simodont
A NISSIN BRAND

Content Catalog

Simodont Courseware v4.22

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CONTENTS

INTRODUCTION

This document provides an overview of all content available in the v4.22 software of the Simodont Dental Trainer.

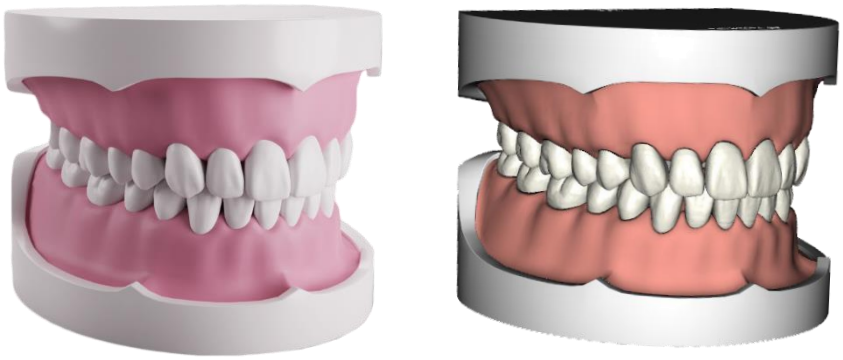
Models

Models are created and provided by Nissin Dental Products Europe B.V. and by Simodont users that develop and share their own models. Information about the origin of the model is found in the information about the model and is displayed in the software. All models mentioned in this catalog are provided with the software.

Natural Tooth Models versus Nissin Typodont Models

The Simodont library contains two types of models:

Natural tooth models	Natural tooth models are created based on micro CT scans from real extracted teeth. All layers from the tooth are extracted from the scan and simulated in the Simodont with different hardness and color.
Nissin models	Nissin models are created based on digital data from the physical NISSIN educational models available on the market. The resemblance of the models is of high quality, making it possible to use physical and virtual models side by side.



Real versus simulated PRO700 in Simodont

Cases

Example cases are created and provided by Nissin Dental Products Europe B.V. and by Simodont users that develop and share their own cases. All cases mentioned in this catalog are a basic start set that should be seen as an example set in order to get education on Simodont started. Via the Simodont Teacher Station it is possible to edit and extent the case library to the Simodont user's own preferences.

Instruments

Instruments are created and provided by Nissin Dental Products Europe B.V. based on requests from Simodont users.

Dental Notation System

Tooth numbers in this catalog are indicated by the FDI (World Dental Federation) dental notation system.

Permanent teeth (adult teeth)

upper right									upper left								
ADA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	ADA
FDI	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28	FDI
FDI	48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38	FDI
ADA	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	ADA
lower right									lower left								

Primary teeth (baby teeth)

upper right						upper left					
ADA	A	B	C	D	E	F	G	H	I	J	ADA
FDI	55	54	53	52	51	61	62	63	64	65	FDI
FDI	85	84	83	82	81	71	72	73	74	75	FDI
ADA	T	S	R	Q	P	O	N	M	L	K	ADA
lower right						lower left					

Generic Features

The Simodont Courseware is designed in such a way that it is possible to tailor any exercise to the specific needs of the user. This is made possible by means of many optional settings when designing a case. The following table gives an overview of the generic features of the software and for which procedures they are available. The procedure specific features are listed in the procedure chapters.

Feature / Procedure	Dental Anatomy	Manual Dexterity	Patient Specific	Target in Tooth, Cariology, Crown, Bridge, Endo access, Pediatric, Implantology, Periodontics
Virtual Patient				✓
Treatment Plan				✓
Instrument Selection	probe	✓	✓	✓
Restart treatment		✓	✓	✓
Save and Reload snapshots		✓	✓	✓
Indirect vision / Mirror usage	✓	✓	✓	✓
Zoom in/out, limit zoom	✓	✓	✓	✓
Models rotation & translation limits		✓	✓	✓
Session timer		✓	✓	✓
Custom question forms + feedback	✓	✓		✓
Model segment statistics		✓		✓
Evaluation against treatment plan				✓
Self-Assessment Rubric				✓
Remote viewer	✓	✓	✓	✓
Treatment Evaluation	✓	✓	✓	✓
Reporting	✓	✓	✓	✓
Review Assessed work on Simodont		✓	✓	✓

How to use the available models and cases

This catalog lists all available models for each procedure. Each of these models can be used by Simodont users to create their own, tailored cases. For some of the available models also predefined example cases have been created to highlight the various possibilities and features available with the models in Simodont.

Flexibility of the NISSIN models

The NISSIN models available in Simodont are the PRO200, PRO500, PRO700, PDI200 and IMP5003. Simodont users can create cases based on any tooth from these models, as all positions are available as a drillable model.

The PRO700 offers even more possibilities as it includes a wide range of tooth series. The following series are provided with the PRO700:

- Sound single layer [A5] - 32 positions
- Sound double layered [A20] - 24 positions
- Caries multi layered [A27] - 11 predefined cases / 8 pos; see chapter CARIOLOGY
- Endo multi layered [B22] - 6 predefined cases / 6 pos; see chapter ENDODONTOLOGY
- Target in tooth [based on A21/25] - 12 predefined cases; see chapter TARGET IN TOOTH

How to read the available models table for jaws

For the full jaw models, an overview as depicted below is given, listing among others the teeth that can be selected as 'treatable tooth' in a case. Each of these teeth can be selected in a case, to use them for the actual treatment exercise.

Model name	Model image	Teeth	Description	Segments	Tags	Origin
Nissin PRO700		11-18 21-28 31-38 41-48	• The PRO700 A27 series has caries teeth for positions 11, 13, 14, 16, 22, 35, 36, 46. • All other teeth are available as sound single and or double layered teeth. (A5 / A20) • Please refer to the list of predefined caries cases for the complete overview.	Enamel Dentin Caries	CAR	NISSIN

The Nissin PRO700 model is suitable for cariology, crown, bridge and endodontic exercises. Users can create treatment exercises for all 32 present teeth in this model.

Model name This is the exact name of the model as shown as well in the Simodont Courseware.

Model image A preview of the model.

Teeth	This is a list of all teeth available as drillable teeth in the model.
Description	This explains the special characteristics of the model.
Segments	This is a list of segments (tissues) present in the model.
Tags	This is a list of procedures this model is suitable for and whether the model is sound or not.
Origin	This shows where the model originates from. Usually, Simodont models are created based on scans provided by Simodont users or they originate from Nissin physical training models.

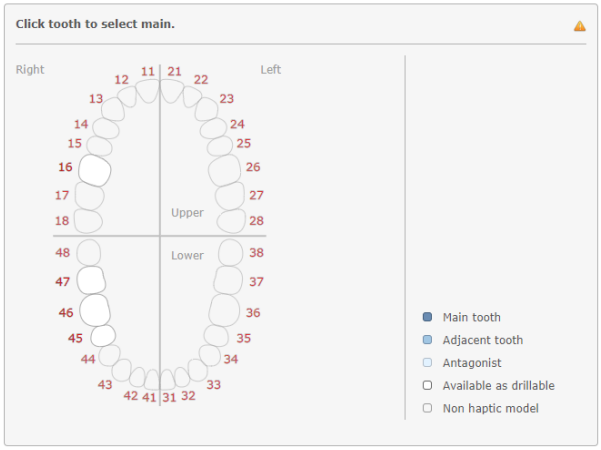
Designing cases and selecting models and teeth

When building a new case, and selecting a model, the Simodont courseware will show you which teeth are available for the selected model.

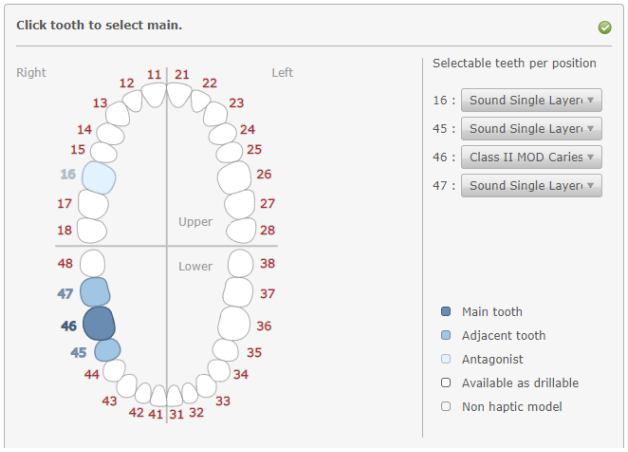
Selecting models and teeth for CAR, CRW, END, PED, IMP, TT

For each case you are designing, you will have to select one or two focus teeth for the exercise. In the example below (right) we have selected the 46 as our main tooth for the exercise. The software will automatically activate the adjacent and antagonist teeth when these are available in the selected model. For Periodontics cases, the exception is made, that you can select up to 4 active teeth with calculus.

Note: For performance reasons, it is better not to select two adjacent calculus teeth should for scaling cases.



Selected model: 46_01_CRW_SND_J_STCatA_ACTA_01
Only 4 drillable teeth (white)
No main tooth is selected yet. (no blue teeth)



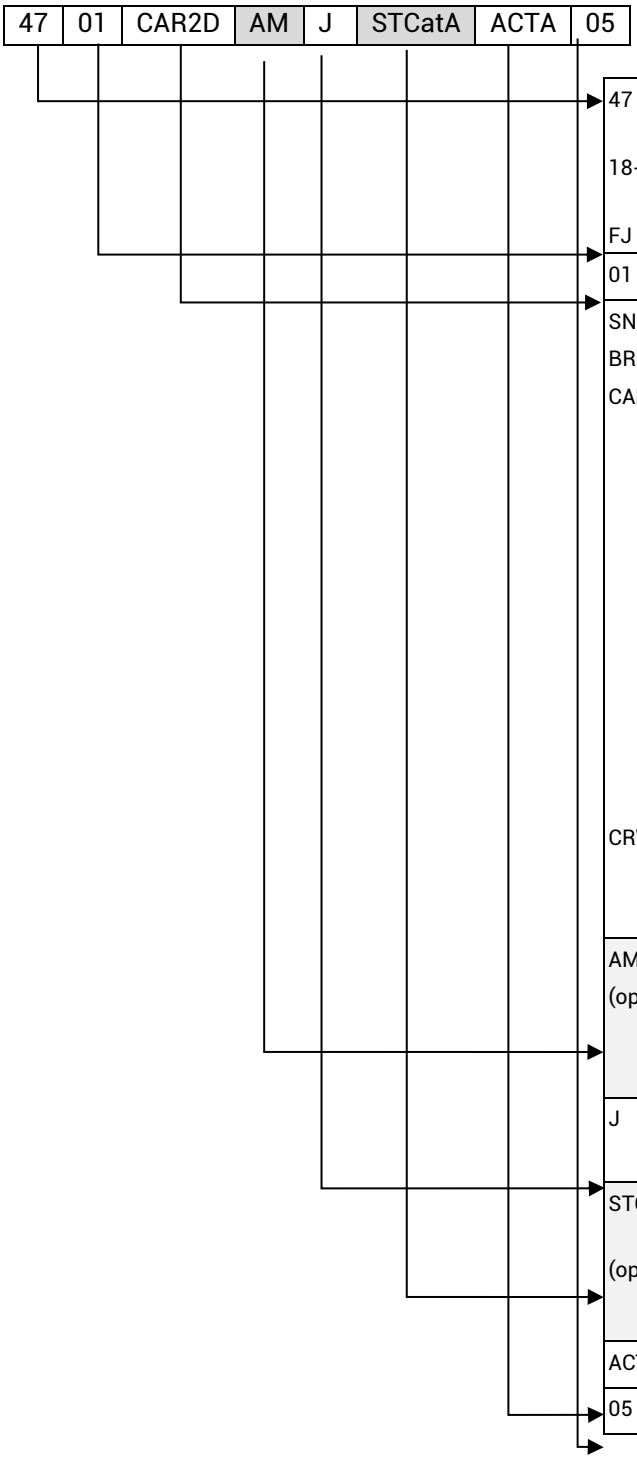
Selected model: PRO700
All teeth are selectable. 46 is selected as main. (dark blue)
Adjacent and antagonist are automatically selected. (light blue)
For the selected positions, multiple options are available.

Selecting teeth for Dental Anatomy cases

The setup of a Dental Anatomy cases is very different from the other procedure. In the non-dental anatomy cases the case focuses on one model and one to four teeth to treat. A Dental Anatomy case can be seen as a carousel of various teeth models that are presented to the student. Therefore it is possible

to select many different teeth models within one Dental Anatomy case. Please refer to the Teacher Manual for instructions on how to build a Dental Anatomy case.

Model naming convention for natural teeth



47	Position of the tooth/available as drillable tooth (FDI-notation)
18-23	Range of teeth available as drillable teeth, start counting from distal tooth first quadrant and continue clockwise.
FJ	All quadrants with teeth available as drillable teeth
01	Sequential number for the tooth
SND	sound model
BRG	bridge model
CAR	caries present in model Black's caries classification is added: I occlusal areas and buccal or lingual pits II posterior interproximal III anterior interproximal IV anterior interproximal including the incisal corner V gingival at facial or lingual VI anterior incisal edges or cusp tips + the depth of caries: E in enamel D in dentine DP in dentine and pulp tissue
CRW	crown model In case of a CRW model, the code F or FC is added in case of fractured tooth / fractured cusp(s).
AM (optional)	AM amalgam restoration CE cerec restoration CO composite restoration GI glass ionomer restoration
J	J jaw model S solitary tooth model
STCatA (optional)	ST this model is standardized, according to: CatA CatA is added in case of a Standard tooth model CatB CatB is added in case of Deciduous tooth model CatC CatB is added in case of Elderly tooth model
ACTA	Reference to the school that created the model
05	Revision

DENTAL ANATOMY

# unique models:	54
# predefined cases:	2

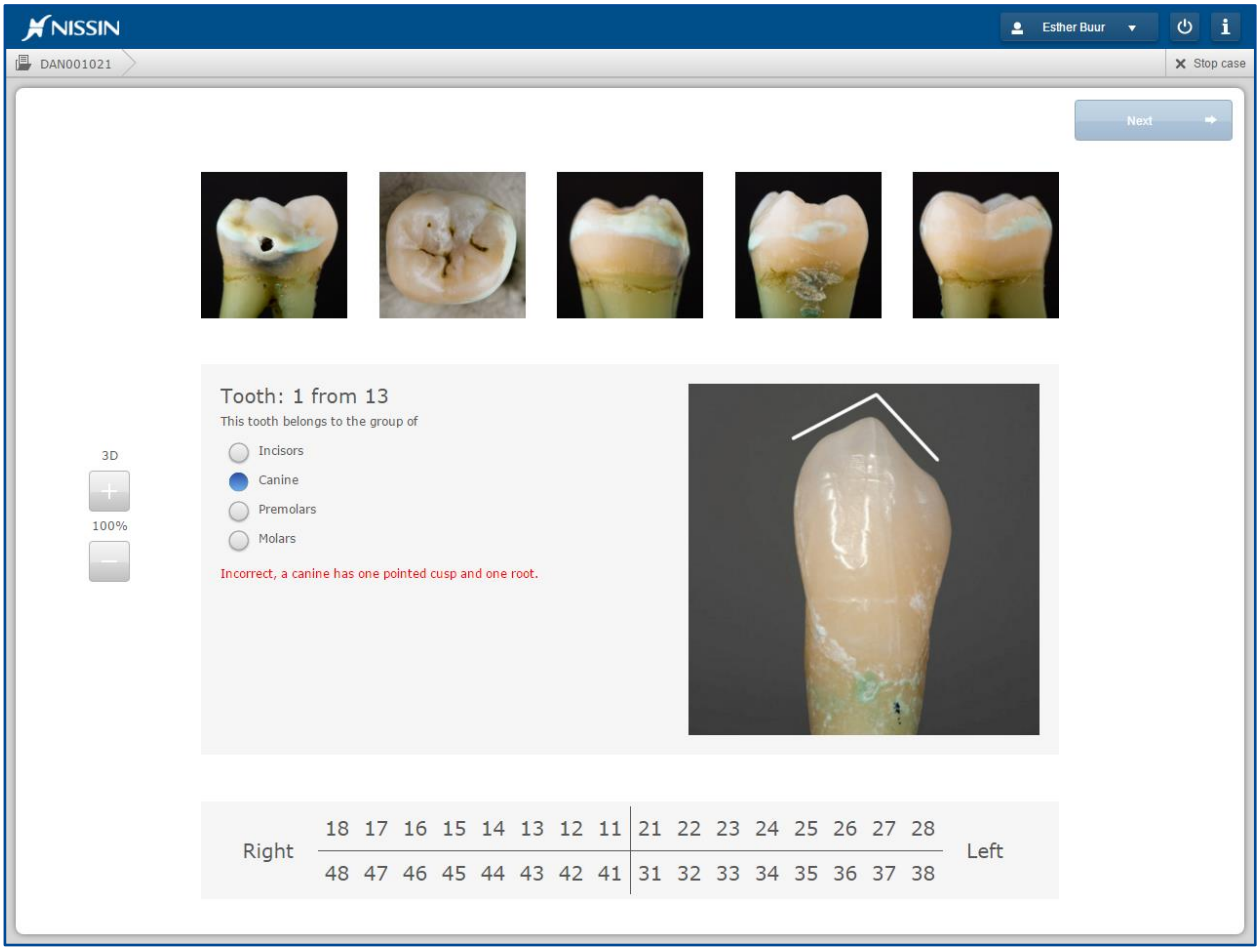
Create your own custom cases
based on a subset of the available models

Introduction

In the Dental Anatomy (DAN) module students can familiarize themselves with tooth anatomy.

A range of healthy and diseased tooth models is available for identification based on the morphology of the tooth. Multiple pre-programmed questions are available for each particular tooth to increase the learning guidance. Complementary questions can be added.

This module can be used for practice or examination.

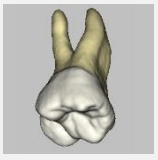
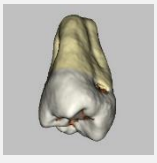


Special DAN features

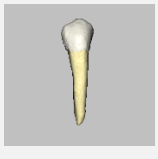
- Over 50 permanent dentition tooth models are available for dental anatomy training.
- In the Practice Mode the student is guided with step-by-step questions to identify the tooth.
- Students can get direct feedback in practice mode with an explanation why their answer was incorrect.
- In the examination mode the student is asked to identify the tooth without further guidance.
- Tooth models are always shown in a random fashion such that the student is not able to learn a certain pattern.
- Teachers can easily create their own DAN cases by making a selection of models and by adding questions to the questionnaire.
- Teachers can view student results and create reports from data exports once the students have submitted their work.

Overview of available DAN models

Create custom cases using one of the available models.

Upper Jaw - Right		Upper Jaw - Left	
#11	 11_01_SND  11_02_SND	#21	 21_01_CAR  21_02_SND  21_03_SND
#12	 12_01_CAR	#22	 22_01_CAR
#13	 13_01_SND  13_02_SND	#23	-
#14	 14_01_CAR  14_02_SND  14_03_SND  14_04_SND	#24	 24_02_SND  24_03_SND
#15	 15_01_CAR	#25	 25_01_SND
#16	 16_01_SND	#26	-
#17	  	#27	  

Upper Jaw - Right				Upper Jaw - Left			
	17_01_SND	17_02_CAR	17_03_CAR		27_01_CAR	27_02_CAR	27_03_SND
	 17_05_SND	 17_06_SND			 27_04_SND	 27_05_SND	
#18	-			#28	 28_01_CAR		

Lower Jaw – Right				Lower Jaw - Left			
#31	 31_01_SND	 31_03_SND		#41			
#32	 32_01_SND	 32_02_SND		#42			
#33	 33_02_SND			#43	 43_02_CAR		
#34	 34_01_CAR			#44	 44_01_SND	 44_02_SND	
#35	 35_01_CAR2D	 35_02_SND	 35_03_SND	#45	 45_01_CAR		

Lower Jaw – Right			Lower Jaw - Left			
	 35_04_SND					
#36	 36_01_CAR	 36_02_SND_01_DAN	#46	 46_01_SND	 46_02_CAR	
#37	 37_01_CAR2DP		#47	 47_01_CAR	 47_02_CAR	 47_03_SND
				 47_04_SND		
#38	 38_03_SND		#48	 48_01_CAR		

Overview of predefined DAN cases

For the Dental Anatomy module, two predefined example cases are delivered to demonstrate the possibilities of this procedure.

Case no.	Description	Treatment	Assessment	Origin
DAN001021	• 13 different tooth models shown in random order. • Standard tooth identification questions. • Direct feedback in text and images is given to the student to explain why a certain answer was incorrect.	none	Questionaire for tooth number identification based on inspection of tooth morphology.	ACTA
DAN006001	• 54 different tooth models shown in random order. • Standard tooth identification questions. • Direct basic feedback on given answers.	none	Questionaire for tooth number identification based on inspection of tooth morphology.	NISSIN

Available DAN instruments

The hand probe is made available in all DAN cases. It is not yet possible to create a custom instrument set for DAN cases.

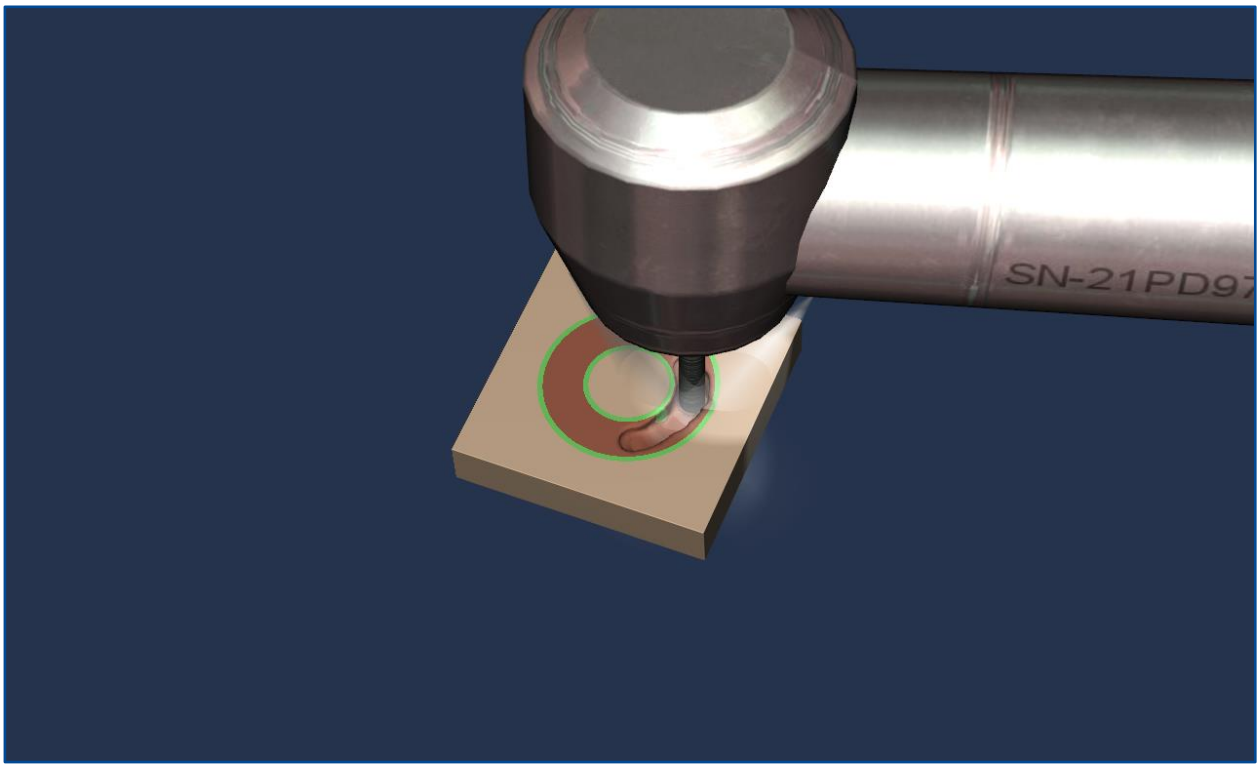
MANUAL DEXTERITY

# unique models:	33
# predefined cases:	43

Create your own custom cases
based on one of the available models

Introduction

Beginning students can train basic and more advanced manual dexterity skills on a large range of objects. In these exercises the goal is to remove a target volume, while removing as little as possible from the surrounding leeway (safety margin).

