Package: intergrowth (via r-universe)

September 12, 2024

Type Package

Title An R Implementation of the INTERGROWTH-21st Standards and Tools

Version 0.0.0.9001

Description The INTERGROWTH-21st Project is a multi-centre,
multi-ethnic, population-based project, conducted between 2009
and 2014, in eight demarcated urban areas: Pelotas, Brazil;
Shunyi County, Beijing, China; Central Nagpur, India; Turin,
Italy; Parklands Suburb, Nairobi, Kenya; Muscat, Oman; Oxford,
UK, and Seattle, USA. Its primary aim was to study growth,
health, nutrition and neuro-development from less than 14 weeks
of gestation to 2 years of age, using the same conceptual
framework as the WHO Multicentre Growth Reference Study, so as
to produce international prescriptive standards for pregnancy
dating, maternal weight gain, fetal growth, newborn size, the
postnatal growth of preterm infants and cognitive development
at 2 years of age. These scientifically robust clinical tools
may be used to monitor and evaluate maternal and fetal
well-being, as well as infant health and nutrition at an
individual and population level.

License GPL-3

Depends R (>= 2.10)

Imports lubridate, stringr

Suggests testthat, covr, spelling, knitr, rmarkdown

Encoding UTF-8

Language en-GB

LazyData true

RoxygenNote 7.2.3

Roxygen list(markdown = TRUE)

URL https://nutriverse.io/intergrowth/,
https://github.com/nutriverse/intergrowth

BugReports https://github.com/nutriverse/intergrowth/issues

VignetteBuilder knitr

Repository https://nutriverse.r-universe.dev

RemoteUrl https://github.com/nutriverse/intergrowth

RemoteRef HEAD

RemoteSha 2b38cfc719ebde44edd2effe33f471c66b52634a

Contents

Index **[37]**

---

ac_gestage_centile *International fetal growth standards: table of centiles of abdominal circumference based on gestation age in exact weeks*

Description

International fetal growth standards: table of centiles of abdominal circumference based on gestation age in exact weeks

Usage

```
ac_gestage_centile
```

Format

A tibble with 189 rows and 3 columns:

week Gestational age in exact weeks

centile Centiles (3rd, 5th, 10th, 50th, 90th, 95th, 97th)

ac Abdominal circumference in millimetres

Source

Papageorghiou AT, Ohuma EO, Altman DG, Todros T, Cheikh Ismail L, Lambert A et al. International standards for fetal growth based on serial ultrasound measurements: the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project. Lancet 2014, 384(9946):869-79.

Examples

```
ac_gestage_centile
```

---

ac_gestage_sd	*International fetal growth standards: table of z-scores of abdominal circumference based on gestation age in exact weeks*

Description

International fetal growth standards: table of z-scores of abdominal circumference based on gestation age in exact weeks

Usage

```
ac_gestage_sd
```

Format

A tibble with 189 rows and 3 columns:

gestage Gestational age in exact weeks

sd z-scores (-3SD, -2SD, -1SD, 0, 1SD, 2SD, 3SD)

ac Abdominal circumference in millimetres

Source

Papageorghiou AT, Ohuma EO, Altman DG, Todros T, Cheikh Ismail L, Lambert A et al. International standards for fetal growth based on serial ultrasound measurements: the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project. Lancet 2014, 384(9946):869-79.

Examples

```
ac_gestage_sd
```

---

bl_gestage_pt_centile	*International Newborn Size References for Very Preterm Infants: table of centiles for birth length-for-gestational age for very preterm infants*

Description

International Newborn Size References for Very Preterm Infants: table of centiles for birth length-for-gestational age for very preterm infants

Usage

```
bl_gestage_pt_centile
```

Format

A tibble with 882 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

centile Centile - 3rd, 5th, 10th, 50th, 90th, 95th, 97th

bl Birth length in centimetres

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
bl_gestage_pt_centile
```

---

bl_gestage_pt_sd	*International Newborn Size References for Very Preterm Infants: table of z-score for birth length-for-gestational age for very preterm infants*

Description

International Newborn Size References for Very Preterm Infants: table of z-score for birth length-for-gestational age for very preterm infants

Usage

