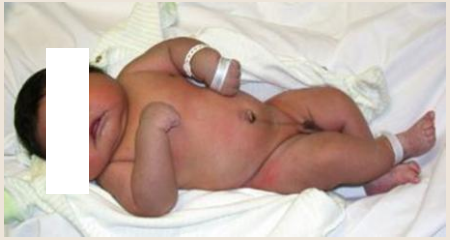
GDM Management

Gestational Diabetes Mellitus & Nursing practicum

ANC, Labor & Recovery - Comprehensive Management



Asst.Prof.Duangporn Pasuwan

GDM: Definition & Overview

Gestational Diabetes Mellitus (GDM): Glucose intolerance first recognized during pregnancy, typically appearing in 2nd or 3rd trimester. Affects 2-10% of pregnancies globally; major cause of maternal and neonatal complications.

- **Pathophysiology:** Pregnancy-induced insulin resistance due to placental hormones (human placental lactogen: HPL , cortisol)
- **Screening:** GLT and diagnosis : OGTT (Oral Glucose Tolerance Test) at 24-28 weeks; universal screening recommended
- **Risk of complications:** Maternal hyperglycemia → fetal hyperglycemia → neonatal complications (hypoglycemia, macrosomia, respiratory distress)
- **Post-pregnancy:** 50% risk of type 2 diabetes within 10 years; requires ongoing monitoring

Risk Factors & Diagnostic Criteria

Risk Factors: Obesity (BMI >30), age >35, family history of diabetes, previous GDM, PCOS, sedentary lifestyle, ethnicity (Hispanic, Asian, African)

Diagnostic Criteria (OGTT 75g, 2-hour): Fasting <92 mg/dL; 1-hour <180 mg/dL; 2-hour <153 mg/dL. One abnormal value = GDM diagnosis.

OGTT 100 g

: Fasting < 95 mg/dL; 1-hour <180 mg/dL; 2-hour <155 mg/dL. 3-hour <140 mg/dL two abnormal value = GDM A1

Fasting > or =95 mg/dL; 1-hour <180 mg/dL; 2-hour <155 mg/dL. 3-hour <140 mg/dL two abnormal value = GDM A2

Fasting > or =126 mg/dL; 1-hour >180 mg/dL; 2-hour >155 mg/dL. 3-hour >140 mg/dL = Overt DM (Previous DM before pregnancy)

Clinical Signs: Polyuria, polydipsia, fatigue, recurrent UTI/candida, glycosuria on urinalysis

Risk factors for GDM:

High blood pressure.

Heart disease.

Family history of Type 2 diabetes.

Personal history of GD (in previous pregancies).

Having obesity or overweight before pregnancy.

Advanced maternal age.

Prediabetes.

Polycystic ovary syndrome (PCOS).

There are usually no obvious warning signs of GDM.
If you do have symptoms, they may include:

TABLE 1. Diagnosis of gestational diabetes with a 100-g or 75-g glucose load

100-g glucose load		
Fasting	95 mg/dL	5.3 mmol/L
One-hour	180 mg/dL	10.0 mmol/L
Two-hour	155 mg/dL	8.6 mmol/L
Three-hour	140 mg/dL	7.8 mmol/L
75-g glucose load		
Fasting	95 mg/dL	5.3 mmol/L
One-hour	180 mg/dL	10.0 mmol/L
Two-hour	155 mg/dL	8.6 mmol/L

OGTT (4 Tube)

