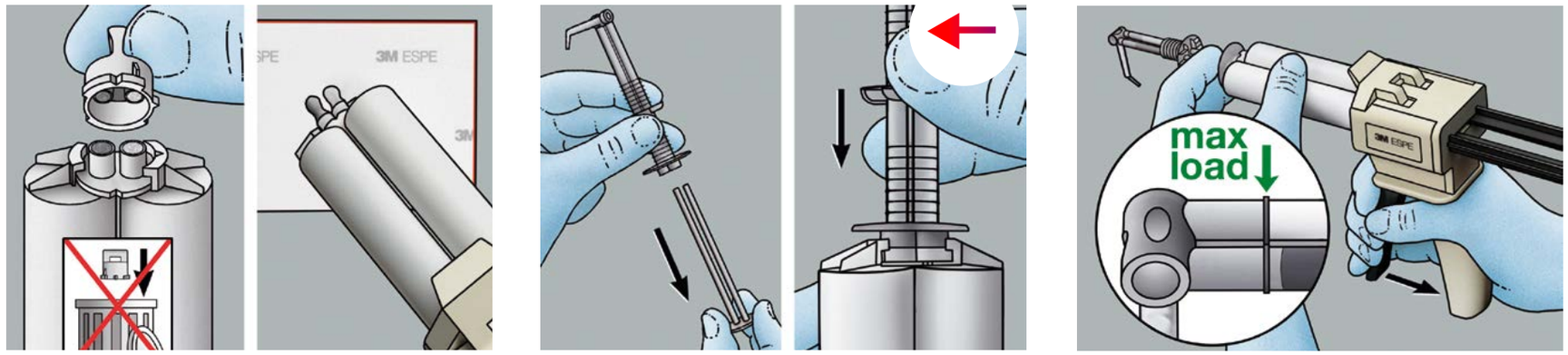


Tips for success.





3M™ ESPE™ Intra-oral Syringe Green/Purple



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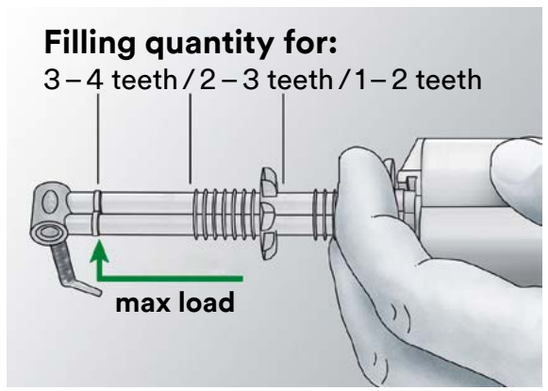
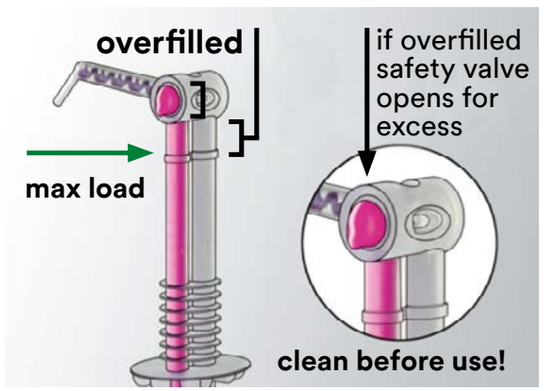
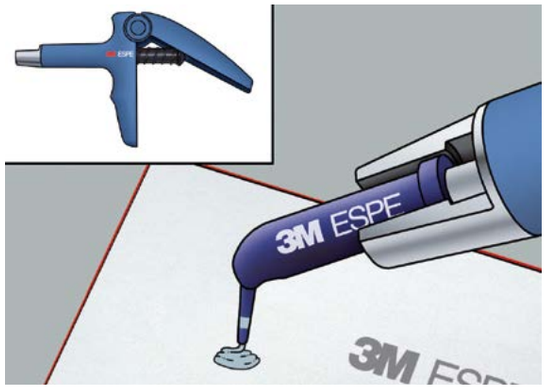




3M™ ESPE™ Retraction Capsule



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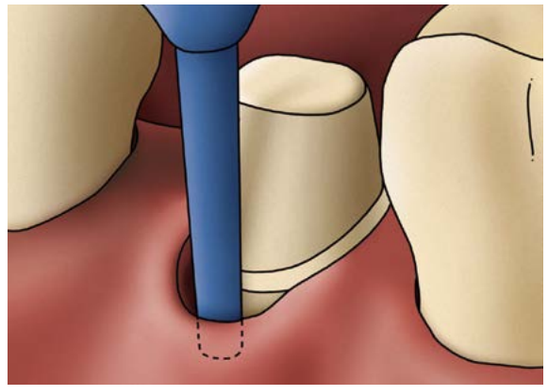
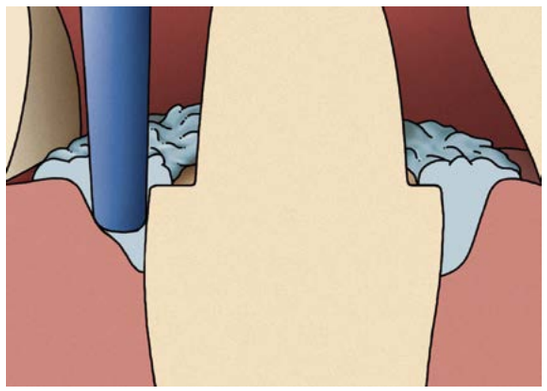
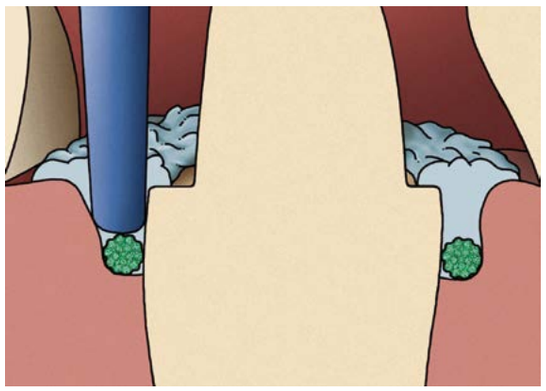


Insert retraction capsule tip into the sulcus.



