

Term small for gestational age newborn baby (SGA)

Clinical Guideline Presentation v4.0



45 minutes

Towards CPD Hours

References:

Queensland Clinical Guideline: *Term small for gestational age baby* is the primary reference for this package.

Recommended citation:

Queensland Clinical Guidelines. Term small for gestational baby clinical guideline education presentation E22.16-1-V4-R27. Queensland Health. 2022.

Disclaimer:

This presentation is an implementation tool and should be used in conjunction with the published guideline. This information does not supersede or replace the guideline. Consult the guideline for further information and references.

Feedback and contact details:

M: GPO Box 48 Brisbane QLD 4001 | **E:** guidelines@health.qld.gov.au | **URL:** www.health.qld.gov.au/qcg

Funding:

Queensland Clinical Guidelines is supported by the Queensland Health, Healthcare Improvement Unit.

Copyright:

© State of Queensland (Queensland Health) 2022



This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives V4.0 International licence. In essence, you are free to copy and communicate the work in its current form for non-commercial purposes, as long as you attribute Queensland Clinical Guidelines, Queensland Health and abide by the licence terms. You may not alter or adapt the work in any way. To view a copy of this licence, visit <https://creativecommons.org/licenses/by-nc-nd/4.0/deed.en>

For further information, contact Queensland Clinical Guidelines, RBWH Post Office, Herston Qld 4029, email Guidelines@health.qld.gov.au For permissions beyond the scope of this licence, contact: Intellectual Property Officer, Queensland Health, GPO Box 48, Brisbane Qld 4001, email ip_officer@health.qld.gov.au

Images are property of State of Queensland (Queensland Health) unless otherwise cited.

Learning objectives

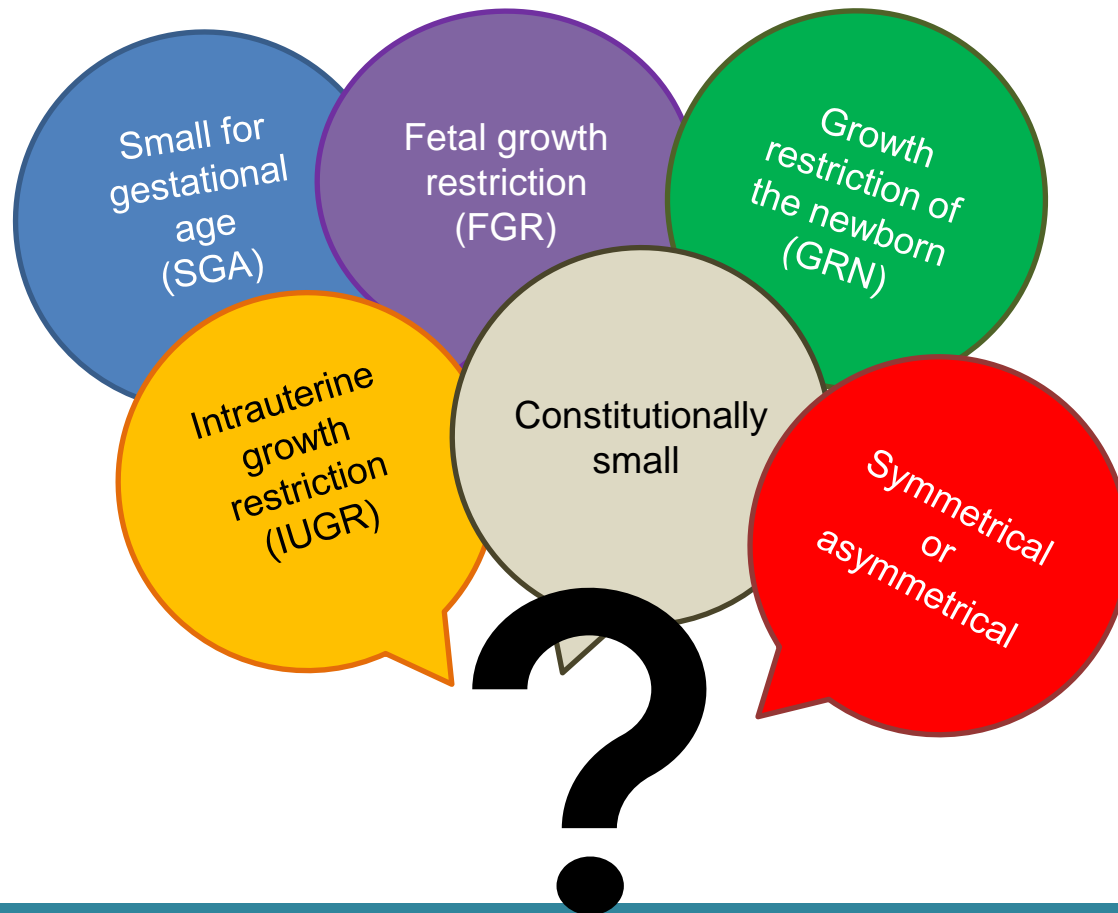
- Identify relevant terminology
- Identify the short and longer term implications of being born term and growth restricted
- Identify additional care requirements for the term growth restricted newborn baby
- Discuss parental considerations

Abbreviations

Abbreviation	
BMI	Body mass index
EFW	Estimated fetal weight
FGR	Fetal growth restriction
GRN	Growth restriction of the newborn
PDHM	Pasteurised donor human milk
SGA	Small for gestational age
>	Greater than
<	Less than

Growth terminology

- Terms are often used interchangeably but not always correctly and they can be confusing!



