Queensland Clinical Guidelines

Translating evidence into best clinical practice

Maternity and Neonatal **Clinical Guideline**

Term small for gestational age newborn baby

Queensland Government

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Cultural acknowledgement

The Department of Health acknowledges the Traditional Custodians of the lands, waters and seas across the State of Queensland on which we work and live. We also acknowledge First Nations peoples in Queensland are both Aboriginal Peoples and Torres Strait Islander Peoples and pay respect to the Aboriginal and Torres Strait Islander Elders past, present and emerging.

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Flow Chart: Summary—Term small for gestational age newborn baby

Growth restriction of the newborn (GRN)

Diagnostic criteria
- BW < 3rd percentile

OR
- 3 or more of:
  - BW < 10th percentile
  - L < 10th percentile
  - HC < 10th percentile
  - Suspected FGR
  - Current pregnancy risk factor (e.g. congenital infection, hypertension, pre-eclampsia, diabetes)

Risk factors
- Primip or grand-multip, short interpregnancy interval
- Ethnicity (e.g. Aboriginal or Torres Strait Islander)
- Low socio-economic status
- Age < 16 or > 35 years
- Suspected FGR
- Previous FGR, SGA, stillbirth
- Co-morbidities (e.g. obesity)
- Substance use (e.g. smoking)
- Mental illness or eating disorder

Health implications
- Lower Apgars/acidosis
- Respiratory compromise
- Hypothermia
- Hypoglycaemia
- Hypocalcaemia
- Jaundice
- Feeding intolerance
- Longer term health impacts
  - Neurological delays
  - Obesity
  - Metabolic disorders

Suspected SGA/GRN

Care at birth
- Anticipate need for resus
- Immediate drying/warmth
- Consider paired BG/lactate
- Support delayed cord clamping (unless required to move for resus)
- Skin to skin
- Recommend placental histopathology
- Feed within 30–60 minutes

Assessment
- Review history
- Review EDD
- Plot BW, L, HC on growth charts
- Physical examination
- Assess for features of GRN
- Other assessments as indicated
- Document findings

Additional care
- Additional surveillance whilst minimising mother, baby separation
- Low threshold for escalation of care
- Referral as indicated
- Parental information and support

Care of baby: SGA/GRN

Thermoregulation
- Promote skin to skin
- Check temperature before feeds (at least first 24 hours)
- Delay first bath

Metabolic
- Monitor as clinically indicated:
  - Blood glucose
  - Calcium
  - Jaundice

Feeding
- Aim is to achieve *gradual* weight gain
- Individualise feeding plan
- Feed at least third hourly
- If PDHM/formula feeding, balance quota with tolerance
- If intolerance seek review
- Consider intravenous therapy or gavage feeds as required

Discharge considerations
- Feeding
- Weight
- Maintaining temperature
- Jaundice
- Parental readiness and ability to engage with follow-up

Follow-up
- Early post discharge appt
- Assess growth and development up to 2 years

BG blood gas**, BMI** body mass index, **BW** birth weight, **EDD** estimated due date, **FGR** fetal growth restriction, **GRN** growth restriction in the newborn, **L** length, **HC** head circumference**, PHDM** pasteurised human donor milk, **SGA** small for gestational age, **Resus** resuscitation, **<** less than,**>** greater than

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Abbreviations

AC	Abdominal circumference
EBM	Expressed breastmilk
EFW	Estimated fetal weight
FGR	Fetal growth restriction
GRN	Growth restriction in the newborn/neonate
SGA	Small for gestational age
SUPC	Sudden unexpected postnatal collapse

Definitions

Anthropometry	Study of measurements and proportions of the human body.
Feeding interval	The interval between start of one feed and start of next feed (start to start)
Growth velocity	The slope of change in fetal biometric percentiles based on gestational age across at least two ultrasounds during pregnancy (e.g. 18 weeks gestation and 32 weeks gestation).
Neonatal unit	In this guideline, neonatal unit, is used to mean any clinical area where specialised observation, monitoring, and baby care is provided.
Sudden unexpected postnatal collapse (SUPC)	The sudden cardiorespiratory collapse within the first seven days of life of an apparently healthy newborn born greater than 35 weeks gestation
Term pregnancy	Gestation greater than or equal to 37 weeks and less than 42 gestational weeks. Further classifications include: o Early term (37+0–38+6 weeks) o Full term (39+0–40+6 weeks) o Late term (41+0–41+6 weeks) o Post term (42+0 and beyond).

