

# Health & Care Information Model:

## nl.zorg.ApgarScore-v1.2

Status: Final

Release: 2024

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# Content

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# 1. nl.zorg.ApgarScore-v1.2

DCM::CoderList	Werkgroep RadB Verpleegkundige Gegevens
DCM::ContactInformation.Address	*
DCM::ContactInformation.Name	*
DCM::ContactInformation.Telecom	*
DCM::ContentAuthorList	Werkgroep RadB Verpleegkundige Gegevens
DCM::CreationDate	11-10-2016
DCM::DeprecatedDate	
DCM::DescriptionLanguage	nl
DCM::EndorsingAuthority.Address	
DCM::EndorsingAuthority.Name	
DCM::EndorsingAuthority.Telecom	
DCM::Id	2.16.840.1.113883.2.4.3.11.60.40.3.12.16
DCM::KeywordList	Apgar
DCM::LifecycleStatus	Final
DCM::ModelerList	Werkgroep RadB Verpleegkundige Gegevens
DCM::Name	nl.zorg.ApgarScore
DCM::PublicationDate	24-04-2024
DCM::PublicationStatus	Published
DCM::ReviewerList	Projectgroep RadB Verpleegkundige Gegevens & Kerngroep Registratie aan de Bron
DCM::RevisionDate	05-09-2023
DCM::Supersedes	nl.zorg.ApgarScore-v1.1
DCM::Version	1.2
HCIM::PublicationLanguage	EN

## 1.1 Revision History

Publicatieversie 1.0 (04-09-2017)

Publicatieversie 1.0.1 (01-09-2020)

Bevat: ZIB-891.

Publicatieversie 1.1 (01-12-2021)

Bevat: ZIB-1408.

Publicatieversie 1.2 (15-10-2023)

Bevat: ZIB-1757, ZIB-1922, ZIB-1945.

## 1.2 Concept

The Apgar score represents the overall clinical status of a newborn child. This is evaluated one, five and ten minutes after birth based on 5 parameters: Appearance, Pulse, Grimace, Activity, Respiration. If the score measured at 5 minutes is < 8, the Apgar score is measured again at 10, 15, 20 minutes etc. until the score = 8.

## 1.3 Mindmap

## 1.4 Purpose

The Apgar score is primarily meant to rapidly determine the clinical condition of the newborn child and whether extra care is required. A low Apgar score can be caused by developmental disorders, prenatal accidents or negative influences during birth. The Apgar score remains a snapshot in time and cannot be used to predict the locomotive or mental development of a child.

