

JAMES manual

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Chapter 1

Prerequisites

This is very, very first minimal documentation of JAMES internals.

Chapter 2

Introduction

Here's an introduction about JAMES

Chapter 3

Growth charts in JAMES

3.1 Chart naming conventions

The link <https://groeidiagrammen.nl/ocpu/lib/james/www/> contains an interactive overview of the available growth charts. There are 342 different charts: for boys and girls, for preterms, for different age ranges, for specific ethnic groups, for height, weight, BMI, and so on. Each chart has a chart code, a character code identifying the design. This section explains the construction of the chart codes.

The GitHub repository <https://github.com/stefvanbuuren/chartbox> contains the chart libraries that are available to JAMES. The `list_charts()` function produces a tabular overview.

```
charts <- chartbox::list_charts()
dim(charts)
```

```
## [1] 342    8
```

```
charts[c(1, 22, 23, 300, 301, 340), ]
```

##	chartgrp	chartcode	population	sex	design	side	language	week
## 1	nl2010	HJAA	HS	male	A	front	dutch	
## 22	nl2010	HMBH	HS	female	B	hgt	dutch	
## 23	nl2010	HMBR	HS	female	B	wfh	dutch	
## 300	preterm	PMEAN32	PT	female	E	front	dutch	32
## 301	preterm	PMEAN33	PT	female	E	front	dutch	33
## 340	who	WMBA	WHOpink	female	B	front	dutch	

The `chartbox` package currently contains three chart groups: `nl2010`, `preterm` and `who`. Each group collects charts of a similar type.

Chart Group	Charts	Chart code	Description	Source
n12010	136	CCCC	Dutch children 0-21 years, including minorities	Talma et al. (2010)
preterm	192	CCCCCNN	Dutch preterms, ga \leq 36 weeks, 0-4 years	Bocca-Tjeertes et al. (2012)
who	14	CCCC	WHO Child Growth Standards 0-4 years	WHO

The chart code is an alpha-numeric code of four (for **n12010** and **who**) or seven (for **preterm**) that uniquely identifies each of the charts. The table below specifies the full coding schema used to construct the chart codes.

Position	Field	Value	Description
1	Population	N	Dutch
		T	Turkish
		M	Moroccan
		H	Hindostan
		P	Preterm
		W	WHO
2	Sex	J	Male
		M	Female
3	Design	A	0-15 months
		B	0-4 years, WFH
		C	1-21 years
		D	0-21 years
		E	0-4 years, WFA
		X	A4, double sided
4	Side	A	A4, front
		B	A4, back
		C	A4, back, no hdc
		H	square, hgt
		O	square, hdc
		Q	square, bmi
		R	square, wfh
		W	square, wgt
5	Language	N	Dutch
		E	English
6-7	Week	25-36	Gestational age

For illustration, code **NJAA** references to Dutch (**N**), boys (**J**), 0-15 month (**A**), front side (**A**). Likewise, **PMEAN33** codes for the chart of preterm (**M**), girls (**M**), 0-4 years (**E**), front side (**A**), Dutch language (**N**) born at 33 weeks of gestation (**33**).

Some forms hold multiple growth charts. For example, the **NJAA** chart is designed for A4 paper size (297mm \times 210mm) and contains three growth charts:

head circumference by age, length by age, and weight by age. Some others have no diagram, like NJAB with explanations. All square formats hold one growth chart. All of the square forms have equal sizes (160mm \times 160mm).

The following table lists the measures per design-form combination.

Design	Side	Measure	Description
A	A	hdc	Head circumference by age, 0-15 mo
		hgt	Length by age, 0-15 mo
		wgt	Weight by age, 0-15 mo
B	B		
	H	hgt	Length by age, 0-15 mo
	O	hdc	Head circumference by age, 0-15 mo
	W	wgt	Weight by age, 0-15 mo
	A	wfh	Weight for height, 0-4 yr
		hgt	Length by age, 0-4 yr
	B	hdc	Head circumference by age, 0-4 yr
	C		
	H	hgt	Height by age, 0-4 yr
	O	hdc	Head circumference by age, 0-4 yr
C	R	wfh	Weight for height, 0-4 yr
	W	wgt	Weight by age, 0-4 yr
	A	wfh	Weight for height, 1-21 yr
		hgt	height by age, 1-21 yr
	B	bmi	BMI by age, 1-21 yr
		hdc	Head circumference by age, 1-21 yr
	C	bmi	BMI by age, 1-21 yr
	H	hgt	Height by age, 1-21 yr
	O	hdc	Head circumference by age, 1-21 yr
	Q	bmi	Body mass index by age, 1-21 yr
E	R	wfh	Weight for height, 1-21 yr
	A	wgt	Weight by age, 0-4 yr
		hgt	height by age, 0-4 yr
	B	hdc	Head circumference by age, 0-4 yr
	H	hgt	Height by age, 0-4 yr
	O	hdc	Head circumference by age, 0-4 yr
	W	wgt	Weight by age, 0-4 yr

Chapter 4

Methods

We describe our methods in this chapter.

Bibliography

- Bocca-Tjeertes, I., van Buuren, S., Bos, A., Kerstens, J., ten Vergert, E., and Reijneveld, S.A. (2012). Growth of preterm and fullterm children aged 0-4 years: Integrating median growth and variability in growth charts. *Journal of Pediatrics*, 161(3):460–465.
- Talma, H., Schonbeck, Y., Bakker, B., Hirasing, R., and van Buuren, S. (2010). *Groeidiagrammen 2010: Handleiding bij het meten en wegen van kinderen en het invullen van groeidiagrammen*. TNO Kwaliteit van Leven, Leiden.