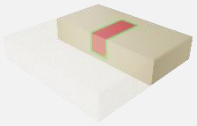


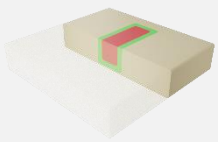
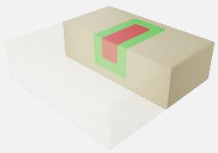
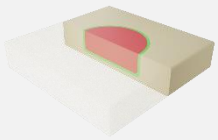
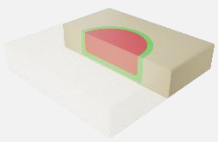
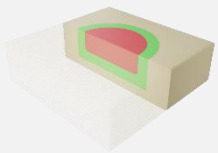
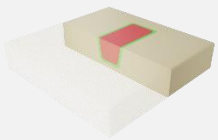
Special MAN features

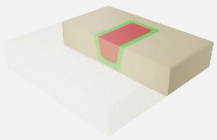
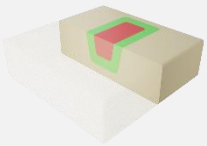
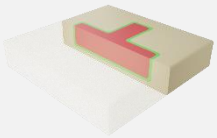
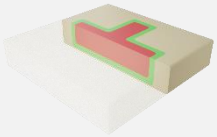
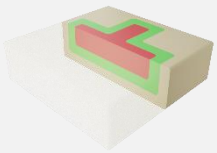
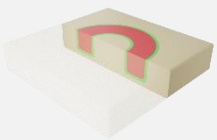
- Real time segment statistics of removed material
- Direct and indirect vision (mirror) exercises

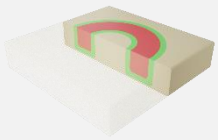
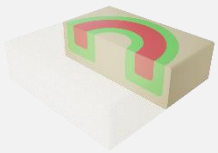
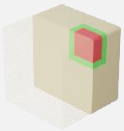
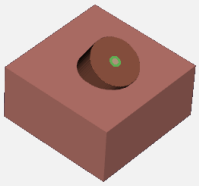
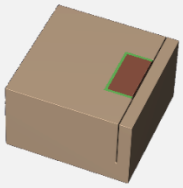
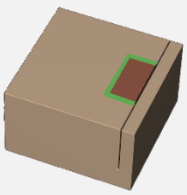
Overview of available MAN models

Create custom cases using one of the available models.

Model name	Model image	Description	Segments	Tags	Origin
channel_model_02		• Channel shaped target • Leeway thickness 0.2 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN

Model name	Model image	Description	Segments	Tags	Origin
channel_model_04		• Channel shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN
channel_model_08		• Channel shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN
circle_model_02		• Circle shaped target • Leeway thickness 0.2 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN
circle_model_04		• Circle shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN
circle_model_08		• Circle shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN
sloped_channel_model_02		• Sloped channel shaped target • Leeway thickness 0.2 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN

Model name	Model image	Description	Segments	Tags	Origin
sloped_channel_model_04		• Sloped channel shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN
sloped_channel_model_08		• Sloped channel shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN
cross_model_02		• Cross shaped target • Leeway thickness 0.2 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN
cross_model_04		• Cross shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN
cross_model_08		• Cross shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN
hollow_circle_model_02		• Donut shaped target • Leeway thickness 0.2 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN

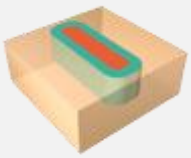
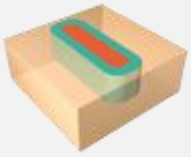
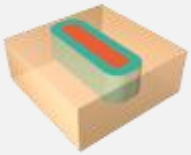
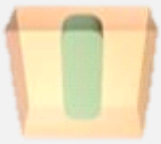
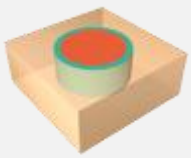
Model name	Model image	Description	Segments	Tags	Origin
hollow_circle_model_04		• Donut shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN
hollow_circle_lesson_08		• Donut shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN
assem_block_model		• Cube shaped target on edge • Leeway thickness 0.2 mm • Target depth 0.75 mm	Target Leeway-bottom/sides Container-bottom/sides	MAN	NISSIN
cone 12 deg		• Cylinder with taper shaped target 12 degrees (2x6), with shoulder (at line) • Leeway thickness 0.2 mm	Target Leeway Container	MAN CRW	NISSIN
skewed cylinder		• Cylinder in block under angle • Target Ø 1mm • Leeway thickness 0.2 mm	Target Leeway Container	MAN END	NISSIN
0.2mm block with wall		• Cube shaped target on edge, with side wall • Leeway thickness 0.2 mm	Target Leeway Container	MAN CAR	NISSIN
0.4mm block with wall		• Cube shaped target on edge, with side wall • Leeway thickness 0.4 mm	Target Leeway Container	MAN CAR	NISSIN

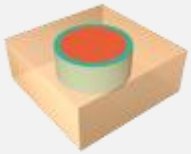
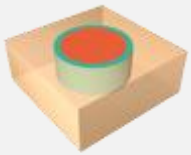
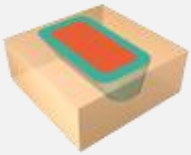
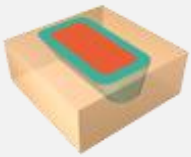
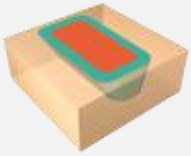
Overview of predefined MAN cases

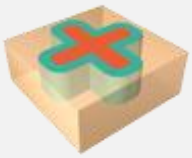
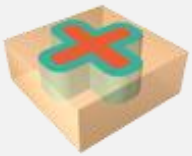
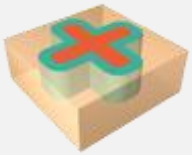
This is an overview of the predefined cases that come with the Simodont Dental Trainer. These cases can be used straight away in an educational program, or a copy of the case can be created and customized to the users' own preferences.

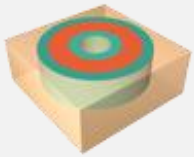
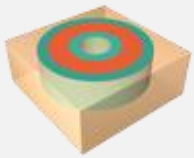
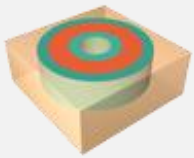
Target model cases

Models created by Nissin Dental Products Europe BV, cases designed by ACTA.

Case no.	Model Description		Case Settings
MAN001001		• Channel shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	• Difficulty: Level 1 • Required target removal: 60% • Direct vision • Mirror: not available • Model movement: limited
MAN001002		• Channel shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	• Difficulty: Level 2 • Required target removal: 75% • Direct vision • Mirror: not available • Model movement: limited
MAN001003		• Channel shaped target • Leeway thickness 0.2 mm • Target depth 1.5 mm	• Difficulty: Level 3 • Required target removal: 90% • Direct vision • Mirror: not available • Model movement: limited
MAN001004		• Channel shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	• Difficulty: Level 4 • Required target removal: 60% • Indirect vision • Mirror: available • Model movement: limited
MAN001005		• Channel shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	• Difficulty: Level 5 • Required target removal: 80% • Indirect vision • Mirror: available • Model movement: limited
MAN001011		• Circle shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	• Difficulty: Level 1 • Required target removal: 60% • Direct vision • Mirror: not available • Model movement: limited

Case no.	Model Description		Case Settings
MAN001012		• Circle shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	• Difficulty: Level 2 • Required target removal: 75% • Direct vision • Mirror: not available • Model movement: limited
MAN001013		• Circle shaped target • Leeway thickness 0.2 mm • Target depth 1.5 mm	• Difficulty: Level 3 • Required target removal: 90% • Direct vision • Mirror: not available • Model movement: limited
MAN001014		• Circle shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	• Difficulty: Level 4 • Required target removal: 60% • Indirect vision • Mirror: available • Model movement: limited
MAN001015		• Circle shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	• Difficulty: Level 5 • Required target removal: 80% • Indirect vision • Mirror: available • Model movement: limited
MAN001021		• Sloped channel shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	• Difficulty: Level 1 • Required target removal: 60% • Direct vision • Mirror: not available • Model movement: limited
MAN001022		• Sloped channel shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	• Difficulty: Level 2 • Required target removal: 75% • Direct vision • Mirror: not available • Model movement: limited
MAN001023		• Sloped channel shaped target • Leeway thickness 0.2 mm • Target depth 1.5 mm	• Difficulty: Level 3 • Required target removal: 90% • Direct vision • Mirror: not available • Model movement: limited

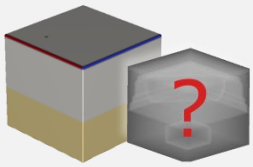
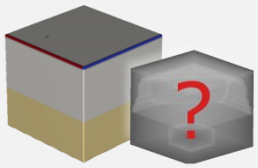
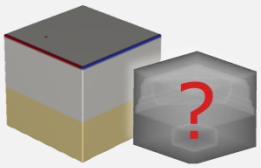
Case no.	Model Description		Case Settings
MAN001024		• Sloped channel shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	• Difficulty: Level 4 • Required target removal: 60% • Indirect vision • Mirror: available • Model movement: limited
MAN001025		• Sloped channel shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	• Difficulty: Level 5 • Required target removal: 80% • Indirect vision • Mirror: available • Model movement: limited
MAN001031		• Cross shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	• Difficulty: Level 1 • Required target removal: 60% • Direct vision • Mirror: not available • Model movement: limited
MAN001032		• Cross shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	• Difficulty: Level 2 • Required target removal: 75% • Direct vision • Mirror: not available • Model movement: limited
MAN001033		• Cross shaped target • Leeway thickness 0.2 mm • Target depth 1.5 mm	• Difficulty: Level 3 • Required target removal: 90% • Direct vision • Mirror: not available • Model movement: limited
MAN001034		• Cross shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	• Difficulty: Level 4 • Required target removal: 60% • Indirect vision • Mirror: available • Model movement: limited
MAN001035		• Cross shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	• Difficulty: Level 5 • Required target removal: 80% • Indirect vision • Mirror: available • Model movement: limited

Case no.	Model Description		Case Settings
MAN001041		• Donut shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	• Difficulty: Level 1 • Required target removal: 60% • Direct vision • Mirror: not available • Model movement: limited
MAN001042		• Donut shaped target • Leeway thickness 0.4 mm • Target depth 1.5 mm	• Difficulty: Level 2 • Required target removal: 75% • Direct vision • Mirror: not available • Model movement: limited
MAN001043		• Donut shaped target • Leeway thickness 0.2 mm • Target depth 1.5 mm	• Difficulty: Level 3 • Required target removal: 90% • Direct vision • Mirror: not available • Model movement: limited
MAN001044		• Donut shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	• Difficulty: Level 4 • Required target removal: 60% • Indirect vision • Mirror: available • Model movement: limited
MAN001045		• Donut shaped target • Leeway thickness 0.8 mm • Target depth 1.5 mm	• Difficulty: Level 5 • Required target removal: 80% • Indirect vision • Mirror: available • Model movement: limited
MAN001051		• Cube shaped target on edge • Leeway thickness 0.4 mm • Target depth 0.75 mm	• Difficulty: Level 1 • Required target removal: 60% • Direct vision • Mirror: not available • Model movement: limited
MAN001052		• Cube shaped target on edge • Leeway thickness 0.4 mm • Target depth 0.75 mm	• Difficulty: Level 2 • Required target removal: 75% • Direct vision • Mirror: not available • Model movement: limited

Case no.	Model Description		Case Settings
MAN001053		• Cube shaped target on edge • Leeway thickness 0.2 mm • Target depth 0.75 mm	• Difficulty: Level 3 • Required target removal: 90% • Direct vision • Mirror: not available • Model movement: limited
MAN001054		• Cube shaped target on edge • Leeway thickness 0.8 mm • Target depth 0.75 mm	• Difficulty: Level 4 • Required target removal: 60% • Indirect vision • Mirror: available • Model movement: limited
MAN001055		• Cube shaped target on edge • Leeway thickness 0.8 mm • Target depth 0.75 mm	• Difficulty: Level 5 • Required target removal: 80% • Indirect vision • Mirror: available • Model movement: limited

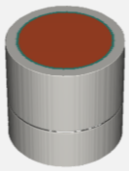
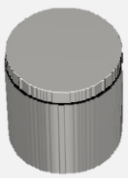
Cariology specific cases

Models and cases designed and created by Leeds School of Dentistry, UK.

Case no.	Model Description		Case Settings
MAN002001 MAN002002		• Hidden pool of caries under enamel • Caries haptically detectable, and visibly detectable	• Difficulty: Level 1 • Required target removal: 95% • Direct vision • Model movement: free • Zoom: factor 2.5 and fixed
MAN002003 MAN002004 MAN002005 MAN002006 MAN002007 MAN002008 MAN002009		• Hidden pool of caries under enamel • Caries haptically detectable, but visibly not detectable	• Difficulty: Level 2 • Required target removal: 95% • Direct vision • Model movement: free • Zoom: factor 1.5 and free
MAN002010		• Hidden pool of caries under enamel • Caries haptically detectable, but visibly not detectable	• Difficulty: Level 3 • Required target removal: 95% • Direct vision • Model movement: free • Zoom: factor 2.6 and fixed • No visible statistical feedback

Crown specific cases

Models and cases designed and created by Leeds School of Dentistry, UK.

Case no.	Model Description		Case Settings
MAN003001		• Cylinder with taper shaped target 6 degrees (2x3), with shoulder (at line) • Leeway thickness 0.4 mm	• Direct vision
MAN003002		• Cylinder with taper shaped target 6 degrees (2x3), with shoulder (at line) • Leeway thickness 0.4 mm	• Indirect vision

Endodontic specific cases

Models and cases designed and created by Leeds School of Dentistry, UK.

Case no.	Model Description		Case Settings
MAN004001		• Thin target to practice exact drilling in the direction of the pulp chamber	• Direct vision • Difficulty level: Easy
MAN004002		• Thin target to practice exact drilling in the direction of the pulp chamber	• Indirect vision • Difficulty level: Easy
MAN004003		• Thin target to practice exact drilling in the direction of the pulp chamber	• Direct vision • Difficulty level: Moderate
MAN004004		• Thin target to practice exact drilling in the direction of the pulp chamber	• Indirect vision • Difficulty level: Moderate
MAN004005		• Thin target to practice exact drilling in the direction of the pulp chamber	• Direct vision • Difficulty level: Challenging
MAN004006		• Thin target to practice exact drilling in the direction of the pulp chamber	• Indirect vision • Difficulty level: Challenging

Available MAN instruments

The manual dexterity cases are provided with an instrument set that is suitable for the exercise. However, it is possible to use any of the available instruments from the instrument library for these exercises.

Please refer to the Instruments chapter of this document to get a complete overview of all available instruments.

Note! All instruments in the instrument library are usable in any of the procedures, with exclusion of the Dental Anatomy procedure.

TARGET IN TOOTH

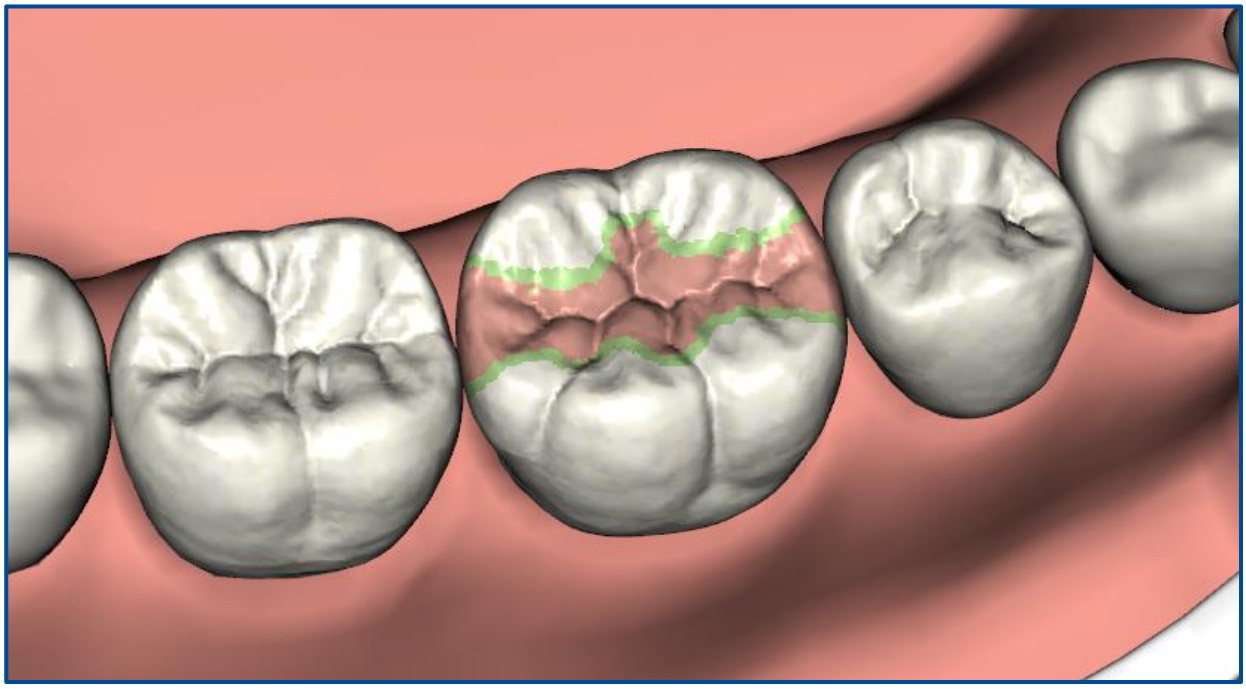
# unique models:	1 (12)
# unique teeth:	12
# predefined cases:	12

Create the synergy between physical and virtual training

Introduction

The Target in Tooth exercises are the next step after the Manual Dexterity exercises, and before starting training on real simulated patient cases. Beginning students can get familiar with the specifics and theory behind the design of a variety of preparations. Ideal preparations are made visible in a tooth model.

Like in the manual dexterity exercises, it is the goal to remove a target volume while removing as little as possible from the surrounding leeway (0.4mm safety margin). This will, when executed correctly, eventually reveal the ideal preparation for the intended preparation.



Special TT features

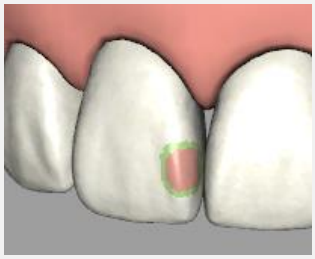
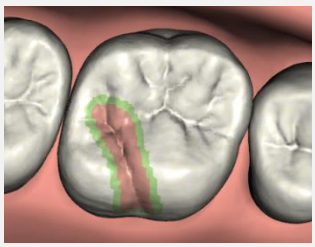
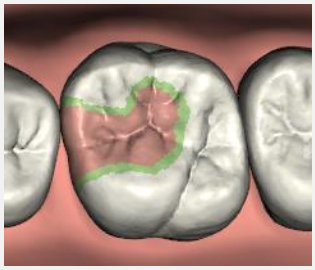
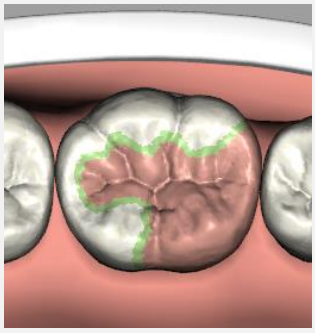
- Visual color feedback of ideal prep and leeway area in the tooth (toggle)
- Real time feedback on segment statistics (% removed per segment)
- Real time feedback of damage to adjacent teeth
- Objective scoring
- Variety of cariology and crown exercises
- Direct and indirect vision (mirror) exercises

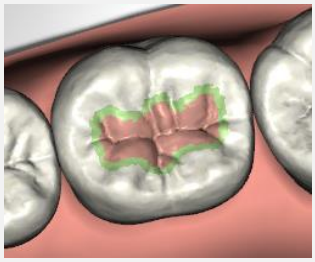
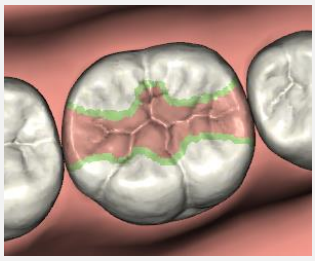
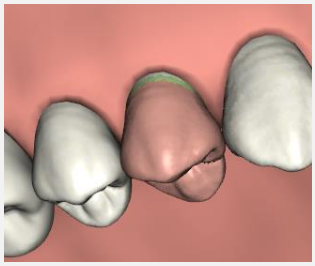
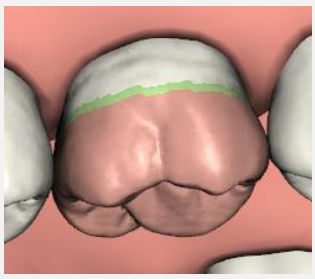
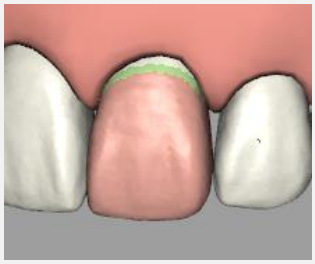
Overview of available TT models

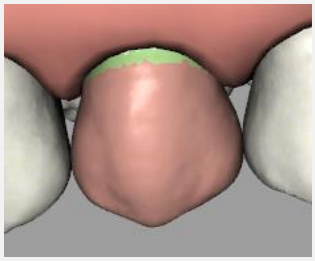
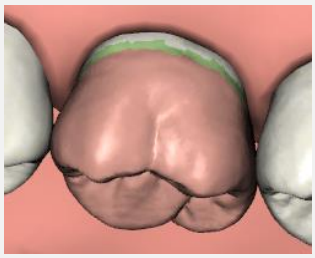
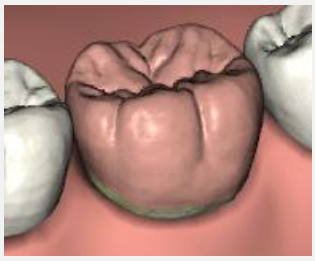
The Target in Tooth concept is only available in the Nissin PRO700 model.

Overview of predefined CAR and CRW TT cases

This is an overview of the predefined Target in tooth cases that come with the Simodont Dental Trainer. These cases can be used straight away in an educational program, or a copy of the case can be created and customized to the users' own preferences.