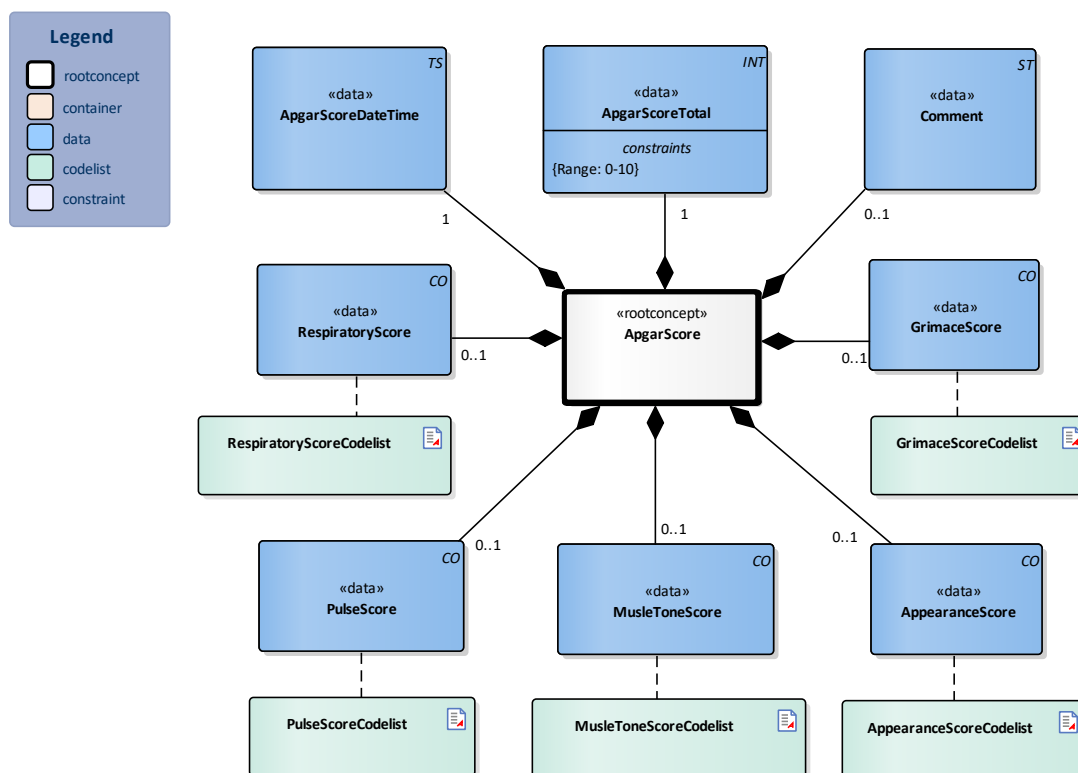
## 1.5 Patient Population

The ApgarScore information model is meant for children up to the age of 12 month.

## 1.6 Evidence Base

The definitions of the concepts are based on the Apgar score (as defined in Dutch by the KNOV), the guidelines Fetal Monitoring of the NVOG and Reanimation of Newborn of the NVK.

## 1.7 Information Model



<b>«rootconcept»</b>	<b>ApgarScore</b>	
<b>Definitie</b>	Root concept of the ApgarScore information model. This root concept contains all data elements of the ApgarScore information model.	
<b>Datatype</b>		
<b>DCM::ConceptId</b>	NL-CM:12.16.1	
<b>DCM::DefinitionCode</b>	SNOMED CT: 302083008	Finding of Apgar score
<b>Opties</b>		

<b>«data»</b>	<b>ApgarScoreDateTime</b>	
<b>Definitie</b>	The day and time at which the Apgar score is registered.	
<b>Datatype</b>	TS	
<b>DCM::ConceptId</b>	NL-CM:12.16.3	
<b>DCM::ExampleValue</b>	09-08-2019 13:15	
<b>Opties</b>		

<b>«data»</b>	<b>ApgarScoreTotal</b>	
<b>Definitie</b>	Total of the Apgar score. The total score has a range from 0 - 10.	
<b>Datatype</b>	INT	
<b>DCM::ConceptId</b>	NL-CM:12.16.2	

<b>DCM::DefinitionCode</b>	LOINC: 9271-8 10 minute Apgar Score	
<b>DCM::DefinitionCode</b>	LOINC: 9274-2 5 minute Apgar Score	
<b>DCM::DefinitionCode</b>	LOINC: 9272-6 1 minute Apgar Score	
<b>Opties</b>		
<b>Constraint</b>	Range: 0-10	

<b>«data»</b>	<b>RespiratoryScore</b>	
<b>Definitie</b>	The Apgar subscore for respiration.	
<b>Datatype</b>	CO	
<b>DCM::ConceptId</b>	NL-CM:12.16.4	
<b>DCM::DefinitionCode</b>	LOINC: 32415-2 5 minute Apgar Respiratory effort	
<b>DCM::DefinitionCode</b>	LOINC: 32405-3 10 minute Apgar Respiratory effort	
<b>DCM::DefinitionCode</b>	LOINC: 32410-3 1 minute Apgar Respiratory effort	
<b>DCM::ExampleValue</b>	2 (Flink huilen en goed doorademen)	
<b>DCM::ValueSet</b>	RespiratoryScoreCodelist	OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.16.1
<b>Opties</b>		

<b>«data»</b>	<b>AppearanceScore</b>	
<b>Definitie</b>	The Apgar subscore for skin color/appearance.	
<b>Datatype</b>	CO	
<b>DCM::ConceptId</b>	NL-CM:12.16.7	
<b>DCM::DefinitionCode</b>	LOINC: 32411-1 5 minute Apgar Color	
<b>DCM::DefinitionCode</b>	LOINC: 32401-2 10 minute Apgar Color	
<b>DCM::DefinitionCode</b>	LOINC: 32406-1 1 minute Apgar Color	
<b>DCM::ExampleValue</b>	2 (Normale gezonde huidskleur)	
<b>DCM::ValueSet</b>	AppearanceScoreCodelist	OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.16.4
<b>Opties</b>		

<b>«data»</b>	<b>PulseScore</b>	
<b>Definitie</b>	The Apgar subscore for pulse.	
<b>Datatype</b>	CO	
<b>DCM::ConceptId</b>	NL-CM:12.16.5	
<b>DCM::DefinitionCode</b>	LOINC: 32412-9 5 minute Apgar Heart rate	
<b>DCM::DefinitionCode</b>	LOINC: 32402-0 10 minute Apgar Heart rate	
<b>DCM::DefinitionCode</b>	LOINC: 32407-9 1 minute Apgar Heart rate	
<b>DCM::ExampleValue</b>	1 (Een hartslag van minder dan 100 slagen per minuut)	
<b>DCM::ValueSet</b>	PulseScoreCodelist	OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.16.2