Definitions

Term	Meaning
Small for gestational age	<ul style="list-style-type: none"> • Overall term for fetal or baby birth weight below 10th percentile for gestational age and sex • Requires comprehensive assessment to determine if baby: <ul style="list-style-type: none"> ◦ Growth restricted or ◦ Constitutionally small (normally grown baby with a smaller stature)
Fetal growth restriction	<ul style="list-style-type: none"> • Pathological process—fetus doesn't reach growth potential • Estimated fetal weight (EFW) < 3rd percentile or < 10th percentile with other pathology and may: <ul style="list-style-type: none"> ◦ Occur early or late (before/after 32 weeks gestation) ◦ Be asymmetrical (reduced EFW only) ◦ Be symmetrical (reduced overall size)
Growth restriction of the newborn	<ul style="list-style-type: none"> • Baby born with growth restriction • Birth weight below 3rd percentile or • At least 3 of: BW, HC or length < 10th percentile, FGR or maternal risk factors <ul style="list-style-type: none"> ◦ Birth weight may be above 10th percentile

Case study

Lisa, a 42 year old primip is in active labour at 38 weeks. During her pregnancy Lisa was told her baby 'Samuel' had fetal growth restriction. Her pregnancy was otherwise uneventful and she is now in active second stage.

What care will you plan for Samuel knowing he might be growth restricted?

- Potential for resuscitation
- Paired cord gases may be needed
- Delayed cord clamping (increases iron stores)
- Warm blankets, maternal warmth, environmental temperature
- Early skin to skin and feeding
- Close clinical surveillance
- Placental examination and/or histopathology for diagnosis

Increased risk of:

- Acidosis, lower Apgar scores, respiratory compromise

May have:

- Larger surface area
- Higher energy needs
- Less body fat

More likely to become:

- Hypothermic
- Hypoglycaemic
- Jaundice

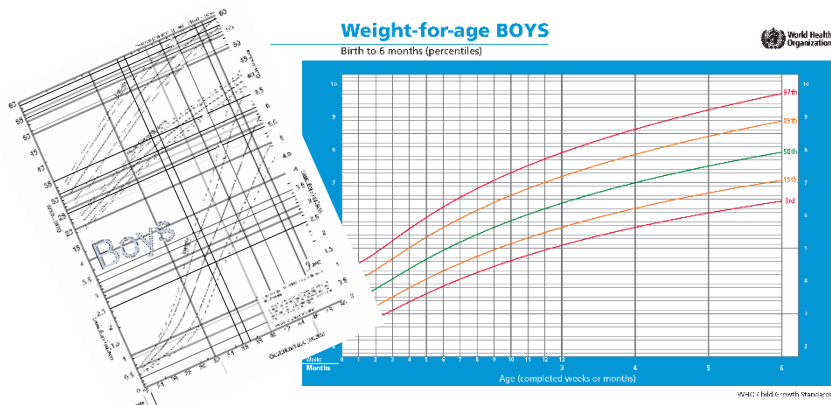


Growth

Samuel's birth weight is plotted as 2100 grams, head circumference 30.5 cm and length 45 cm.

Is Samuel considered growth restricted according to his anthropometry?

Yes—all measurements are below the 3rd percentile on standard growth charts



GRN may also be defined when birth weight is NOT less than the 3rd percentile,
if at least three of the following present:

- Birth weight < 10th percentile
- Head circumference < than 10th percentile
- Length < 10th percentile
- Prenatal diagnosis of FGR
- Maternal pregnancy risk factors (e.g. hypertension, diabetes, pre-eclampsia)

What assessments will you perform in the first instance?

- 
- Eye/Ear
Gonorrhea (male)
Gonorrhea (female)
Chlamydia (male)
Chlamydia (female)

- Wizen appearance, hyperalert
- Decreased skeletal mass
- Decreased subcutaneous fat
- Skin cracked, peeling, loose folds
- Larger head-to-body ratio
- Possible dysmorphic features
- Large anterior fontanelle
- Thin straight hair
- Immature ear cartilage
- Meconium stained umbilical cord
- Diminished breast buds,
- Absent buccal fat
- Small, scaphoid shaped abdomen
- Immature labia majora in females
- Hands and feet appear large
- Long fingernails

Thermoregulation

Samuel and Lisa are transferred to the postnatal ward. Samuel is having trouble maintaining his temperature.

What care do you provide to Lisa and Samuel?