Slowly and steadily, inject astringent retraction paste into sulcus. Completely fill the sulcus.



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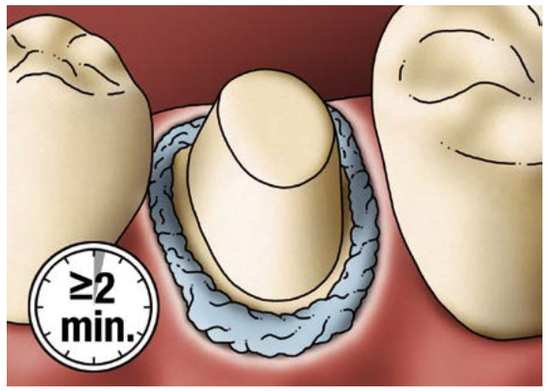

Leave astringent retraction paste on for a minimum of 2 minutes.

Completely remove astringent retraction paste with air-water spray and suction.

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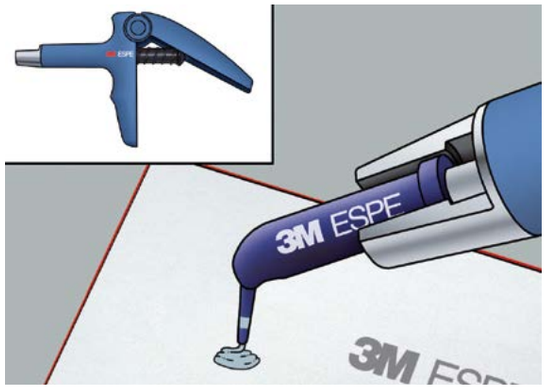

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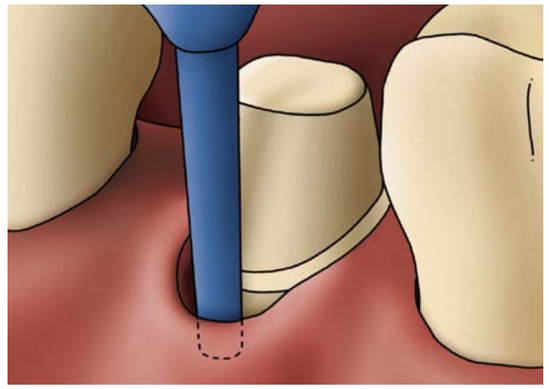

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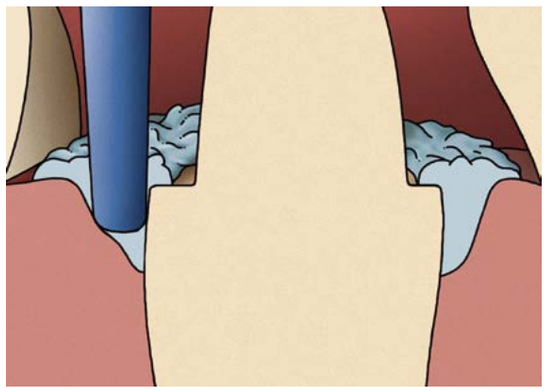

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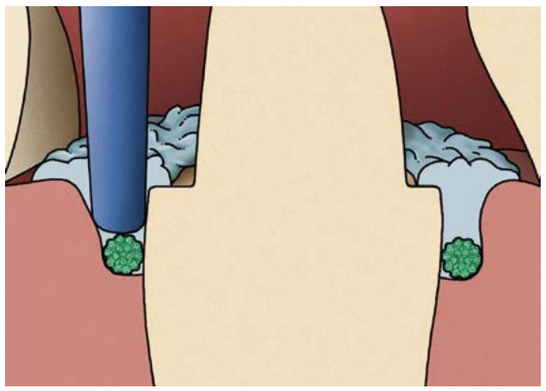

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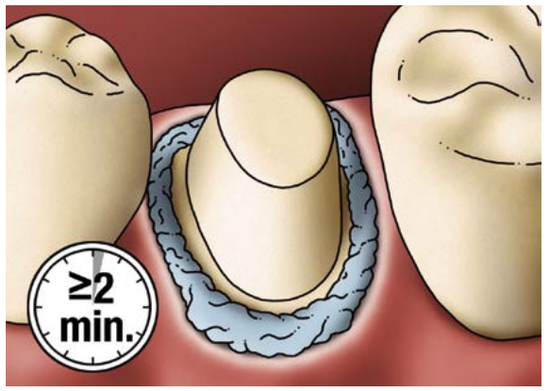
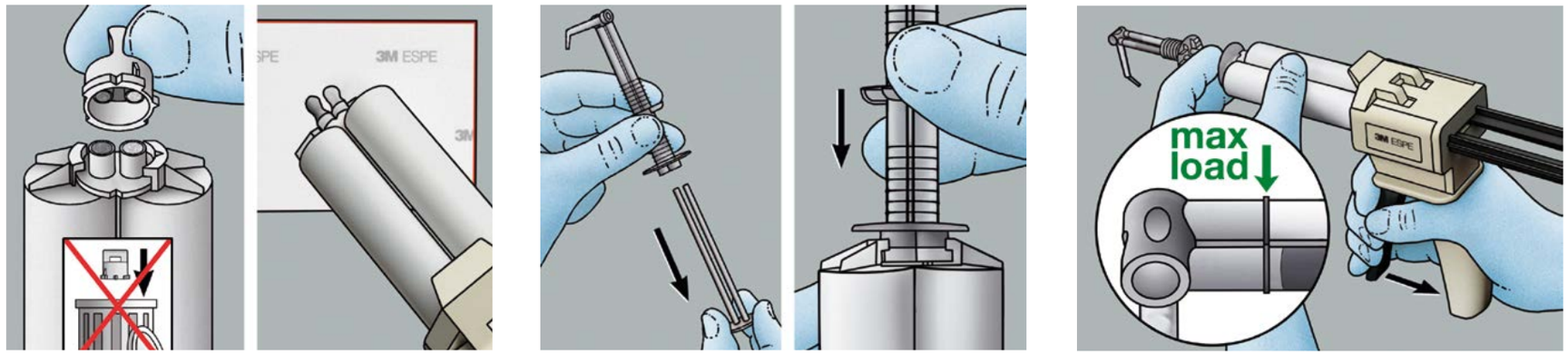