Case no.	Preview	Treatment	Assessment	Tags	Origin
Cariology					
TT CAR 11-01-AB		Class III – mesial on tooth #11	Real time segment statistics on target and leeway zones, with performance score. Damage to adjacent teeth.	CAR	NISSIN
TT CAR 16-01-AH		Occlusal, OL on tooth #16	Real time segment statistics on target and leeway zones, with performance score. Damage to adjacent teeth.	CAR	NISSIN
TT CAR 26-01-AJ		MO On tooth #26	Real time segment statistics on target and leeway zones, with performance score. Damage to adjacent teeth.	CAR	NISSIN
TT CAR 36-01-AT		MOL On tooth #36	Real time segment statistics on target and leeway zones, with performance score. Damage to adjacent teeth.	CAR	NISSIN

Case no.	Preview	Treatment	Assessment	Tags	Origin
TT CAR 37-01-AH		Class I prep On tooth #37	Real time segment statistics on target and leeway zones, with performance score. Damage to adjacent teeth.	CAR	NISSIN
TT CAR 46-01-AL		MOD prep On tooth #46	Real time segment statistics on target and leeway zones, with performance score. Damage to adjacent teeth.	CAR	NISSIN
Crown					
TT CRW 14-04-AA		Crown shoulder margin On tooth #14	Real time segment statistics on target and leeway zones, with performance score. Damage to adjacent teeth.	CRW	NISSIN
TT CRW 16-01-AA		Crown On tooth #16	Real time segment statistics on target and leeway zones, with performance score. Damage to adjacent teeth.	CRW	NISSIN
TT CRW 21-01-AA		Crown shoulder margin On tooth #21	Real time segment statistics on target and leeway zones, with performance score. Damage to adjacent teeth.	CRW	NISSIN

Case no.	Preview	Treatment	Assessment	Tags	Origin
TT CRW 25-01-AA		Crown On tooth #25	Real time segment statistics on target and leeway zones, with performance score. Damage to adjacent teeth.	CRW	NISSIN
TT CRW 26-01-AA		Crown On tooth # 26	Real time segment statistics on target and leeway zones, with performance score. Damage to adjacent teeth.	CRW	NISSIN
TT CRW 46-01-AA		Crown On tooth #46	Real time segment statistics on target and leeway zones, with performance score. Damage to adjacent teeth.	CRW	NISSIN

CARIOLOGY

# unique models:	21
# unique teeth:	174
# predefined cases:	12

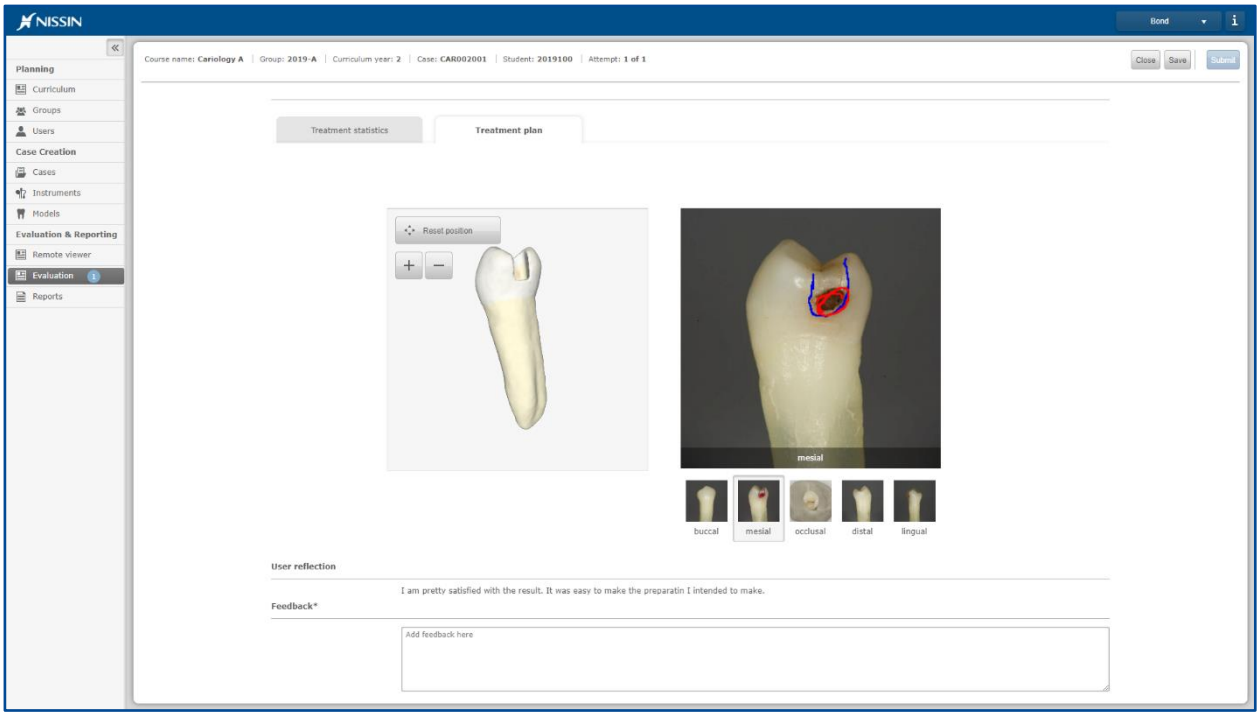
Create your own custom cases
based on one of the available models

Introduction

Caries preparations can be practiced on a large range of 3D models made from high-resolution micro-CT scans of extracted teeth. These models contain the different dental tissues (enamel, dentine, pulp, caries, amalgam, composite) and the anatomy of the scanned tooth. The tissue boundaries are exactly rendered.

The available caries cases range from mild to extremely affected and are suitable for either standard preparations or minimal invasive preparations.

By experiencing real world anatomy and pathology, students can understand and train for the challenges that caries cases may provide before going to the clinic.



Special CAR features

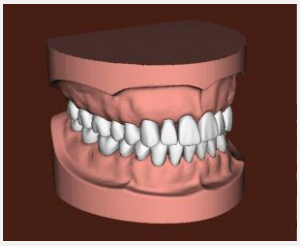
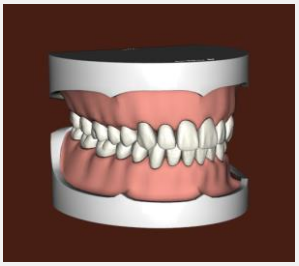
In addition to the generic features that the Simodont offers there are various procedure specific features:

- Side by side evaluation of preparation and treatment plan
- Caries detection (caries detection dye)
- Automatic assessment of class I preparations
- Red pulp chamber indicates pulp chamber perforation

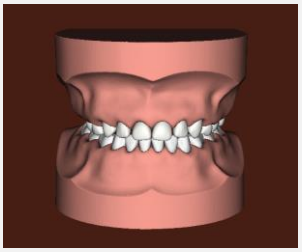
Overview of available CAR models

Create custom cases using one of the available models.

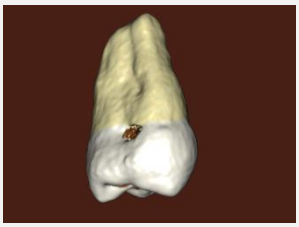
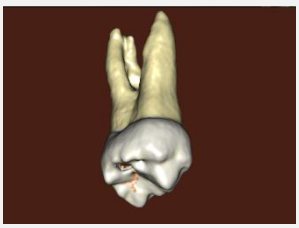
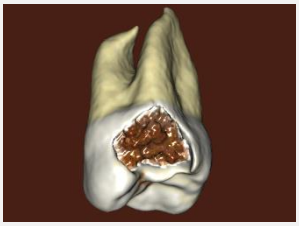
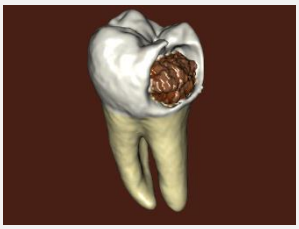
NISSIN models – Permanent dentition

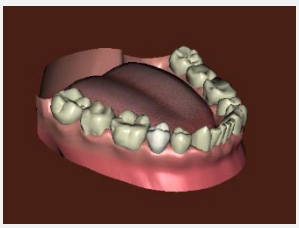
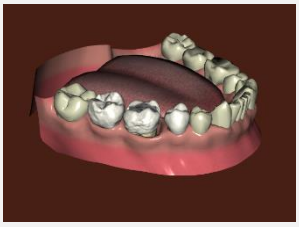
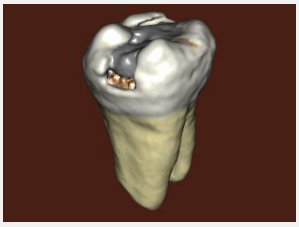
Model name	Model image	Teeth	Description	Segments	Tags	Origin
Nissin-PRO200-MC		11-18 21-28 31-38 41-48	• All teeth from quadrant 1, 2, 3 and 4 • No tissue morphology – uniform hardness and color of enamel throughout the whole tooth	Enamel	BRG CAR CRW	NISSIN
Nissin-PRO500-MC		11-17 21-27 31-37 41-47	• All teeth from quadrant 1, 2, 3 and 4 • No tissue morphology – uniform hardness and color of enamel throughout the whole tooth	Enamel	BRG CAR CRW	NISSIN
Nissin PRO700		11-18 21-28 31-38 41-48	• The PRO700 A27 series has caries teeth for positions 11, 13, 14, 16, 22, 35, 36, 46. • All other teeth are available as sound single and or double layered teeth. (A5 / A20) • Please refer to the list of predefined caries cases for the complete overview.	Enamel Dentin Caries	CAR	NISSIN

NISSIN models – Primary dentition

Model name	Model image	Teeth	Description	Segments	Tags	Origin
Nissin PDI200		51-55 61-65 71-75 81-85 + 16, 26, 36, 46	• Pediatric jaw model representing a 6-year-old dentition. • Mixed dentition with primary teeth and permanent teeth. (permanent teeth are #16, #26, #36, #46) • Suited for abutment and cavity preparation.	Enamel	PED	NISSIN

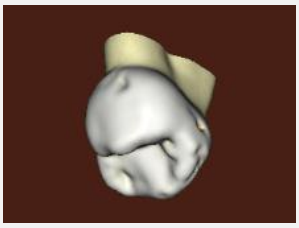
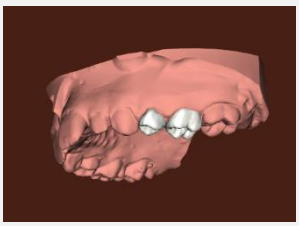
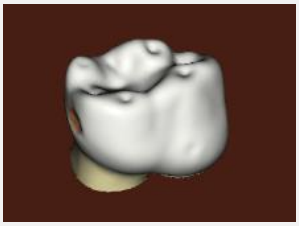
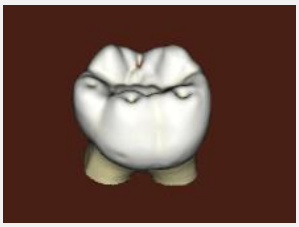
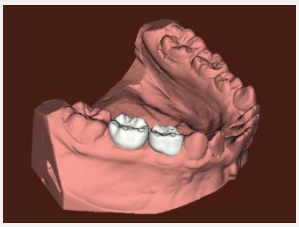
Natural tooth models – Permanent dentition

Model name	Model image	Teeth	Description	Segments	Tags	Origin
17_02_CAR2D_S_STCatA_ACTA_01		17	• Upper right second molar • Caries class II into dentin • Solitary tooth model	Enamel Dentin Caries	CAR II	ACTA
27_02_CAR1D_S_STCatA_ACTA_01		27	• Upper left second molar • Caries class I into dentin • Solitary tooth model	Enamel Dentin Caries	CAR I	ACTA
28_01_CAR2D_S_STCatA_ACTA_01		28	• Upper left third molar • Caries class II into dentin • Solitary tooth model	Enamel Dentin Caries	CAR II	ACTA
37_01_CAR2DP_S_STCatA_ACTA_01		37	• Lower left second molar • Caries class II into dentin and pulp • Solitary tooth model	Enamel Dentin Caries	CAR II	ACTA
43_02_CAR5D_S_STCatA_ACTA_01		43	• Lower right canine • Caries class V into dentin • Solitary tooth model	Enamel Dentin Caries	CAR V	ACTA
45_01_CAR2D_S_STCatA_ACTA_01		45	• Lower right second premolar • Caries class II into dentin • Solitary tooth model	Enamel Dentin Caries	CAR II	ACTA

Model name	Model image	Teeth	Description	Segments	Tags	Origin
45_01_CAR2D_J_STCatA_ACTA_01		45	• Lower right second premolar • Caries class II into dentin • Placed in jaw • Main tooth 45, other teeth in model are non-drillable	Enamel Dentin Caries	CAR II	ACTA
46_02_CRW_CAR2D_AM_J_STCatA_ACTA_01		45, 46, 47	• Lower right first molar • Caries class II into dentin under amalgam • Placed in jaw • Main tooth 46, adjacent teeth (45, 47) also drillable	Enamel Dentin Caries Amalgam*	CAR II CRW	ACTA
47_01_CAR2D_AM_S_STCatA_ACTA_01		47	• Lower right molar • Caries class II into dentin under amalgam • Solitary tooth model	Enamel Dentin Caries Amalgam*	CAR II	ACTA
47_02_CAR2D_S_STCatA_ACTA_01		47	• Lower right molar • Caries class II into dentin • Solitary tooth model	Enamel Dentin Caries	CAR II	ACTA
18_28_01_MC_J_STCatA_DLI_01		11-18 21-28	• All teeth from quadrant 1 and 2 • Sound teeth • Plugs available for all positions to close the gaps in bridge cases • *Remake of the 18-23_01_SND_J_STCatA_LDI_01 model*	Enamel Dentin	CAR BRG CRW END	LDI

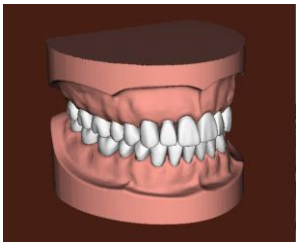
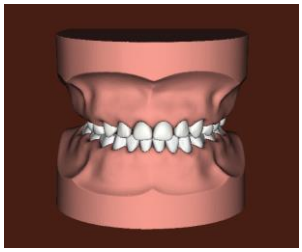
* the amalgam is haptically simulated but not included in the removal statistics.

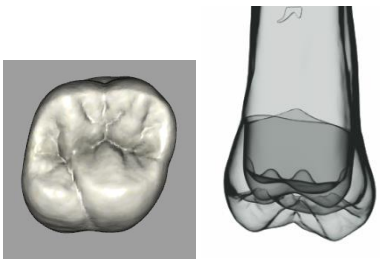
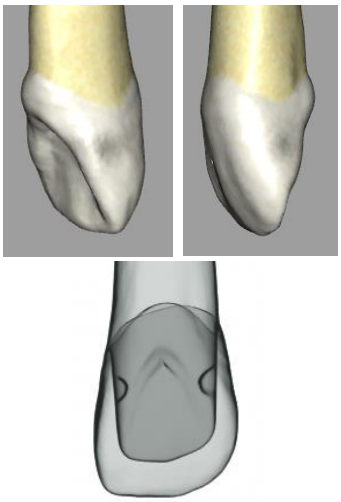
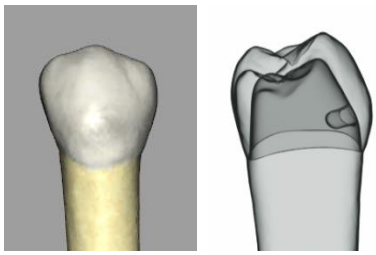
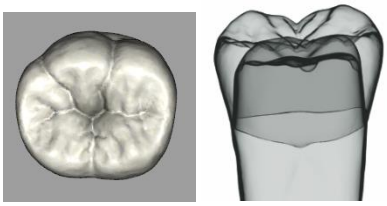
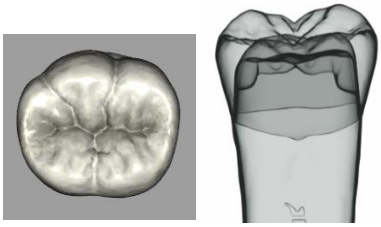
Natural tooth models – Primary dentition

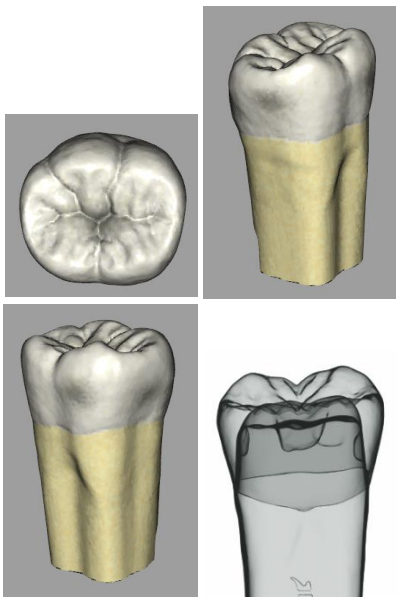
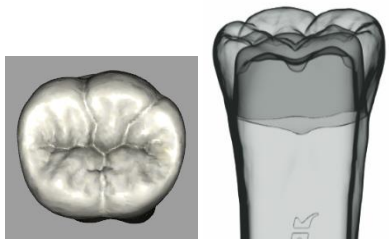
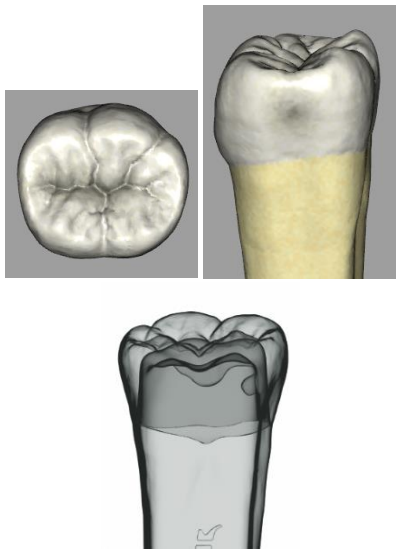
Model name	Model image	Teeth	Description	Segments	Tags	Origin
64_01_CAR2D_S_STCatB_LDI_01		64	• Upper left first molar • Caries class II into dentin • High-definition pulp chamber and root canals • Solitary tooth model	Enamel Dentin Caries	CAR II END	LDI
65_01_CAR2D_S_STCatB_LDI_01		65	• Upper left second molar • Caries class II into dentin • High-definition pulp chamber and root canals • Solitary tooth model	Enamel Dentin Caries	CAR II END	LDI
64_65_01_CAR2D_S_STCatB_LDI_01 64 and 65 in a jaw		64, 65	• Upper left first and second molars • Tooth 64 has caries class II in to dentin • Tooth 65 has caries class II in to dentin • High-definition pulp chamber and root canals • Placed in jaw, other teeth are non-drillable	Enamel Dentin Caries	CAR II END	LDI
84_01_CAR2D_S_STCatB_LDI_01		84	• Lower left first molar • Caries class II into dentin • High-definition pulp chamber and root canals • Solitary tooth model	Enamel Dentin Caries	CAR II END	LDI
85_01_CAR1D_S_STCatB_LDI_01		85	• Lower left second molar • Caries class I into dentin • High-definition pulp chamber and root canals • Solitary tooth model	Enamel Dentin Caries	CAR I END	LDI
84_85_01_CAR_J_STCatB_LDI_01		84, 85	• Lower right first and second molar • Tooth 84 has caries class II in to dentin • Tooth 85 has caries class I in to dentin • High-definition pulp chamber and root canals • Placed in jaw, other teeth are non-drillable	Enamel Dentin Caries	CAR I CAR II END	LDI

Overview of predefined CAR cases

CAR cases with NISSIN models

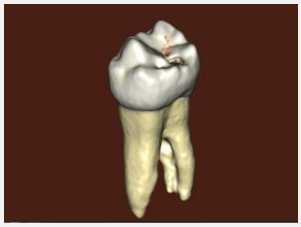
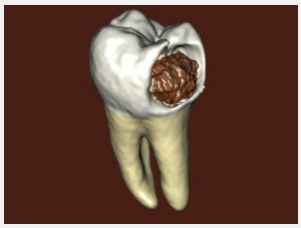
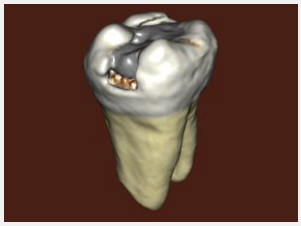
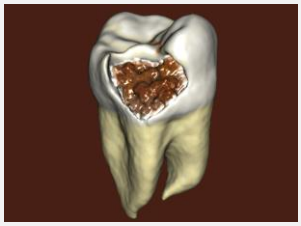
Case name	Image	Treatment	Assessment
PRO200-36 *Demo case* *Model:* *PRO200*		Class I prep on sound single layered tooth #36	Visual inspection tools
PDI200-61 *Demo case* *Model:* *PDI200*		Class III prep on sound single layered tooth #61	Visual inspection tools
CAR P7-11-01	 	Class III Distal Caries On multi-layered tooth #11 NISSIN PRO700	Segment statistics, Damage to adjacent teeth
CAR P7-13-01	 	Class II Distal Caries On multi-layered tooth #13 NISSIN PRO700	Segment statistics, Damage to adjacent teeth
CAR P7-14-01	 	DO Caries On multi-layered tooth #14 NISSIN PRO700	Segment statistics, Damage to adjacent teeth

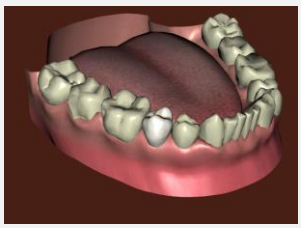
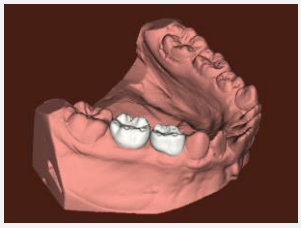
Case name	Image	Treatment	Assessment
CAR P7-16-01		Class I – 4 Caries places On multi-layered tooth #16 NISSIN PRO700	Segment statistics, Damage to adjacent teeth
CAR P7-22-01		Class III Mesial and Distal Caries On multi-layered tooth #22 NISSIN PRO700	Segment statistics, Damage to adjacent teeth
CAR P7-35-01		Class V Caries On multi-layered tooth #35 NISSIN PRO700	Segment statistics, Damage to adjacent teeth
CAR P7-36-01		Class I 3 Caries Places On multi-layered tooth #36 NISSIN PRO700	Segment statistics, Damage to adjacent teeth
CAR P7-36-02		MOD Heavy Caries On multi-layered tooth #36 NISSIN PRO700	Segment statistics, Damage to adjacent teeth

Case name	Image	Treatment	Assessment
CAR P7-36-03		MODL Caries On multi-layered tooth #36 NISSIN PRO700	Segment statistics, Damage to adjacent teeth
CAR P7-46-01		MOD Caries On multi-layered tooth #46 NISSIN PRO700	Segment statistics, Damage to adjacent teeth
CAR P7-46-02		MO Caries On multi-layered tooth #46 NISSIN PRO700	Segment statistics, Damage to adjacent teeth
There is a series of Target in Tooth - Caries cases available with the PRO700 model. Please refer to chapter “Target in Tooth” for more information.			

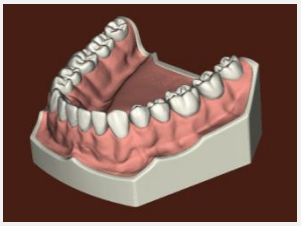
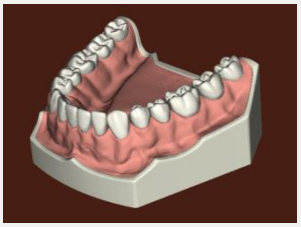
CAR cases with natural tooth models

This is an overview of the predefined cases that come with the Simodont Dental Trainer. These cases can be used straight away in an educational program, or a copy of the case can be created and customized to the users' own preferences.

Case no.	Patient		Model	Treatment	Assessment	Origin
CAR002001	Male 35 years Tooth: 45			Class II caries into dentin	Assessment against treatment plan	ACTA
CAR002002	Male 20 years Tooth:27			Class I, occlusal Statistics caries into dentin	Assessment against treatment plan	ACTA
CAR002003	Female 28 years Tooth:37			Class II caries into dentin and pulp tissue	Assessment against treatment plan	ACTA
CAR002004	Male 57 years Tooth: 47			Class II caries into dentin under amalgam restoration	Assessment against treatment plan	ACTA
CAR002005	Male 45 years Tooth: 28			Class II caries into dentin	Assessment against treatment plan	ACTA
CAR002006	Male 49 years Tooth:43			Class V, gingival-facial caries into dentin	Assessment against treatment plan	ACTA

Case no.	Patient		Model	Treatment	Assessment	Origin
CAR003001	Male 35 years Tooth: 45			Class II caries into dentin	Assessment against treatment plan	ACTA
CAR006084	Adrian Hall Male 7 years Tooth: 84			Class II, occlusal-distal, interproximal amalgam prep on #84	Rubric Assessment	Model: LDI Case: NISSIN

CAR cases with Frasaco models

Case no.	Patient		Model	Treatment	Assessment	Origin
CAR006036	John Smith Male 35 years Tooth: 36			Class I, occlusal amalgam prep on tooth #36 Frasaco AG3	Objective Assessment against ideal prep	Model: Frasaco Case: NISSIN
CAR006135	Susan Jones Female 20 years Tooth: 35			Class II, oclusal-mesial amalgam prep on tooth #35 Frasaco AG3	Rubric Assessment	Model: Frasaco Case: NISSIN

Available CAR instruments

For the cariology (operative dentistry) procedure many different instruments are available. This is a variation of excavating burs, hand excavators, hand probes, cavity preparation burs (round, flat end cylinder, inverted cone, pear etcetera) and finishing burs.

Please refer to the Instruments chapter of this document to get a complete overview of all available instruments.

Note! All instruments in the instrument library are usable in any of the procedures, with exclusion of the Dental Anatomy procedure.