<b>Opties</b>	
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<b>«data»</b>	<b>GrimaceScore</b>	
<b>Definitie</b>	The Apgar subscore for grimace.	
<b>Datatype</b>	CO	
<b>DCM::ConceptId</b>	NL-CM:12.16.8	
<b>DCM::DefinitionCode</b>	LOINC: 32414-5 5 minute Apgar Reflex irritability	
<b>DCM::DefinitionCode</b>	LOINC: 32404-6 10 minute Apgar Reflex irritability	
<b>DCM::DefinitionCode</b>	LOINC: 32409-5 1 minute Apgar Reflex irritability	
<b>DCM::ExampleValue</b>	2 (Reageert door te huilen, te hoesten of te niezen)	
<b>DCM::ValueSet</b>	GrimaceScoreCodelist	OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.16.5
<b>Opties</b>		

<b>«data»</b>	<b>MusleToneScore</b>	
<b>Definitie</b>	The Apgar subscore for activity/muscle tone.	
<b>Datatype</b>	CO	
<b>DCM::ConceptId</b>	NL-CM:12.16.6	
<b>DCM::DefinitionCode</b>	LOINC: 32413-7 5 minute Apgar Muscle tone	
<b>DCM::DefinitionCode</b>	LOINC: 32408-7 1 minute Apgar Muscle tone	
<b>DCM::DefinitionCode</b>	LOINC: 32403-8 10 minute Apgar Muscle tone	
<b>DCM::ExampleValue</b>	2 (Beweegt armpjes en beentjes goed)	
<b>DCM::ValueSet</b>	MusleToneScoreCodelist	OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.16.3
<b>Opties</b>		

<b>«data»</b>	<b>Comment</b>	
<b>Definitie</b>	Comment on the Apgar score.	
<b>Datatype</b>	ST	
<b>DCM::ConceptId</b>	NL-CM:12.16.9	
<b>DCM::DefinitionCode</b>	LOINC: 48767-8 Annotation comment	
<b>Opties</b>		

<b>«document»</b>	<b>RespiratoryScoreCodelist</b>	
<b>Definitie</b>		
<b>Datatype</b>		
<b>DCM::ExampleValue</b>	Zwak huilen	
<b>DCM::ValueSetBinding</b>	Required	
<b>DCM::ValueSetId</b>	2.16.840.1.113883.2.4.3.11.60.40.2.12.16.1	
<b>DCM::ValueSetIncludeOTH</b>	False	
<b>DCM::ValueSetStatus</b>	Active	
<b>HCIM::ValueSetLanguage</b>	EN	
<b>Opties</b>		

AdemhalingScoreCodelijst			OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.16.1		
Concept Name	Concept Code	Concept Value	CodeSys. Name	CodeSystem OID	Description
Not breathing	LA6725-1	0	LOINC	2.16.840.1.113883.6.1	Niet op eigen kracht ademen
Weak cry; may sound like whimpering, slow or irregular breathing	LA6726-9	1	LOINC	2.16.840.1.113883.6.1	Zwak, onregelmatig of hijgerig ademen
Good, strong cry; normal rate and effort of breathing	LA6727-7	2	LOINC	2.16.840.1.113883.6.1	Flink huilen en goed doorademen

«document»	AppearanceScoreCodelist	
Definitie		
Datatype		
DCM::ValueSetBinding	Required	
DCM::ValueSetId	2.16.840.1.113883.2.4.3.11.60.40.2.12.16.4	
DCM::ValueSetInclude OTH	False	
DCM::ValueSetStatus	Active	
HCIM::ValueSetLanguage	EN	
Opties		

HuidskleurScoreCodelijst			OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.16.4		
Concept Name	Concept Code	Concept Value	CodeSys. Name	CodeSystem OID	Description
The baby's whole body is completely bluish-gray or pale	LA6722-8	0	LOINC	2.16.840.1.113883.6.1	Een bleke of blauwe huidskleur
Good color in body with bluish hands or feet	LA6723-6	1	LOINC	2.16.840.1.113883.6.1	Normale huidskleur lijfje, maar blauwachtige armen en benen
Good color all over	LA6724-4	2	LOINC	2.16.840.1.113883.6.1	Normale gezonde huidskleur