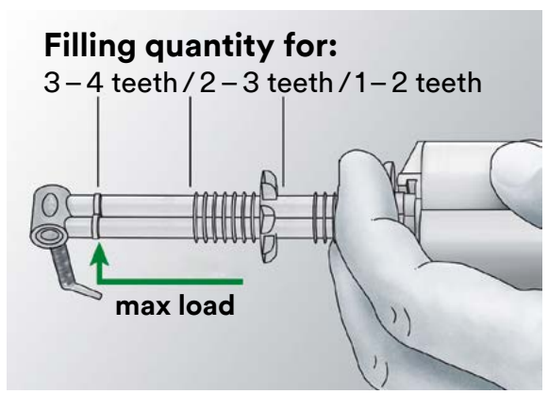
Leave astringent retraction paste on for a minimum of 2 minutes.

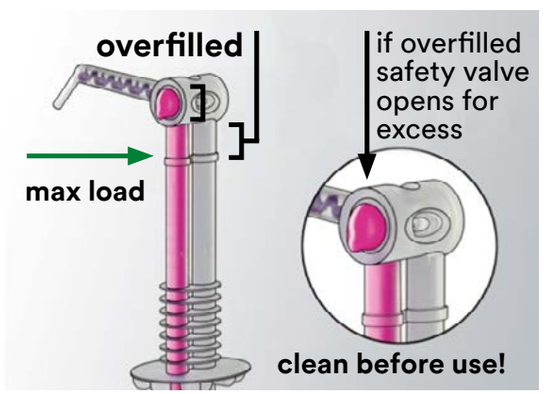
Completely remove astringent retraction paste with air-water spray and suction.

3M™ ESPE™ Intra-oral Syringe Green/Purple



Tips for success.





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3M ESPE Dental

Portfolio Overview
Imprint™ 4 VPS Impression Material

PRODUCT	DISPENSING SYSTEM	VISCOSITY LOW – HIGH	SETTING VERSION	MAXIMUM WORKING TIME (23°C/73°F)	MAXIMUM INTRA-ORAL SYRINGING TIME (37°C/98°F)	INTRA-ORAL SETTING TIME (37°C/98°F)
TRAY MATERIALS						
Imprint™ 4 Penta™ Putty		Putty	Regular Set	1:30	–	2:30
Imprint™ 4 Penta™ Heavy **Imprint™ 4 Heavy**		Heavy Body	Regular Set	2:00	–	2:00
Imprint™ 4 Penta™ Super Quick Heavy **Imprint™ 4 Super Quick Heavy**		Heavy Body	Fast Set	1:15	–	1:15
WASH MATERIALS						
Imprint™ 4 Light			Regular Set	–	1:00	2:00
Imprint™ 4 Super Quick Light			Fast Set	–	0:35	1:15
Imprint™ 4 Regular			Regular Set	–	1:00	2:00
Imprint™ 4 Super Quick Regular			Fast Set	–	0:35	1:15

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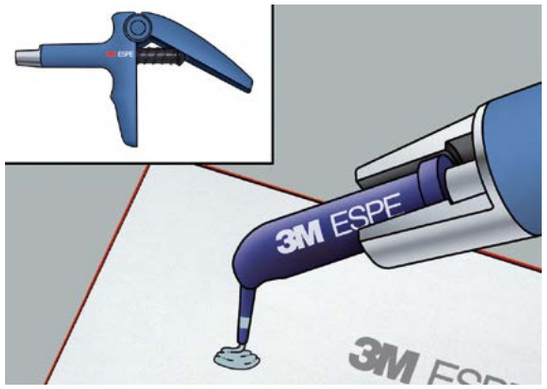
Portfolio Overview
Impregum™ Polyether Impression Material

PRODUCT	DISPENSING SYSTEM	VISCOSITY LOW – HIGH	SETTING VERSION	WORKING TIME* AT 23°C/74°F MIN:SEC	TOTAL SETTING TIME** MIN:SEC
TRAY AND MONOPHASE MATERIALS					
Impregum™ Penta™ Soft Heavy Body			Regular Set	2:30	6:00
Impregum™ Penta™ Soft Medium Body			Regular Set	2:45	6:00
Impregum™ Penta™ Medium Body			Regular Set	2:45	6:00
Impregum™ Soft Medium Body (Tray)			Regular Set	1:45	6:00
Impregum™ Penta™ Soft Quick Step Heavy Body			Fast Set	1:00	4:00
Impregum™ Penta™ Soft Quick Step Medium Body			Fast Set	1:00	4:00
Impregum™ Soft Quick Step Medium Body (Tray)			Fast Set	1:00	4:00
WASH MATERIALS					
Impregum™ Penta™ Soft Light Body			Regular Set	3:15	6:30
Impregum™ Soft Light Body			Regular Set	2:00	5:30
Impregum™ Soft Quick Step Light Body			Fast Set	1:00	4:00

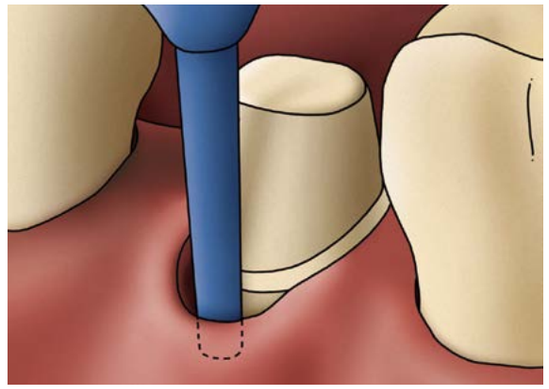
*Working time includes mixing time.