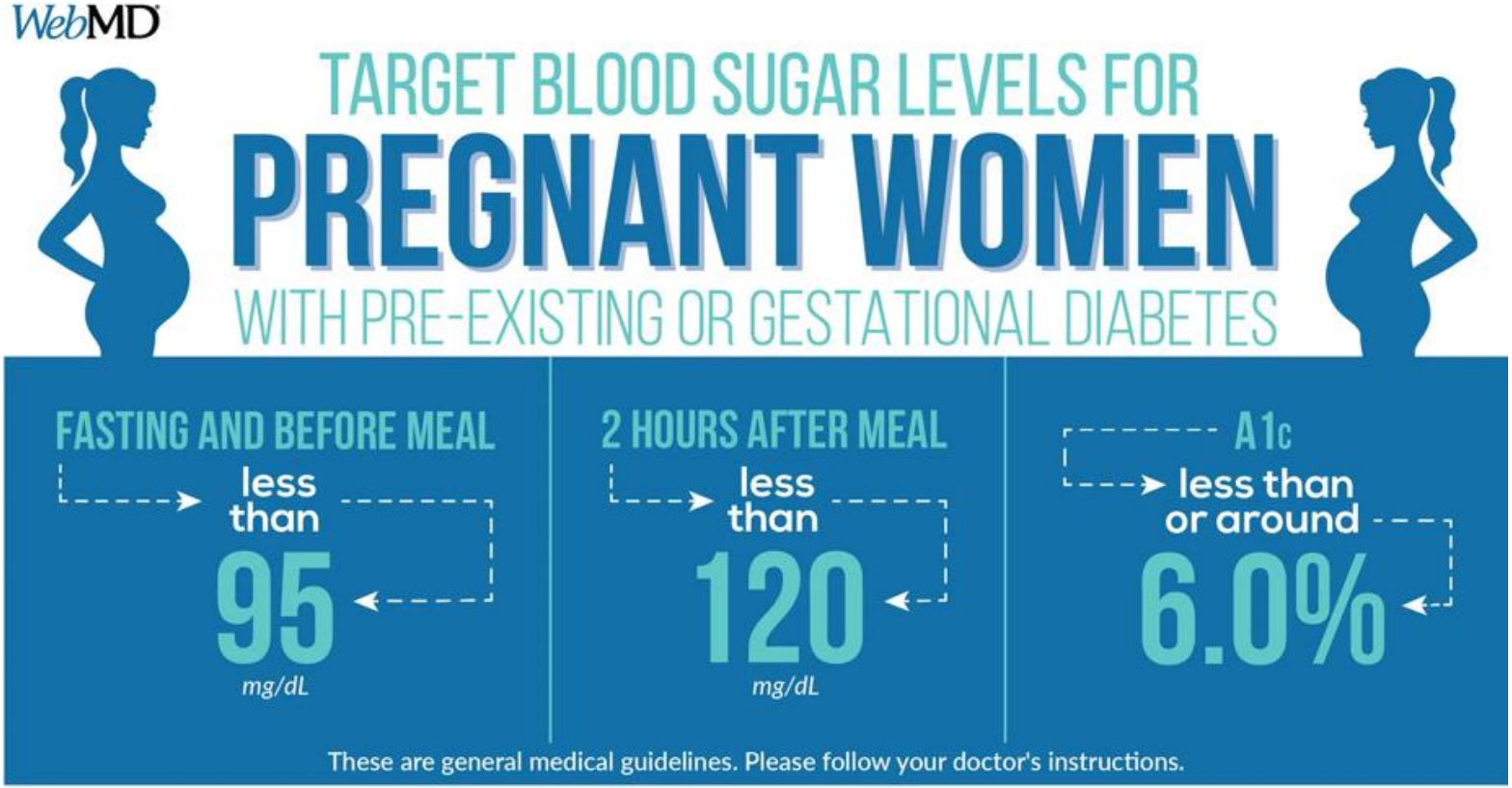
Fasting	95 mg/dL
One-hour	180 mg/dL
Two-hour	155 mg/dL
Three-hour	140 mg/dL


QUALITY SINCE 1922
Grace

Health education at ANC

Nursing Care During ANC (Antenatal care)

Assessment	Monitoring	Interventions
Glucose Screening:50g GCT at 24-28 weeks; OGTT if abnormal	Fasting glucose, 2-hour post-load levels; HbA1c baseline and monthly	Educate on screening importance; arrange repeat testing if needed; explain results
Blood Glucose Monitoring:Self-monitoring 4x daily (fasting, post-meals)	Daily glucose log; target ranges (fasting <95, 1-hr <140, 2-hr <120 mg/dL)	Teach glucose meter use; provide log sheets; review readings at each visit; adjust therapy
Dietary Management:Medical nutrition therapy (MNT) by dietitian	Carbohydrate counting, portion control, meal timing; weight gain pattern (25-35 lbs)	Refer to dietitian; teach balanced diet; monitor compliance; encourage regular meals; avoid sweets
Physical Activity:Exercise program individualized for pregnancy	Exercise tolerance, glucose response to activity, maternal wellbeing	Encourage 150 min/week moderate activity (walking, swimming); monitor for hypoglycemia post-exercise
Insulin/Medication:If diet alone insufficient (30-40% need insulin)	Fasting glucose; adjust insulin doses every 1-2 weeks; watch for hypoglycemia	Teach insulin injection technique; provide emergency glucagon kit; educate on hypoglycemia signs
Fetal Monitoring:Ultrasound for growth, amniotic fluid, birth defects screening	Fetal weight, polyhydramnios, macrosomia risk; NST if indicated	Schedule regular ultrasounds; assess fetal well-being; prepare for possible preterm delivery


WebMD
TARGET BLOOD SUGAR LEVELS FOR
PREGNANT WOMEN
WITH PRE-EXISTING OR GESTATIONAL DIABETES
FASTING AND BEFORE MEAL
less than
95
mg/dL
2 HOURS AFTER MEAL
less than
120
mg/dL
A1c
less than or around
6.0%
These are general medical guidelines. Please follow your doctor's instructions.