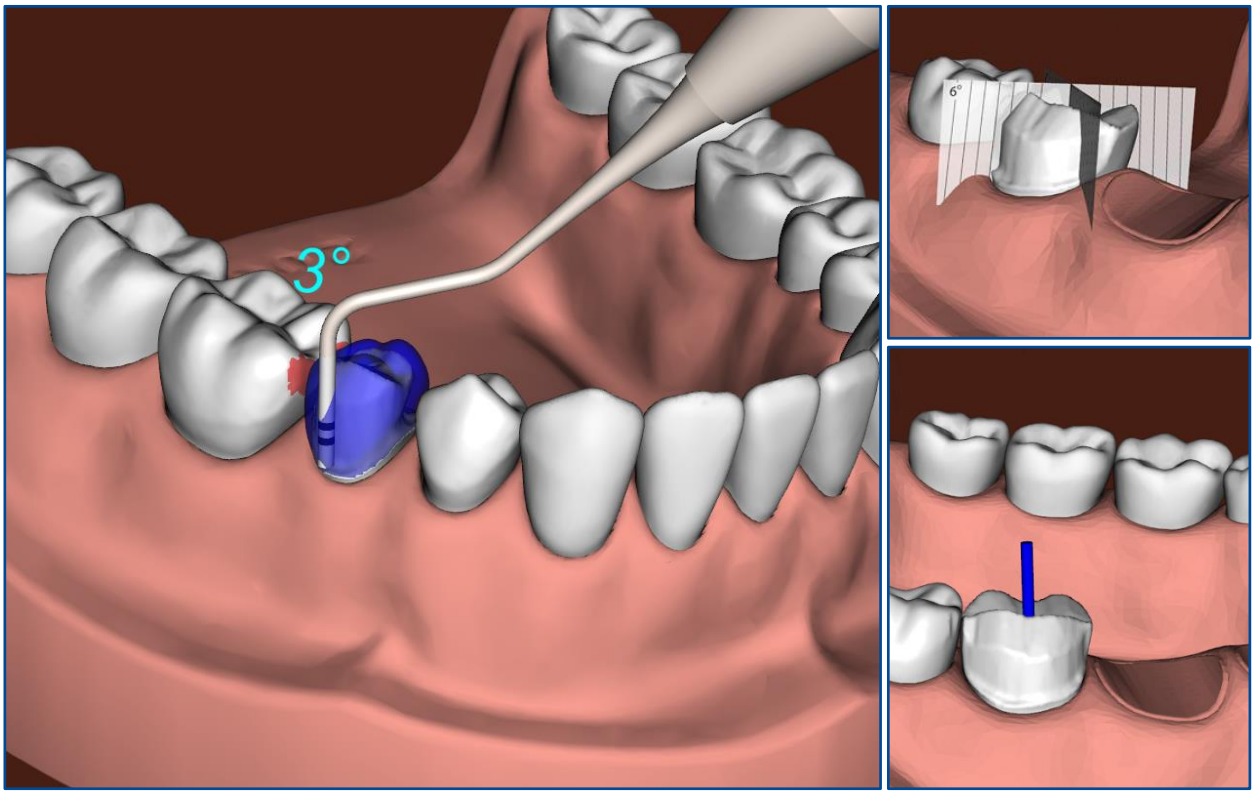
CROWN AND BRIDGE

# unique models:	10
# unique teeth:	200+
# predefined cases:	6

Create your own custom cases
based on one of the available models

Introduction

Crown and bridge preparations can be trained on single teeth or in full jaw models. The Simodont offers a variety of virtual tools to assess the crown and bridge preparation.



Special CRW and BRG features

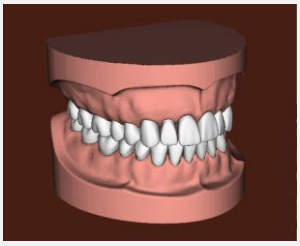
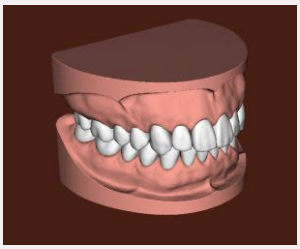
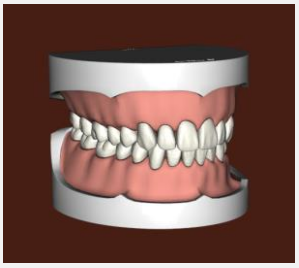
- Show the tooth's anatomical long axis
- Show the damage on adjacent teeth
- Measure wall angles (glass grids and gauges) against the tooth's long axis
- Measure reduction using prep gauges
- Test occlusion with the antagonist
- Use plugs to close the openings in the jaw

Overview of available CRW and BRG models

Custom cases for crown and bridge procedures can be created using any of the available models.

The following models are very suitable for building crown and bridge cases. Any possible tooth configuration can be chosen for designing a case when using one of the following models.

NISSIN models

Model name	Model image	Teeth	Description	Segments	Tags	Origin
Nissin-PRO200-MC		11-18 21-28 31-38 41-48	• All teeth from quadrant 1, 2, 3 and 4 • No tissue morphology – uniform hardness and color of enamel throughout the whole tooth • Plugs available for all positions to close the gaps in bridge cases	Enamel	BRG CAR CRW	NISSIN
Nissin-PRO500-MC		11-17 21-27 31-37 41-47	• All teeth from quadrant 1, 2, 3 and 4 • No tissue morphology – uniform hardness and color of enamel throughout the whole tooth • Plugs available for all positions to close the gaps in bridge cases	Enamel	BRG CAR CRW	NISSIN
Nissin PRO700		11-18 21-28 31-38 41-48	• All teeth from quadrant 1, 2, 3 and 4 • Multiple tooth series available, single layer and multi-layer teeth with natural tooth segments. • Sound single layered teeth (A5) • Sound double layered teeth (A20) • Caries teeth (A27) • Endo teeth (B22) • Plugs available for all positions to close the gaps in bridge cases • Target in tooth models based on A21/A25 series.	Enamel Dentin Caries Pulp Chamber*	BRG CAR CRW END	NISSIN

* the pulp chamber is haptically simulated but not included in the removal statistics.

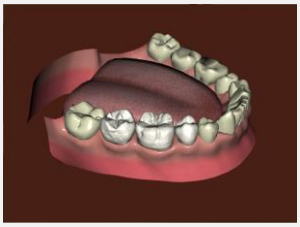
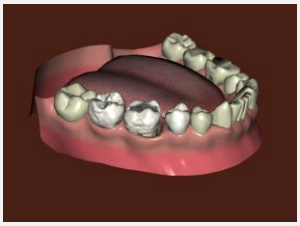
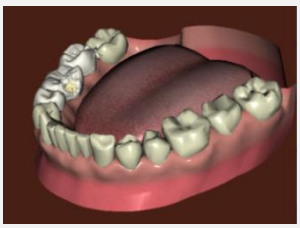
Natural tooth models – Permanent dentition

Model name	Model image	Teeth	Description	Segments	Tags	Origin
18_28_01_MC_J_STCatA_DLI_01		11-18 21-28	• All teeth from quadrant 1 and 2 • Sound teeth • Plugs available for all positions to close the gaps in bridge cases • *Remake of the 18-23_01_SND_J_STCatA_LDI_01 model*	Enamel Dentin	CAR BRG CRW END	LDI

Overview of available CRW models

The following models are specifically suitable for crown cases (not for bridge cases).

Natural tooth models – Permanent dentition

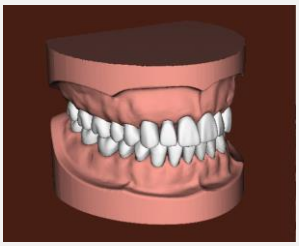
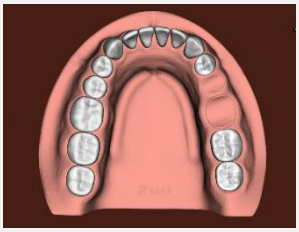
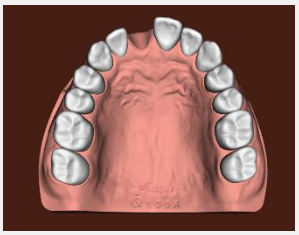
Model name	Model image	Teeth	Description	Segments	Tags	Origin
46_01_CRW_SND_J_STCatA_ACTA_01		45, 46, 47	• Lower right first molar • Sound • Placed in jaw • Main tooth 46, adjacent teeth (45, 47) also drillable	Enamel Dentin	CRW SND	ACTA
46_02_CRW_CAR2D_AM_J_STCatA_ACTA_01		45, 46, 47	• Lower right first molar • Caries class II into dentin under amalgam • Placed in jaw • Main tooth 46, adjacent teeth (45, 47) also drillable	Enamel Dentin Caries Amalgam*	CAR II CRW	ACTA
46_03_CRW_FC_J_STCatA_ACTA_01		45, 46, 47	• Lower right molar • Fractured mesiolingual cusp • Placed in jaw • Main tooth 46, adjacent teeth (45, 47) also drillable	Enamel Dentin	CRW	ACTA

Model name	Model image	Teeth	Description	Segments	Tags	Origin
FJ_01_SND_ STCatA_NISSIN_ 01		11-17 21-27 31-37 41-47	• All teeth from upper and lower jaw in one model *Please note that the tooth surface definition in this model is not as high as in other models.*	Enamel Dentin	SND CRW	NISSIN

* the amalgam is haptically simulated but not included in the removal statistics.

Overview of predefined CRW and BRG cases

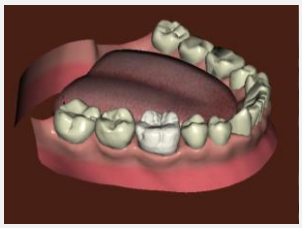
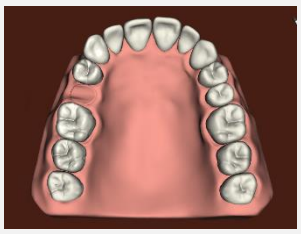
CRW and BRG cases with NISSIN models

Case no.	Patient	Model	Treatment	Assessment	Origin
PRO200-45 Crown	*No patient*		Crown prep on sound #45 NISSIN PRO200	Visual inspection tools	NISSIN
PRO200-4447 Bridge	*No patient*		Bridge prep on #44 and #47 NISSIN PRO200	Visual inspection tools	NISSIN
PRO500-1221 Bridge	*No patient*		Bridge prep on #12 and #21 NISSIN PRO500	Visual inspection tools	NISSIN

There is a series of Target in Tooth - Crown cases available with the PRO700 model. Please refer to chapter “Target in Tooth” for more information.

CRW and BRG cases with natural tooth models

This is an overview of the predefined cases that come with the Simodont Dental Trainer. These cases can be used straight away in an educational program, or a copy of the case can be created and customized to the users' own preferences.

Case no.	Patient		Model	Treatment	Assessment	Origin
CRW002001	Male 46 years Tooth: 46			Crown prep on sound #46	Visual inspection tools	ACTA
BRG011416 Bridge	*No patient*			Bridge prep on #14 and #16	Visual inspection tools	LDI / NISSIN

Available CRW instruments

For the crown procedure many different instruments are implemented. This is a variation of preparation and finishing burs (round, flat and beveled ended cylinder burs, round and flat ended taper burs, flames and needles). In addition, there are preparation gauges and virtual glass grids available that help assessment of the preparation (depth and angle).

Please refer to the Instruments chapter of this document to get a complete overview of all available instruments.

Note! All instruments in the instrument library are usable in any of the procedures, with exclusion of the Dental Anatomy procedure.

PATIENT SPECIFIC

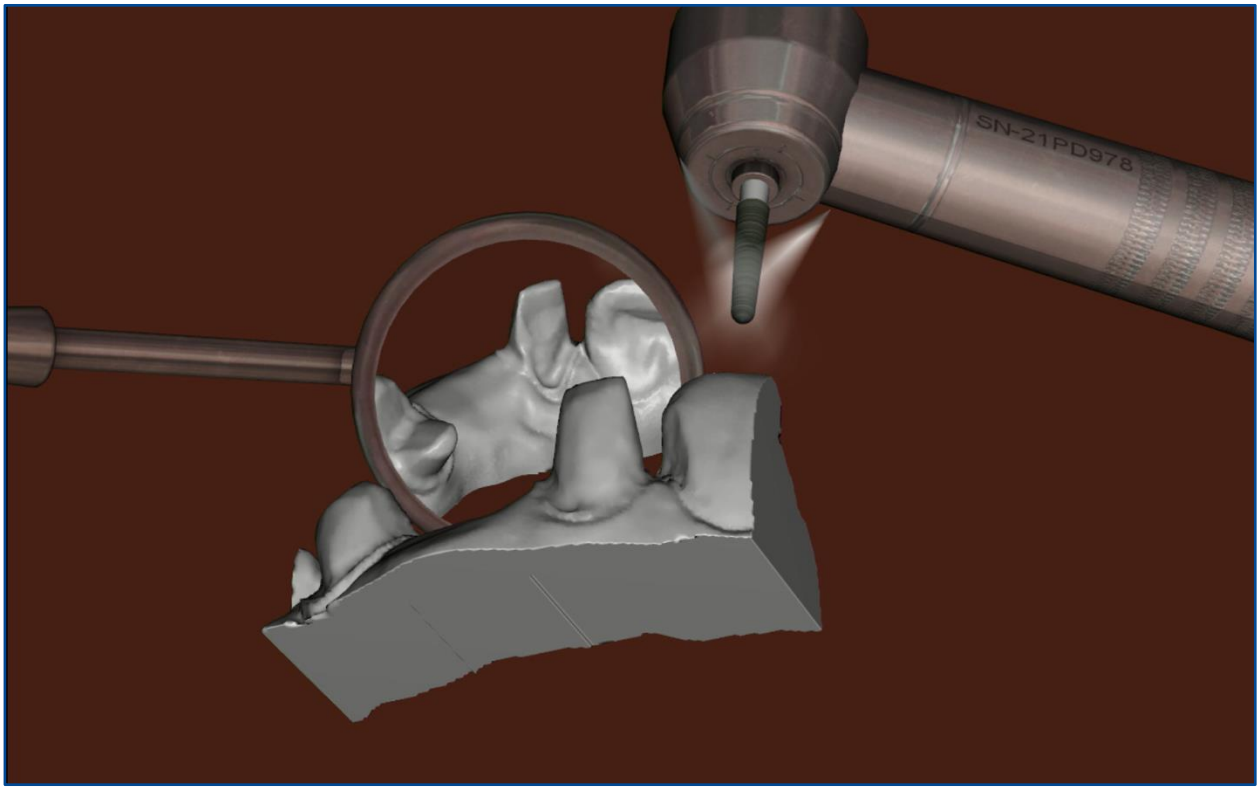
# unique models:	∞
# predefined cases:	0

Create your own custom cases/models based on your own intra oral scans

Introduction

With Simodont students can practice crown and bridge preparations for a specific patient prior to treating the patient in the clinic. When an intra-oral scan of a particular patient has been made, that scan (STL/ PLY) can be uploaded into Simodont and converted into a 3D model. A student can make a preparation for that patient with unlimited practice and repeat.

This way students can increase their confidence and competence prior to treating the actual patient. It will help ensure patient safety and provide confidence to the teacher.



Predefined PS models and cases

As Simodont users can upload their own intra oral scans and assign them directly to one or multiple students. There are no example models or predefined cases available for the Patient Specific procedure. Please refer to the Teacher Manual for a detailed description of the Patient Scan workflow.

Available PS instruments

As the patient specific procedure is mainly meant for crown and bridge preparations, please refer to the CRW and BRG section of this manual for the available instruments.

ENDODONTOLOGY

# unique models:	25
# unique teeth:	36
# predefined cases:	18

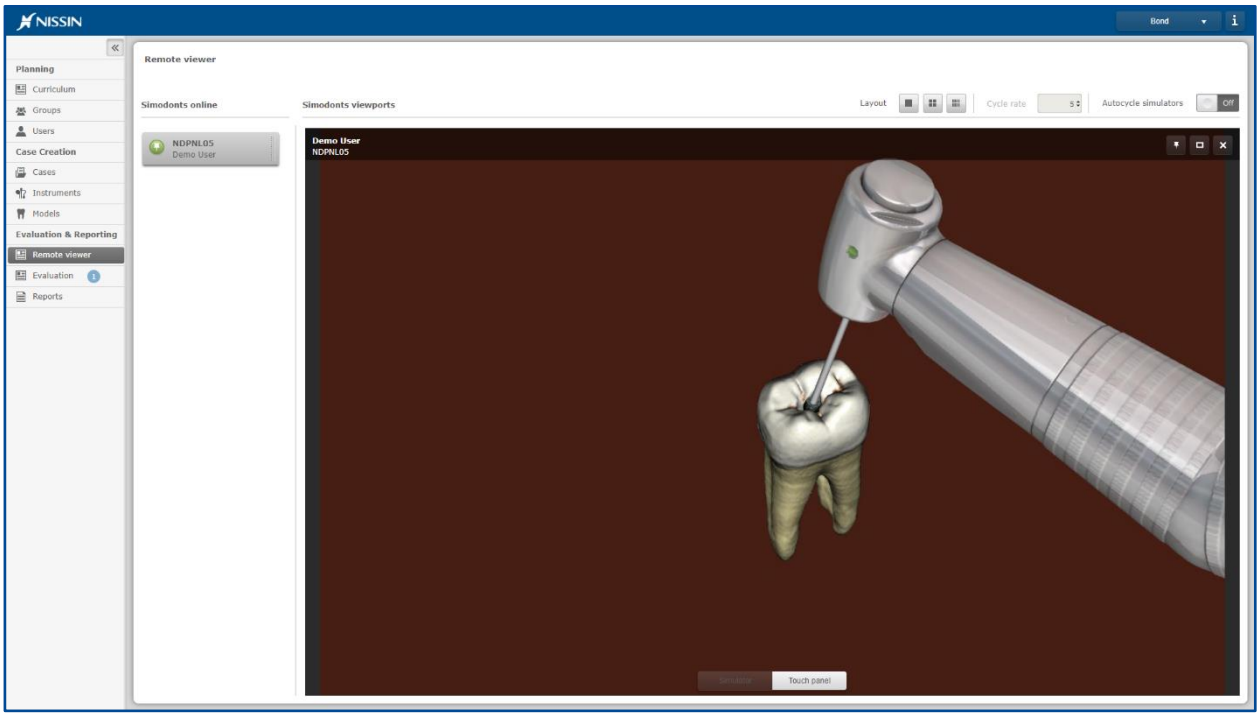
Create your own custom cases
based on one of the available models

Introduction

Endodontic access cavity preparations can be practiced on a range of 3D models made from high-resolution micro-CT scans of extracted teeth.

All models contain the different dental tissues (enamel, dentine, pulp, caries, amalgam, composite) and the anatomy of the scanned tooth having precisely simulated tissue boundaries.

When making the preparation the drop into the pulp chamber can be clearly felt.



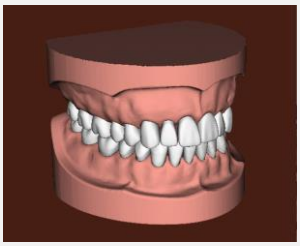
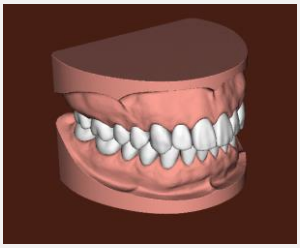
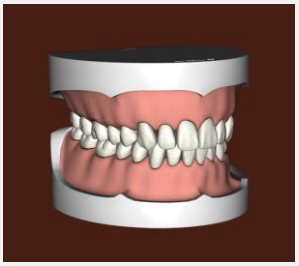
Special END features

- Single, bifurcated and trifurcated root models with well-defined pulp chamber and root canals
- Pulpal walls are stained red to allow easy view of pulp chamber perforation
- Remove the ‘blood’ from the tooth using the irrigation option
- Inspect the pulp chamber using the semi-transparent tooth option
- Feel the drop in the pulp chamber
- Inspect the pulp chamber and root canals morphology using the explorer

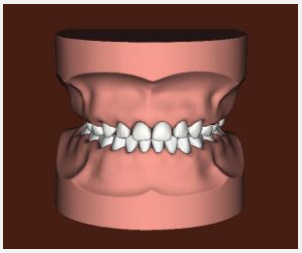
Overview of available END models

Create custom cases using one of the available models.

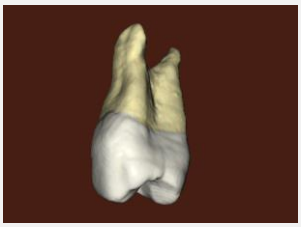
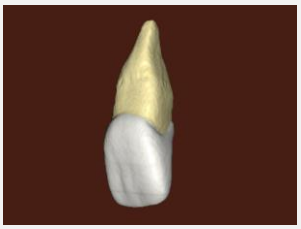
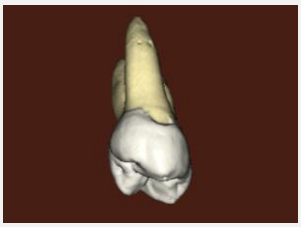
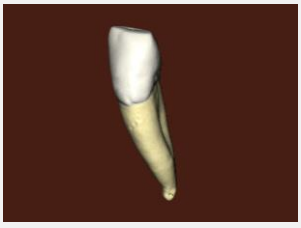
NISSIN models – Permanent dentition

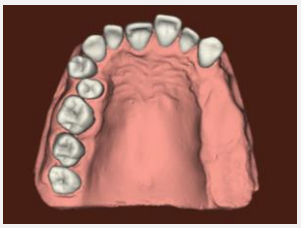
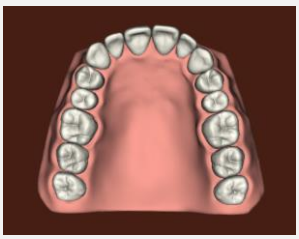
Model name	Model image	Teeth	Description	Segments	Tags	Origin
Nissin-PRO200-MC		11-18 21-28 31-38 41-48	• All teeth from quadrant 1, 2, 3 and 4 • No tissue morphology – uniform hardness and color of enamel throughout the whole tooth	Enamel	BRG CAR CRW	NISSIN
Nissin-PRO500-MC		11-17 21-27 31-37 41-47	• All teeth from quadrant 1, 2, 3 and 4 • No tissue morphology – uniform hardness and color of enamel throughout the whole tooth	Enamel	BRG CAR CRW	NISSIN
Nissin PRO700		11-18 21-28 31-38 41-48	• The PRO700 A27 series has caries teeth for positions 11, 13, 14, 16, 22, 35, 36, 46. • All other teeth are available as sound single and or double layered teeth. (A5 / A20) • Please refer to the list of predefined caries cases for the complete overview.	Enamel Dentin Caries	CAR	NISSIN

NISSIN models – Primary dentition

Model name	Model image	Teeth	Description	Segments	Tags	Origin
Nissin PDI200		51-55 61-65 71-75 81-85 + 16, 26, 36, 46	• Pediatric jaw model representing a 6-year-old dentition. • Mixed dentition with primary teeth and permanent teeth. (permanent teeth are #16, #26, #36, #46) • Suited for abutment and cavity preparation.	Enamel	PED	NISSIN

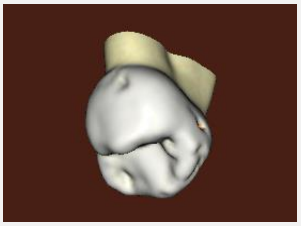
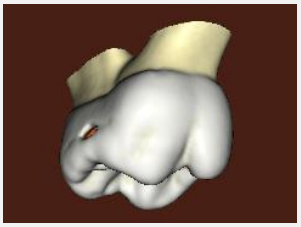
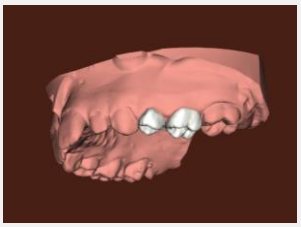
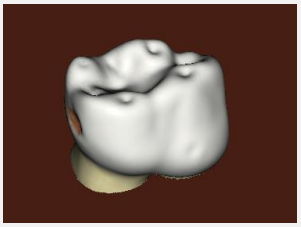
Natural tooth models – Permanent dentition