1 Introduction

Growth is a dynamic process that is assessed over time and is compared to a hypothetical growth potential, represented in growth charts. Human growth is at its greatest during the second half of pregnancy, resulting in a six-fold increase in weight.[1] An interruption in intra-uterine growth places the fetus/baby at increased risk of adverse perinatal mortality and morbidity (e.g. metabolic conditions, neurodevelopmental delay, stillbirth).[2,3]

Obstetric management is focused on identifying the possibility of growth restriction, the underlying causes or contributing factors, monitoring fetal wellbeing during pregnancy and planning birth (timing location, mode of birth) to optimise outcomes.

After birth, individual assessment and risk profiling is essential to identify newborn babies with growth restriction and to balance clinical intervention for improved outcomes.[4,5] This guideline focuses on the term newborn baby (37+0–41+6 weeks gestation) who is small for gestational age (SGA) and/or with growth restriction of the newborn (GRN), and is also applicable to the post-term SGA baby.

1.1 Incidence

In Queensland, approximately 7% of term babies are born less than the 10th percentile.[6] Aboriginal and/or Torres Strait Islander babies are disproportionately represented within the low birth weight population.[6]

Table 1. Queensland birth data

Year	Births at term (n)	Indigenous status	Birth weight ≤ 3rd percentile (%)		Birth weight > 3rd and ≤ 10th percentile (%)	
			Indigenous	Not Indigenous	Indigenous	Not Indigenous
2016	56,952	3,662	2.8	1.5	6.6	5
2017	54,607	3,632	2.9	1.4	8.2	5
2018	55,023	3,670	3.3	1.4	7.8	5.2
2019	54,755	3,920	2.7	1.5	8	5.2
2020	54,214	3,830	2.9	1.4	8.3	5

Source: Perinatal Data Collection, Department of Health, Department of Health (Queensland)-Statistical Services Branch, 2021.[6]

1.2 Clinical standards

Table 2. Clinical standards

Aspect	Consideration
Standard care	• Refer to Queensland Clinical Guideline: *Standard care*[7] for care considered 'usual' or 'standard' • Includes for example: privacy, consent, decision making, sensitive communication, medication administration, parental information, staff education and support, culturally appropriate care
Model of care	• Family centred care with developmentally supportive neonatal care[8]
Clinician education	• Support learning and education to: o Promote use of consistent terminology[5] o Implement supportive care for babies with SGA/GRN[8] o Improve awareness of common parental experiences and psychological needs (e.g. greater reassurance with feeding)[9] o Enhance preparation for discharge and improve outcomes relating to maternal readiness[10]

2 Terminology

During pregnancy, differentiating between SGA and fetal growth restriction (FGR) (also known as intra-uterine growth restriction (IUGR)) remains an obstetric challenge, and terms are often used interchangeably.[11] A more recent term *growth restriction of the newborn* (GRN) aims to aid the recognition of babies at risk, who might otherwise be missed according to currently accepted definitions and standards.[5]

Table 3 Terminology

Small for gestational age (SGA)		
Definition	**Baby's birth weight less than the 10th percentile for sex and gestational age[5,11,12]**	
Categories	Constitutionally small	• Small, healthy baby, at low risk of adverse perinatal outcomes[11]
	Small due to FGR	• Small due to a pathological process in-utero leading to restricted growth and greater adverse outcomes[12]
Implications	• Fetal adaptations following an adverse in-utero event may result in subtle changes or disguise signs of FGR[13,](e.g. symmetrical FGR)[14] • SGA may be used to refer to the fetus as well as the baby (SGA fetus) when estimated fetal weight (EFW) is below the 10th percentile • An SGA baby may/may not have FGR[5] therefore suspect FGR/GRN until assessment complete • If FGR/GRN identified, use growth restriction terminology[5,11]	
Fetal growth restriction (FGR)		
Definition	• A pathological process (e.g. utero-placental dysfunction), whereby the fetus does not reach their growth potential, identified by[12]: o Weight less than the 3rd percentile **OR** o Less than 10th percentile with other pathology: ▪ EFW/abdominal circumference (AC) below the 10th percentile[12] ▪ Measurements falling more than two quartiles on percentile graphs[11] ▪ Reducing growth velocity[15] ▪ Parameters identified by serial ultrasound (e.g. Doppler studies, amniotic fluid volume)[12]	
Categories	Early onset	• Occurring before 32 weeks gestation[16]
	Late onset	• Occurring at or after 32 weeks gestation[16]
	Severe	• Fetal biometry less than 3rd percentile[12]
	Symmetrical	• Growth measurements follow lower percentile growth curves[17] • Associated with early pregnancy insult (e.g. congenital malformation/infection, fetal alcohol syndrome)
	Asymmetrical	• Head circumference is large in comparison to other measurements[5] (also known as 'head-sparing')
Implications	• Increased rate of perinatal mortality and morbidity[12,16] • Low clinical rates of antenatal detection (20%) means most babies with FGR have increased risk of adverse outcomes and are undiagnosed until after birth[3]	
Growth restriction of the newborn (GRN)		
Definition	• Birth weight is less than the 3rd percentile **OR** • At least 3 of the following are present[5]: o Birth weight less than 10th percentile o Head circumference less than 10th percentile o Length less 10th percentile o Antenatal diagnosis of FGR o Maternal pregnancy risk factors (e.g. hypertension, pre-eclampsia,[5] diabetes[18])	
Implications	• A postnatal term to identify growth restricted babies[5] • Includes babies affected by growth restriction, not detected before birth, some with birthweights above the 10th percentile[5]	