```
bl_gestage_pt_sd
```

Format

A tibble with 882 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

sd Standard deviation (z-score): -3, -2, -1, 0, 1, 2, 3

bl Birth length in centimetres

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
bl_gestage_pt_sd
```

```
bl_gestage_term_centile
```
International Newborn Size Standards: table of centiles for birth length-for-gestational age for infants

---

Description

International Newborn Size Standards: table of centiles for birth length-for-gestational age for infants

Usage

```
bl_gestage_term_centile
```

Format

A tibble with 980 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

centile Centile - 3rd, 5th, 10th, 50th, 90th, 95th, 97th

bl Birth length in centimetres

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
bl_gestage_term_centile
```

bl_gestage_term_sd	*International Newborn Size Standards: table of z-score for birth length-for-gestational age for infants*

Description

International Newborn Size Standards: table of z-score for birth length-for-gestational age for infants

Usage

```
bl_gestage_term_sd
```

Format

A tibble with 980 and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

sd Standard deviation (z-score): -3, -2, -1, 0, 1, 2, 3

bl Birth length in centimetres

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
bl_gestage_term_sd
```

bpd_gestage_centile	*International fetal growth standards: table of centiles of bi-parietal diameter based on gestation age in exact weeks*

Description

International fetal growth standards: table of centiles of bi-parietal diameter based on gestation age in exact weeks

Usage

```
bpd_gestage_centile
```

Format

A tibble with 189 rows and 3 columns:

week Gestational age in exact weeks

centile Centiles (3rd, 5th, 10th, 50th, 90th, 95th, 97th)

bpd Bi-parietal diameter in millimetres

Source

Papageorghiou AT, Ohuma EO, Altman DG, Todros T, Cheikh Ismail L, Lambert A et al. International standards for fetal growth based on serial ultrasound measurements: the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project. Lancet 2014, 384(9946):869-79.

Examples

```
bpd_gestage_centile
```

---

bpd_gestage_sd	*International fetal growth standards: table of z-scores of bi-parietal diameter based on gestation age in exact weeks*

Description

International fetal growth standards: table of z-scores of bi-parietal diameter based on gestation age in exact weeks

Usage

```
bpd_gestage_sd
```

Format

A tibble with 189 rows and 3 columns:

gestage Gestational age in exact weeks

sd z-scores (-3SD, -2SD, -1SD, 0, 1SD, 2SD, 3SD)

bpd Bi-parietal diameter in millimetres

Source

Papageorghiou AT, Ohuma EO, Altman DG, Todros T, Cheikh Ismail L, Lambert A et al. International standards for fetal growth based on serial ultrasound measurements: the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project. Lancet 2014, 384(9946):869-79.

Examples

```
bpd_gestage_sd
```

---

bw_gestage_pt_centile	*International Newborn Size References for Very Preterm Infants: table of centiles for birthweight-for-gestational age for very preterm infants*

Description

International Newborn Size References for Very Preterm Infants: table of centiles for birthweight-for-gestational age for very preterm infants

Usage

```
bw_gestage_pt_centile
```

Format

A tibble with 882 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

centile Centile - 3rd, 5th, 10th, 50th, 90th, 95th, 97th

bw Birthweight in kilograms

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
bw_gestage_pt_centile
```

---

bw_gestage_pt_sd	*International Newborn Size References for Very Preterm Infants: table of z-score for birthweight-for-gestational age for very preterm infants*

Description

International Newborn Size References for Very Preterm Infants: table of z-score for birthweight-for-gestational age for very preterm infants

Usage

```
bw_gestage_pt_sd
```

Format

A tibble with 882 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

sd Standard deviation (z-score): -3, -2, -1, 0, 1, 2, 3

bw Birthweight in kilograms

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
bw_gestage_pt_sd
```

---

bw_gestage_term_centile

> *International Newborn Size Standards: table of centiles for birthweight-for-gestational age for infants*

Description

International Newborn Size Standards: table of centiles for birthweight-for-gestational age for infants

Usage

```
bw_gestage_term_centile
```

Format

A tibble with 980 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

centile Centile - 3rd, 5th, 10th, 50th, 90th, 95th, 97th

bw Birthweight in kilograms

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
bw_gestage_term_centile
```

---

bw_gestage_term_sd	*International Newborn Size Standards: table of z-score for birthweight-for-gestational age for infants*

Description

International Newborn Size Standards: table of z-score for birthweight-for-gestational age for infants

Usage