Nursing Care During Labor & Delivery (LR)

Assessment	Monitoring	Interventions
Glucose Management:HOLD home insulin dose; check glucose upon admission	Hourly blood glucose monitoring during labor (target 100-150 mg/dL); IV glucose if needed	Establish IV access; administer IV fluids without glucose initially; check glucose every 1-2 hours
Insulin During Labor:Use short-acting insulin or continuous insulin infusion if needed	Glucose trends; insulin sensitivity typically increases during labor	Use insulin drip if glucose >180 mg/dL; adjust per protocol; avoid hypoglycemia (<70 mg/dL)
Continuous Fetal Monitoring:Electronic monitoring; watch for fetal compromise	FHR baseline, variability, decelerations; assessment for macrosomia complications	Maintain continuous monitoring; position left lateral; prepare for possible operative delivery; have pediatrics present
Maternal Comfort & Pain:Epidural preferred if possible to reduce stress	Labor progression, pain relief adequacy, maternal glucose response to stress hormones	Facilitate epidural; provide support; monitor for ketoacidosis signs (nausea, fruity breath, altered pH)
Nutritional Support:IV fluids with electrolytes; assess for dehydration	Fluid intake/output; electrolytes; hydration status; urine ketones	Maintain IV fluids (lactated Ringer's preferred); monitor I&O; encourage ambulation if able; NPO until clear
Delivery Preparation:Notify pediatrics of GDM for neonatal glucose monitoring	Delivery imminent; mode of delivery (vaginal vs. C-section for macrosomia/dystocia)	Alert pediatrics; prepare for neonatal hypoglycemia protocol; have IV dextrose ready; assist with immediate delivery

Nursing Care During Postpartum Period (PP)

Assessment	Monitoring	Interventions
Glucose Normalization:Glucose typically normalizes postpartum; monitor daily	Fasting glucose trends; usually return to normal within 24-72 hours; discontinue insulin if normal	Check fasting glucose daily; resume home diabetes meds only if glucose elevated; educate on post-pregnancy risk
Breastfeeding Support:Exclusive breastfeeding protects infant; improves maternal glucose	Feeding frequency, infant latch, milk transfer; maternal calorie needs (500 extra/day)	Encourage breastfeeding within 1 hour of delivery; provide lactation support; monitor infant glucose if needed
Maternal Recovery:Monitor for postpartum hemorrhage, infection, preeclampsia	Lochia, fundal tone, vital signs, glucose stability, wound healing; emotional wellbeing	Provide routine postpartum care; assess perineal/abdominal wounds; monitor for signs of infection
Neonatal Glucose Monitoring:Infant at risk for hypoglycemia first 24-48 hours	Heel stick glucose at 2-4 hours of life; repeat per protocol if <45 mg/dL or symptomatic	Ensure early breastfeeding; have IV dextrose available; educate parents on hypoglycemia signs
Lifestyle & Diet Counseling:Return to prepregnancy diet; weight loss goal (1-1.5 lbs/week)	Dietary compliance, physical activity resume, weight trajectory, emotional eating triggers	Educate on healthy diet; encourage breastfeeding (burns 500 cal/day); resume exercise at 6-8 weeks postpartum
Follow-up Testing:Fasting glucose/OGTT at 6-8 weeks; then annually	HbA1c at postpartum visit; annual screening for type 2 diabetes development	Schedule 6-week postpartum visit with fasting glucose; provide results; refer to endocrinology if abnormal; counsel on future pregnancy risk

Primary Nursing Diagnosis - Mother

- **Deficient Knowledge** related to GDM management, glucose monitoring, dietary modifications, and insulin administration
- **Risk for Unstable Blood Glucose** related to pregnancy-induced insulin resistance and carbohydrate metabolism changes
- **Anxiety/Stress** related to diagnosis, fear of maternal/fetal complications, and lifestyle changes required
- **Nutritional Imbalance** related to need for careful dietary management and weight gain monitoring
- **Risk for Injury (Self/Fetus)** related to maternal hypoglycemia and fetal hyperglycemia complications
- **Health-Seeking Behavior** related to motivation for self-care and compliance with treatment plan

Primary Nursing Diagnosis - Newborn

- **Risk for Neonatal Hypoglycemia** related to maternal hyperglycemia and fetal hyperinsulinemia causing rapid glucose drop postpartum
- **Risk for Respiratory Distress Syndrome** related to prematurity and maternal GDM complications
- **Risk for Macrosomia Complications** related to fetal hyperglycemia causing excessive growth and birth trauma
- **Risk for Hyperbilirubinemia** related to increased red blood cell turnover from fetal polycythemia
- **Ineffective Feeding Pattern** related to hypoglycemia, prematurity, and maternal GDM effects on infant maturity
- **Risk for Delayed Development** related to potential birth complications and neonatal complications from maternal GDM

Comprehensive Summary-GDM Nursing practicum

Phase	Key Assessments	Core Interventions	Outcomes
ANC (Antenatal)	50g GCT screening; OGTT diagnosis; daily glucose monitoring (4x); weight gain; fetal growth	Dietary counseling; insulin initiation if needed; glucose log review; exercise prescription; fetal monitoring (US, NST); education on signs/symptoms	Glycemic control achieved (glucose targets met); appropriate weight gain; healthy fetal growth; maternal knowledge and compliance
L&R (Labor)	Hourly glucose checks; IV access; fetal monitoring; labor progression; pain level; delivery mode assessment	IV fluids without glucose; insulin drip if glucose >180 mg/dL; continuous fetal monitoring; epidural for stress reduction; prepare for operative delivery if macrosomia; notify pediatrics	Glucose maintained 100-150 mg/dL during labor; safe vaginal or C-section delivery; fetal safety; immediate readiness for neonatal glucose monitoring
PP (Postpartum)	Fasting glucose daily; neonatal glucose screening; breastfeeding assessment; maternal/infant recovery; 6-week OGTT	Discontinue insulin if glucose normal; encourage breastfeeding; neonatal glucose monitoring per protocol; lifestyle education; 6-week postpartum testing; annual diabetes screening; future pregnancy counseling	Maternal glucose normalized; neonatal hypoglycemia prevented/managed; successful breastfeeding; type 2 diabetes prevented through lifestyle; informed about recurrence risk (50%)