3 Growth and health

SGA/GRN is an independent risk factor for increased length of hospital stay after birth and readmission during the baby's first year of life.[19]

3.1 Short term health risks

Table 4. Short term health implications

Aspect	Consideration
Resuscitation	• Babies with birthweight less than the 10th percentile are more likely to experience[3]: o Neonatal resuscitation (e.g. lower Apgar scores, acidosis, neonatal death) o Respiratory compromise[20] (e.g. bronchopulmonary dysplasia, pulmonary hypertension, meconium aspiration syndrome[21]) • SGA is a recognised risk factor for sudden unexpected postnatal collapse (SUPC)[22]
Hypothermia	• Due to[20]: o Larger surface area to body weight ratio o Higher energy requirements and less glycogen stores o Less body fat and greater proportion of body fluids
Nutritional problems	• Feeding intolerance[20] • Refer to Section 5.2 Infant feeding
Metabolic disturbance	• Hypoglycaemia (physiological glucose intolerance/insulin resistance)[17,23] o Refer to Queensland Clinical Guideline: *Hypoglycaemia-newborn*[24] • Lower rate of fat and protein absorption[25] • Hypocalcaemia[26]
Jaundice	• Greater risk related to polycythaemia[25] o Refer to Queensland Clinical Guideline: *Neonatal jaundice*[27]

3.2 Longer term health outcomes

Table 5. Longer term health outcomes

Aspect	Consideration
Expected growth 0–6 months	• Expected growth from birth to six months[25,28] o Weight 140–200 grams per week o Head circumference 0.5 cm per week o Length 1.5–2.5 cm per month
Catch-up growth	• More than 85% of term babies with GRN will achieve catch-up growth in their first 1–2 years of life[17,29] o The more growth restricted the less the likelihood of attaining a normal height[17] • Optimal catch-up growth: o Gradually increases over two percentiles during the first several months, (e.g. from less than 10th percentile to between 25th to 50th percentile) then tracks to a median growth by two years[30] o Minimises long term adverse health outcomes (e.g. rapid growth, overweight/obesity)[30] • Improved opportunity for optimal catch-up growth occurs when: o Breastmilk is the main source of nutrition[31,32] o Six hours per day of skin to skin contact (less than two hours per day did not result in significant outcome for weight gain)[33]
Neurodevelopmental	• Neurodevelopmental impacts may include delays in cognitive, language and behaviour (e.g. attention, social, emotional) domains[34]
Endocrine system	• Increased risk of obesity and metabolic disturbances such as glucose intolerance, insulin resistance, amino acid metabolism[17,23,35]
Cardiovascular system	• Increased incidence of hypertension, dyslipidaemia[17] and iron deficient anaemia[36]
Reproductive system	• Increased incidence of hypospadias, puberty alterations (e.g. earlier age of onset), polycystic ovarian syndrome and subfertility[37]