```
bw_gestage_term_sd
```

Format

A tibble with 980 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

sd Standard deviation (z-score): -3, -2, -1, 0, 1, 2, 3

bw Birthweight in kilograms

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
bw_gestage_term_sd
```

---

calculate_ac_gestage   *Calculate abdominal circumference for gestational age centiles and z-scores*

Description

Calculate abdominal circumference for gestational age centiles and z-scores

Usage

```
calculate_ac_gestage(gestage = NULL, ac = NULL)
```

Arguments

gestage   Gestational age. Gestational age can be provided as a string with a format of weeks+days or as numeric of exact weeks in decimal format

ac   Abdominal circumference in millimetres

Value

A list of 2 elements containing 1) abdominal circumference- for-gestational age z-score; and, 2) abdominal circumference- for-gestational age centile.

Examples

```
calculate_ac_gestage(gestage = "78+0", ac = 55)
```

---

calculate_bpd_gestage   *Calculate bi-parietal diameter for gestational age centiles and z-scores*

Description

Calculate bi-parietal diameter for gestational age centiles and z-scores

Usage

```
calculate_bpd_gestage(gestage = NULL, bpd = NULL)
```

Arguments

gestage   Gestational age. Gestational age can be provided as a string with a format of weeks+days or as numeric of exact weeks in decimal format

bpd   Bi-parietal diameter in millimetres

Value

A list of 2 elements containing 1) bi-parietal diameter-for-gestational age z-score; and, 2) bi-parietal diameter-for-gestational age centile.

Examples

```
calculate_bpd_gestage(gestage = "78+0", bpd = 20)
```

---

calculate_efw	*Calculate estimated fetal weight given abdominal circumference and head circumference*

Description

Calculate estimated fetal weight given abdominal circumference and head circumference

Usage

```
calculate_efw(ac = NULL, hc = NULL)
```

Arguments

ac	Abdominal circumference in centimetres. Use measurements made between 22+0 and 40+0 gestational weeks only.
hc	Head circumference in centimetres. Use measurements made between 22+0 and 40+0 gestational weeks only.

Value

Estimated fetal weight in grams.

Examples

```
calculate_efw(ac = 55, hc = 90)
```

---

calculate_efw_gestage   *Calculate estimated fetal weight for gestational age centiles and z-scores*

Description

Calculate estimated fetal weight for gestational age centiles and z-scores

Usage

```
calculate_efw_gestage(gestage = NULL, ac = NULL, hc = NULL)
```

Arguments

gestage	Gestational age. Gestational age can be provided as a string with a format of weeks+days or as numeric of exact weeks in decimal format
ac	Abdominal circumference in centimetres
hc	Head circumference in centimetres

Value

A list of 6 elements containing 1) estimated fetal weight in grams based on abdominal circumference and head circumference; 2) skewness of gestational age; 3) mean gestational age; 4) coefficient of variation of gestational age; 5) estimated fetal weight-for-gestational age z-score; and, 6) estimated fetal weight-for-gestational age centile.

Examples

```
calculate_efw_gestage(gestage = "30+0", ac = 26, hc = 29)
```

---

calculate_fl_gestage   *Calculate femur length for gestational age centiles and z-scores*

Description

Calculate femur length for gestational age centiles and z-scores

Usage

```
calculate_fl_gestage(gestage = NULL, fl = NULL)
```

Arguments

gestage	Gestational age. Gestational age can be provided as a string with a format of weeks+days or as numeric of exact weeks in decimal format
fl	Femur length in millimetres

Value

A list of 2 elements containing 1) femur length-for-gestational age z-score; and, 2) femur length-for-gestational age centile.

Examples

```
calculate_fl_gestage(gestage = "78+0", fl = 10)
```

| calculate_gestage | *Calculate gestational age given crown-rump length and/or head circumference and femur length based on ultrasound* |

Description

Calculate gestational age given crown-rump length and/or head circumference and femur length based on ultrasound

Usage

```
calculate_gestage(date = Sys.Date(), crl = NULL, hc = NULL, fl = NULL)
```

Arguments

date	Date when measurement/s was/were taken. Defaults to current date.
crl	Crown-rump length measurement in millimetres
hc	Head circumference measurement in millimetres
fl	Femur length measurement in millimetres

Value

A list of 3 elements containing 1) gestational age in weeks (numeric); 2) gestational age in weeks and days (character); and, 3) expected date of delivery (date).