Prevention & Patient Education

- **Dietary Management:** 3 meals + 3 snacks daily; carbs 40%, protein 20%, fat 40%; portion control; avoid refined sugars; consistent meal timing
- **Physical Activity:** 150 min/week moderate exercise (walking, swimming); 3 days/week strength training; monitor for hypoglycemia during/after exercise
- **Home Glucose Monitoring:** Fasting before meals, 2-hours after meals; keep log; target ranges (fasting <95, 1-hr <140, 2-hr <120 mg/dL)
- **Insulin Self-Administration:** Proper injection technique; site rotation; hypoglycemia emergency kit (glucagon); signs of hypo/hyperglycemia
- **Postpartum Lifestyle:** Weight loss goal (1-1.5 lbs/week); breastfeeding (burns 500 cal/day); return to exercise at 6-8 weeks; annual diabetes screening for 10 years
- **Future Pregnancy Planning:** 50% recurrence risk; preconception evaluation if planning another pregnancy; intensive glycemic control prior to conception

Maternal & Neonatal Complications

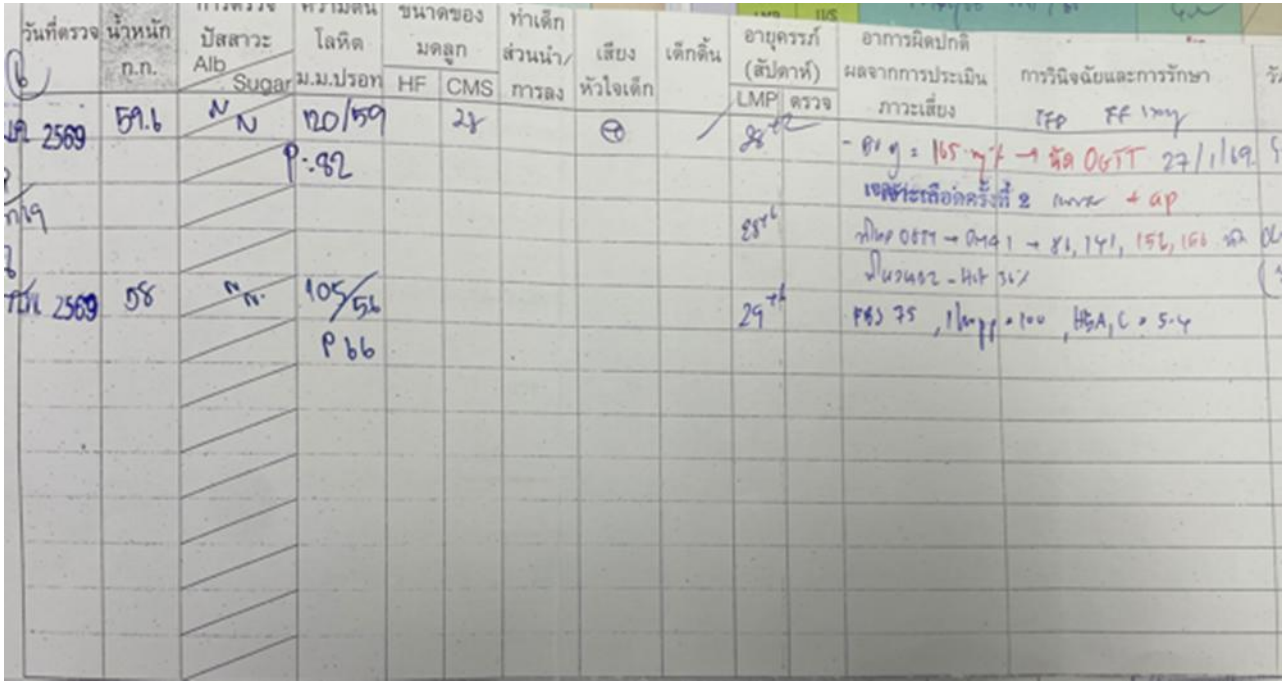
Maternal Complications:

- Preeclampsia (3x increased risk); diabetic ketoacidosis; polyhydramnios; UTI/candida infections; cesarean delivery (50%)
- Type 2 diabetes (50% within 10 years); cardiovascular disease risk; obesity