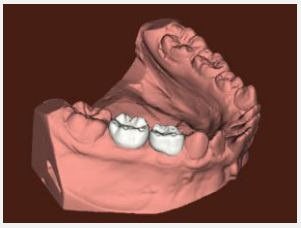
Model name	Model image	Teeth	Description	Segments	Tags	Origin
14_01_SND_S_STCatA_ACTA_01		14	• Upper right first premolar • Sound • Solitary tooth model	Enamel Dentin	SND END	ACTA
16_02_SND_S_STCatA_ACTA_01		16	• Upper right first molar • Sound • Solitary tooth model	Enamel Dentin	SND END	ACTA
21_02_SND_S_STCatA_ACTA_01		21	• Upper left central incisor • Sound • Solitary tooth model	Enamel Dentin	SND END	ACTA
22_01_SND_S_STCatA_ACTA_01		22	• Upper left lateral incisor • Sound • Solitary tooth model	Enamel Dentin	SND END	ACTA
27_01_SND_S_STCatA_ACTA_01		27	• Upper left second molar • Sound • Solitary tooth model	Enamel Dentin	SND END	ACTA
33_01_SND_S_STCatA_ACTA_01		33	• Lower left canine • Sound • Solitary tooth model	Enamel Dentin	SND END	ACTA

Model name	Model image	Teeth	Description	Segments	Tags	Origin
34_01_SND_S_STCatA_ACTA_01		34	• Lower left first premolar • Sound • Solitary tooth model	Enamel Dentin	SND END	ACTA
36_01_SND_S_STCatA_ACTA_02		36	• Lower left first molar • Sound • Solitary tooth model	Enamel Dentin	SND END	ACTA
36_03_SND_S_STCatA_ACTA_01		36	• Lower left first molar • Sound • Solitary tooth model	Enamel Dentin	SND END	ACTA
41_01_SND_S_STCatA_ACTA_01		41	• Lower right central incisor • Sound • Solitary tooth model	Enamel Dentin	SND END	ACTA
18-23_01_SND_J_STCatA_LDI_01		11-18 21-23	• All teeth from first quadrant and 21, 22, 23 • Sound	Enamel Dentin	SND END CRW	LDI
18-23_02_SND_J_STCatA_LDI_01		11-18 21-23	• All teeth from first quadrant and 21, 22, 23 • Sound • Malocclusion	Enamel Dentin	SND END CRW MO	LDI
18_28_01_MC_J_STCatA_DLI_01		11-18 21-28	• All teeth from quadrant 1 and 2 • Sound teeth • Plugs available for all positions to close the openings in the jaw	Enamel Dentin	CAR BRG CRW END	LDI

Model name	Model image	Teeth	Description	Segments	Tags	Origin
			• *Remake of the 18-23_01_SND_ J_STCatA_LDI_01*			

Natural tooth models – Primary dentition

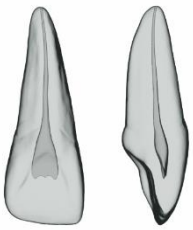
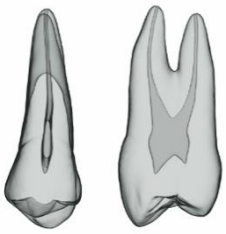
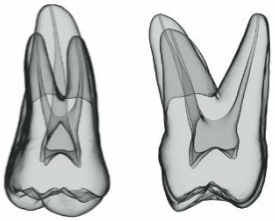
Model name	Model image	Teeth	Description	Segments	Tags	Origin
64_01_CAR2D_S_ STCatB_LDI_01		64	• Upper left first molar • Caries class II into dentin • High-definition pulp chamber and root canals • Solitary tooth model	Enamel Dentin Caries	CAR II END	LDI
65_01_CAR2D_S_ STCatB_LDI_01		65	• Upper left second molar • Caries class II into dentin • High-definition pulp chamber and root canals • Solitary tooth model	Enamel Dentin Caries	CAR II END	LDI
64_65_01_CAR2D _S_STCatB_LDI_0 1		64, 65	• Upper left first and second molars • Tooth 64 has caries class II in to dentin • Tooth 65 has caries class II in to dentin • High-definition pulp chamber and root canals • Placed in jaw, other teeth are non-drillable	Enamel Dentin Caries	CAR II END	LDI
84_01_CAR2D_S_ STCatB_LDI_01		84	• Lower left first molar • Caries class II into dentin • High-definition pulp chamber and root canals • Solitary tooth model	Enamel Dentin Caries	CAR II END	LDI
85_01_CAR1D_S_ STCatB_LDI_01		85	• Lower left second molar • Caries class I into dentin • High-definition pulp chamber and root canals • Solitary tooth model	Enamel Dentin Caries	CAR I END	LDI

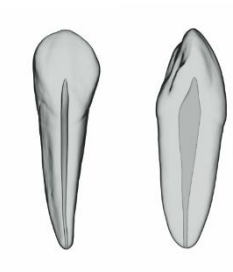
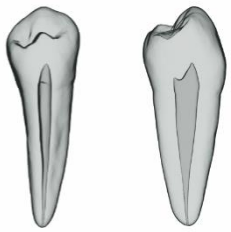
Model name	Model image	Teeth	Description	Segments	Tags	Origin
84_85_01_CAR_J_STCatB_LDI_01		84, 85	• Lower right first and second molar • Tooth 84 has caries class II in to dentin • Tooth 85 has caries class I in to dentin • High-definition pulp chamber and root canals • Placed in jaw, other teeth are not available for treatment.	Enamel Dentin Caries	CAR I CAR II END	LDI

Overview of predefined END cases

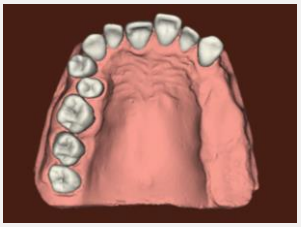
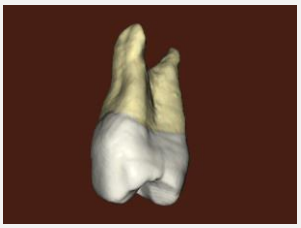
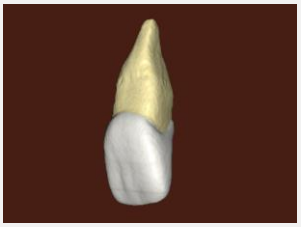
This is an overview of the predefined cases that come with the Simodont Dental Trainer. These cases can be used straight away in an educational program, or a copy of the case can be created and customized to the users' own preferences.

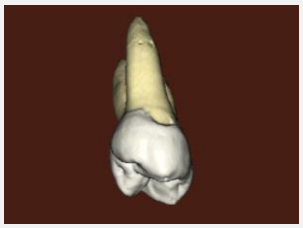
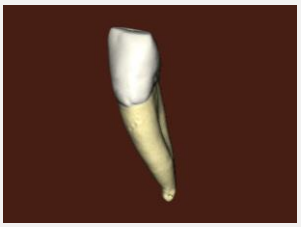
END cases with NISSIN models

Case name	Image	Treatment	Assessment
END 7B22-11		Access cavity prep on multi layered tooth #11 NISSIN PRO700	Visual inspection tools
END 7B22-24		Access cavity prep on multi layered tooth #24 NISSIN PRO700	Visual inspection tools
END 7B22-26		Access cavity prep on multi layered tooth #26 NISSIN PRO700	Visual inspection tools

Case name	Image	Treatment	Assessment
END 7B22-33		Access cavity prep on multi layered tooth #33 NISSIN PRO700	Visual inspection tools
END 7B22-36		Access cavity prep on multi layered tooth #36 NISSIN PRO700	Visual inspection tools
END 7B22-44		Access cavity prep on multi layered tooth #44 NISSIN PRO700	Visual inspection tools

END cases with natural tooth models

Case no.	Patient		Model	Treatment	Assessment	Origin
END001108	Heather Miller Female 33 years Tooth: 36			Access cavity prep on #36	Assessment against treatmentplan Rubric Assessment	ACTA
END006021	*No patient*			Access cavity prep on #11 normal occlusion	Rubric Assessment	LDI
END006121	Andrew Youngs Male 17 years Tooth: 11			Access cavity prep on #11 malocclusion	Rubric Assessment	LDI
END006114	*No patient*			Access cavity prep on #14	none	NISSIN
END006116	*No patient*			Access cavity prep on #16	none	NISSIN
END006121	*No patient*			Access cavity prep on #21	none	NISSIN

Case no.	Patient	Model	Treatment	Assessment	Origin
END006122	*No patient*		Access cavity prep on #22	none	NISSIN
END006127	*No patient*		Access cavity prep on #27	none	NISSIN
END006133	*No patient*		Access cavity prep on #33	none	NISSIN
END006134	*No patient*		Access cavity prep on #34	none	NISSIN
END006136	*No patient*		Access cavity prep on #36	none	NISSIN
END006141	*No patient*		Access cavity prep on #41	none	NISSIN

Available END instruments

For the endodontic (access cavity) procedure many different instruments are implemented. This is a variation of access cavity preparation burs (long shank round burs, flat ended cylinder burs, safe ended taper burs) and in addition explorers.

Please refer to the Instruments chapter of this document to get a complete overview of all available instruments.

Note! All instruments in the instrument library are usable in any of the procedures, with exclusion of the Dental Anatomy procedure.

PEDIATRIC

# unique models:	9
# unique teeth:	26
# predefined cases:	3

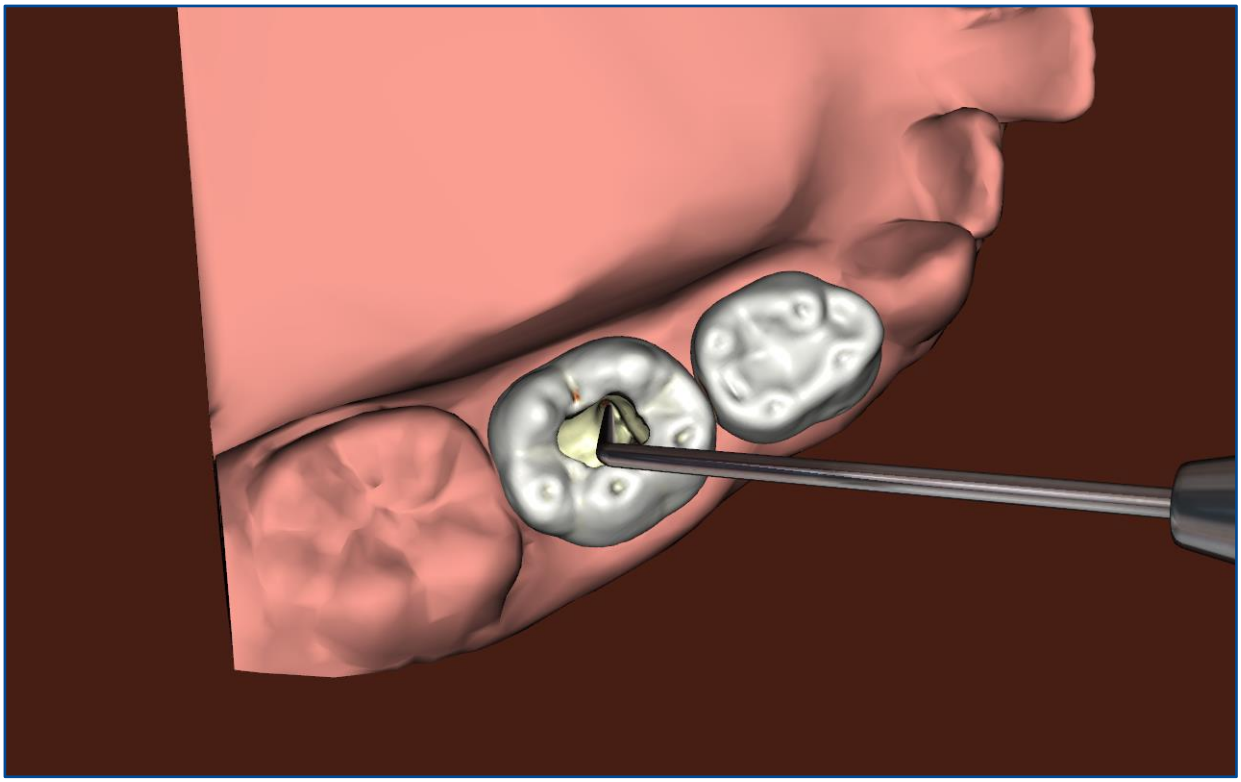
Create your own custom cases
based on one of the available models

Introduction

Pediatric preparations such as pulpotomies can be practiced on primary dentition models, which are available in two types. Models that are based on high resolution CT scans are available which offers practice opportunities with insight into real life anatomy of these teeth.

Furthermore, a full set of plastic Nissin PED teeth is available for practice. This virtual Nissin model is also very helpful for initial training prior to moving on to practicing on plastic models in the pre-clinic.

In terms of software functionality this procedure is very similar to the cariology and endodontic access prep procedure.



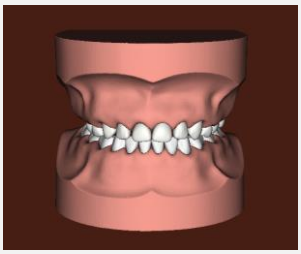
Special PED features

- Real extracted tooth models and typodont full jaw models
- Pulpal walls are stained red to allow easy view of pulp chamber perforation
- Remove the ‘blood’ from the tooth using the irrigation option
- Inspect the pulp chamber using the semi-transparent tooth option
- Feel the drop in the pulp chamber
- Inspect the pulp chamber and root canals morphology using the explorer

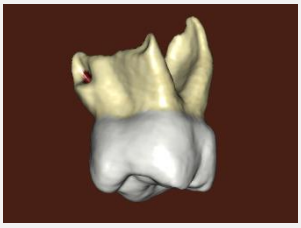
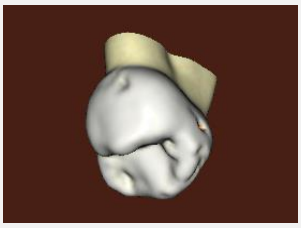
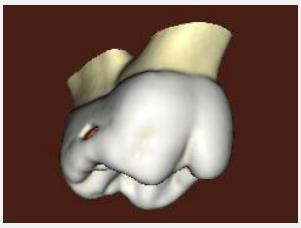
Overview of available PED models

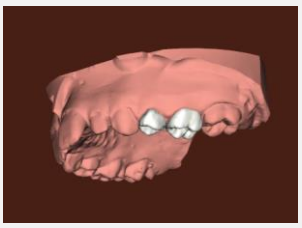
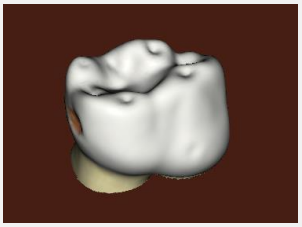
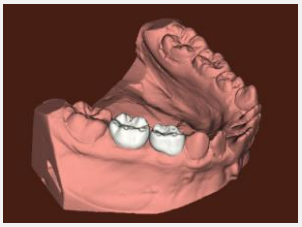
Create custom cases using one of the available models.

Nissin typodont models

Model name	Model image	Teeth	Description	Segments	Tags	Origin
Nissin PDI200		51-55 61-65 71-75 81-85 + 16, 26, 36, 46	• Pedo jaw model representing a 6-year-old dentition. • Mixed dentition with primary teeth and permanent teeth. (permanent teeth are #16, #26, #36, #46) • Suited for abutment and cavity preparation.	none	PED	NISSIN

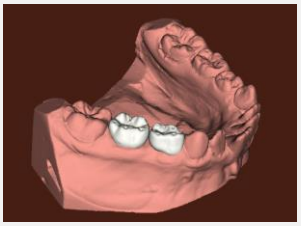
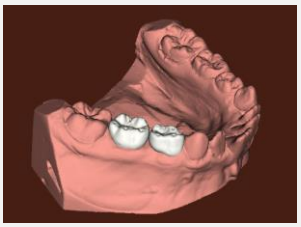
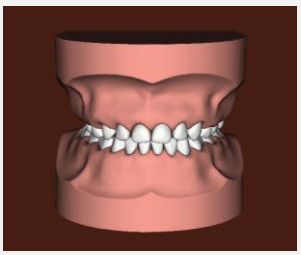
Natural tooth models

Model name	Model image	Teeth	Description	Segments	Tags	Origin
52_01_SND_S_STCatB_ACTA_01		52	• Upper right lateral incisor • Sound • Solitary tooth model	Enamel Dentin	SND PED	ACTA
54_01_SND_S_STCatB_ACTA_01		54	• Upper right first molar • Sound • Solitary tooth model	Enamel Dentin	SND PED	ACTA
64_01_CAR2D_S_STCatB_LDI_01		64	• Upper left first molar • Caries class II into dentin • High-definition pulp chamber and root canals • Solitary tooth model	Enamel Dentin Caries	CAR II END PED	LDI
65_01_CAR2D_S_STCatB_LDI_01		65	• Upper left second molar • Caries class II into dentin • High-definition pulp chamber and root canals • Solitary tooth model	Enamel Dentin Caries	CAR II END PED	LDI

Model name	Model image	Teeth	Description	Segments	Tags	Origin
64_65_01_CAR2D_S_STCatB_LDI_01		64, 65	• Upper left first and second molars • Tooth 64 has caries class II in to dentin • Tooth 65 has caries class II in to dentin • High-definition pulp chamber and root canals • Placed in jaw, other teeth are non-drillable	Enamel Dentin Caries	CAR II END PED	LDI
84_01_CAR2D_S_STCatB_LDI_01		84	• Lower left first molar • Caries class II into dentin • High-definition pulp chamber and root canals • Solitary tooth model	Enamel Dentin Caries	CAR II END PED	LDI
85_01_CAR1D_S_STCatB_LDI_01		85	• Lower left second molar • Caries class I into dentin • High-definition pulp chamber and root canals • Solitary tooth model	Enamel Dentin Caries	CAR I END PED	LDI
84_85_01_CAR_J_STCatB_LDI_01		84, 85	• Lower right first and second molar • Tooth 84 has caries class II in to dentin • Tooth 85 has caries class I in to dentin • High-definition pulp chamber and root canals • Placed in jaw, other teeth are not available for treatment.	Enamel Dentin Caries	CAR I CAR II END PED	LDI

Overview of predefined PED cases

This is an overview of the predefined cases that come with the Simodont Dental Trainer. These cases can be used straight away in an educational program, or a copy of the case can be created and customized to the users' own preferences.

Case no.	Patient		Model	Treatment	Assessment	Origin
CAR006084	Adrian Hall Male 7 years Tooth: 84			Class II, occlusal-distal, interproximal amalgam prep on #84	Rubric Assessment	Model: LDI Case: NISSIN
END006085	Adrian Hall Male 7 years Tooth: 85			Access cavity prep on #85	Rubric Assessment	Model: LDI Case: NISSIN
PDI200-61 *Demo case*	*No patient*			Class III prep on sound #61 Nissin PDI200	Visual inspection tools	NISSIN

Available PED instruments

For the Pediatric procedure many different instruments are implemented. This is a variation of excavating burs, hand excavators, hand probes, cavity preparation burs (round, flat end cylinder, inverted cone, pear etcetera) and finishing burs.

Please refer to the Instruments chapter of this document to get a complete overview of all available instruments.

Note! All instruments in the instrument library are usable in any of the procedures, with exclusion of the Dental Anatomy procedure.

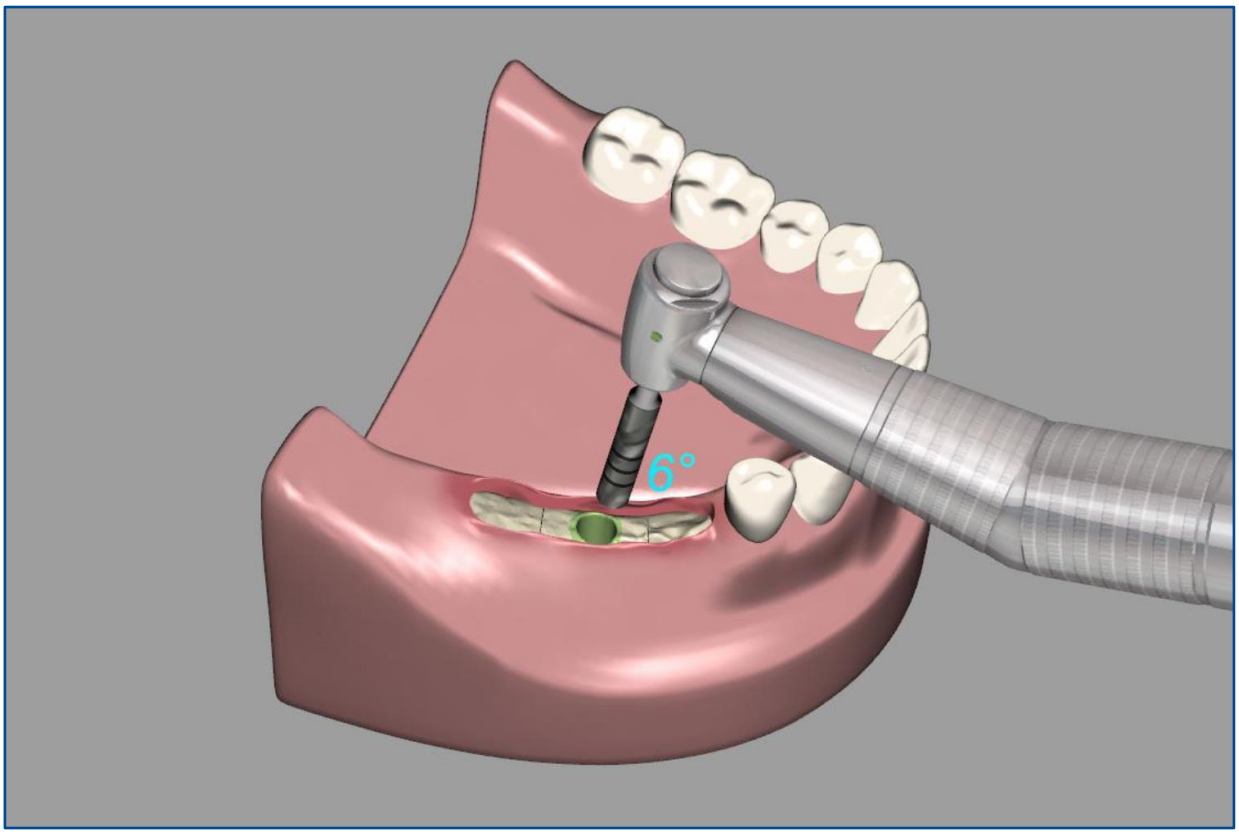
IMPLANTOLOGY

# unique models:	1
# unique positions:	3
# predefined cases:	9

Create your own custom cases
based on one of the available models

Introduction

Implant preparations can be practiced on Nissin's own implant training models that are also available as physical typodonts.



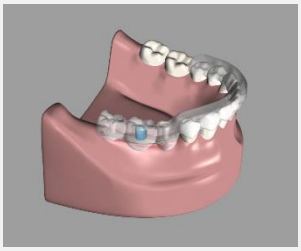
Special IMP features

- Three implant positions: 45, 46 and 47 in Nissin's IMP5003
- Jawbone with cortical and cancellous bone types simulated
- Guided (haptic) and free-hand drilling exercises
- Multiple drill sizes: 2.2, 2.8, 3.5
    - With visual depth markings
    - With and without real-time angulation assistance
    - Size 2.2 comes with and without stop ring for guided drilling
- Depth gauges – with and without real-time angulation assistance
- Ability to show and hide the long axis, showing the preparation's ideal position and angle
- Ability to show and hide drill guide
- Ability to show and hide target and leeway
- Ability to show the jawbone semi-transparent for visual inspection of the preparation
- Objective assessment and scoring through target definition
- Nerve damage feedback through the real-time statistics

Overview of available IMP models

Create custom cases using one of the available models.