- Information about why Samuel is at increased risk of hypothermia
- Strategies to minimise heat loss
 - Extra wraps/clothes
 - Skin to skin
 - Radiant heater if required
 - Avoid drafts
 - Delay first bath
 - Temperature before feeds
 - Clinical surveillance
- Large surface area to body weight ratio
- High energy requirements and less glycogen stores
- Less body fat and greater proportion of body fluids



Feeding

Lisa decides to breastfeed and asks if there is anything particular she should do because Samuel is small.

What support do you offer Lisa?

- Talk with Lisa about GRN and feeding
 - Limited energy reserves
 - Likely to tire easily
 - At least every three hours from start of one feed to start of next
 - Watch duration of feeding
 - Importance of temperature
 - Risk of hypoglycaemia
- Discuss breastfeeding supports
 - Expressing after feeds for supply
 - Indications for top-up feeding
 - Use of PDHM if available
 - Lactation support

Breastfed GRN babies are more likely to achieve catch-up weight without adiposity and insulin resistance

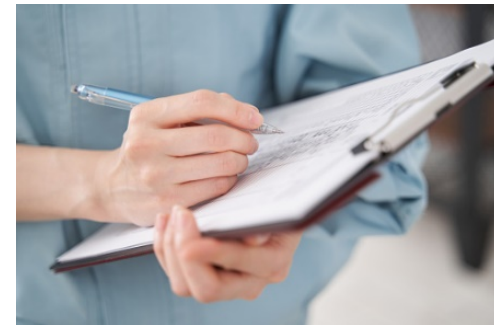


Feeding concerns

Samuel initially breastfed every couple of hours and seemed very hungry. Now at 12 hours of age he is sleepy, uninterested and hasn't fed for 3.5 hours.

What actions do you take?

- Review Samuel's
 - Feeding history since birth
 - Output (wet/dirty nappies)
- Assess Samuel clinically
 - Appearance and state of alertness
 - Vital signs
 - Blood glucose level
- Support and observe a breastfeed
 - Limit length of feed (20–30 minutes)
 - Consider top-up feed
 - Consider escalation of care



Neonatal unit

Lisa is worried that Samuel will need to go to the neonatal unit because he is so small.

What can you tell Lisa?

- SGA/GRN is not a reason by itself for admission/transfer
- Samuel could need admission if he:
 - Develops respiratory compromise
 - Needs intravenous therapy
 - Has feeding intolerance
 - Becomes significantly hypoglycaemic
 - Needs gavage feeding
 - Becomes significantly jaundiced



Risk factors

Lisa asks why Samuel is small.

What can you tell Lisa about risk factors for GRN?

Risk factors can be broadly grouped as related to demographics, pregnancy (past and current), existing maternal comorbidities and factors affecting the baby

Often not detected antenatally

Demographics

- Ethnicity
- Age: < 16 and > 35 years
- Lower socioeconomic status

Obstetric

- Primiparity, grand multiparity
- Short interpregnancy interval/multiple pregnancy
- Inadequate pregnancy weight gain
- Uterine/placental abnormality/infection
- Previous stillbirth, FGR, abnormalities
- Hypertension/pre-eclampsia
- Poor antenatal care

Comorbidities

- High or low BMI, or bariatric surgery
- Hypertension, diabetes, renal, thyroid
- Mental illness

Baby

- Genetic syndromes, chromosomal abnormalities
- Congenital infections, heart defects
- In-utero substance exposure

Discharge planning

- Some SGA/FGR/GRN babies will potentially tire between 48–72 hours of age
- Discuss early with parents importance of remaining in hospital over this time period
- Check in with parents daily about progress and to reinforce plans
- If parents choose early discharge discuss potential issues and when/how to seek help

Discharge

Samuel is now 24 hours old, feeding quite well with occasional top-ups and, has maintained his temperature with extra clothes and wraps. Lisa says she wants to go home because she can't sleep with all the noise.

What will you advise Lisa?

- Early discharge is not recommended
 - Staying in hospital to make sure Samuel's feeding, temperature, weight gain or loss, jaundice and blood glucose are all stable will have a positive effect on Samuel's longer term growth and health
 - If Lisa decides to go home, early follow-up at home with the midwifery home visiting and child health service and her GP is important
- Jaundice and poor feeding are common reasons for readmission
 - Initial follow-up appointments within 72 hours of discharge have led to a 15% reduction in readmission rates





Follow-up

Samuel continues to feed regularly and maintain his temperature, and Lisa is managing well. Samuel's weight is 2000 grams. You discuss discharge with Lisa.

In addition to usual discharge preparation, what will you discuss with Lisa?

- Expected and optimal growth
 - Importance of attending follow-up until Samuel is at least 2 years
 - The plan for review/follow-up that is documented in Samuel's personal health record
 - Feelings some women experience after having a growth restricted baby
- Optimal growth is gradual, increasing over two percentiles during the first several months
 - Fast weight gain increases risk of obesity
 - Slow weight gain associated with other conditions (e.g. malnutrition)