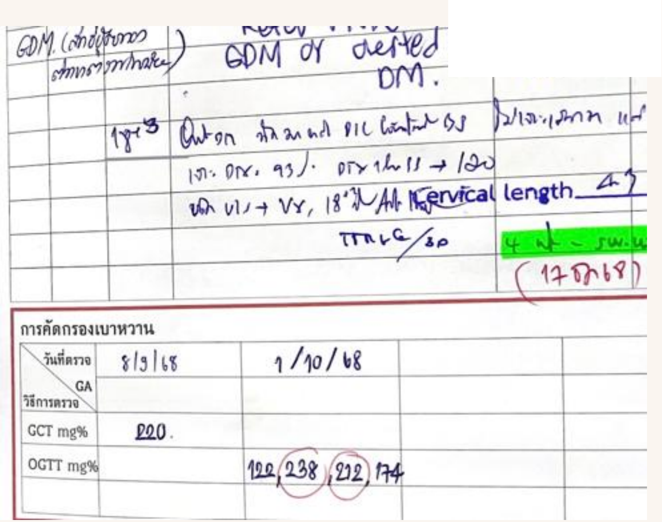
Neonatal Complications:

- Hypoglycemia (most common; 30-50% of infants); macrosomia (birth trauma, dystocia); prematurity; respiratory distress syndrome; hyperbilirubinemia; polycythemia; cardiomyopathy; increased infection risk
- Long-term: Obesity, type 2 diabetes, metabolic syndrome in childhood/adulthood

Example : Case 1 : GDM A1 (G2P0A0L1)



Case 2 : GDM A2



GDM or deFted DM.

Cervical length

การคัดกรองเบาหวาน		
วันที่ตรวจ / GA / วิธีการตรวจ	8/9/68	1/10/68
GCT mg%	220.	
OGTT mg%		122, 238, 212, 174

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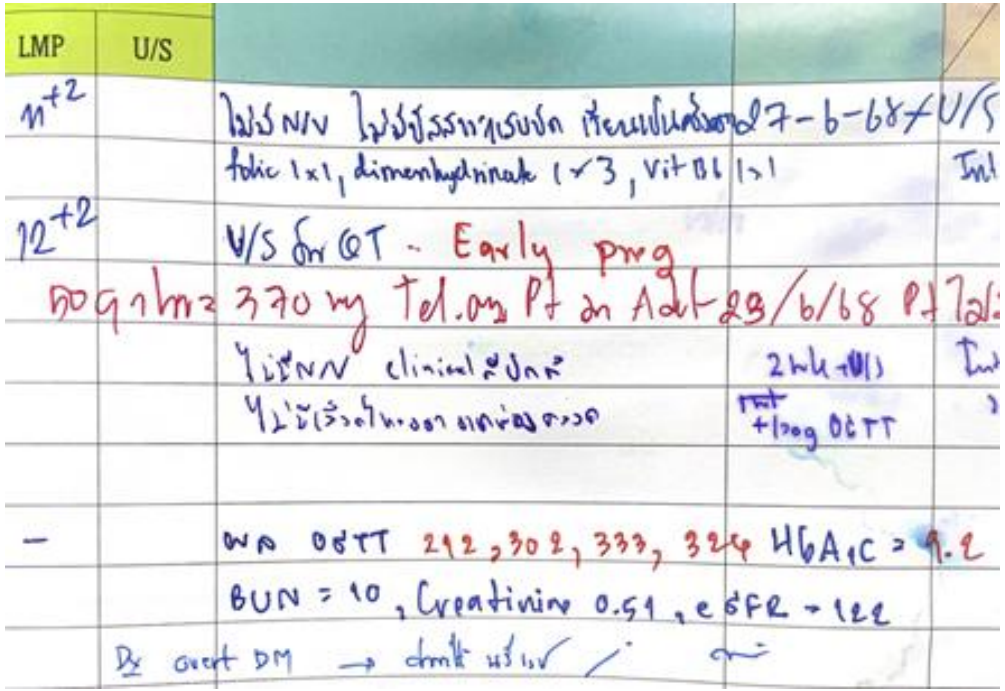
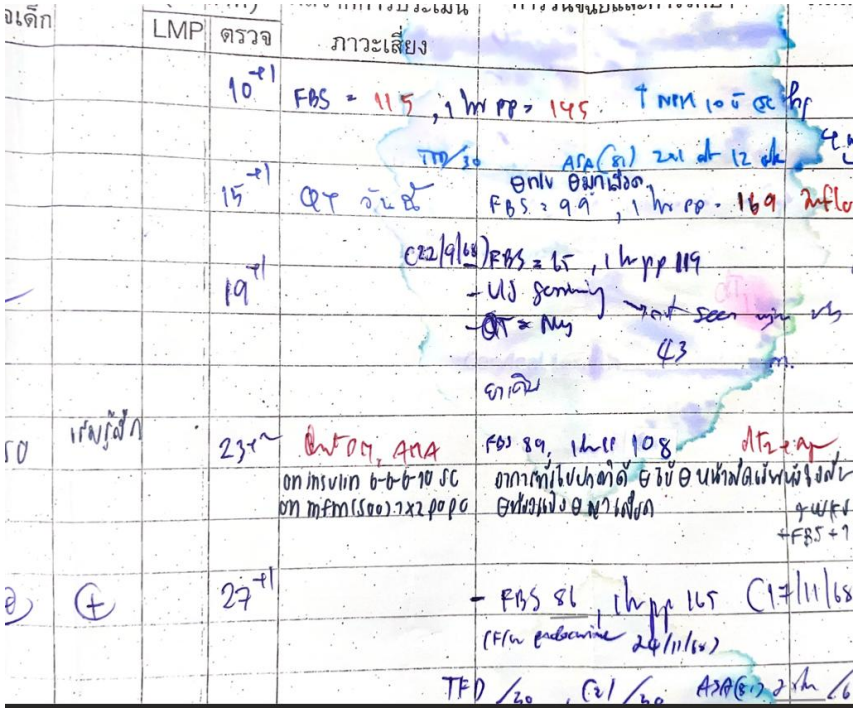
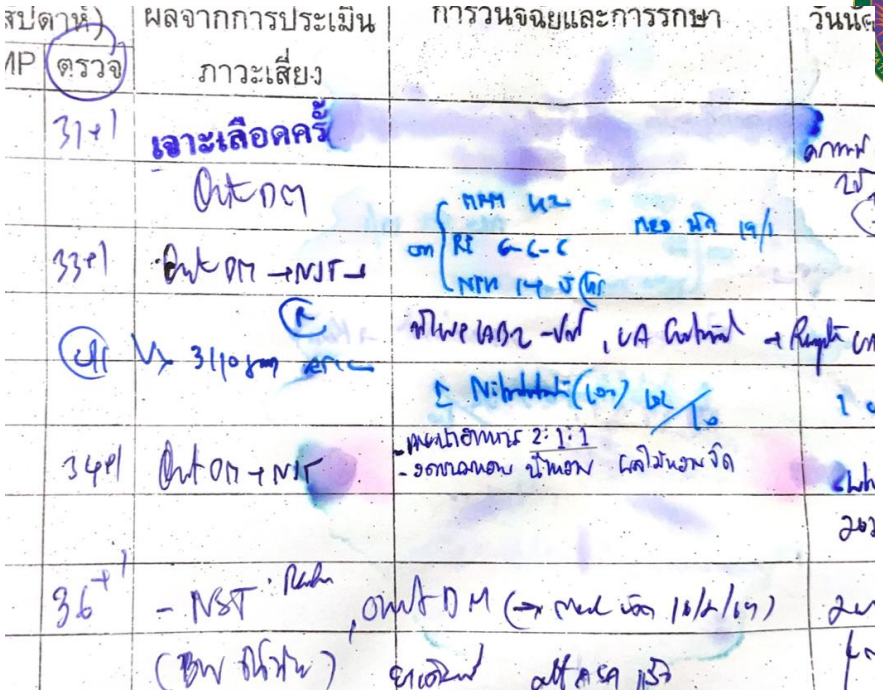
Case3 : Overt DM : G1P0 Lab : normal but LAB Screening GDM abnormal