**includes working time.

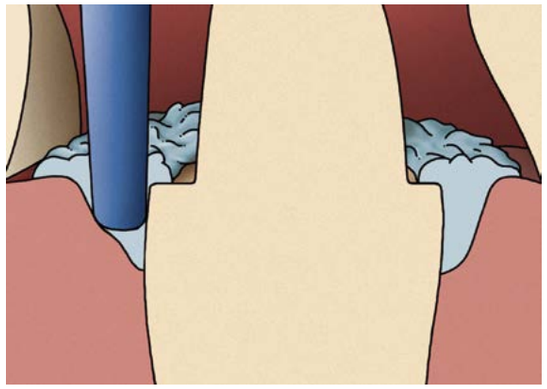
3M™ ESPE™ Retraction Capsule



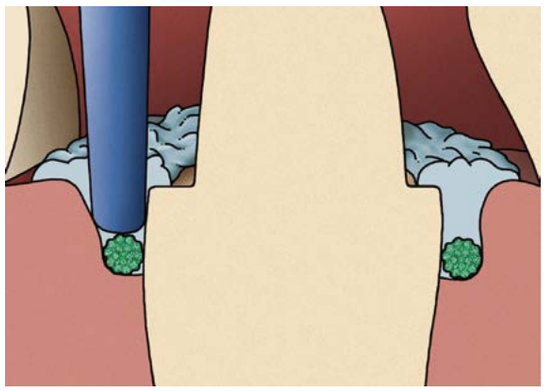
Remove a retraction capsule from the blister and insert into dispenser (fits into most composite dispensers). Extrude a small amount of paste and discard.



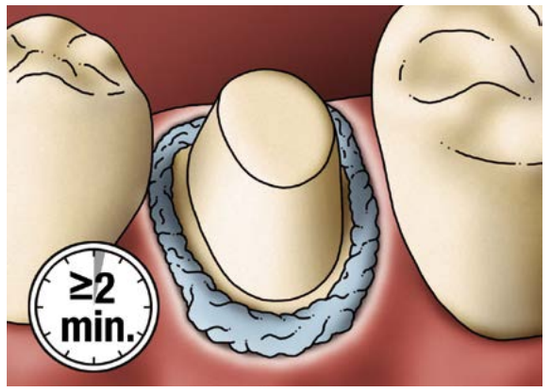
Insert retraction capsule tip into the sulcus.



Slowly and steadily, inject astringent retraction paste into sulcus. Completely fill the sulcus.



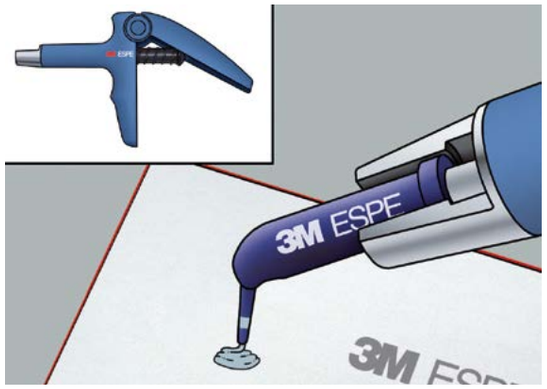
Optional: procedure with cords.
For more gingival deflection, the astringent retraction paste can be used in combination with retraction cords.



Leave astringent retraction paste on for a minimum of 2 minutes.

Completely remove astringent retraction paste with air-water spray and suction.

3M™ ESPE™ Retraction Capsule



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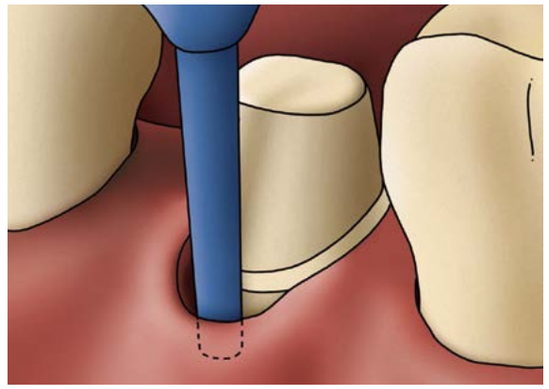

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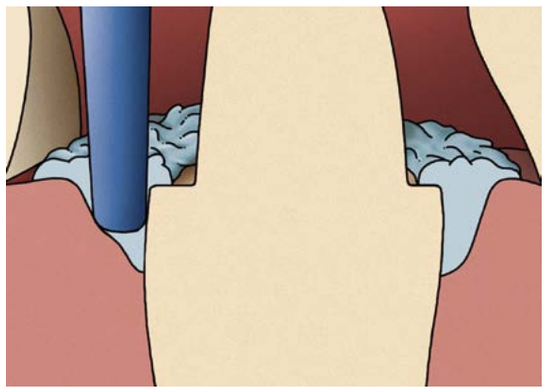

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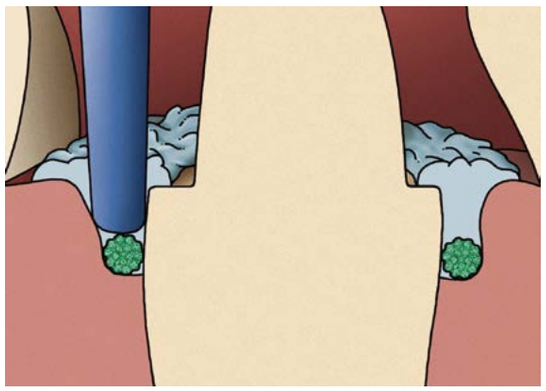

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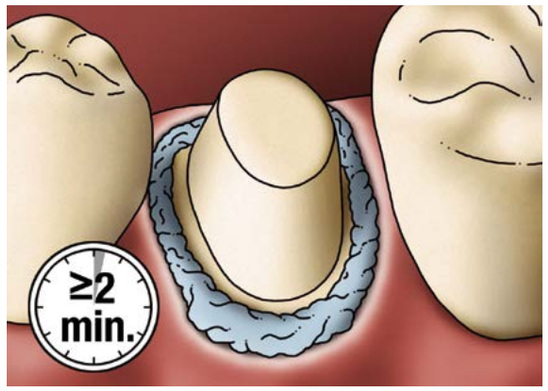