4 Assessment and diagnosis

4.1 Risk factors

Table 6. Risk factors

Aspect	Consideration
Demographics	• Ethnicity and maternal place of birth (e.g. Torres Strait Islands,[6] South-East Asia[38]) • Age (less than 16 years and greater than 35 years)[25] • Lower socioeconomic status[25]
Obstetric history	• Primiparity[12] or grand multiparity[39] • Short interpregnancy interval[25] • Multiple pregnancy[39] • Inadequate pregnancy weight gain[40] • Poor antenatal care[25] • Uterine abnormalities[25] • Previous baby experiencing: o Chromosomal abnormalities[25] o Inborn error of metabolism[25] o FGR[41] o Stillbirth[41] • Placental abruption[12] or praevia[39] • Pre-eclampsia[12,25]
Maternal comorbidities	• Medical conditions (e.g. diabetes, hypertension, thyroid disease, kidney disease)[25] • Body mass index (BMI)[25,42] o Less than 18.5 kg/m^2 o 30 kg/m^2 and above • Previous bariatric surgery[43] • Micronutrient deficiencies[25] • Mental health conditions (e.g. stress[25]) • Excessive physical work[25]
Maternal substance exposure	• Medications (e.g. warfarin, steroids, anticonvulsants, antineoplastics)[39] • Substances (e.g. smoking, alcohol)[25] o Refer to Queensland Clinical Guideline: *Perinatal substance use: maternal*[44] • Environmental exposures (e.g. disinfectants)[45]
Placental	• Abnormalities (e.g. velamentous cord insertion)[46] • Single umbilical artery • Placental infarctions[12,46] • Infection[39]
Baby	• Congenital infections (e.g. syphilis, toxoplasmosis, rubella, cytomegalovirus (CMV), herpes)[12,39] • Genetic factors involved in approximately half of FGR[41] • Anomalies: o Chromosomal abnormality (e.g. trisomy 13, 18, 21)[39] o Major anomalies (e.g. omphalocele, neural tube defect)[39] o Congenital heart defects (e.g. Tetralogy of Fallot, ventricular septal defect requiring surgery)[47]

4.2 Assessment

Identifying and differentiating between a normal growth baby and one who is growth restricted, is based on a combination of assessment, risk factors, overall size and the clinical picture.[48]

Table 7. Assessment

Aspect	Consideration
History	• Review maternal and birth history to identify associated factors[41] o Consider size of parents and familial growth patterns that may support baby being constitutionally small o Consider the accuracy of the estimated prenatal gestational age[49] • Refer to 4.1 Risk factors
Anthropometry	• Measure and plot birth weight, length and head circumference according to gestational age and sex • Compare head circumference to weight and length, to support clinical interpretation[25]
Physical features	• Perform a clinical examination of the newborn o Refer to Queensland Clinical Guideline: *Newborn baby assessment (routine)*[50] • Assess for features of GRN including[17]: o Wizened appearance, general lack of subcutaneous fat, decreased skeletal mass, hyper alert o Dysmorphic features (e.g. babies with genetic disorders, congenital infections) o Skin cracked, peeling and loose skin folds o Larger head-to-body ratio o Large anterior fontanelle o Thin, smooth, straight hair o Immature ear cartilage o Absent buccal fat o Meconium stained umbilical cord o Diminished breast buds o Small, scaphoid shaped abdomen o Immature labia majora in females o Hands and feet appear large o Long fingernails
Other tools	• If gestational age is uncertain, (e.g. no early ultrasound) a physical assessment may assist estimation: o New Ballard method: FGR may increase inaccuracy of score (e.g. diminished vernix, reduced amniotic fluid, dry skin)[17] o Dubowitz method: more comprehensive tool[51] • Clinical assessment of nutrition (CAN) score o Scores subcutaneous and muscle mass to determine nutritional status[17] • Ponderal index o Determines level of malnourishment[17] • Ratio of newborn mid-arm circumference to head circumference to identify insufficient birth weight[17]

4.2.1 Growth charts

Table 8. Growth charts

Aspect	Consideration
Context	• Represent expected growth potential • Population and customised charts can both aid identification of SGA/GRN[5] • Lack of high level evidence to support use of one growth chart over another[12,52] • Variations in metrics may result in different cut off points for FGR/SGA/GRN[53] • Controversy exists regarding concepts and modelling, such as[54]: o Growth charts assume constant growth o Increasing rates of intervention (e.g. induction of labour, elective caesarean) have altered term gestation percentiles[55]
Commonly used growth charts	• World Health Organization (WHO) growth charts are used in the baby's personal health record (Red Book (or Blue Book for NSW babies)[56] • Fenton growth charts are widely used in Australia[57] o Data compiled from developed countries, including Australia[1] o Blend into the WHO growth charts • Customised Australian birth weight percentiles have been developed but lack validation[57]
Recommendation	• Use either the Fenton growth charts *or* the WHO growth charts to plot weight • Determine choice of growth chart at the facility level and use across the service to promote consistent clinical interpretation • At discharge, transfer the measurements into the baby's personal health record[5] (WHO growth chart)