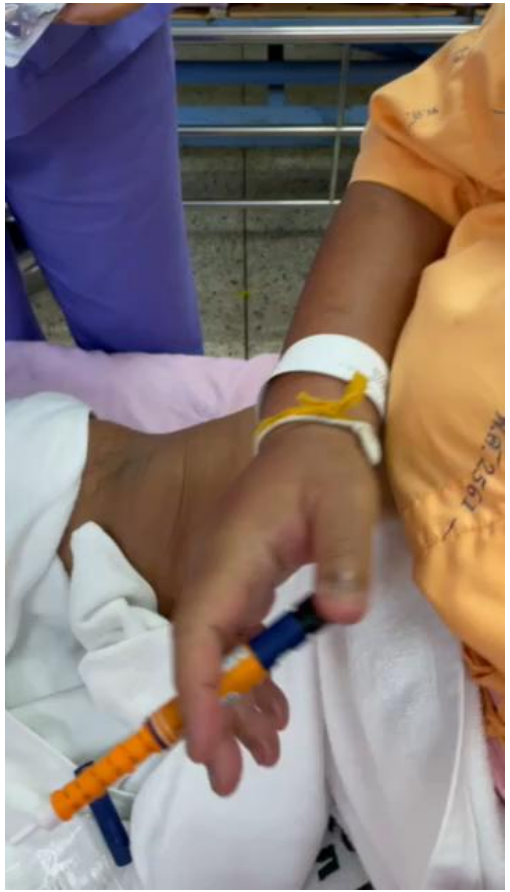


	LMP	ตรวจ	ภาวะเสี่ยง	
		10 +1	FBS = 115 , 1 hr PP = 145	
		15 +1		
		19 +1		
		23 +~		
		27 +1		



	ผลจากการประเมิน	การวินจฉัยและการรักษา	วันนัด
MP	ตรวจ	ภาวะเสี่ยง	
	31 +1	เจาะเลือดครั้ง	
	33 +1		
	34 +1		
	36 +1		