Examples

```
calculate_gestage(date = "2016-23-12", crl = 17)
calculate_gestage(date = "2016-23-12", hc = 130, fl = 20)
```

---

calculate_gestage_crl *Calculate gestational age given crown-rump length (mm) based on ultrasound*

Description

Calculate gestational age given crown-rump length (mm) based on ultrasound

Usage

```
calculate_gestage_crl(date = Sys.Date(), crl = NULL)
```

Arguments

date	Date when measurement/s was/were taken. Date should be provided in format. Defaults to current date.
crl	Crown-rump length measurement in millimetres.

Value

A list of 3 elements containing 1) gestational age in weeks (numeric); 2) gestational age in weeks and days (character); and, 3) expected date of delivery (date).

Examples

```
calculate_gestage(date = "2016-23-12", crl = 17)
```

---

calculate_gestage_hcfl

Calculate gestational age given head circumference (mm) and/or femur length (mm) based on ultrasound

---

Description

Calculate gestational age given head circumference (mm) and/or femur length (mm) based on ultrasound

Usage

```
calculate_gestage_hcfl(date = Sys.Date(), hc = NULL, fl = NULL)
```

Arguments

date	Date when measurement/s was/were taken. Date should be provided in format. Defaults to current date.
hc	Head circumference measurement in millimetres.
fl	Femur length measurement in millimetres.

Value

A list of 3 elements containing 1) gestational age in weeks (numeric); 2) gestational age in weeks and days (character); and, 3) expected date of delivery (date).

Examples

```
calculate_gestage_hcfl(date = "2016-23-12", hc = 130, fl = 20)
```

---

calculate_gwg_gestage *Calculate gestational weight gain-for-gestational age z-score and centile*

Description

Calculate gestational weight gain-for-gestational age z-score and centile

Usage

```
calculate_gwg_gestage(gestage = NULL, baseline = NULL, current = NULL)
```

Arguments

gestage	Gestational age. Gestational age can be provided as a string with a format of weeks+days or as numeric of exact weeks in decimal format
baseline	Baseline weight in kilograms (up to 2 decimal places) in the first trimester of pregnancy (less than 14 weeks gestational age)
current	Weight at current visit in kilograms (up to 2 decimal places)

Value

A list of 3 elements containing 1) gestational weight gain in kilograms; 2) gestational weight gain-for-gestational age z-score; and, 3) gestational weight gain-for-gestational age centile.

Examples

```
calculate_gwg_gestage(gestage = "32+0", baseline = 60, current = 69.52)
```

---

calculate_hc_gestage   *Calculate head circumference for gestational age centiles and z-scores*

Description

Calculate head circumference for gestational age centiles and z-scores

Usage

```
calculate_hc_gestage(gestage = NULL, hc = NULL)
```

Arguments

gestage   Gestational age. Gestational age can be provided as a string with a format of
                weeks+days or as numeric of exact weeks in decimal format

hc   Head circumference in millimetres

Value

A list of 2 elements containing 1) head circumference-for-gestational age z-score; and, 2) head circumference-for-gestational age centile.

Examples

```
calculate_hc_gestage(gestage = "78+0", hc = 90)
```

---

calculate_ofd_gestage   *Calculate occipito-frontal diameter for gestational age centiles and z-scores*

Description

Calculate occipito-frontal diameter for gestational age centiles and z-scores

Usage

```
calculate_ofd_gestage(gestage = NULL, ofd = NULL)
```

Arguments

gestage   Gestational age. Gestational age can be provided as a string with a format of
                weeks+days or as numeric of exact weeks in decimal format

ofd   Occipito-frontal diameter in millimetres

Value

A list of 2 elements containing 1) occipito-frontal diameter-for-gestational age z-score; and, 2) occipito-frontal diameter-for-gestational age centile.