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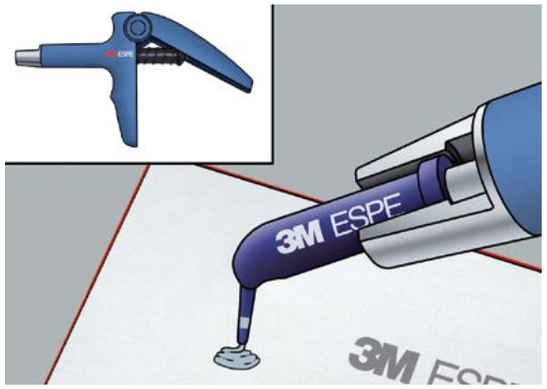
3M™ ESPE™ Retraction Capsule



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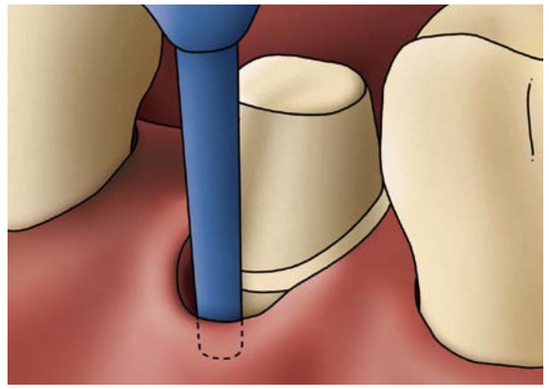

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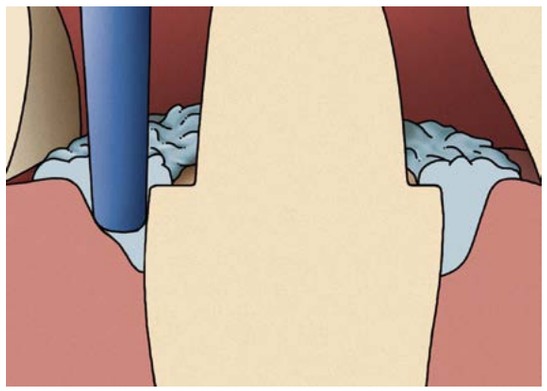

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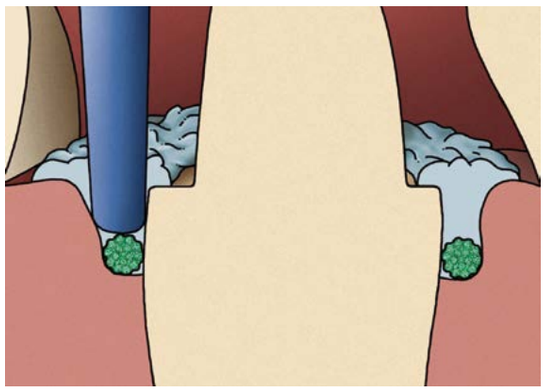

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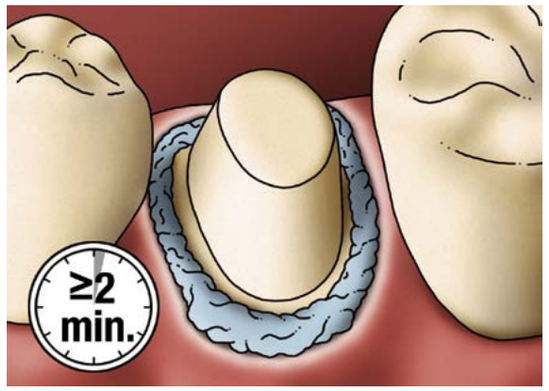

Leave astringent retraction paste on for a minimum of 2 minutes.

Completely remove astringent retraction paste with air-water spray and suction.

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Material Combinations per Technique
Imprint™ 4 VPS Impression Material

TRAY MATERIAL	RECOMMENDED WASH MATERIALS
1-STEP TECHNIQUE—PENTA™	
Imprint™ 4 Penta™ Heavy Hydrophilic heavy body	Imprint™ 4 Light Imprint™ 4 Regular
Imprint™ 4 Penta™ Super Quick Heavy Fast setting hydrophilic heavy body	Imprint™ 4 Super Quick Light Imprint™ 4 Super Quick Regular
Imprint™ 4 Penta™ Putty Putty consistency	Imprint™ 4 Regular
1-STEP TECHNIQUE—CARTRIDGE	
Imprint™ 4 Super Quick Heavy Fast setting hydrophilic heavy body	Imprint™ 4 Super Quick Light Imprint™ 4 Super Quick Regular
Imprint™ 4 Heavy Hydrophilic heavy body	Imprint™ 4 Light Imprint™ 4 Regular
2-STEP TECHNIQUE	
Imprint™ 4 Penta™ Putty Putty consistency	Imprint™ 4 Super Quick Light Imprint™ 4 Light

Customer Care Center: 1-800-634-2249 www.3MESPE.com/Imprint4

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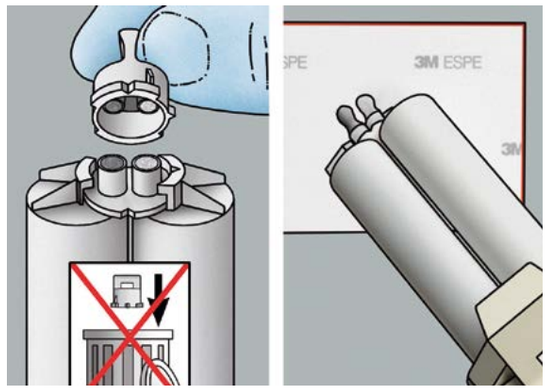
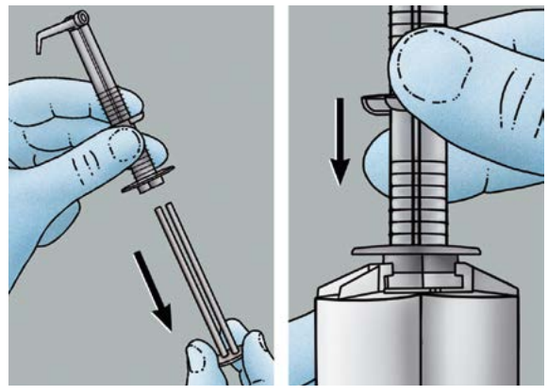
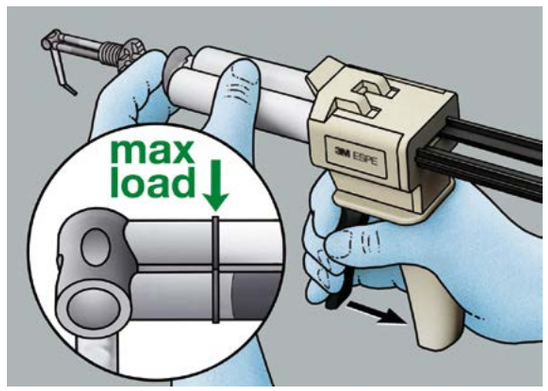
1-800-634-2249