Insulin use for Overt DM pregnancy



type of Insulin

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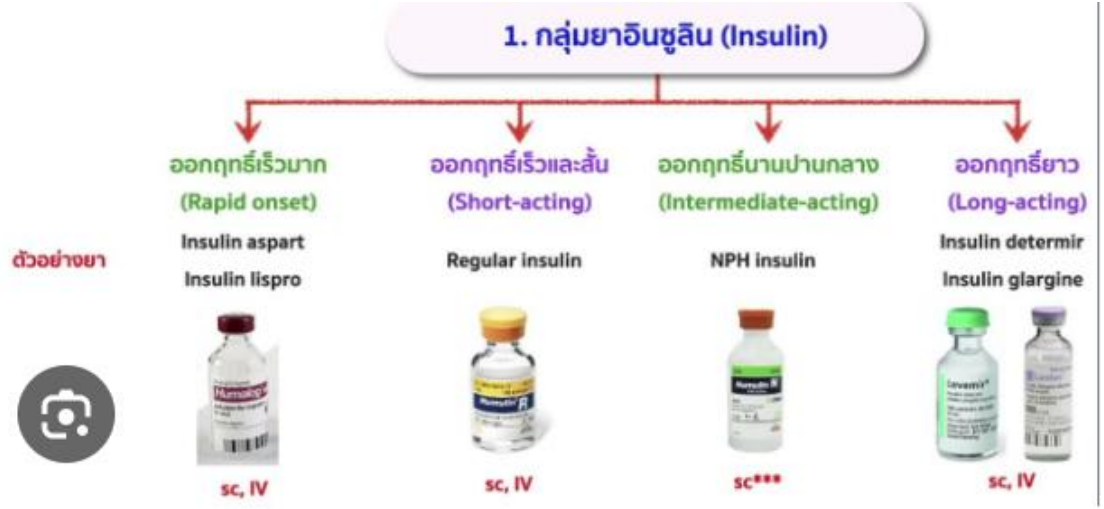
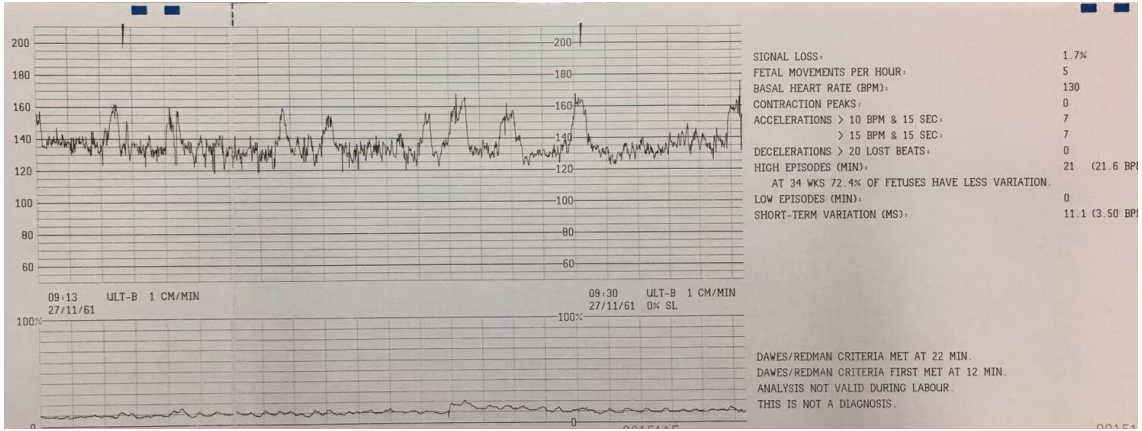
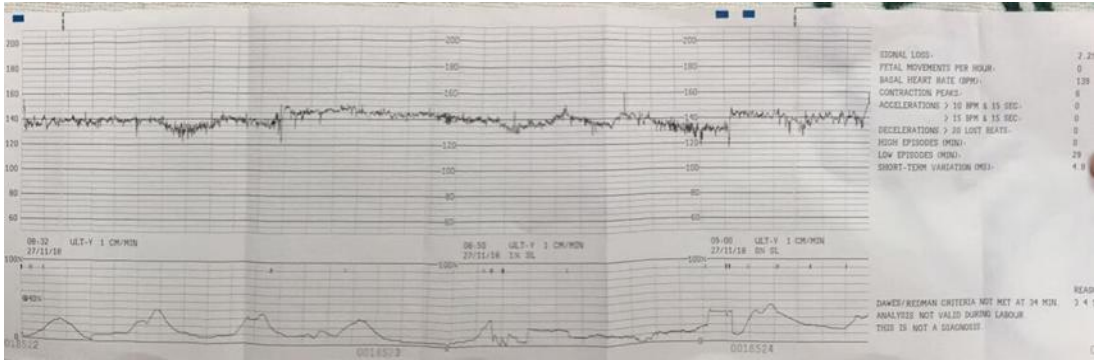
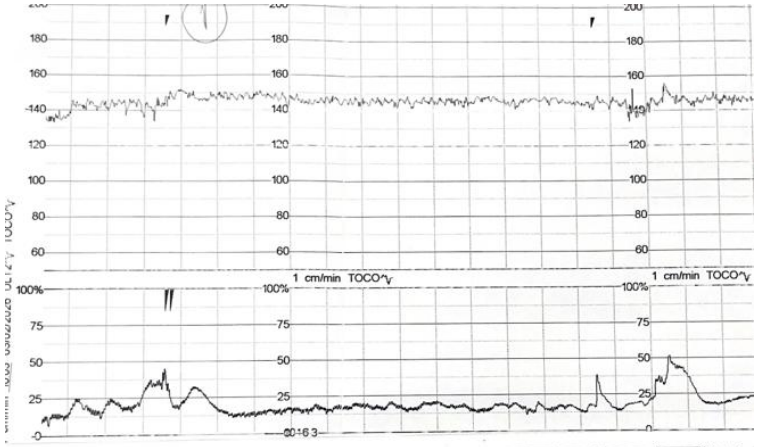