Examples

```
calculate_ofd_gestage(gestage = "78+0", ofd = 25)
```

---

calculate_sfh_gestage *Calculate symphysis-fundal height-for-gestational age z-score and centile*

Description

Calculate symphysis-fundal height-for-gestational age z-score and centile

Usage

```
calculate_sfh_gestage(gestage = NULL, sfh = NULL)
```

Arguments

gestage   Gestational age. Gestational age can be provided as a string with a format of weeks+days or as numeric of exact weeks in decimal format

sfh   Symphysis-fundal height measurement in centimetres up to 1 decimal place

Value

A list of 2 elements containing 1) symphysis-fundal height-for-gestational age z-score; and, 2) symphysis-fundal height-for-gestational age centile.

Examples

```
calculate_sfh_gestage(gestage = "40+1", sfh = 40)
```

`crl_gestage_centile`	*International fetal size standards in early pregnancy: table of centiles of crown-rump length based on gestation age in weeks and days*

Description

International fetal size standards in early pregnancy: table of centiles of crown-rump length based on gestation age in weeks and days

Usage

```
crl_gestage_centile
```

Format

A tibble with 336 rows and 4 columns:

week Gestational age - weeks

day Gestation age - days

centile Centiles (3rd, 5th, 10th, 50th, 90th, 95th, 97th)

crl Crown-rump length in millimetres

Source

Napolitano R, Dhami J, Ohuma EO, Ioannou C, Conde-Agudelo A, Kennedy SH et al. Pregnancy dating by fetal crown-rump length: a systematic review of charts. BJOG 2014, 121(5):556-5.

Examples

```
crl_gestage_centile
```

`crl_gestage_sd`	*International fetal size standards in early pregnancy: table of z-scores of crown-rump length based on gestation age in weeks and days*

Description

International fetal size standards in early pregnancy: table of z-scores of crown-rump length based on gestation age in weeks and days

Usage

```
crl_gestage_sd
```

Format

A tibble with 336 rows and 4 columns:

week Gestational age - weeks

day Gestation age - days

sd z-scores (-3SD, -2SD, -1SD, 0, 1SD, 2SD, 3SD)

crl Crown-rump length in millimetres

Source

Napolitano R, Dhami J, Ohuma EO, Ioannou C, Conde-Agudelo A, Kennedy SH et al. Pregnancy dating by fetal crown-rump length: a systematic review of charts. BJOG 2014, 121(5):556-5.

Examples

```
crl_gestage_sd
```

---

efw_gestage_centile	*International fetal growth standards: table of centiles of estimated fetal weight based on gestation age in exact weeks*

Description

International fetal growth standards: table of centiles of estimated fetal weight based on gestation age in exact weeks

Usage

```
efw_gestage_centile
```

Format

A tibble with 189 rows and 3 columns:

week Gestational age in exact weeks

centile Centiles (3rd, 5th, 10th, 50th, 90th, 95th, 97th)

efw Estimated fetal weight in grams

Source

Papageorghiou AT, Ohuma EO, Altman DG, Todros T, Cheikh Ismail L, Lambert A et al. International standards for fetal growth based on serial ultrasound measurements: the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project. Lancet 2014, 384(9946):869-79.

Examples

```
efw_gestage_centile
```

efw_gestage_sd	*International fetal growth standards: table of z-scores of estimated fetal weight based on gestation age in exact weeks*

Description

International fetal growth standards: table of z-scores of estimated fetal weight based on gestation age in exact weeks

Usage

```
efw_gestage_sd
```

Format

A tibble with 189 rows and 3 columns:

gestage Gestational age in exact weeks

sd z-scores (-3SD, -2SD, -1SD, 0, 1SD, 2SD, 3SD)

efw Estimated fetal weight in grams

Source

Papageorghiou AT, Ohuma EO, Altman DG, Todros T, Cheikh Ismail L, Lambert A et al. International standards for fetal growth based on serial ultrasound measurements: the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project. Lancet 2014, 384(9946):869-79.

Examples

```
efw_gestage_sd
```

fl_gestage_centile	*International fetal growth standards: table of centiles of femur length based on gestation age in exact weeks*

Description

International fetal growth standards: table of centiles of femur length based on gestation age in exact weeks

Usage

```
fl_gestage_centile
```

Format

A tibble with 189 rows and 3 columns:

week Gestational age in exact weeks

centile Centiles (3rd, 5th, 10th, 50th, 90th, 95th, 97th)

fl Femur length in millimetres

Source

Papageorghiou AT, Ohuma EO, Altman DG, Todros T, Cheikh Ismail L, Lambert A et al. International standards for fetal growth based on serial ultrasound measurements: the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project. Lancet 2014, 384(9946):869-79.