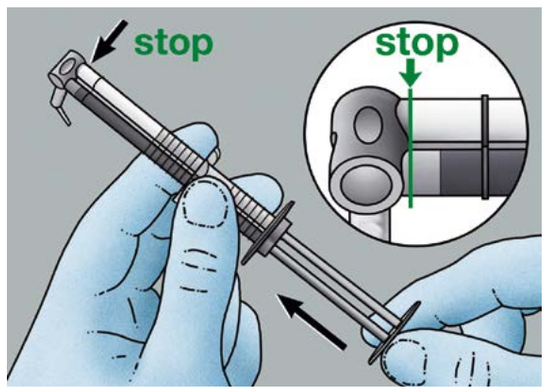
3M Canada
Post Office Box 5757
London, Ontario N6A 4T1 Canada
1-888-363-3685

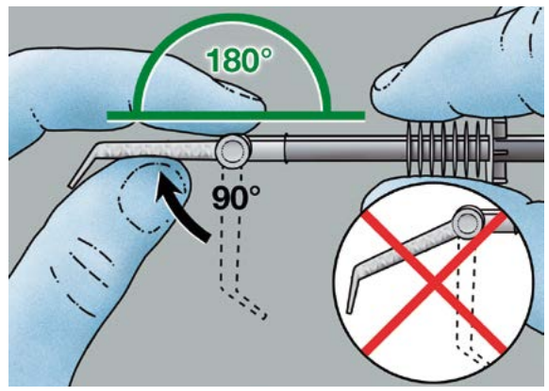
3M™ ESPE™ Intra-oral Syringe Green/Purple

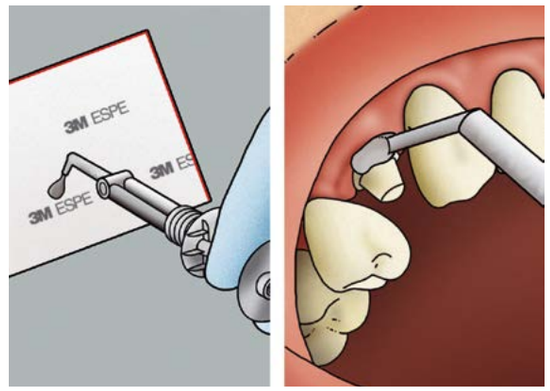




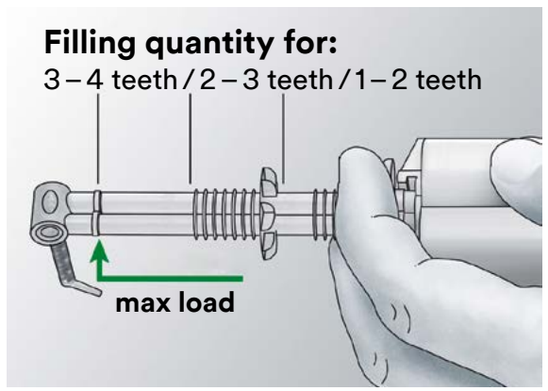


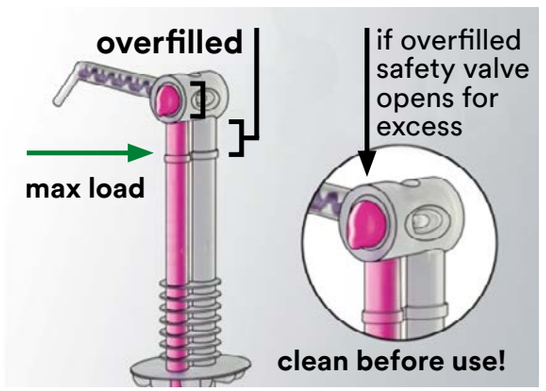






Tips for success.





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Material Combinations per Technique
Imprint™ 4 VPS Impression Material

TRAY MATERIAL	RECOMMENDED WASH MATERIALS
1-STEP TECHNIQUE—PENTA™	
Imprint™ 4 Penta™ Heavy Hydrophilic heavy body	Imprint™ 4 Light Imprint™ 4 Regular
Imprint™ 4 Penta™ Super Quick Heavy Fast setting hydrophilic heavy body	Imprint™ 4 Super Quick Light Imprint™ 4 Super Quick Regular
Imprint™ 4 Penta™ Putty Putty consistency	Imprint™ 4 Regular
1-STEP TECHNIQUE—CARTRIDGE	
Imprint™ 4 Super Quick Heavy Fast setting hydrophilic heavy body	Imprint™ 4 Super Quick Light Imprint™ 4 Super Quick Regular
Imprint™ 4 Heavy Hydrophilic heavy body	Imprint™ 4 Light Imprint™ 4 Regular
2-STEP TECHNIQUE	
Imprint™ 4 Penta™ Putty Putty consistency	Imprint™ 4 Super Quick Light Imprint™ 4 Light

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Material Combinations per Technique
Impregum™ Polyether Impression Material

TRAY MATERIAL	RECOMMENDED WASH MATERIAL
MONOPHASE TECHNIQUE – PENTA™	
Impregum™ Penta™ Soft Medium Body	
Impregum™ Penta™ Medium Body	
Impregum™ Penta™ Soft Quick Step Medium Body	
1-STEP TECHNIQUE – PENTA™	
Impregum™ Penta™ Soft Heavy Body	Impregum™ Soft Light Body
Impregum™ Penta™ Soft Heavy Body	Impregum™ Penta™ Soft Light Body
Impregum™ Penta™ Soft Quick Step Heavy Body	Impregum™ Soft Quick Step Light Body
1-STEP TECHNIQUE – CARTRIDGE	
Impregum™ Soft Medium Body (Tray)	Impregum™ Soft Light Body
Impregum™ Soft Quick Step Medium Body (Tray)	Impregum™ Soft Quick Step Light Body