Nissin typodont models

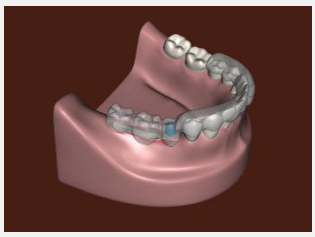
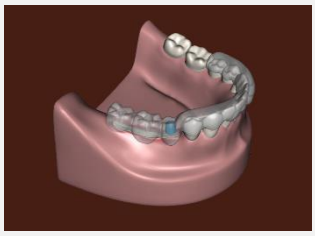
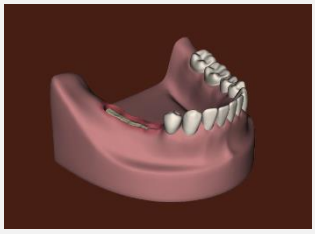
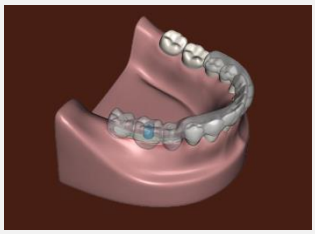
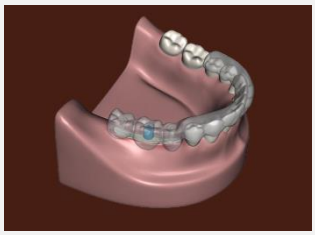
Model name	Model image	Pos	Description	Segments	Tags	Origin
Nissin IMP5003		45, 46, 47	• Implant model • Suited for guided and free-hand implant preparation	Bone*, Target, Over prep-sub, Over prep-max, No-go zone, Nerve	IMP	NISSIN

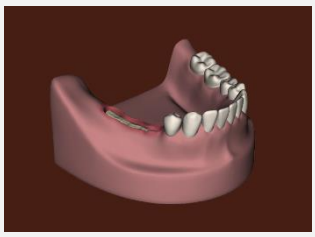
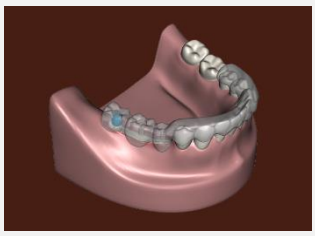
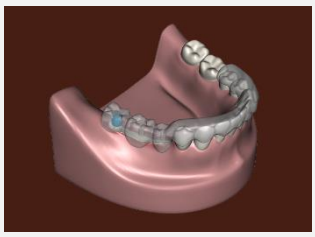
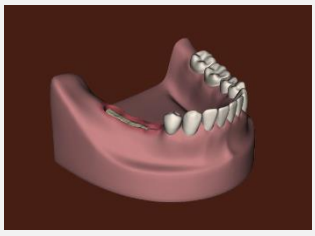
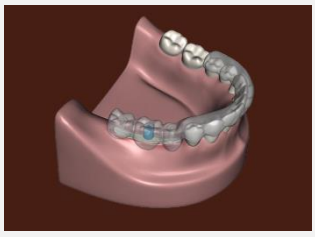
* cancellous and cortical bone are individually haptically simulated and are combined for removal statistics.

Overview of predefined IMP cases

This is an overview of the predefined cases that come with the Simodont Dental Trainer. These cases can be used straightaway in an educational program, or a copy of the case can be created and customized to the user's own preferences.

Cases based on IMP5003 model
Patient
The cases for the IMP5003 model all include (panorama) CT images that help in the pre-training dialog.   The full CT/dicom files are availble through the Nissin Dental Products Inc website.

Case no.		Model	Treatment	Assessment	Origin
IMP5003 -45 LVL1	 Kenzo Yamamoto Male - 32 years		• Position 45 • Guided drilling Ø2.2, 8 mm deep • Real-time angle assistance • No target visible	No objective assessment. Practicing guided drilling.	Model: NISSIN Case: NISSIN
IMP5003 -45 LVL2	 Kenzo Yamamoto Male - 32 years		• Position 45 • Guided drilling Ø2.2, 8 mm deep • Free-hand drilling sizes Ø2.8 and Ø3.5 8 mm deep • Real-time angle assistance • Target and leeway visible	Objective assessment and score using target and leeway assessment. Practicing free-hand drilling after guided drilling.	Model: NISSIN Case: NISSIN
IMP5003 -45 LVL3	 Kenzo Yamamoto Male - 32 years		• Position 45 • Free-hand drilling sizes Ø2.2, Ø2.8 and Ø3.5, 8 mm deep. • No angle assistance • Target and leeway visible	Objective assessment and score using target and leeway assessment. Practicing free-hand drilling.	Model: NISSIN Case: NISSIN
IMP5003 -46 LVL1	 Kenzo Yamamoto Male - 32 years		• Position 46 • Guided drilling Ø2.2, 8 mm deep • Real-time angle assistance • No target visible	No objective assessment. Practicing guided drilling.	Model: NISSIN Case: NISSIN
IMP5003 -46 LVL2	 Kenzo Yamamoto Male - 32 years		• Position 46 • Guided drilling Ø2.2, 8 mm deep • Free-hand drilling sizes Ø2.8 and Ø3.5 8 mm deep • Real-time angle assistance • Target and leeway visible	Objective assessment and score using target and leeway assessment. Practicing free-hand drilling after guided drilling.	Model: NISSIN Case: NISSIN

Case no.		Model	Treatment	Assessment	Origin
IMP5003 -46 LVL3	 Kenzo Yamamoto Male - 32 years		• Position 46 • Free-hand drilling sizes Ø2.2, Ø2.8 and Ø3.5, 8 mm deep. • No angle assistance • Target and leeway visible	Objective assessment and score using target and leeway assessment. Practicing free-hand drilling.	Model: NISSIN Case: NISSIN
IMP5003 -47 LVL1	 Kenzo Yamamoto Male - 32 years		• Position 47 • Guided drilling ∅2.2, 6 mm deep • Real-time angle assistance • No target visible	No objective assessment. Practicing guided drilling.	Model: NISSIN Case: NISSIN
IMP5003 -47 LVL2	 Kenzo Yamamoto Male - 32 years		• Position 47 • Guided drilling Ø2.2, 6 mm deep • Free-hand drilling sizes Ø2.8 and Ø3.5 6 mm deep • Real-time angle assistance • Target and leeway visible	Objective assessment and score using target and leeway assessment. Practicing free-hand drilling after guided drilling.	Model: NISSIN Case: NISSIN
IMP5003 -47 LVL3	 Kenzo Yamamoto Male - 32 years		• Position 47 • Free-hand drilling sizes Ø2.2, Ø2.8 and Ø3.5, 6 mm deep. • No angle assistance • Target and leeway visible	Objective assessment and score using target and leeway assessment. Practicing free-hand drilling.	Model: NISSIN Case: NISSIN
Demo case	 Kenzo Yamamoto Male - 32 years		• Position 46 • Guided drilling Ø2.2, 8 mm deep • Free-hand drilling sizes Ø2.8 and Ø3.5 8 mm deep • Real-time angle assistance • Target and leeway visible • Full Implant instrument set available	Objective assessment and score using target and leeway assessment. Practicing free-hand drilling after guided drilling.	Model: NISSIN Case: NISSIN

PERIODONTICS

unique models: 2

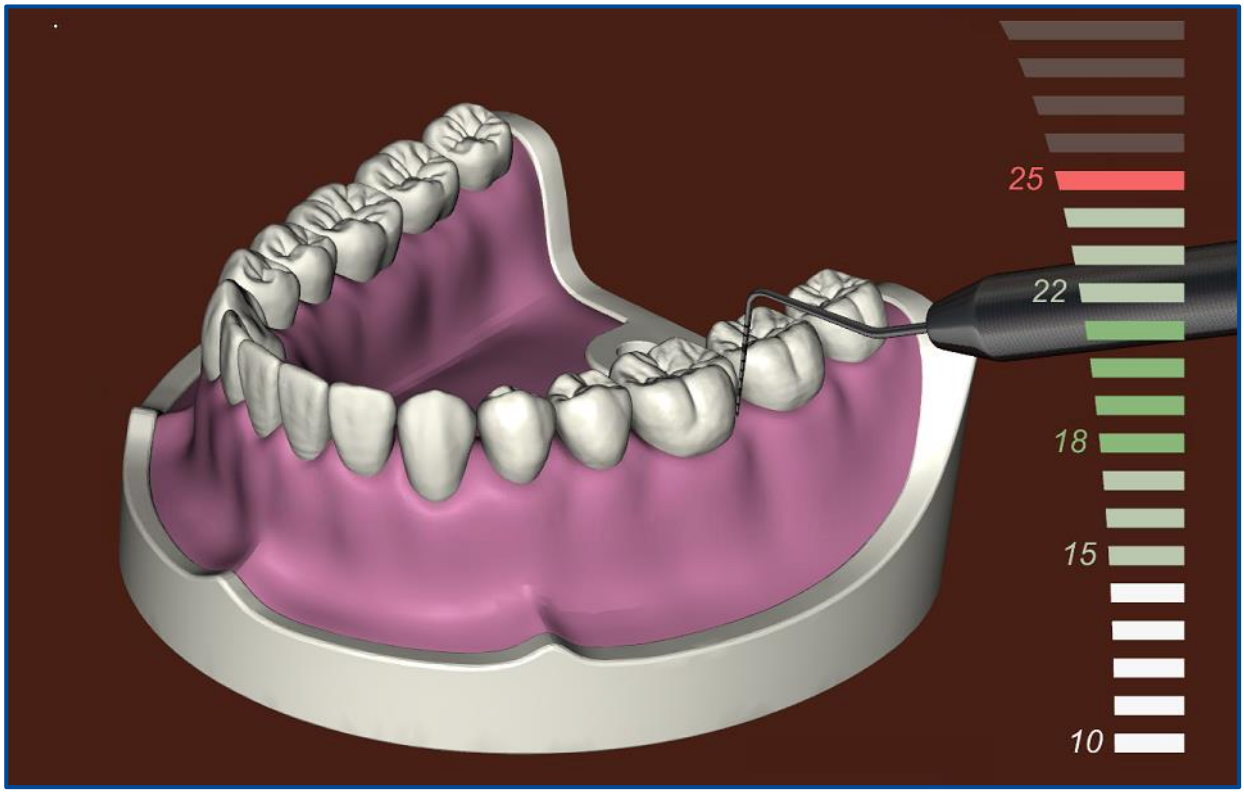
predefined cases: 7

Create your own custom cases
based on the available models

Introduction

Several periodontic exercises, such as pocket probing, calculus detection and calculus removal by hand or using ultrasonic devices can be performed on the NISSIN 700HPRO model. This is NISSIN's newest periodontics model.

Various assistive features were implemented to help the student to better understand the correct usage of the periodontal instruments. In addition, students get familiar with periodontal charting using the build in charting methods. Additionally, objective scoring is done for the calculus removal exercises based on a calculus removal score per tooth.



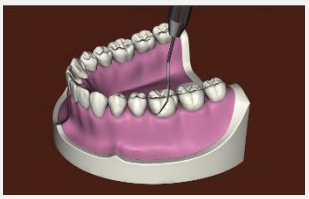
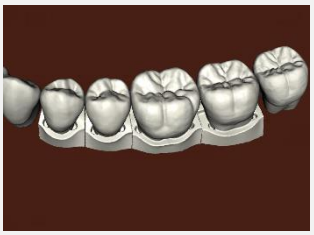
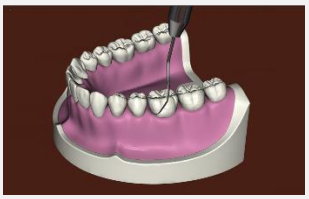
Special PER features

- Probing for periodontal measurements
- Pocket depth charting
- Real-time feedback on probing force for guidance on the force applied (UNC12, UNC15 and WHO probe)
- Subgingival calculus detection using ODU11 and ODU12 explorers, and periodontal probes
- Calculus detection charting
- Ultrasonic scaling (magnetostrictive)
- Hand scaling using Nevi4 scalers, H6/7 scalers, and Gracey 1/2 curettes
- Live angle feedback during hand scaling for guidance in correct instrument angulation
- Ability to highlight the remaining calculus using the calculus detector view option
- Ability to hide the gingiva to inspect the remaining calculus and/or pockets
- Live calculus removal scoring through statistics

Overview of available PER models

Create custom cases using one of the available models.

Nissin typodont models

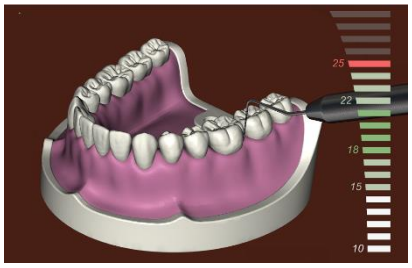
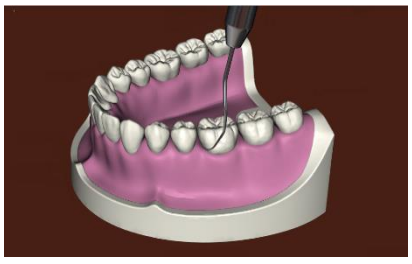
Model name	Model image	Teeth	Description	Segments	Tags	Origin
Nissin-700HPRO_proto_nocal v5 ***No calculus***	 	34, 35, 36, 37	• Based on an early version of the Nissin 700HPRO model • No calculus present • Bone structure present for probing of pockets • Haptic walls in gingiva to prevent moving out of the pockets • For probing purposes *For correct pocket readings see case details in next table case: PER-Probing.*	Enamel	SND PER	NISSIN
Nissin-700HPRO_proto_wcal v18 ***With calculus***		31, 32, 34, 35, 36, 37 41, 42	• Based on an early version of the Nissin 700HPRO model • No bone structure present • For calculus detection and calculus removal purposes Various calculus deposit options available. Moderate size calculus present on all teeth for the purpose of calculus removal. Available subgingival calculus deposits for calculus detection purposes: 34: • Small ledge lingual-mesial • Small spot facial 35: • Small spot distal • Small ledge lingual 36: • Ledge lingual • Small ledge distal	Enamel Calculus	PER	NISSIN

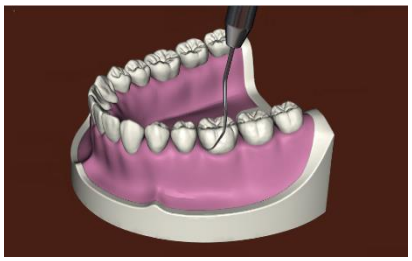
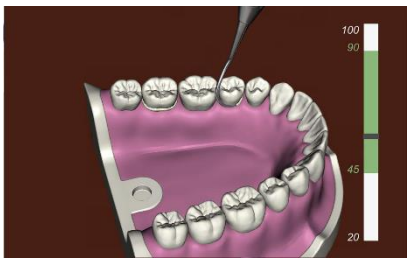
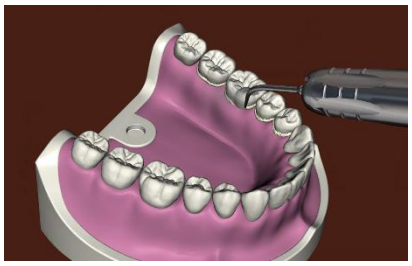
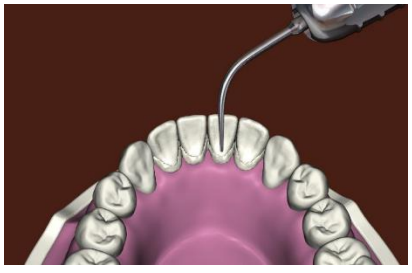
Model name	Model image	Teeth	Description	Segments	Tags	Origin
			• Ledge mesial-facial 37: • Small ledge facial (near distal) • Small spot lingual (near distal)			

Overview of predefined PER cases

This is an overview of the predefined cases that come with the Simodont Dental Trainer. These cases can be used straight away in an educational program, or a copy of the case can be created and customized to the users' own preferences.

PER cases with NISSIN models

Case name	Image	Treatment	Assessment	Origin
PER - Probing		Assess the pocket depths at all 6 sites of the teeth using the UNC12 or UNC15 and enter the readings in the in the chart. Correct pocket depth readings: **#** **DF** **F** **MF** **DL** **L** **ML** 34 3 2 2 3 2 3 35 3 2 2 3 2 2 36 3 1 3 3 2 3 37 3 3 3 3 2 3	Compare the results with the official chart	Model: NISSIN Case: NISSIN
PER - Calculus exploring 1		Explore the teeth for the presence of subginival calculus using the ODU11 and 12 explorers. One calculus deposit per tooth. Enter the readings in the chart. Present deposits : 34 – Small subgingival calculus ledge lingual-mesial 35 – Small subgingival calculus spot distal 36 – Subgingival calculus ledge distal 37 - Small subgingival calculus ledge	Compare the results with the official chart	Model: NISSIN Case: NISSIN

Case name	Image	Treatment	Assessment	Origin
		facial		
PER - Calculus exploring 2		Explore the teeth for the presence of subginival calculus using the ODU11 and 12 explorers. One calculus deposit per tooth. Enter the readings in the chart. Present deposits : 34 – Small subgingival calculus spot facial 35 – Small subgingival calculus ledge lingual 36 – Subgingival calculus ledge mesial-facial 37 - Small subgingival calculus spot lingual (near distal)	Compare the results with the official chart	Model: NISSIN Case: NISSIN
PER - Hand scaling – 35 & 37		Remove the supragingival calculus from tooth 37 and 35 using the Nevi4 hand scalers.	Calculus removal score per tooth through statistics.	Model: NISSIN Case: NISSIN
PER - Ultrasonic scaling – 34 & 36		Remove the supragingival caluclus from tooth 36 and 34 using the ultrsonic scaler.	Calculus removal score per tooth through statistics.	Model: NISSIN Case: NISSIN
PER – Ultrasonic scaling – lower front		Remove the supragingival caluclus from teeth 31, 32, 41, 42 using the ultrsonic scaler.	Calculus removal score per tooth through statistics.	Model: NISSIN Case: NISSIN
PER – Hand scaling – lower front		Remove the supragingival calculus from teeth 31, 32, 41, 42 using the Gracey 1/2 curettes and/or H6/7 scaler.	Calculus removal score per tooth through statistics.	Model: NISSIN Case: NISSIN

Available PER instruments

For the Periodontic procedure different instruments are implemented. This is a variation of periodontal probes, hand scalers and an ultrasonic magnetostrictive scaler.

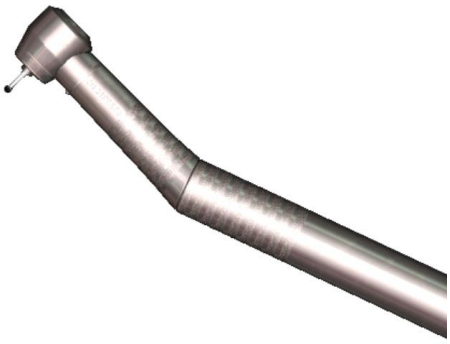
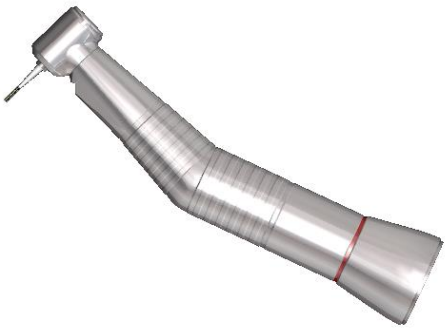
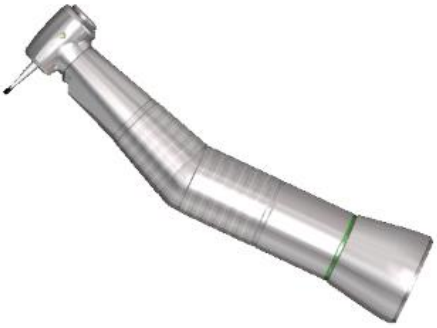
Please refer to the Instruments chapter of this document to get a complete overview of all available instruments.

INSTRUMENTS

Hand pieces

Different hand pieces are used for different types of rotary instruments depending on their application.

The following hand pieces are available in the Simodont:

Description	Preview
AIR ROTOR high speed **AIR**	
ELECTRICAL RED Speed increasing high speed **ELR**	
ELECTRICAL GREEN Speed reducing low speed **ELG**	

Burs

Bur naming convention

Nissin uses the ISO naming convention for rotary instrument names. The ISO standard uses a combination of five codes. Together they determine the characteristics of the bur.

De ISO code:

diamond burs: material - shank - head shape - grid size - diameter

steel and carbide burs: material - shank - head shape - cutting design - diameter

For example, the “FG 001 012 BL has ISO code 806-314-001-524-012

ISO	806	314	001	524	012
	material	shank type	cutting shape	grid size	diameter

Material

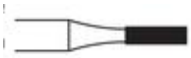
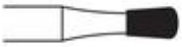
ISO	Description
310	Steel
500	Tungsten Carbide
806	Diamond

Shank

ISO	Description		Length mm	Diameter mm
204	RA	Right Angle	22	2.35
205	RA L	Right Angle long	26	2.35
314	FG Short	Friction grip miniature	16,5	1.6
314	FG	Friction grip normal length	19	1.6
315	FG L	Friction grip long	21	1.6
316	FG XL	Friction grip extra long	25	1.6

Shape

There is a large amount of bur shapes available. The shapes below are the burr shapes that currently are available in the Simodont Dental Trainer.

Shape	Burr shape ISO code	Shape example
Round	001	
Flat end cylinder	109, 110, 156	
Beveled end cylinder	131	
Round end cylinder	141	
Needle	156, 166	
Flat end taper	168-174	
Inverted cone	204	
Round end taper	197, 198, 199	
Round safe end taper	219, 220	
Pear	233, 234, 237, 245	
Flame	249, 250	
Football	257	
Egg	277	
Torpedo	289	
Torpedo taper	298, 299	

Grid size (diamond burs only)

For diamond burs the grid size is an important parameter. The following grid sizes are used:

ISO		Color	Grid size	Use	Actual size
534	●	Green	Coarse	Grinding	125-150 µm
524	●	Blue	Medium	Universal Grinding	90-120 µm
514	●	Red	Fine	Burnishing	20-40 µm
504	●	Yellow	Extra fine	Finishing	12-22 µm

Cutting design (steel and tungsten carbide burs only)

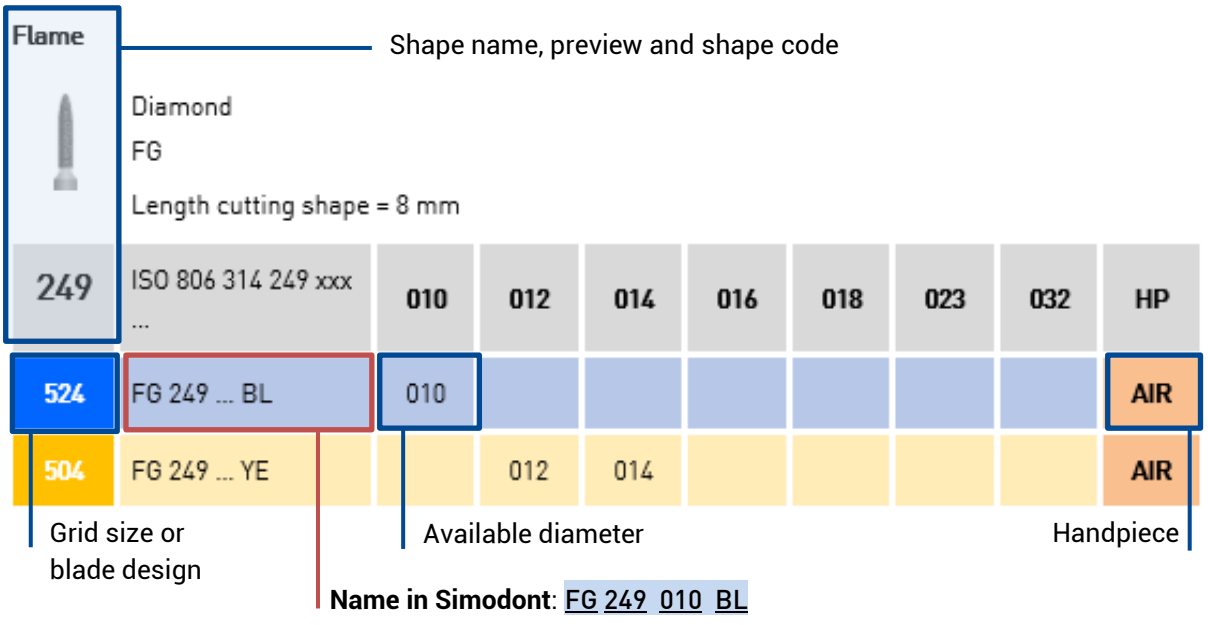
ISO	Description
001	Straight cut
003	Straight, sharp cut
006	Right helicoidal
010	Left helicoidal

Diameter

The diameter is in mm and directly derived from the ISO code's last three digits.

How to find your instrument in the Simodont Courseware

The name of the bur in the Simodont courseware is shown in the row right under the ISO code.