Examples

```
fl_gestage_centile
```

---

fl_gestage_sd	*International fetal growth standards: table of z-scores of femur length based on gestation age in exact weeks*

Description

International fetal growth standards: table of z-scores of femur length based on gestation age in exact weeks

Usage

```
fl_gestage_sd
```

Format

A tibble with 189 rows and 3 columns:

gestage Gestational age in exact weeks

sd z-scores (-3SD, -2SD, -1SD, 0, 1SD, 2SD, 3SD)

fl Femur length in millimetres

Source

Papageorghiou AT, Ohuma EO, Altman DG, Todros T, Cheikh Ismail L, Lambert A et al. International standards for fetal growth based on serial ultrasound measurements: the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project. Lancet 2014, 384(9946):869-79.

Examples

```
fl_gestage_sd
```

---

gestage_crl	*International dating standards in early pregnancy: table of centiles of gestational age in weeks and days based on crown-rump length in millimetres*

Description

International dating standards in early pregnancy: table of centiles of gestational age in weeks and days based on crown-rump length in millimetres

Usage

```
gestage_crl
```

Format

A tibble with 810 rows and 4 columns:

crl Crown-rump length in millimetres

centile Centile (3rd, 10th, 50th, 90th, 97th)

unit Time unit for age value (week or day)

age Age value

Source

Napolitano R, Dhami J, Ohuma EO, Ioannou C, Conde-Agudelo A, Kennedy SH et al. Pregnancy dating by fetal crown-rump length: a systematic review of charts. BJOG 2014, 121(5):556-5.

Examples

```
gestage_crl
```

---

gwg_gestage_centile	*International gestational weight gain standards: table of centiles of gestational weight gain for women with normal body mass index based on gestational age in exact weeks*

Description

International gestational weight gain standards: table of centiles of gestational weight gain for women with normal body mass index based on gestational age in exact weeks

Usage

```
gwg_gestage_centile
```

Format

A tibble with 182 rows and 3 columns:

week Gestational age in exact weeks

centile Centiles (3rd, 5th, 10th, 50th, 90th, 95th, 97th)

gestwt Gestational weight gain in kilograms

Source

Cheikh Ismail L, Bishop DC, Pang R, Ohuma EO, Kac G, Abrams B et al. Gestational weight gain standards based on women enrolled in the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project: a prospective longitudinal cohort study. BMJ 2016, 352(i):555.

Examples

```
gwg_gestage_centile
```

---

gwg_gestage_sd	*International gestational weight gain standards: table of z-scores of gestational weight gain for women with normal body mass index based on gestational age in exact weeks*

Description

International gestational weight gain standards: table of z-scores of gestational weight gain for women with normal body mass index based on gestational age in exact weeks

Usage

```
gwg_gestage_sd
```

Format

A tibble with 182 rows and 3 columns:

week Gestational age in exact weeks

sd z-scores (-3SD, -2SD, -1SD, 0, 1SD, 2SD, 3SD)

gestwt Gestational weight gain in kilograms

Source

Cheikh Ismail L, Bishop DC, Pang R, Ohuma EO, Kac G, Abrams B et al. Gestational weight gain standards based on women enrolled in the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project: a prospective longitudinal cohort study. BMJ 2016, 352(i):555.

Examples

```
gwg_gestage_sd
```

| hc_gestage_centile | *International fetal growth standards: table of centiles of head circum-ference based on gestation age in exact weeks* |

Description

International fetal growth standards: table of centiles of head circumference based on gestation age in exact weeks

Usage

```
hc_gestage_centile
```

Format

A tibble with 189 rows and 3 columns:

week Gestational age in exact weeks

centile Centiles (3rd, 5th, 10th, 50th, 90th, 95th, 97th)

hc Head circumference in millimetres

Source

Papageorghiou AT, Ohuma EO, Altman DG, Todros T, Cheikh Ismail L, Lambert A et al. International standards for fetal growth based on serial ultrasound measurements: the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project. Lancet 2014, 384(9946):869-79.

