

Department:	Obstetrics and Gynecology (Ambulatory Care)		
Document:	Departmental Policy and Procedure		
Title:	Application of Fetal Scalp Electrode		
Applies To:	All Obstetrics and Gynecology Staff		
Preparation Date:	January 08, 2025	Index No:	L&D-DPP-057
Approval Date:	January 22, 2025	Version :	2
Effective Date:	February 22, 2025	Replacement No.:	L&D-DPP-057(1)
Review Date:	February 22, 2028	No. of Pages:	7

1. PURPOSE:

- 1.1 To outline indications and guidelines for applications of Fetal Scalp Electrode (FSE).

2. DEFINITONS:

- 2.1 **Fetal Scalp Electrodes-** is an electrical wire set into a sharp spiral metal tip and encased in a plastic sheath. Placement involves attachment of the electrode onto the fetal scalp for direct measurement of fetal heart rate (FHR) by electrical activity. The tip attaches about 2mm onto the scalp skin covering the bony portion of the fetal head.

3. POLICY:

- 3.1 Obtain an accurate recording of the Fetal Heart Rate especially when external monitoring tracings are unsatisfactory due to loss of contact.
 - 3.1.1 Obtain FHR recording of twin (1) in labor following rupture of membranes.
 - 3.1.2 Accurately record FHR when abdominal recording displays an abnormal pattern.
- 3.2 Verbal consent must be obtained from the patient prior to application.

4. PROCEDURE:

- 4.1 Preparation:
 - 4.1.1 Obtain consent from the woman and document verbal consent has been obtained.
 - 4.1.2 Ensure privacy.
 - 4.1.3 Ensure the woman's bladder is empty.
 - 4.1.4 Establish the membranes are ruptured prior to application of the FSE.
 - 4.1.5 Establish there are no risk factors prior to application.
- 4.2 Applying the FSE:
 - 4.2.1 Place patient in lithotomy position.
 - 4.2.2 Perform a vaginal examination to confirm:
 - 4.2.2.1 The membranes are ruptured.
 - 4.2.2.2 The identification of the presenting part.
 - 4.2.2.3 There is no cord presentation.
 - 4.2.2.3 The position for application is not over the fontanel, face or genitalia.
 - 4.2.2.3 Using an aseptic technique, remove the FSE from its package leaving the wire locked in the retention notch at the top of the FSE.
 - 4.2.2.3 Insert the FSE until the presenting part is contacted and ensure the guide tube end is held flat against the presenting part.
 - 4.2.2.3 Pull the grip out from the outer guide tube enough to release the protection tap from the guide tube and then push the grip back in until the spiral tip contacts the presenting part.

- 4.2.2.3 Rotate the handle grip clockwise (approx. 1 full turn) until milk resistance indicates full attachment. (DO NOT over rotate).
- 4.2.2.3 Release the wires from the retention notch and grasp the guide tube and slide both the guide and drive tubes off the wires.
- 4.2.2.3 Connect the FSE to the leg adaptor, monitor cable and CTG inlet.
- 4.2.2.3 Do not scrub until the electrode is attached to the CTG, is working correctly and recording.
- 4.3 Removing the FSE
 - 4.3 Pull the FS connector out of the leg adapter. Grasp the electric wires as close as possible to the fetal presenting part, turning them counter clockwise until the spiral tip is free from the fetal skin. DO NOT pull the FSE wires apart.
 - 4.3 Inspect the spiral tip to ensure that it is still attached to the FSE hub. If the tip has separated from the hub and remains embedded in the presenting part remove it using an aseptic technique.
 - 4.3 REMINDER the FSE must be removed prior to performing a caesarean section.
- 4.4 Post Procedure:
 - 4.4.1 Documentation should include:
 - 4.4.1.1 The indication and use of the FSE in the maternal progress notes.
 - 4.4.1.2 Date and time of FSE application.
 - 4.4.1.3 Degree of effacement.
 - 4.4.1.4 Cervical dilatation.
 - 4.4.1.5 Color of amniotic fluid.
 - 4.4.1.6 Station and position of P/P (presenting part).
 - 4.4.1.7 FHR pattern following application.
 - 4.4.1.8 Legible signature.
 - 4.4.2 Notify the pediatric team if there are any abnormalities of the insertion site on the newborn after delivery (e.g. lacerations or infections)
 - 4.4.3 Advise the mother to examine the scalp or buttocks of her newborn frequently until healed and to report any abnormalities.
 - 4.4.4 Dispose of single use items and clean monitor cable.

5. MATERIAL AND EQUIPMENT:

- 5.1 Vaginal examination pack
- 5.2 Sterile water based lubricant
- 5.3 Sterile gloves
- 5.4 Antiseptic cream
- 5.5 FSE
- 5.6 Adhesive tape
- 5.7 Cardiotocograph (CTG) monitor

6. RESPONSIBILITIES:

- 6.1 Physician
- 6.2 Nurses
- 6.3 Midwives




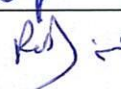



7. APPENDICES:

- 7.1 History and Examination Form
- 7.2 Partogram

8. REFERENCES:

- 8.1 Acker, D (2007) Clinical Pearls in Application of Electronic Fetal Heart Rate Monitoring.
- 8.2 ACOG (2005) Intrapartum Fetal Heart Rate Monitoring. ACOG Practice Bulletin Number 70. Obstetrics and Gynecology Vol. 106, No. 6, December, 2005.
- 8.3 RANZCOG (2002) Clinical Guidelines: Intrapartum, Fetal Surveillance.
- 8.4 Thacker, S., Stroup, D and Peterson H. (2005) Continuous Electronic Fetal Heart Monitoring During Labor. (Cochrane Review) In: The Cochrane Library, Issue 1.
- 8.5 King Edward Memorial Hospital (2008) Clinical Guidelines- 5.6.1. Corometric Fetal Scalp Electrode. Accessed on 04 / 03 / 11.
- 8.6 MOH, Guidelines for Obstetrics and Gynecology, Clinical Policies and Procedures, 2013.