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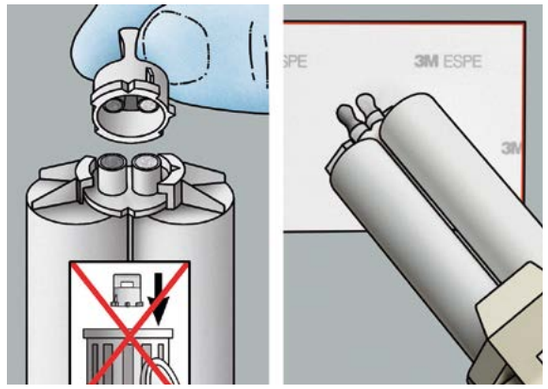
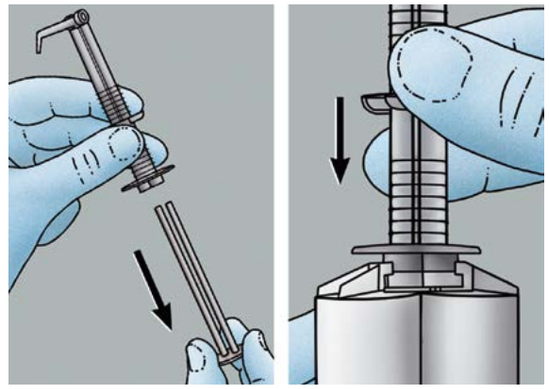
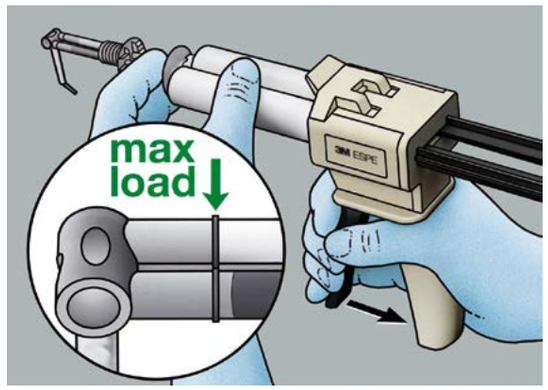
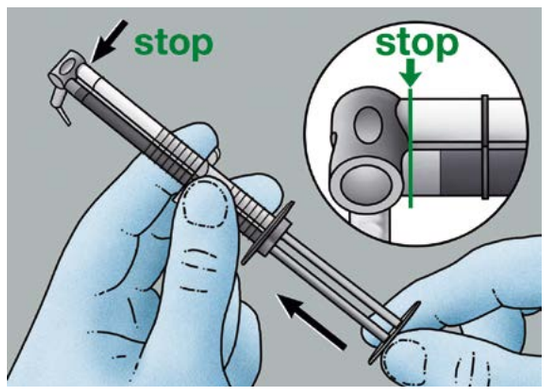
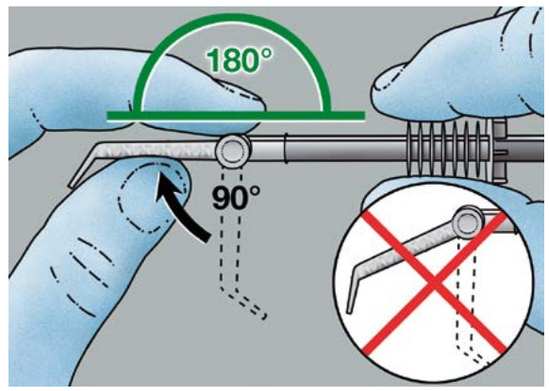
3M™ ESPE™ Intra-oral Syringe Green/Purple

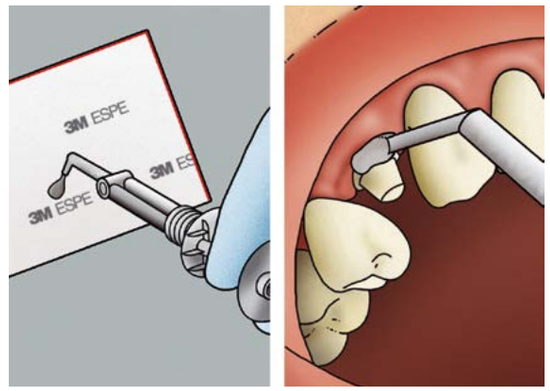












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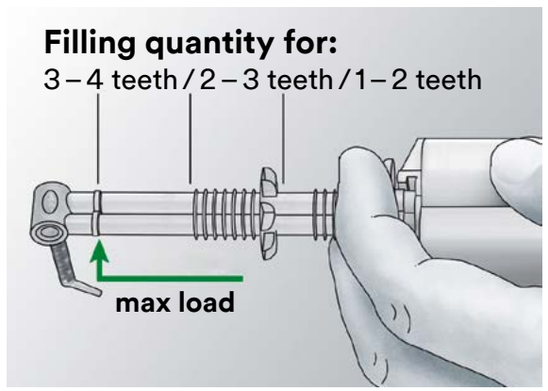
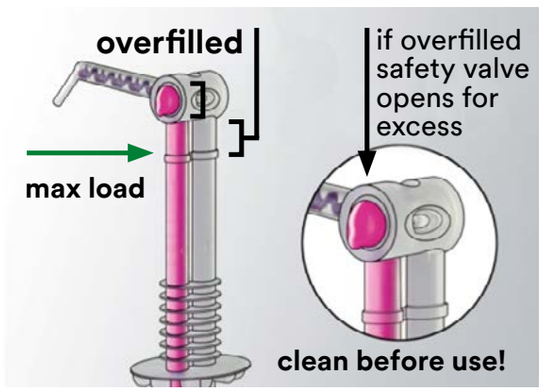
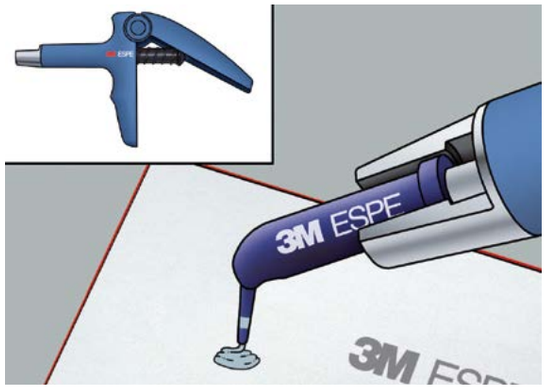
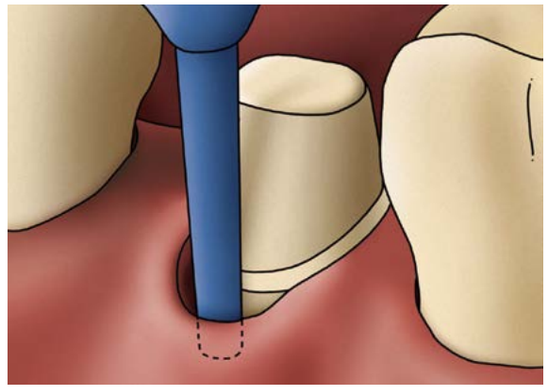