Examples

```
hc_gestage_centile
```

---

hc_gestage_pt_centile   *International Newborn Size References for Very Preterm Infants: table of centiles for head circumference-for-gestational age for very preterm infants*

Description

International Newborn Size References for Very Preterm Infants: table of centiles for head circumference-for-gestational age for very preterm infants

Usage

```
hc_gestage_pt_centile
```

Format

A tibble with 882 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

centile Centile - 3rd, 5th, 10th, 50th, 90th, 95th, 97th

hc Head circumference in centimetres

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
hc_gestage_pt_centile
```

---

hc_gestage_pt_sd   *International Newborn Size References for Very Preterm Infants: table of z-score for head circumference-for-gestational age for very preterm infants*

Description

International Newborn Size References for Very Preterm Infants: table of z-score for head circumference-for-gestational age for very preterm infants

Usage

```
hc_gestage_pt_sd
```

Format

A tibble with 882 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

sd Standard deviation (z-score): -3, -2, -1, 0, 1, 2, 3

hc Head circumference in centimetres

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
hc_gestage_pt_sd
```

---

hc_gestage_sd	*International fetal growth standards: table of z-scores of head circumference based on gestation age in exact weeks*

Description

International fetal growth standards: table of z-scores of head circumference based on gestation age in exact weeks

Usage

```
hc_gestage_sd
```

Format

A tibble with 189 rows and 3 columns:

gestage Gestational age in exact weeks

sd z-scores (-3SD, -2SD, -1SD, 0, 1SD, 2SD, 3SD)

hc Head circumference in millimetres

Source

Papageorghiou AT, Ohuma EO, Altman DG, Todros T, Cheikh Ismail L, Lambert A et al. International standards for fetal growth based on serial ultrasound measurements: the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project. Lancet 2014, 384(9946):869-79.

Examples

```
hc_gestage_sd
```

```
hc_gestage_term_centile
```

International Newborn Size Standards: table of centiles for head circumference-for-gestational age for infants

---

Description

International Newborn Size Standards: table of centiles for head circumference-for-gestational age for infants

Usage

```
hc_gestage_term_centile
```

Format

A tibble with 980 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

centile Centile - 3rd, 5th, 10th, 50th, 90th, 95th, 97th

hc Head circumference in centimetres

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
hc_gestage_term_centile
```

---

hc_gestage_term_sd	*International Newborn Size Standards: table of z-score for head circumference-for-gestational age for infants*

Description

International Newborn Size Standards: table of z-score for head circumference-for-gestational age for infants

Usage

```
hc_gestage_term_sd
```

Format

A tibble with 980 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

sd Standard deviation (z-score): -3, -2, -1, 0, 1, 2, 3

hc Head circumference in centimetres

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
hc_gestage_term_sd
```

---

ofd_gestage_centile	*International fetal growth standards: table of centiles of occipito-frontal diameter based on gestation age in exact weeks*

Description

International fetal growth standards: table of centiles of occipito-frontal diameter based on gestation age in exact weeks

Usage

```
ofd_gestage_centile
```

Format

A tibble with 189 rows and 3 columns:

week Gestational age in exact weeks

centile Centiles (3rd, 5th, 10th, 50th, 90th, 95th, 97th)

ofd Occipito-frontal diameter in millimetres

Source

Papageorghiou AT, Ohuma EO, Altman DG, Todros T, Cheikh Ismail L, Lambert A et al. International standards for fetal growth based on serial ultrasound measurements: the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project. Lancet 2014, 384(9946):869-79.

Examples

```
ofd_gestage_centile
```

---

ofd_gestage_sd	*International fetal growth standards: table of z-scores of occipito-frontal diameter based on gestation age in exact weeks*

Description

International fetal growth standards: table of z-scores of occipito-frontal diameter based on gestation age in exact weeks

Usage

```
ofd_gestage_sd
```

Format

A tibble with 189 rows and 3 columns:

gestage Gestational age in exact weeks

sd z-scores (-3SD, -2SD, -1SD, 0, 1SD, 2SD, 3SD)

ofd Occipito-frontal diameter in millimetres

Source

Papageorghiou AT, Ohuma EO, Altman DG, Todros T, Cheikh Ismail L, Lambert A et al. International standards for fetal growth based on serial ultrasound measurements: the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project. Lancet 2014, 384(9946):869-79.