4.2.2 Quick guide estimates to growth restriction

Table 9. Estimates of growth restriction using Fenton growth charts

		Boy			Girl		
Gestation	**Percentile**	**BW** (g)	**L** (cm)	**HC** (cm)	**BW** (g)	**L** (cm)	**HC** (cm)
37+0 weeks	3rd	2150	43.8	30.5	2050	43.0	30.2
	10th	2400	45.2	31.4	2290	44.5	31.1
38+0 weeks	3rd	2350	45.0	31.2	2250	44.0	30.8
	10th	2600	46.2	32.1	2500	45.5	31.8
39+0 weeks	3rd	2550	46.0	31.8	2410	45.0	31.5
	10th	2800	47.3	32.7	2650	46.5	32.4
40+0 weeks	3rd	2750	47.0	32.4	2580	46.0	32.2
	10th	3000	48.3	33.2	2810	47.5	32.9
41+0 weeks	3rd	2910	48.0	33.0	2710	47.2	32.7
	10th	3200	49.2	33.8	2980	48.5	33.5

Measurements approximated using the Fenton 2013 growth calculator[58]

4.3 Diagnosis and investigations

Accurate diagnosis is key to implementing early intervention, follow-up monitoring and improved health outcomes.[11]

Table 10. Diagnostic and investigations

Aspect	Consideration
Diagnostic criteria	• Use GRN diagnostic criteria to improve detection rates o Refer to Section 2 Terminology • Document clinical decision making process and criteria used to differentiate between normal growth and SGA/GRN (e.g. presence and absence of physical features, additional tools used for assessment)
Investigations	• Individualise according to clinical circumstances, consider (particularly if antenatal care limited or absent): o Maternal toxoplasmosis, rubella, herpes screen, syphilis o Urine CMV polymerase chain reaction (PCR)[59] o Karyotype[59] o Cranial ultrasound[59] • Placental histopathology recommended if[12,46]: o Placental vascular malperfusion lesions o Increased neonate-to-placenta weight ratio (associated with recurrent SGA/GRN) o Placental weight less than 350 grams[39] • If suspicion of abnormalities, (e.g. dysmorphic features), consider[59]: o Dysmorphology assessment and molecular genetic testing[60] o Ophthalmology assessment
Communication and referral	• Discuss findings with family[17] • Refer to specialists as required (e.g. geneticist)

5 Supportive care

A focus on keeping baby "warm, pink and sweet", whilst monitoring for any clinical compromise, is the mainstay of care for most well babies who are SGA or have GRN.[25]

5.1 Newborn care

Table 11. Newborn care

Aspect	Consideration
At birth	• Anticipate need for resuscitation[3] o Refer to Queensland Clinical Guideline: *Neonatal resuscitation*[61] • Immediate drying or occlusive wraps (high risk of hypothermia)[25] • Promote skin to skin contact[33] and support with warm wraps/blankets (with safe positioning of upper airway) • Delay cord clamping to increase iron stores (no increased morbidities associated with SGA/GRN and polycythaemia)[36] • Consider paired cord blood gases[12] • Record first temperature • Commence feeding within 30–60 minutes[20,25] • Examine placenta and consider histopathology[12,46]
Clinical surveillance	• Support mother and baby togetherness, minimise separation[8] o SGA/GRN alone is not an indication for admission to a neonatal unit o Follow local protocols for criteria for admission to a neonatal unit • SGA baby requires close surveillance in the postnatal area[17,22] • Support care provision to minimise/prevent[25]: o Hypothermia o Respiratory compromise o Hypoglycaemia • Blood glucose monitoring o Refer to Queensland Clinical Guideline: *Hypoglycaemia-newborn*[24] • Clinical observations as per neonatal early warning tool (NEWT)[62] o Take temperature prior to feeds for first 24 hours o Maintain low threshold for escalation of care • Monitor input and output • If clinical deterioration, transfer care as per local protocols o Refer to Queensland Clinical Guidelines: *Neonatal stabilisation for retrieval*[63]
Thermoregulation	• Limit exposure to environmental temperature variations to conserve energy resources[25,64] o Maintain thermoneutral environment (draft free environment, room temperature at least 25 °C) o Skin to skin contact supports neonatal thermoregulation o Use warm wraps/blankets to support skin to skin contact o If required, use external heat sources (e.g. radiant warmer) o Delay first bath at least until after the first 24 hours[65]
Jaundice	• Monitor for jaundice due to associated polycythaemia[25,66] o Refer to Queensland Clinical Guideline: *Neonatal jaundice*[24]
Metabolic disturbances	• Maintain awareness of increased risk of hypo/hyperglycaemia within the first 48 hours of life[25] o Refer to Queensland Clinical Guideline: *Hypoglycaemia-newborn*[24] • If baby unwell, consider screening for hypocalcaemia[66]