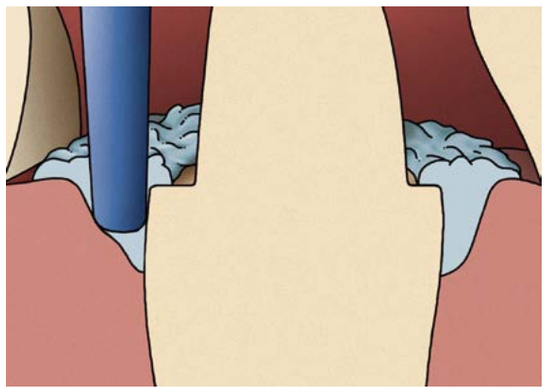
3M™ ESPE™ Retraction Capsule



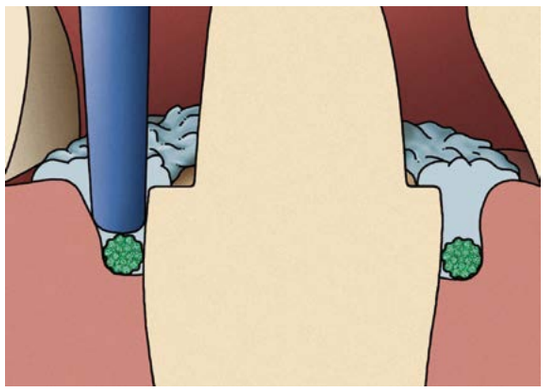
Remove a retraction capsule from the blister and insert into dispenser (fits into most composite dispensers). Extrude a small amount of paste and discard.



Insert retraction capsule tip into the sulcus.



Slowly and steadily, inject astringent retraction paste into sulcus. Completely fill the sulcus.



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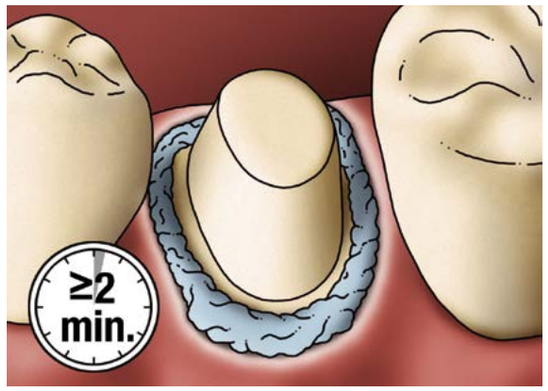

Leave astringent retraction paste on for a minimum of 2 minutes.

Completely remove astringent retraction paste with air-water spray and suction.

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Portfolio Overview
Imprint™ 4 VPS Impression Material

PRODUCT	DISPENSING SYSTEM	VISCOSITY (LOW – HIGH)	SETTING VERSION	MAXIMUM WORKING TIME (23°C/73°F)	MAXIMUM INTRA-ORAL SYRINGING TIME (37°C/98°F)	INTRA-ORAL SETTING TIME (37°C/98°F)
TRAY MATERIALS						
Imprint™ 4 Penta™ Putty		Putty	Regular Set	1:30	–	2:30
Imprint™ 4 Penta™ Heavy **Imprint™ 4 Heavy**		Heavy Body	Regular Set	2:00	–	2:00
Imprint™ 4 Penta™ Super Quick Heavy **Imprint™ 4 Super Quick Heavy**		Heavy Body	Fast Set	1:15	–	1:15
WASH MATERIALS						
Imprint™ 4 Light			Regular Set	–	1:00	2:00
Imprint™ 4 Super Quick Light			Fast Set	–	0:35	1:15
Imprint™ 4 Regular			Regular Set	–	1:00	2:00
Imprint™ 4 Super Quick Regular			Fast Set	–	0:35	1:15

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Portfolio Overview
Impregum™ Polyether Impression Material

PRODUCT	DISPENSING SYSTEM	VISCOSITY LOW – HIGH	SETTING VERSION	WORKING TIME* AT 23°C/74°F MIN:SEC	TOTAL SETTING TIME** MIN:SEC
TRAY AND MONOPHASE MATERIALS					
Impregum™ Penta™ Soft Heavy Body			Regular Set	2:30	6:00
Impregum™ Penta™ Soft Medium Body			Regular Set	2:45	6:00
Impregum™ Penta™ Medium Body			Regular Set	2:45	6:00
Impregum™ Soft Medium Body (Tray)			Regular Set	1:45	6:00
Impregum™ Penta™ Soft Quick Step Heavy Body			Fast Set	1:00	4:00
Impregum™ Penta™ Soft Quick Step Medium Body			Fast Set	1:00	4:00
Impregum™ Soft Quick Step Medium Body (Tray)			Fast Set	1:00	4:00
WASH MATERIALS					
Impregum™ Penta™ Soft Light Body			Regular Set	3:15	6:30
Impregum™ Soft Light Body			Regular Set	2:00	5:30
Impregum™ Soft Quick Step Light Body			Fast Set	1:00	4:00

*Working time includes mixing time.

**includes working time.