Examples

```
ofd_gestage_sd
```

sfh_gestage_centile	*International symphysis-fundal height standards: table of centiles of symphysis-fundal height based on gestation age in exact weeks*

Description

International symphysis-fundal height standards: table of centiles of symphysis-fundal height based on gestation age in exact weeks

Usage

```
sfh_gestage_centile
```

Format

A tibble with 189 rows and 3 columns:

week Gestational age in exact weeks

centile Centiles (3rd, 5th, 10th, 50th, 90th, 95th, 97th)

sfh Symphysis-fundal height in centimetres

Source

Papageorghiou AT, Ohuma EO, Gravett MG, Lamber A, Noble JA, Pang R et al. International standards for symphysis-fundal height based on serial measurements from the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project: prospective cohort study in eight countries. BMJ 2016, 355:i5662.

Examples

```
sfh_gestage_centile
```

sfh_gestage_sd	*International symphysis-fundal height standards: table of z-scores of symphysis-fundal height based on gestation age in exact weeks*

Description

International symphysis-fundal height standards: table of z-scores of symphysis-fundal height based on gestation age in exact weeks

Usage

```
sfh_gestage_sd
```

Format

A tibble with 189 rows and 3 columns:

gestage Gestational age in exact weeks

sd z-scores (-3SD, -2SD, -1SD, 0, 1SD, 2SD, 3SD)

sfh Symphysis-fundal height in centimetres

Source

Papageorghiou AT, Ohuma EO, Gravett MG, Lamber A, Noble JA, Pang R et al. International standards for symphysis-fundal height based on serial measurements from the Fetal Growth Longitudinal Study of the INTERGROWTH-21st Project: prospective cohort study in eight countries. BMJ 2016, 355:i5662.

Examples

```
sfh_gestage_sd
```

---

wlr_gestage_pt_centile

International Newborn Size References for Very Preterm Infants: table of centiles for weight-length ratio-for-gestational age for very preterm infants

---

Description

International Newborn Size References for Very Preterm Infants: table of centiles for weight-length ratio-for-gestational age for very preterm infants

Usage

```
wlr_gestage_pt_centile
```

Format

A tibble with 882 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

centile Centile - 3rd, 5th, 10th, 50th, 90th, 95th, 97th

wlr Weight-length ratio in kilograms/metres

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
wlr_gestage_pt_centile
```

---

wlr_gestage_pt_sd	*International Newborn Size References for Very Preterm Infants: table of z-score for weight-length ratio-for-gestational age for very preterm infants*

Description

International Newborn Size References for Very Preterm Infants: table of z-score for weight-length ratio-for-gestational age for very preterm infants

Usage

```
wlr_gestage_pt_sd
```

Format

A tibble with 882 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

sd Standard deviation (z-score): -3, -2, -1, 0, 1, 2, 3

wlr Weight-length ratio in kilogram/metre

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
wlr_gestage_pt_sd
```

---

wlr_gestage_term_centile

> *International Newborn Size Standards: table of centiles for weight-length ratio-for-gestational age for infants*

Description

International Newborn Size Standards: table of centiles for weight-length ratio-for-gestational age for infants

Usage

```
wlr_gestage_term_centile
```

Format

A tibble with 980 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

centile Centile - 3rd, 5th, 10th, 50th, 90th, 95th, 97th

wlr Weight-length ratio in kilograms/metres

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

```
wlr_gestage_term_centile
```

---

wlr_gestage_term_sd *International Newborn Size Standards: table of z-score for weight-length ratio-for-gestational age for infants*

Description

International Newborn Size Standards: table of z-score for weight-length ratio-for-gestational age for infants

Usage

```
wlr_gestage_term_sd
```

Format

A tibble with 980 rows and 5 columns:

week Gestational age weeks component

day Gestational age days component

sex Sex; 1 = male; 2 = female

sd Standard deviation (z-score): -3, -2, -1, 0, 1, 2, 3

wlr Weight-length ratio in kilogram/metre

Source

Villar J, Giuliani F, Fenton TR, Ohuma EO, Ismail LC, Kennedy SH et al. INTERGROWTH-21st very preterm size at birth reference charts. Lancet 2016, 387(10021):844-45.

Examples

wlr_gestage_term_sd

Index