5.2 Infant feeding

Babies with limited reserves (e.g. early term) are more likely to tire easily, have inefficient suck and swallow, and less milk transfer.[28]

Table 12. Infant feeding

Aspect	Consideration
Breastfeeding	• Breastfeeding improves health outcomes for SGA/GRN babies[31,32] o Healthier catch-up growth and less adiposity and insulin resistance • If preferred feeding method, recommend early lactation support (e.g. lactation consultation, assistance with expressing/storing expressed breastmilk (EBM) after feeds, support for supply concerns) o Refer to Queensland Clinical Guideline: *Establishing breastfeeding*[67]
Feeding support	• Develop an individualised feeding plan with parents[28] • Feed at least every three hours and monitor frequency o Calculate feeding interval from start of one feed to start of next feed • Observe and asses an entire feed at regular intervals (e.g. each shift) (e.g. nutritive versus non-nutritive sucking, if baby tiring) • Consider pasteurised donor human milk (PDHM) if available[25] • If PDHM/formula feeding, balance quota with tolerance of feeds • Monitor for vomiting, signs of feed intolerance[20]
Feeding concerns	• If after the first feed, baby has not fed in a three-hour interval (calculate interval from start of one feed to start of next feed) o Review previous feeding history, urinary output, bowel motions (type, colour, and frequency) o Assess baby (e.g. temperature, heart rate, respirations, colour) o Review lactation support and feeding plan o Consider early paediatric/neonatal team notification and review • If feeding concerns, consider as indicated: o Limiting length of feed (e.g. 20–30 minutes)[28] o Gavage, supplementation (EBM, PDHM or formula) or IV fluids[20] o Gradual increase of enteral feeds accompanied by IV fluids[20] o Speech pathologist assessment for feeding safety

5.3 Parental support

Table 13. Parental support

Aspect	Consideration
Parental support	• Advise parents about[9]: o Essential elements of care (e.g. thermoregulation, feeding frequency) o Additional benefits of breastfeeding/breastmilk for SGA/FGR baby[31,32] o Benefits of skin to skin—positioned to support adequate airway[22,68] o When to seek urgent assistance (e.g. baby's colour changes, breathing concerns, floppy tone)[22,68] • Offer additional information about: o Recognising feeding cues, suck types (e.g. nutritive), feeding behaviours (e.g. tiring during feeds)[9] o Common feelings experienced (e.g. unpreparedness, guilt, focus and concern about feeding, fatigue)[9] o Bonding and attachment through positive parent-infant strategies[8,69] o Community resources (e.g. web based, support services/groups) • Refer to multidisciplinary team for additional support as indicated (e.g. social work, perinatal mental health)
Impact on future pregnancy	• Discuss impact on future pregnancies o Increased risk of future babies with SGA/GRN[46] o Cumulative risk if other pregnancy risk factors exist (e.g. previous preterm birth or stillbirth)[70] o Benefits of early engagement in pregnancy care and additional interventions according to risks (e.g. low dose aspirin)[12] • Offer support to reduce modifiable risk factors (e.g. smoking cessation, o Refer for specialist support (e.g. Alcohol and Drug Service)[12]

6 Discharge planning and follow-up

Table 14. Discharge and follow-up

Aspect	Consideration
Context	• SGA/GRN have higher rates of hospital readmission due to health concerns, increased risk of jaundice and subsequent feeding challenges • Initial baby follow-up appointments within 72 hours of discharge have led to a 15% reduction in readmission rates[71]
Readiness for discharge	• Involve parents early, discuss timing and make a plan for discharge[20] • Consider delaying discharge (or advising against early discharge) as may: o Increase opportunity to establish maternal and newborn readiness o Mitigate increased risk of readmission • If baby has been cared for in a neonatal unit, consider additional time for rooming-in[20] • In addition to usual discharge criteria[25]: o Baby is clinically stable (all vital signs within normal limits, maintains own temperature) o Baby is feeding adequately o Weight gain or loss is appropriate within the context of individualised clinical assessment o Review for jaundice (common reason for readmission[72,73,74]) o Parent(s) able/willing to engage with follow-up services
Additional information for parent/s	• Discuss importance of follow-up o Often growth monitoring occurs only after developmental concerns are identified[30] • Document referral plan in the baby's personal health record (e.g. Red Book (or Blue Book for NSW babies)) • Offer information about: o Nutritional/feeding requirements o Gradual nature of catch up growth [refer to Table 5. Longer term health outcomes] • Provide parent information sheet (e.g. Queensland Clinical Guidelines: *Small baby born at term*)
Initial follow-up	• Recommend early follow-up o If baby born early term, contact within 48 hours[28] o If discharge is within 48 hours of birth, contact within 2–3 days • Following initial review (e.g. by home visiting maternity service), refer for ongoing follow up (e.g. child health services or general practitioner (GP))
Ongoing follow-up	• Recommend follow-up assessment and growth monitoring up to at least two years of age, by a paediatric care provider[17,34,75] (e.g. child health services, GP, paediatrician, allied heath) • Consider as indicated: o Cardiovascular health o Metabolic parameters o Neurodevelopmental assessment and early intervention[34] o Referral to specialist staff