Example NST:Reactive(Category I)



Example NST : Non Reactive (Category II)





Indication Owut DM. GPLOALMP —

Request by

	Date	3 กพ 69	
Number		SVF	
Presentation		V ซ	
BPD	HC	38+1	39+0
FL	AC	38+3	39+2
FHB		+	
AF		12.0 cm	
Anomaly			
Placenta Site		post upper	
EDD			
GA		39+1 wk by EDD	
Comment		EFW 3638 gm (7 pgoth)	

⊕ EDF at UA

Imp Rlo fetal LGA

ชำระเงินแล้ว ใบเสร็จรับเ

Retained Foley’s cath Prepare for C/S

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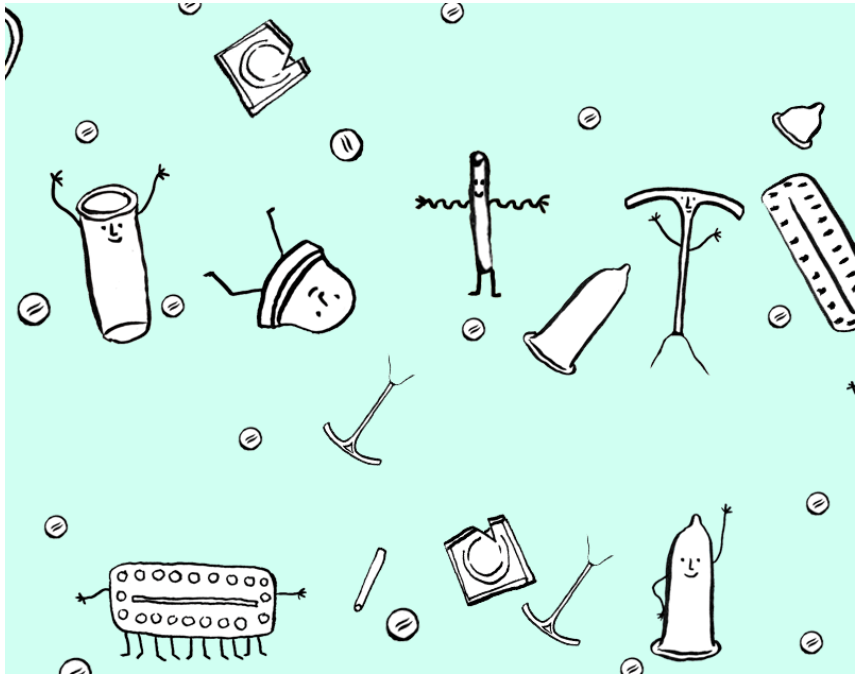
Contraception ??

- What type of contraception should to use after delivery ??




10 ทริคเรียนดี
แบบฉบับวิทยาศาสตร์
อยากอัปเลเวลตัวเองให้เก่งขึ้น อัปเกรดให้ดีขึ้น เราทำได้!
1 ทบทวนบทเรียน ภายใน 24 ชม. จำได้ 80%
2 อ่านก่อนนอน สมองจำแม่น
3 อ่านทีละพาร์ท จำดีกว่าอ่านรวดเดียว
4 รับบทคุณครูท่านหนึ่ง สอนเพื่อน = สอนตัวเอง
5 อ่านจากกระดาษ จำนานกว่าอ่านจอ
6 เปลี่ยนไลเลอร์ อ่านหนังสือบ่อยๆ
7 ตั้งโจทย์เอง ทำเอง
8 พูดออกมาดังๆ ฟังเสียงตัวเอง
9 ทำ Mind Mapping
10 ออกกำลังกาย ก่อนอ่าน
“ อย่าลืม ตั้งใจเรียนในห้องให้เข้าใจ และหมั่นทบทวนบทเรียน เป็นประจำ หากทำได้ รับรองผลการเรียนดีขึ้นแน่นอน ”

Thank You!

Questions & Discussion

Comprehensive Nursing Management of Gestational Diabetes Mellitus