«document»	PulseScoreCodelist	
Definitie		
Datatype		
DCM::ValueSetBinding	Required	
DCM::ValueSetId	2.16.840.1.113883.2.4.3.11.60.40.2.12.16.2	
DCM::ValueSetInclude OTH	False	
DCM::ValueSetStatus	Active	

<b>HCIM::ValueSetLanguage</b>	EN				
<b>Opties</b>					
<b>HartslagScoreCodelijst</b>			<b>OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.16.2</b>		
<b>Concept Name</b>	<b>Concept Code</b>	<b>Concept Value</b>	<b>CodeSys. Name</b>	<b>CodeSystem OID</b>	<b>Description</b>
No heart rate	LA6716-0	0	LOINC	2.16.840.1.113883.6.1	Geen hartslag, of een onhoorbare hartslag
Fewer than 100 beats per minute	LA6717-8	1	LOINC	2.16.840.1.113883.6.1	Een hartslag van minder dan 100 slagen per minuut
At least 100 beats per minute	LA6718-6	2	LOINC	2.16.840.1.113883.6.1	Een hartslag van meer dan 100 slagen per minuut

<b>«document»</b>	<b>GrimaceScoreCodelist</b>				
<b>Definitie</b>					
<b>Datatype</b>					
<b>DCM::ValueSetBinding</b>	Required				
<b>DCM::ValueSetId</b>	2.16.840.1.113883.2.4.3.11.60.40.2.12.16.5				
<b>DCM::ValueSetInclude OTH</b>	False				
<b>DCM::ValueSetStatus</b>	Active				
<b>HCIM::ValueSetLanguage</b>	EN				
<b>Opties</b>					
<b>ReflexenScoreCodelijst</b>			<b>OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.16.5</b>		
<b>Concept Name</b>	<b>Concept Code</b>	<b>Concept Value</b>	<b>CodeSys. Name</b>	<b>CodeSystem OID</b>	<b>Description</b>
No response to airways being suctioned	LA6719-4	0	LOINC	2.16.840.1.113883.6.1	Reageert niet op prikkels/Geen reactie
Grimace during suctioning	LA6720-2	1	LOINC	2.16.840.1.113883.6.1	Reageert met kleine jammergeluidjes en zwakke bewegingen
Grimace and pulling away, cough, or sneeze during suctioning	LA6721-0	2	LOINC	2.16.840.1.113883.6.1	Reageert door te huilen, te hoesten of te niezen

<b>«document»</b>	<b>MusleToneScoreCodelist</b>				
<b>Definitie</b>					
<b>Datatype</b>					
<b>DCM::ValueSetBinding</b>	Required				
<b>DCM::ValueSetId</b>	2.16.840.1.113883.2.4.3.11.60.40.2.12.16.3				
<b>DCM::ValueSetInclude OTH</b>	False				

<b>DCM::ValueSetStatus</b>	Active				
<b>HCIM::ValueSetLanguage</b>	EN				
<b>Opties</b>					
<b>SpierspanningScoreCodelijst</b>			<b>OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.16.3</b>		
<b>Concept Name</b>	<b>Concept Code</b>	<b>Concept Value</b>	<b>CodeSys. Name</b>	<b>CodeSystem OID</b>	<b>Description</b>
Limp; no movement	LA6713-7	0	LOINC	2.16.840.1.113883.6.1	Geen spierspanning aanwezig/slap
Some flexion of arms and legs	LA6714-5	1	LOINC	2.16.840.1.113883.6.1	Weinig bewegingen met armpjes en beentjes
Active motion	LA6715-2	2	LOINC	2.16.840.1.113883.6.1	Beweegt armpjes en beentjes goed

	<b>Legend</b>
<b>Definitie</b>	
<b>Datatype</b>	
<b>Opties</b>	

## 1.8 Example Instances

<b>ApgarScore</b>	
AdemhalingsScore	2 (Flink huilen en goed doorademen)
HartslagScore	1 (Een hartslag van minder dan 100 slagen per minuut)
SpierspanningScore	2 (Beweegt armpjes en beentjes goed)
HuidskleurScore	1 (Roze lijfje, maar blauwachtige armen en benen)
ReflexenScore	2 (Reageert door te huilen, te hoesten of te niezen)
ApgarScoreTotaal	8
ApgarScoreDatumTijd	19-12-2016 9:00
Toelichting	-

## 1.9 Instructions

## 1.10 Interpretation

## 1.11 Care Process

## 1.12 Example of the Instrument

## 1.13 Constraints

## **1.14 Issues**

## **1.15 References**

## **1.16 Functional Model**

## **1.17 Traceability to other Standards**

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