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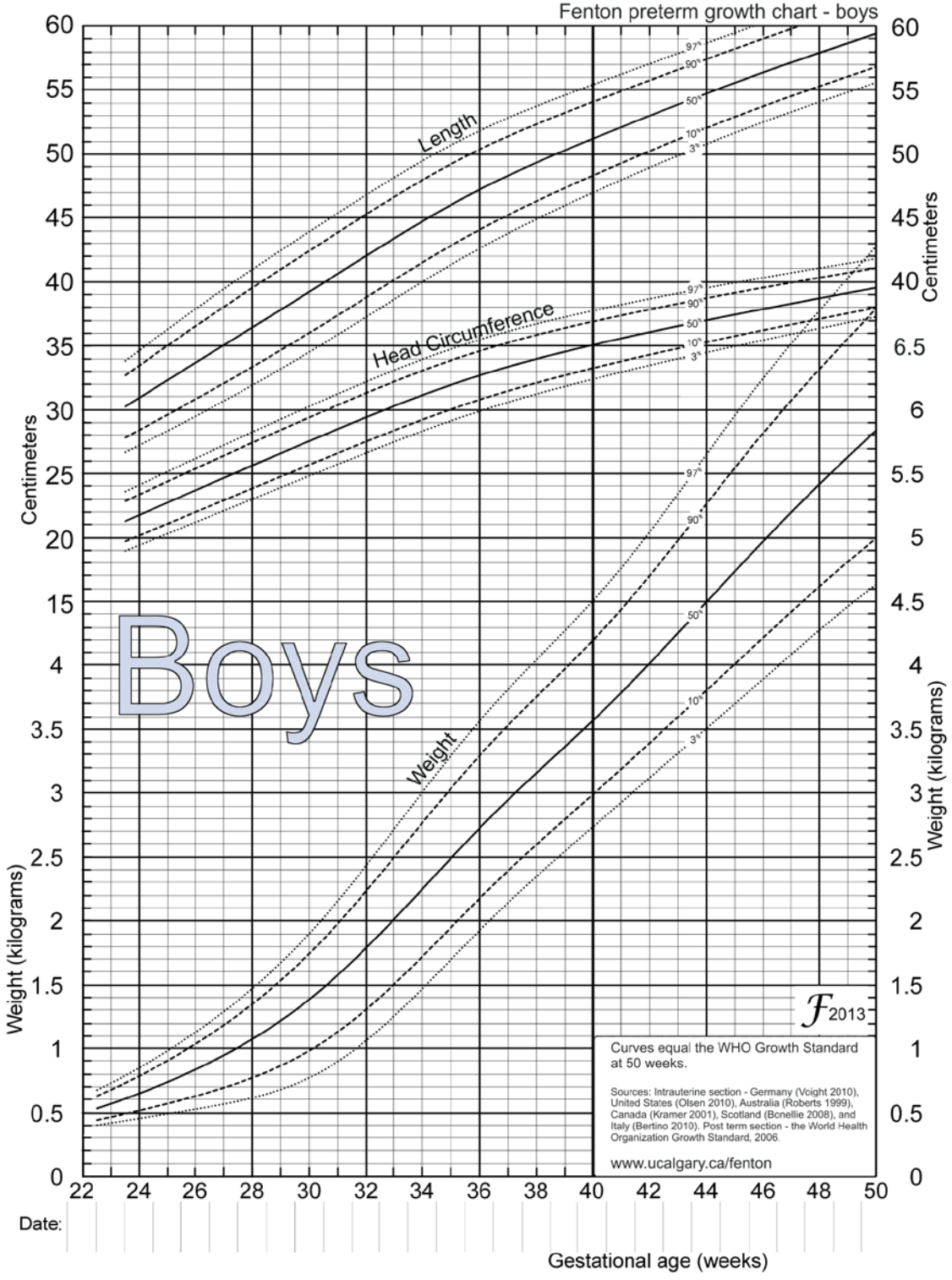
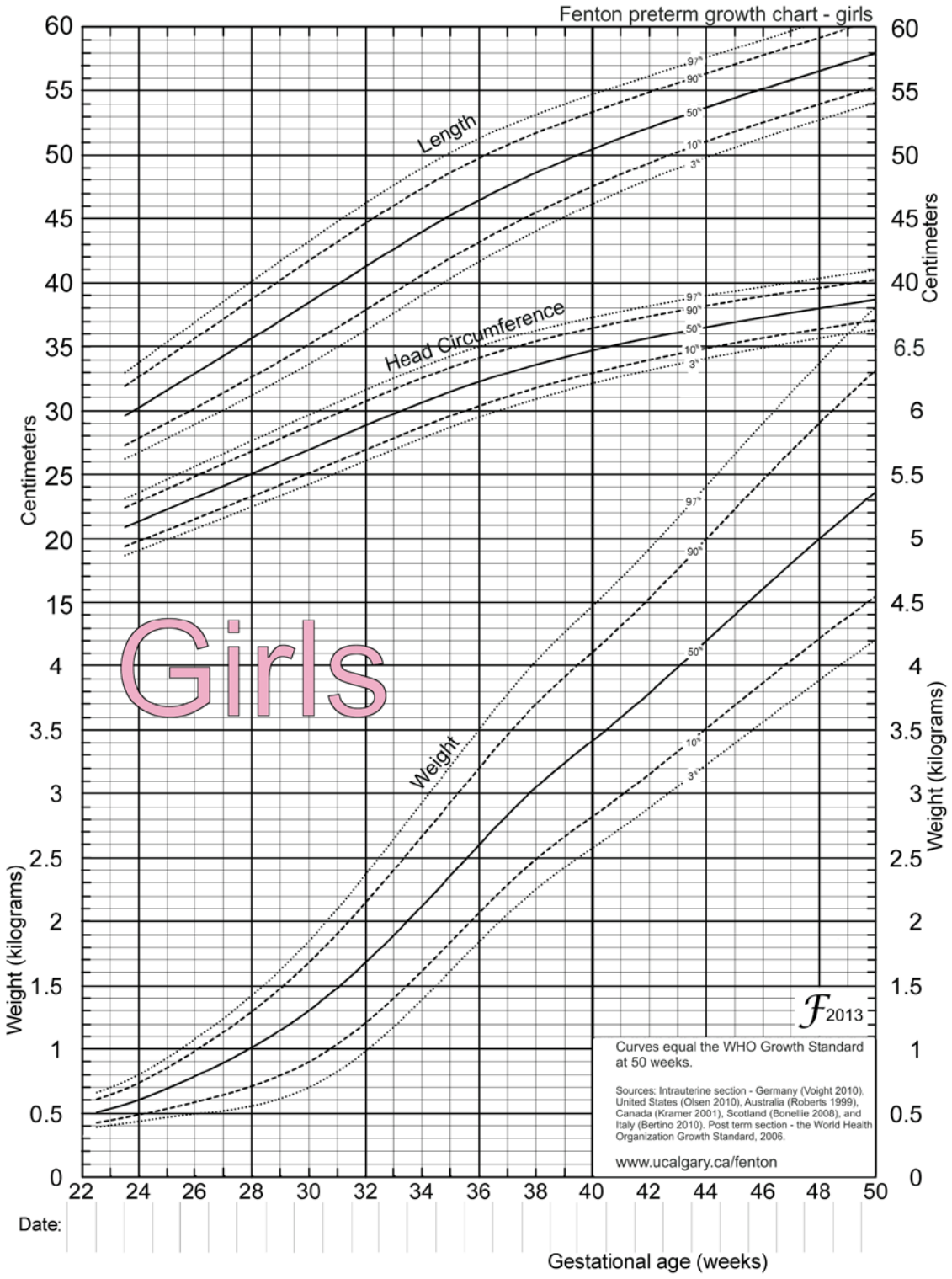
Appendix A: Fenton Growth Charts (boys and girls)




Fenton preterm growth chart - girls
Length
Head Circumference
Weight
97th
90th
50th
10th
3rd
Girls
Centimeters
Weight (kilograms)
Curves equal the WHO Growth Standard at 50 weeks.
Sources: Intrauterine section - Germany (Voight 2010), United States (Olsen 2010), Australia (Roberts 1999), Canada (Kramer 2001), Scotland (Bonellie 2008), and Italy (Bertino 2010). Post term section - the World Health Organization Growth Standard, 2006.
www.ucalgary.ca/fenton
F2013
Date:
Gestational age (weeks)

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