Diamond burs

Round

Diamond
FG

001	ISO 806 314 001 xxx ...	010	012	014	016	018	023	032	HP
524	FG 001... BL	010	012		016				AIR
514	FG 001 ...RE						023		AIR

Inverted Cone

Diamond
FG

010	ISO 806 314 010 xxx ...	010	012	014	016	018	023	032	HP
534	FG 010 ... GR				016				AIR

Flat End Cylinder

Diamond
FG
Length cutting shape = 4 mm

109	ISO 806 314 109 xxx ...	010	012	014	016	018	023	032	HP
524	FG 109 ... BL	010							AIR

Diamond
FG
Length cutting shape = 6 mm

110	ISO 806 314 110 xxx ...	010	012	014	016	018	023	032	HP
524	FG 110 ... BL	010							AIR
514	110 ... RE ELR	010							ELR
504	110 ... YE ELR	010							ELR

Diamond
FG
Length cutting shape = 8 mm

111	ISO 806 314 111 xxx ...	010	012	014	016	018	023	032	HP
524	111 ... BL ELR	010	012						ELR

Beveled End Cylinder

Diamond
FG
Length cutting shape = 10 mm

131	ISO 806 314 131 xxx ...	010	012	014	016	018	023	032	HP
514	FG 131 ... RE			014					AIR

Round End Cylinder

Diamond
FG
Length cutting shape = 8 mm

141	ISO 806 314 141 xxx ...	010	012	014	016	018	023	032	HP
514	FG 141... RE		012	014					AIR
534	FG 141... GR		012	014					AIR

Round Edge Cylinder

Diamond
FG
Length cutting shape = 6 mm

156	ISO 806 314 156 xxx ...	010	012	014	016	018	023	032	HP
534	FG 156 ... GR				016				AIR

Needle

Diamond
FG
Length cutting shape = 8 mm

165	ISO 806 314 165 xxx ...	010	012	014	016	018	023	032	HP
524	FG 165 ... BL		012						AIR
524	165 ... BL ELR		012						ELR

Diamond
FG
Length cutting shape = 10 mm

166	ISO 806 314 166 xxx ...	010	012	014	016	018	023	032	HP
524	FG 166 ... BL	010							AIR
534	FG 166 ... GR				016				AIR

Flat End Taper

Diamond
FG
Length cutting shape = 8 mm

172	ISO 806 314 172 xxx ...	010	012	014	016	019	020	022	HP
524	FG 172 .. BL			014	016				AIR
524	172 .. BL ELR					019			ELR
514	172 .. RE ELR						020		ELR

Diamond
FG
Length cutting shape = 10 mm

173	ISO 806 314 173 xxx ...	010	012	014	016	018	023	032	HP
524	FG 173 ... BL				016				AIR
534	FG 173 ... GR				016				AIR

Round End Taper

Diamond
FG
Length cutting shape = 6 mm

197	ISO 806 314 197 xxx ...	010	012	014	016	018	023	032	HP
524	FG 197 ... BL		012		016				AIR

Diamond

FG

Length cutting shape = 8 mm

198	ISO 806 314 198 xxx ...	010	012	014	016	018	023	032	HP
524	FG 856 ... BL*				016				AIR
524	856 ... BL ELR				016				ELR
534	FG 856/198 ... GR*		012		016				AIR
514	FG 856 ... RE*			014	016	018	023		AIR
514	856 ... RE ELR					018	023		ELR
504	FG 856 ... YE*				016				AIR

* 856 is the old ISO code and similar to ISO code 198.

Diamond

FG

Length cutting shape = 10 mm

199	ISO 806 314 199 xxx ...	010	012	014	016	018	023	032	HP
524	FG 199 ... BL			014					AIR
524	199 ... BL ELR			014					ELR
534	FG 199 ... GR			014					AIR
534	199 ... GR ELR			014					ELR

Safe End Taper

Diamond

FG

Length cutting shape = 8 mm

219	ISO 806 314 219 xxx …	010	012	014	016	018	023	032	HP
524	FG 219 … BL		012						AIR

Diamond

FG

Length cutting shape = 10 mm

220	ISO 806 314 219 xxx …	010	012	014	016	018	023	032	HP
524	FG 220 … BL			014					ELG

Pear

Diamond

FG

Length cutting shape = 3 mm

233	ISO 806 314 233 xxx …	010	012	014	015	018	023	032	HP
524	FG 233 … BL		012						AIR
504	FG 830 … YE*				015				AIR
504	830 … YE ELR*				015				ELR

* 830 is the old ISO code, and similar to ISO code 233

Diamond

FG

Length cutting shape = 5.5 mm

234	ISO 806 314 234 xxx …	010	012	014	016	018	023	032	HP
524	FG 234 … BL		012						AIR

Diamond
FG
Length cutting shape = 3 mm

237	ISO 806 314 237 xxx ...	010	012	014	016	018	023	032	HP
524	FG 237 ... BL	010							AIR

Flame

Diamond
FG
Length cutting shape = 8 mm

249	ISO 806 314 249 xxx ...	010	012	014	016	018	023	032	HP
524	FG 249 ... BL	010							AIR
504	FG 249 ... YE		012	014					AIR

Diamond
FG
Length cutting shape = 10 mm

250	ISO 806 314 250 xxx ...	010	012	014	016	018	023	032	HP
514	FG 250 ... RE		012						AIR

Football

Diamond
FG
Length cutting shape = 10 mm

257	ISO 806 314 257 xxx ...	010	012	014	016	018	023	032	HP
534	FG 257 ... GR						023		AIR
504	FG 257 ... YE					018			AIR

Egg

Diamond
FG
Length cutting shape = 3-5 mm

277	ISO 806 314 257 xxx ...	010	012	014	016	018	023	032	HP
524	FG 277 ... BL						023		AIR
524	277 ... BL ELR						023		ELR
534	FG 277 ... GR					018			AIR
534	277 ... GR ELR					018			ELR
514	FG 277 ... RE					018			AIR
504	FG 277 ... YE						023		AIR
504	277 ... YE ELR						023		ELR

Torpedo

Diamond
FG
Length cutting shape = 8 mm

289	ISO 806 314 289 xxx ...	010	012	014	016	018	023	032	HP
534	FG 289 ... GR	010	012	014	016				AIR

Torpedo Taper

Diamond
FG
Length cutting shape = 8 mm

298	ISO 806 314 298 xxx ...	010	012	014	016	018	023	032	HP
524	FG 298 ... BL					018			AIR
534	FG 298 ... GR					018			AIR

Diamond
FG
Length cutting shape = 10 mm

299	ISO 806 314 299 xxx ...	010	012	014	016	018	023	032	HP
524	FG299 ... BL				016				AIR
534	FG299 ... GR					018			AIR

Flame

Diamond

FG

Length cutting shape = 4 mm

540	ISO 806 314 540 xxx …	010	012	014	016	018	025	032	HP
514	540 … RE ELR	010							ELR

Round Edge Taper

Diamond

FG

Length cutting shape = 4 mm

544	ISO 806 314 233 xxx …	010	012	014	016	018	025	032	HP
524	FG 544 … BL						025		AIR
514	FG 544 … RE						025		AIR

Diamond

FG

Length cutting shape = 5.5 mm

584	ISO 806 314 584 xxx …	010	012	014	016	018	025	032	HP
524	584 … BL ELR					018			ELR
514	584 … RE ELR					018			ELR

Steel and carbide

Round

Carbide
RA
Straight cut

001	ISO 500 204 001 xxx …	**010**	**012**	**014**	**016**	**018**	**023**	**032**	**HP**
	US	2	3	4	5	6	8	12	
001	US ..	#2	#3	#4	#5	#6	#8	#12	**ELG**
001	US ..	#2	#3	#4	#5				**ELR**

Carbide
RA
Straight cut sharp

001	ISO 500 204 001 xxx …	**010**	**012**	**014**	**016**	**018**	**023**	**032**	**HP**
	US	2S	3S	4S	5S	6S	8S	12S	
003	RAH1S …	010	012	014	016		023	032	**ELG**

Round Long Shank

Steel
RA Long shank
Spiral cut

001	ISO 310 205 006 xxx …	010	012	014	016	018	023	032	HP
006	RAL001 …	010	012	014	016		023		ELG

Round – Long Neck

Carbide
RA Long Neck
Straight cut

001	ISO 500 20x 001 xxx …	010	012	014	016	018	023	032	HP
	LN 001 …		012		016				ELG

Inverted cone

Carbide
RA
Spiral cut left

010	ISO 500 314 010 xxx …	010	012	014	016	018	023	032	HP
001	RA 204 …		012						ELG

Carbide
RA
Spiral cut left

010	ISO 500 314 010 xxx …	010	012	014	016	018	021	023	HP
	US	35	36	37	38	39	40	41	
001	FG 37			014					AIR

Pear

Carbide
FG
Length cutting shape = 2.7 mm

233	ISO 500 314 233 xxx …	008	012	014	016	018	023	032	HP
	US	245							
006	RAH245 …	008							ELG
006	US#245 ELR	008							ELR
006	FG 245 …	008							AIR

Carbide
FG
Length cutting shape = 2.7 mm

237	ISO 500 314 237 xxx …	008	012	014	016	018	023	032	HP
	US	330	331	332					
006	RAH330 …	008							ELG
006	US#330 ELR	008							ELR
006	FG 330 …	008							AIR

Carbide
FG
Length cutting shape = 1.6 mm

237	ISO 500 314 237 xxx …	008	012	014	016	018	023	032	HP
	US	330							
001	FG 237 …	008							AIR

Flat End Taper Fissure

Carbide

FG

Length cutting shape = 4.9 mm

169	ISO 500 314 169 xxx …	009	012	014	016	018	023	032	HP
006	FG169L	009							AIR

Safe End Taper

Carbide

FG

Length cutting shape = 9 mm

219	ISO 806 316 219 xxx …	010	012	014	016	018	023	032	HP
295	ENDO-Z			014					ELR

Surgical drills / Implant

Pilot drills for guided drilling

Steel

RA

Length cutting shape =

G6 = 12.5 mm, G8 = 14.5 mm

Depth markings at 4, 6 and 8 mm

	ISO xxx …	022	022						HP
xxx	IM P.. .. Guided drilling	22 G6+A*	22 G8+A*						ELG

* = with real-time angle assistance

Pilot drills / Twist drills for free-hand drilling

Steel

RA

Length cutting shape = 16 mm

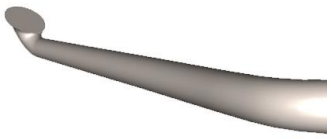
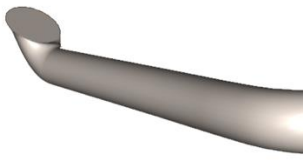
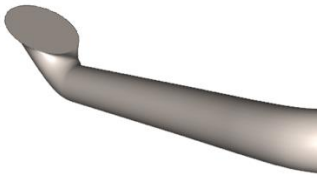
Depth markings at 4, 6 and 8 mm

	ISO xxx …	022	022	028	028	035	035		HP
xxx	IM P..	22	22 +A*	28	28 +A*				**ELG**
xxx	IM T..					35	35 +A*		**ELG**

* = with real-time angle assistance

Hand instruments

Excavators

Preview			
Size (type)	**1,0 mm (153/154)**	**1,5 mm (220/221)**	**2,0 mm (127/128)**
Name in Simodont	**EXC 1.0 RIGHT / LEFT**	**EXC 1.5 RIGHT / LEFT**	**EXC 2.0 RIGHT / LEFT**

Anterior hand scalers & curettes

Preview		
Size (type)	**H6/7 sickle scaler**	**Gracey curettes 1/2**
Name in Simodont	**H6 Scaler & H7 Scaler**	**Gracey Cur 1 & Gracey Cur 2**

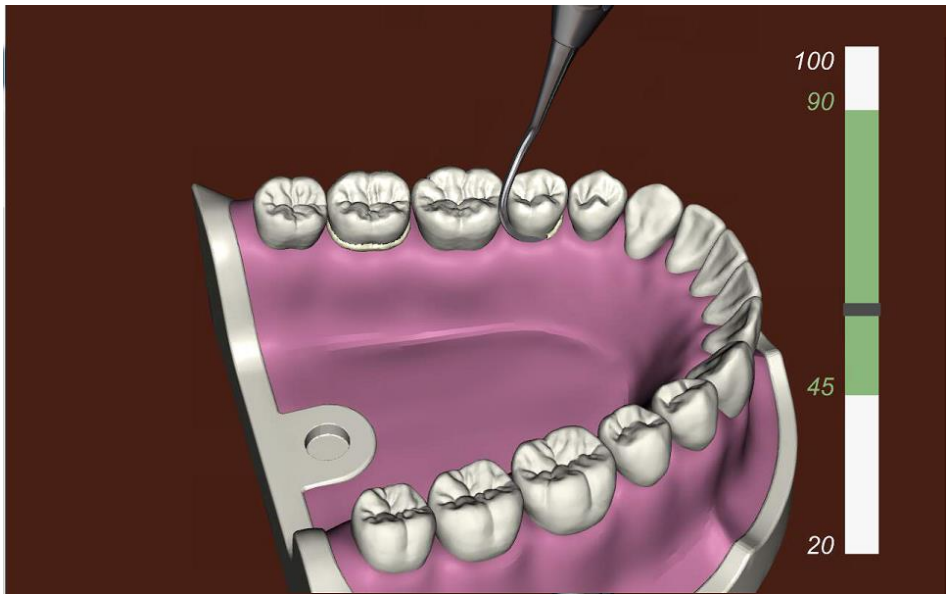
Posterior hand scalers & curettes

Preview		
Size (type)	**Nevi 4 Left / Right sickle scaler**	
Name in Simodont	**Nevi4 Right & Nevi4 Left**	

Live instrument angulation feedback

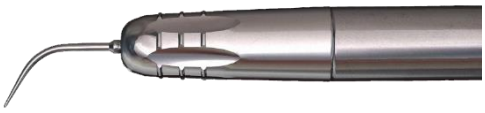
The hand scalers have the option to show live angulation feedback. The visualization shows the angulation in relation to the tooth's surface at the location where the scaler touches the tooth. An instrument angle between 45 and 90 degrees, plus the right amount of lateral and pull force, will result in effective removal of calculus.

Whether the scaler shows the angulation feedback is determined in the case. At case level the teacher can enable the option “Visual assistance” at the treatment plan page, to allow students to use this feature.



Live instrument angulation feedback

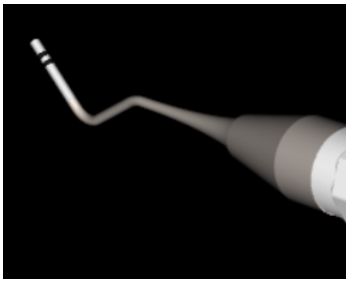
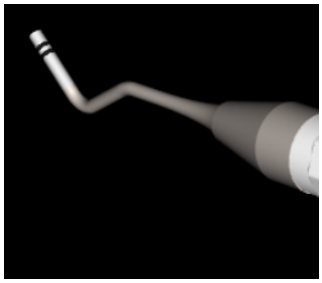
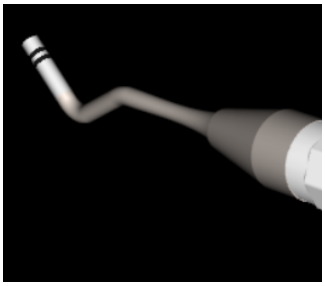
Ultrasonic scalers

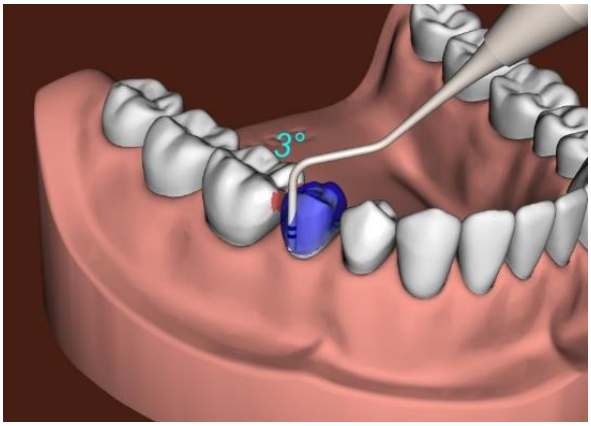
Preview		
Size (type)	**Magnetostrictive**	
Name in Simodont	**US Scal MS**	

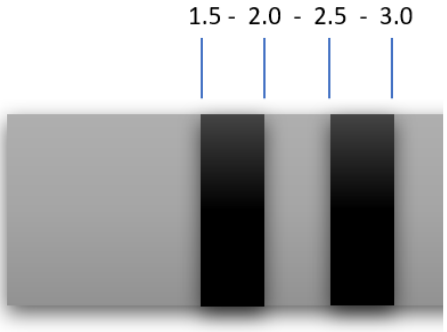
Regular Preparation Gauges

Suitable for crown and bridge procedures. Regular preparation gauges come with and without real-time angle indicator (+A), such that when the gauge is held against the wall of the tooth it can be used to measure the angle of the wall. The angle indicator shows the angle of the tool in relation to the long axis of the tooth.

All preparation gauges have depth markings at 1.5 – 2.0 – 2.5 – 3.0mm

Preview			
Size	**Ø1.0 mm**	**Ø 1.5 mm**	**Ø 2.0 mm**
Name in Simodont	**PREP 1.0 / PREP 1.0+A**	**PREP 1.5 / PREP 1.5+A**	**PREP 2.0 / PREP 2.0+A**





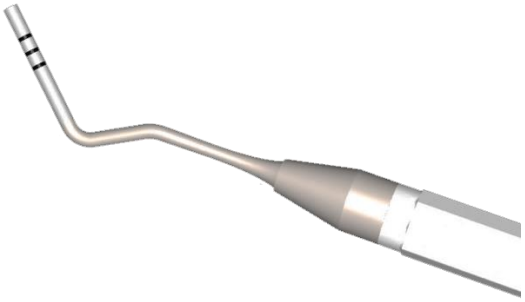
Depth markings regular depth gauges at:

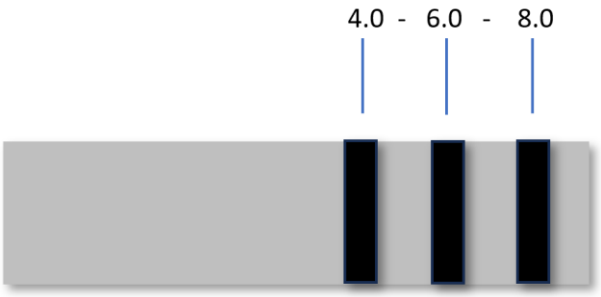
1.5 - 2.0 - 2.5 - 3.0 mm

Implant Depth Gauges

Suitable for implant procedure due to the increased length of the gauge. Implant depth preparation gauges come with and without real-time angle indicator (+A), such that when the gauge is held against the wall of the preparation it can be used to measure the angle of the preparation.

All implant depth gauges have depth markings at 4.0 - 6.0 - 8.0mm.

Preview	
Size	**Ø 2.0 mm, length 16 mm**
Name in Simodont	**Depth GA / Depth GA +A**



Depth markings implant depth gauges at:

4.0 - 6.0 - 8.0 mm

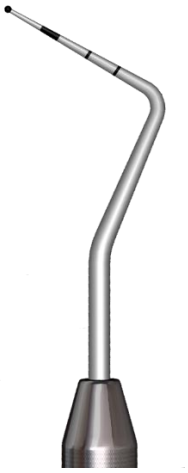
Mirror

Preview	
Size	**22,2 mm**
Name in Simodont	**Mirror**

Probes

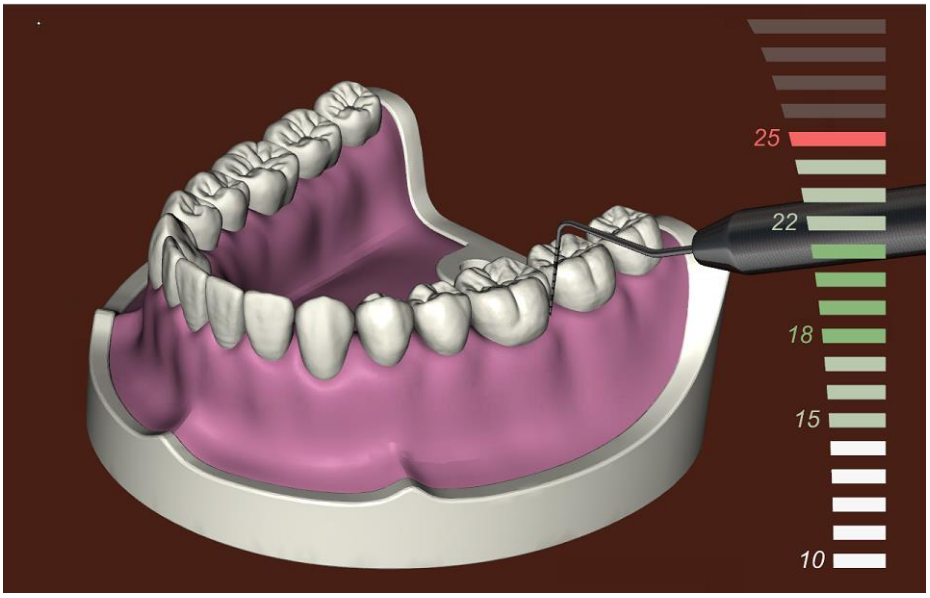
Preview	
Name in Simodont	**Probe**

Periodontal probes

Preview			
Name in Simodont	**UNC12**	**UNC15**	**WHO CP11.5**

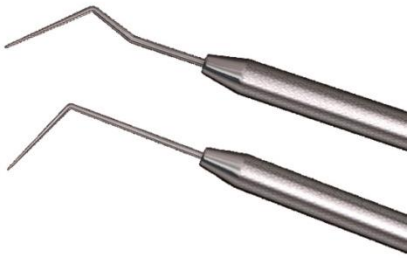
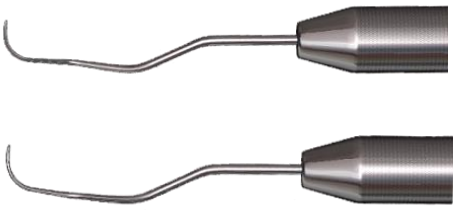
Live force feedback

All the periodontal probes have the option to show live feedback on the force applied. The visualization shows the force applied in the direction of the long axis of the instrument. The force is depicted in grams. Whether the probes show the force feedback is determined in the case. At case level the teacher can enable the option “Visual assistance” at the treatment plan page, to allow students to use this feature.



Live force feedback while using the UNC12 probe

Explorers

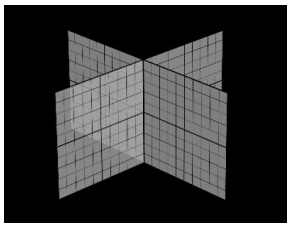
Preview		
Name in Simodont	**EXPLOR DG16-1** **EXPLOR DG16-2**	**EXPL ODU11** **EXPL ODU12**

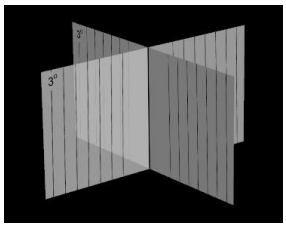
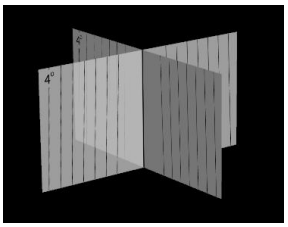
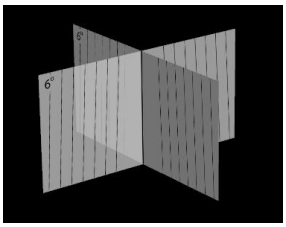
Spreader

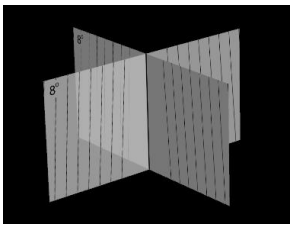
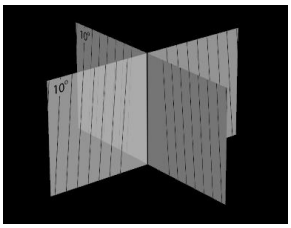
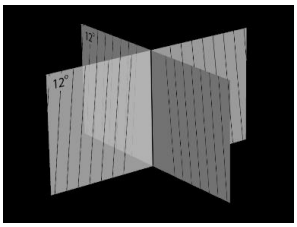
Preview	
Name in Simodont	**Spread D11**

Glass grids (virtual instruments)

Glass grids are virtual instruments that can be placed at the long axis of a tooth to measure the depth or a preparation or the angle of the preparation.

Preview			
Size	**glass grid straight lines**		
Name in Simodont	**GL GRD**		

Preview			
Size	**3 degrees**	**4 degrees**	**6 degrees**
Name in Simodont	**GL GRD 3DEG**	**GL GRD 4DEG**	**GL GRD 6DEG**

Preview			
Size	**8 degrees**	**10 degrees**	**12 degrees**
Name in Simodont	**GL GRD 8DEG**	**GL GRD 10DEG**	**GL GRD 12DEG**

SELF ASSESSMENT RUBRICS

Introduction

The Simodont Dental Trainer offers several self-assessment rubrics that can be used by students to self-assess their preparation.

The results of the self-assessment are visible to the teacher in the Evaluation page on the Teacher Station. The teacher can enter the teacher readings in the same rubric, such that a student-teacher comparison can be made.

Overview of available Rubrics

The following rubrics are available in the Simodont:

Caries:

- Class I Amalgam Preparation
- Class II Amalgam Preparation
- Anterior Class III Composite Preparation

Crown:

- Porcelain Fused to Metal Crown Preparation
- Fixed Dental Prothesis Abutment Preparation (#18, #20)

Endo access cavity:

- Anterior Access Cavity Procedure
- Posterior Access Cavity Procedure

Detailed information of the rubrics is given on the following pages.

Rubrics are currently only available in English. Rubrics cannot be edited by the teacher. In case you want to implement your own rubric, please contact NISSIN. We are able to remotely install a custom rubric.

Rubric: Class I Amalgam Preparation			
Excellent	**Acceptable**	**Marginally Substandard**	**Unacceptable**
1. External Outline Form			
Pits and grooves included and centered 1-1.25 mm B-L width 1-1.5 mm marginal ridge width	Slightly over or under extended Slightly wider B-L	Significantly over or under extended Significantly wider B-L	Grossly over or under extended > 3 mm B-L width or too narrow (does not fit small condenser) < 1 mm marginal ridge
2. Internal Form			
Wall orientation: - B L: Parallel or slightly convergent occlusally - M D: Parallel or slightly divergent - Pulpal: Horizontal Wall smoothness: Smooth and flat Line angles: Well defined	Wall orientation: - B L: Slightly divergent - M D: Slightly convergent - Pulpal: Slightly angled Wall smoothness: Slightly rough and curved Line angles: Lack definition	Wall orientation: - B L: Significantly divergent - M D: Significantly convergent - Pulpal: Significantly angled Wall smoothness: Significantly rough and curved Line angles: Poorly defined	Wall orientation: - B L: Grossly divergent (total lack of retention) or grossly convergent (unsupported walls) - M D: Grossly divergent or grossly convergent Wall smoothness: Grossly rough and poorly defined Line angles: Ill defined
3. Depth			
1.5-2 mm deep	Slightly shallow (1.25-1.5 mm) or deep (2 mm-2.25)	Significantly shallow (1-1.25 mm) or deep (2.25-2.5 mm)	< 1 mm or > 2.5 mm deep
4. Margins			
Smooth and regular	Slightly rough or irregular	Significantly rough or irregular	Grossly rough and poorly defined

Rubric: Class II Amalgam Preparation		
Acceptable	**Marginally Substandard**	**Critically Deficient**
1. External Outline Form		
Contact is visibly open when viewed proximally, and proximal clearance at the height of contour extends not more than 1.5 mm on either one or both proximal walls.	The outline form is inappropriately over-extended so that it compromises the remaining marginal ridge and/or cusp(s). The outline form is slightly under-extended. The proximal cavosurface margin deviates from 90 degrees and may deviate slightly and may jeopardize the longevity of the tooth or restoration.	The outline form is over-extended so that it compromises, undermines and leaves unsupported the remaining marginal ridge to the extent that the pulpal-occlusal wall is unsupported by dentin, or the width of the marginal ridge is 1 mm or less.
2. Gingival clearance		
The gingival clearance is visually open but not greater than 2 mm.	The gingival floor and/or proximal has minimal clearance. The clearance extends beyond 1.5 mm but is equal to or less than 3 mm on either one or both proximal walls The gingival clearance is greater than 2 mm but equal to or less than 3 mm.	The gingival clearance is greater than 3 mm or the contact is not broken.
3. Isthmus		
The isthmus is from 1 to 2 mm wide to not more than one-third of the intercuspal width.	The Isthmus is greater than one third but less than half the intercuspal width.	The isthmus is greater than one-half the intercuspal width.
4. Proximal cavosurface margin		
The proximal cavosurface margin may deviate from 90 degrees but is unlikely to jeopardize the longevity of the tooth or restoration; this includes small areas of unsupported enamel.	The cavosurface margin does not terminate in sound natural tooth structure, or there is explorer penetrable decalcification remaining on the cavosurface margin, or the cavosurface margin terminates in previous restorative material.	The proximal clearance at the height of contour extends beyond 3 mm on either one or both proximal walls.
5. External form deficiencies		

Rubric: Class II Amalgam Preparation		
Acceptable	**Marginally Substandard**	**Critically Deficient**
No external form deficiencies.	There is explorer-penetrable decalcification remaining on the gingival floor.	-
6. Pulpal floor depth		
The pulpal floor depth is 0.5 mm to 1.5 mm beyond the DEJ.	The pulpal floor is not entirely in dentin and islands of enamel are evident or the pulpal floor is more than 1.5 mm beyond the DEJ.	The pulpal floor is not entirely in dentin and islands of enamel are evident or the pulpal floor is more than 1.5 mm beyond the DEJ.
7. Depth of the axial wall		
The depth of the axial wall is 0.5 mm to 1.5 mm beyond the DEJ.	The axial wall is more than 1.5mm beyond the DEJ but less than 2.5 mm.	The axial wall is more than 1.5mm beyond the DEJ but less than 2.5 mm.
8. Walls of the proximal box		
The walls of the proximal box should be convergent but may be parallel, but appropriate internal retention is present	The walls of the proximal box diverge slightly occlusally and may jeopardize the longevity of the tooth or restoration.	The walls of the proximal box diverge occlusally, offering no retention and jeopardizing the longevity of the tooth or restoration.
9. Internal form deficiencies		
No deficiencies	Enamel remains on the axial wall.	Caries or previous restorative material remains in the preparation.
10. Adjacent teeth		
Any damage to adjacent tooth/teeth can be removed with polishing without adversely altering the shape of the contour and/or contact.	Damage to adjacent tooth/teeth requires recontouring that changes the shape and/or contour and/or contact.	There is gross damage to adjacent tooth/teeth, requiring restoration.
11. Tissue management		
-	There is iatrogenic soft tissue damage that is inconsistent with the procedure.	There is gross iatrogenic damage to the soft tissue inconsistent with the procedure and preexisting condition of the soft tissue.

Rubric: Anterior Class III Composite Preparation		
Acceptable	**Marginally Substandard**	**Critically Deficient**
1. Facial wall		
The facial wall, if broken, may extend no more than 1 mm beyond the contact area.	The facial wall extends more than 1 mm beyond the contact area.	The facial wall extends more than 2.5 mm beyond the contact area.
2. Gingival clearance from contact		
The gingival clearance does not exceed 1.5 mm.	The gingival clearance is greater than 1.5 mm and/or Gingival clearance is not visually broken.	The gingival clearance is greater than 2 mm.
3. Outline form		
The outline form may be over-extended mesiodistally 0.5-1 mm beyond what is necessary for complete removal of caries and/or previous restorative material.	The outline form is under-extended, making caries removal or placement of restorative material questionable. The outline form is over-extended mesiodistally by more than 1 mm but no more than 2 mm beyond what is necessary for complete removal of caries and/or previous restorative material.	The outline form is under-extended, making it impossible to manipulate and finish the restorative material. The outline form is over-extended by more than 2 mm beyond what is necessary for complete removal of caries and/or previous restorative material.
4. Cavosurface margins		
The cavosurface margins may be slightly irregular.	The incisal cavosurface margin is over-extended so that the integrity of the incisal angle is compromised. Cavosurface margin is rough and severely irregular. Cavosurface margin does not terminate in sound natural tooth structure, or there is explorer-penetrable decalcification or previous restorative material remaining on the cavosurface margins.	The incisal cavosurface margin is over-extended so that the incisal angle is removed or fractured. A Class IV restoration is required without prior justification.
5. Unsupported enamel		

Rubric: Anterior Class III Composite Preparation		
Acceptable	**Marginally Substandard**	**Critically Deficient**
There may be a small area of unsupported enamel, which is not necessary to preserve facial esthetics.	There are large areas of unsupported enamel, which is not necessary to preserve facial esthetics.	-
6. Enamel cavosurface margin bevels		
Enamel cavosurface margin bevels, if present, do not exceed 1 mm in width.	Enamel cavosurface margin bevels, if present, exceed 1 mm in width, are not uniform, or are inappropriate for the size of the restoration.	-
7. External form deficiencies		
No other external outline form deficiencies.	-	There are caries remaining.
8. Depth of axial wall		
The depth of the axial wall is not greater than 1.5 mm beyond the DEJ.	The depth of the axial wall is deeper than 1.5 mm and is less than 2.5 mm beyond the DEJ.	The axial wall is more than 2.5 mm beyond the DEJ.
9. Internal wall finish		
The internal wall may be slightly rough and irregular.	Some internal walls are rough and irregular.	All internal walls are rough and irregular.
10. Internal form deficiencies		
No other internal deficiencies.	-	Caries or previous restorative material remains. Assigned carious lesions have not been accessed.
11. Adjacent teeth		
Any damage to adjacent teeth can be removed with polishing without adversely altering the shape of the contour and/or contact.	Damage to adjacent teeth requires recontouring that changes the shape, and/or contour, and/or contact.	There is gross damage to adjacent tooth/teeth, requiring restoration.
12. Soft tissue management		

Rubric: Anterior Class III Composite Preparation		
Acceptable	**Marginally Substandard**	**Critically Deficient**
	There is iatrogenic soft tissue damage that is inconsistent with the procedure.	There is gross iatrogenic damage to the soft tissue that is inconsistent with the procedure and pre-existing condition of the soft tissue.

Rubric: Porcelain Fused to Metal Crown Preparation		
Acceptable	**Marginally Substandard**	**Critically Deficient**
1. Cervical margin depth		
Cervical margin is at the level of less than or equal to 1 mm occlusal to the CEJ or simulated free gingival margin, whichever is most coronal.	Cervical margin is over-extended greater than 0.5 mm below the CEJ or the crest of the simulated free gingival margin, whichever is most occlusal Cervical margin is under-extended greater than 1 mm but less than or equal to 1.5 mm occlusal to the CEJ or the crest of the simulated free gingival margin, whichever is most occlusal.	Cervical margin is over-extended by greater than 0.5 mm below the simulated free gingival margin, causing visual damage to the typodont Cervical margin is under-extended by greater than 1.5 mm above the simulated free gingival margin or CEJ, whichever is more coronal, and thereby compromises esthetics, resistance and retention form.
2. Cervical margin smoothness		
Cervical margin is continuous but slightly rough and lacks some definition.	Cervical margin has some continuity, is significantly rough and is poorly defined.	Cervical margin has no continuity and/or definition.
3. Cervical bevel		
Cervical bevel, when used, is greater than 0.5 mm but less than 1.5 mm and lacks some definition.	Cervical bevel, when used, is less than 0.5 mm or greater than 1.5 mm but does not exceed 2 mm.	Cervical bevel, when used, has no continuity or is greater than 2 mm and has no definition.
4. Line of draw		

Rubric: Porcelain Fused to Metal Crown Preparation		
Acceptable	**Marginally Substandard**	**Critically Deficient**
The path of insertion/line of draw deviates less than 20 degrees from the long axis of the tooth.	The path of insertion/line of draw deviates 20 degrees to less than 30 degrees from the long axis of the tooth.	The path of insertion/line of draw deviates greater than or equal to 30 degrees from the long axis of the tooth.
5. Axial reduction		
Axial tissue removal is between 1.0 - 2.0 mm Walls may be slightly rough and lack some definition	Axial tissue removal is between 0.5 mm - 1.0 mm or 2.0 mm - 2.5 mm Axial walls are rough.	Axial tissue removal is less than 0.5 mm or greater than 2.5 mm.
6. Taper		
Taper is present, from nearly parallel to less than 12 degrees per wall.	There is no taper or excessive taper that is greater than or equal to 12 degrees but less than or equal to16 degrees per wall.	Taper is grossly over-reduced greater than 16 degrees per wall and/or there is an undercut.
7. Shoulder		
Facial shoulder is between 1.0 - 2.0 mm wide.	Facial shoulder is reduced 0.5 - 1.0 mm or 2.0 - 2.5 mm.	Facial shoulder is less than 0.5 mm or greater than 2.5 mm.
8. Occlusal reduction		
Occlusal reduction is between 1.5 – 2.5 mm. Occlusal anatomy is maintained.	Occlusal reduction is between 0.5 – 1.5 mm or 2.5 – 3.0 mm. Occlusal anatomy is not maintained and/or is flat.	Occlusal reduction is less than 0.5 mm or greater than 3.0 mm.
9. Internal line angles		
Internal line angles and cusp tip areas are not completely rounded and show a slight tendency of being sharp.	Internal line angles and cusp tip areas show only minimal evidence of rounding with a greater tendency of being sharp.	Internal line angles or cusp tip areas are excessively sharp with no evidence of Rounding.

Rubric: Fixed Dental Prothesis Abutment Preparation (Universal #18,#20) (FDI #37 & #35)			
Excellent	**Acceptable**	**Marginally Substandard**	**Unacceptable**
1. Adjacent teeth #20			
No visible or tactile (surface unaltered)	Not contour change, but visual/tactile roughness detected Damage can be removed w/ polishing w/o altering the shape of the contour.	Damage requires recontouring which changes the shape position of the contact.	Visible damage requiring restoration to correct contour.
2. Occlusal reduction #18			
HC (B) Cusps 1.5 mm NWC (L) 1.0 mm CG 1.0 mm FCR near tip 1.5 mm Contour follows 1 degree anatomy	Insufficient << Excessive 1.2 mm < CHC < 2.0 mm 0.8 mm < NWC < 1.5 mm 0.8 mm < CG < 1.5 mm 1.2 mm < FCR < 2.0 mm Slightly compromised contour	Insufficient << Excessive 1.2 mm < CHC < 2.0 mm 0.8 mm < NWC < 1.5 mm 0.8 mm < CG < 1.5 mm 1.2 mm < FCR < 2.0 mm Occlusal anatomy too compromised	Insufficient << Excessive 1.2 mm < CHC < 2.0 mm 0.8 mm < NWC < 1.5 mm 0.8 mm < CG < 1.5 mm 1.2 mm < FCR < 2.0 mm Severely compromised contour Step in central groove Central groove too B or L Flat plane Angle of FCR incorrect
3. Occlusal reduction #20			

Rubric: Fixed Dental Prothesis Abutment Preparation (Universal #18,#20) (FDI #37 & #35)			
Excellent	**Acceptable**	**Marginally Substandard**	**Unacceptable**
HC (B) Cusps 1.5 mm NWC (L) 1.0 mm CG 1.0 mm FCR near tip 1.5 mm Contour follows 1 degree anatomy	Insufficient << Excessive 1.5 mm < CHC < 2.5 mm 0.8 mm < NWC < 1.5 mm 0.8 mm < CG < 1.5 mm 1.5 mm < FCR < 2.5 mm Slightly compromised contour	Insufficient << Excessive 1.5 mm < CHC < 2.5 mm 0.8 mm < NWC < 1.5 mm 0.8 mm < CG < 1.5 mm 1.2 mm < FCR < 2.0 mm Occlusal anatomy too compromised	Insufficient << Excessive 1.25 mm < CHC < 2.5 mm 0.8 mm < NWC < 1.5 mm 0.8 mm < CG < 1.5 mm 1.5 mm < FCR < 2.5 mm Severely compromised contour Central groove too B or L Flat plane
4. Axial reduction #18			
TOC 6 - 10 degrees Follows contour of adjacent tooth	TOC present but nearly parallel (< 6 degrees) Slightly excessive (15 < TOC < 20 degrees) La Li / M-D	TOC = 0 degree 20 < TOC < 25 degrees	TOC > 25 degrees La-Li / M D Undercut
5. Axial reduction #20			
TOC 6 - 10 degrees Follows contour of adjacent tooth	TOC present but nearly parallel (< 6 degrees) Slightly excessive (15 < TOC < 20 degrees) La Li / M-D	TOC = 0 degree 20 < TOC < 25 degrees	TOC > 25 degrees La-Li / M D Undercut
6. Path of insertion			

Rubric: Fixed Dental Prothesis Abutment Preparation (Universal #18,#20) (FDI #37 & #35)			
Excellent	**Acceptable**	**Marginally Substandard**	**Unacceptable**
POI <10 degrees deviation from parallel to long axis Line of Draw present	POI 10-20 degrees deviation from the long axis Outside walls have insufficient convergence Inside walls have insufficient divergence	POI 20-30 degrees deviation from the long axis Outside walls have insufficient convergence Inside walls have insufficient divergence	POI > 30 degrees from long axis Line of Draw not present Outside wall diverge Inside walls converge Buccal and lingual walls diverge
7. Finish line location #18			
0.5 mm coronal to CEJ	0.5 - 1.0 mm coronal to CEJ Between CEJ and 0.5 mm coronal to CEJ At the level of CEJ	-	1.0 mm coronal to CEJ (underextended) Apical to CEJ (overextended)
8. Finish line location #20			
0.5 mm coronal to CEJ	0.5 - 1.0 mm coronal to CEJ Between CEJ and 0.5 mm coronal to CEJ At the level of CEJ	-	1.0 mm coronal to CEJ (underextended) Apical to CEJ (overextended)
9. Shoulder extension #20			
Lingual extent of original proximal contacts	Shoulder slightly labial M/D Shoulder slightly lingual M/D	Shoulder too labial M/D Shoulder too lingual M/D	Shoulder extension grossly incorrect M, D
10. Finish line quality #18			
Continuous Well defined ½ diameter chamfer bur 360° axially	Continuous but slightly rough and lacks some definition. > or < ½ diameter chamfer diamond bur 1 – 1.2 mm shoulder	Continuous but Significantly rough Poorly defined > or < ½ diameter chamfer diamond bur 0.5 – 1 mm shoulder 1.2 – 1.5 mm	No continuity or definition Significantly rough Too wide, too narrow chamfer Unsupported enamel Too wide (>2.0 mm) Too narrow (<0.5 mm)
11. Finish line quality #20			

Rubric: Fixed Dental Prothesis Abutment Preparation (Universal #18,#20) (FDI #37 & #35)			
Excellent	**Acceptable**	**Marginally Substandard**	**Unacceptable**
Continuous Well defined ½ diameter chamfer bur 360° axially	Continuous but slightly rough and lacks some definition. > or < ½ diameter chamfer diamond bur 1 – 1.2 mm shoulder	Continuous but Significantly rough Poorly defined > or < ½ diameter chamfer diamond bur 0.5 – 1 mm shoulder 1.2 – 1.5 mm	No continuity or definition Significantly rough Too wide, too narrow chamfer Unsupported enamel Too wide (>2.0 mm) Too narrow (<0.5 mm)
12. Finish of the preparation #18			
Rounded Reflects fine grit diamond	Rounded but irregular Limited Roughness	Sharp Rough	Excessively sharp Roughness sufficient to inhibit indirect procedures
13. Finish of the preparation #20			
Rounded Reflects fine grit diamond	Rounded but irregular Limited Roughness	Sharp Rough	Excessively sharp Roughness sufficient to inhibit indirect procedures

Rubric: Anterior Access Cavity Procedure		
Acceptable	**Marginally Substandard**	**Critically Deficient**
1. Placement of the access opening		
Placement of the access opening is on the lingual surface directly over the pulp chamber and allows for: • Pulp horns to be fully removed • Complete debridement of the pulp chamber • Straight-line access to the root canal system	Placement of the access opening is not directly over the pulp chamber, but does allow: • Complete debridement of the pulp chamber • Access to the root canal system	Placement of the access opening is NOT over the pulp chamber and/or does NOT allow: • Complete debridement of the pulp chamber; or access to the root canal system.

2. Size of the access opening		
Size of the access opening: • Allows for complete removal of pulp horns • The incisal aspect of the access opening is not less than 3 mm from the incisal edge which provides for a fully supported incisal edge • The cervical aspect of the access opening is not less than 4 mm from the lingual CE) which provides for a fully supported cingulum • The widest portion of the preparation mesio-distally is not greater than one- half of the lingual surface which provides for fully supported marginal ridges (approximately 2 mm)	Size of the access opening: • The incisal aspect of the access opening is not less than 2 mm from the incisal edge which provides for a supported incisal edge • The cervical aspect of the access opening is not less than 3 mm from the lingual CEJ which provides for a supported cingulum • The widest portion of the preparation mesio-distally is greater than one-half of the lingual surface, but provides for supported marginal ridges (greater than 1mm)	Size of the access opening: • Does NOT allow for removal of pulp horns • Incisal aspect of the access opening is less than 2 mm from the incisal edge which compromises the incisal edge • Cervical aspect of the opening is less than 3 mm from the lingual CEJ which compromises the cingulum • The preparation compromises the mesial and/or distal marginal ridge(s) (1mm or less)
3. Internal form taper		
From the lingual surface to the cervical portion, the internal form tapers to the canal opening with no irregularities	From the lingual surface to the cervical portion, the internal form tapers to the canal opening with no irregularities	Internal form exhibits excessive gouges which compromise the integrity of the tooth

Rubric: Posterior Access Cavity Procedure		
Acceptable	**Marginally Substandard**	**Critically Deficient**
1. Placement of the access opening		
Placement of the access opening is over the pulp chamber allowing for debridement of the pulp chamber and straight-line access to the three root canals located in the tooth.	Placement of the access opening is not directly over the pulp chamber and hinders but allows complete debridement of the pulp chamber and hinders but allows access to the three root canals.	Placement of the access opening is not over the pulp chamber and/or does not allow complete debridement of the pulp chamber or access to the 3 root canals.
2. Access preparation		
Access opening is in the mesial triangular pit and central fossa of the tooth and: • mesial extent of the access preparation is not less than 3 mm from the mesial marginal ridge • buccal extent of the access preparation is not less than 2 mm from the line bisecting the mesiobuccal and distobuccal cusp tips • distal extent of the access preparation is not less than 2 mm from the oblique ridge • The palatal extent of the access preparation is not less than 2 mm from the mesiolingual cusp tip	Access opening is in the mesial triangular pit and central fossa of the tooth and: • mesial extent of the access preparation is not less than 2 mm from the mesial marginal ridge • buccal extent of the access preparation is not less than 1mm from the line bisecting the mesiobuccal and distobuccal cusp tips • distal extent of the access preparation is not less than 1mm from the oblique ridge • palatal extent of the access preparation is not less than 1mm from the mesiolingual cusp tip	The access opening is either grossly under- or over-extended in one or more of the following categories: • mesial extent of the access preparation is less than 2 mm distal to the mesial marginal ridge • buccal extent of the access preparation is less than 1mm from the line bisecting the mesiobuccal and distobuccal cusp tips • distal extent of the access preparation is less than 1mm from the oblique ridge • palatal extent of the access preparation is less than 1mm from the mesiolingual cusp tip • does not allow complete debridement of the pulp chamber or access to the 3 root canals

Rubric: Posterior Access Cavity Procedure		
Acceptable	**Marginally Substandard**	**Critically Deficient**
3. Depth of access preparation		
The depth of the access preparation removes the entire roof of the pulp chamber, and all three canals can be accessed.	Internal form access preparation leaves at least 1mm of lateral supported tooth structure at any point of the preparation and tapers to the canal orifices with moderate gouges.	The depth of the access preparation does not remove the roof of the pulp chamber to the extent that all pulp tissue can be removed, and all 3 canals can be accessed.
4. Internal Form		
The internal form of the access preparation leaves at least 2 mm of supported lateral tooth structure at any point of the access preparation	The internal form of the access preparation leaves at least 2 mm of supported lateral tooth structure at any point of the access preparation	The internal form of the access preparation leaves less than 1mm of lateral supported tooth structure at any point of the preparation and/or tapers to the canal orifices with gross ledges that will inhibit access to the root canal orifices
5. OTHER critical errors		
-	-	• The pulpal floor at the center of the floor is more than 10 mm deep when measured from the buccal cavosurface margin of the access preparation • There is a perforation in any aspect of the access preparation • The crown has been reduced

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