9. APPROVALS:

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Reviewed by:	Dr. Thamer Naguib	Medical Director		January 14, 2025
Reviewed by:	Mr. Abdulelah Ayed AlMutairi	QM&PS Director		January 15, 2025
Approved by:	Mr. Fahad Hezam AlShammari	Hospital Director		January 22, 2025

KINGDOM OF SAUDI ARABIA

وزارة الصحة
Ministry of Health

Hospital: _____ مستشفى: _____

Region: _____ المنطقة/المحافظة: _____

Dept./Unit: _____ القسم/الوحدة: _____

MRN: _____ رقم الملف الطبي: _____

Name: _____ الاسم: _____

Nationality: _____ الجنسية: _____

Age: _____ سنه _____ شهر _____ يوم _____ العمر: _____
Years Months Days

Date of Birth: _____ / _____ / 14 H _____ / _____ / 20 تاريخ الميلاد: _____

Gender: ☐ Male ☐ Female الجنس: _____

OBSTETRIC HISTORY AND ASSESSMENT FORM

Booking Date: _____ / _____ / _____ Telephone No.: _____

Consultant: _____ Referred By: _____

LMP: _____ / _____ / _____ E.D.D.: _____ / _____ / _____
MENSTRUAL CYCLE: _____ REGULAR: ☐ YES ☐ NO PILL WITHDRAWAL: ☐ YES ☐ NO

GRAVIDA _____ PARA _____ +

YEAR	DURATION of PREGNANCY	MODE OF DELIVERY	LIVE, SB ABORTION	SEX	WEIGHT	COMPLICATIONS (GDM, PET, APH, PPH, etc.)	METHOD OF FEEDING
						GDM <input type="checkbox"/>	<input type="checkbox"/> Breastfeeding
						APH <input type="checkbox"/>	<input type="checkbox"/> Bottled
						BPH <input type="checkbox"/>	
						BLADDER INF. <input type="checkbox"/>	
						OTHERS: <input type="checkbox"/> SPECIFY: _____	

MEDICAL HISTORY:

Give details of relevant diseases

☐ Diabetes ☐ YES ☐ NO IF Yes, Treatment: ☐ Oral ☐ Insulin; dose: _____

☐ Hypertension ☐ YES ☐ NO IF Yes, Treatment: _____

☐ Cardiac Disease _____

☐ Pulmonary Disease _____

☐ Renal Disease _____

☐ Blood Disease _____

☐ Infertility _____

☐ Others _____

SURGICAL HISTORY: _____

ALLERGIES: ☐ YES ☐ NO IF Yes, Specify: _____

MEDICATION HISTORY: _____

BLOOD TRANSFUSION: ☐ YES ☐ NO IF Yes, When? _____

FAMILY HISTORY:

☐ Diabetes ☐ Multiple pregnancy ☐ Others

☐ Hypertension ☐ Malformation

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SN _____

Name: _____ الاسم: _____		MRN: [] [] [] [] [] [] [] [] [] [] رقم الملف الطبي: _____			
EXAMINATION:					
Height: _____ cm.		Weight: _____ kg.			
Thyroid: <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal Specify: _____	Heart: <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal Specify: _____				
Breast: <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal Specify: _____	Lungs: <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal Specify: _____				
Veins: _____		Abdomen: _____			
ANTENATAL INVESTIGATIONS:					
Hgb: _____ Date: ____/____/____ ABO Group: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> AB <input type="checkbox"/> O Indirect Coombs Test (ICT): _____ Blood Sugar: <input type="checkbox"/> Normal <input type="checkbox"/> Abnormal	RHESUS: <input type="checkbox"/> (-) <input type="checkbox"/> (+) At Booking: _____ At 32 weeks: _____	VDRL: <input type="checkbox"/> Yes <input type="checkbox"/> No IF Yes, Reaction: _____ Toxoplasmosis: <input type="checkbox"/> Negative <input type="checkbox"/> Positive <input type="checkbox"/> Titer HBs Ag: <input type="checkbox"/> Negative <input type="checkbox"/> Positive Rubella: <input type="checkbox"/> Immune <input type="checkbox"/> Non-immune			
OTHER INVESTIGATIONS:					
ULTRASOUND FINDING:					
Booking USS: _____					
Follow-up USS: _____					
RISK CARD: <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;"> Reproductive History <input type="checkbox"/> Age > 35 yrs <input type="checkbox"/> Parity ≥ 6 <input type="checkbox"/> Abortions ≥ 3 <input type="checkbox"/> PTL <input type="checkbox"/> Baby ≥ 4.5 kg <input type="checkbox"/> Baby ≤ 2.5 kg <input type="checkbox"/> SB or NND <input type="checkbox"/> Eclampsia <input type="checkbox"/> Scared uterus <input type="checkbox"/> PPH </td> <td style="vertical-align: top;"> Medical History <input type="checkbox"/> Cardiac Disease <input type="checkbox"/> Chronic hypertension <input type="checkbox"/> IDDM <input type="checkbox"/> Chronic renal disease <input type="checkbox"/> Pulmonary disease <input type="checkbox"/> Sickle cell disease <input type="checkbox"/> SLE <input type="checkbox"/> Thyroid disease <input type="checkbox"/> Epilepsy <input type="checkbox"/> Thromboembolic disease </td> <td style="vertical-align: top;"> Current Pregnancy <input type="checkbox"/> Multiple pregnancy <input type="checkbox"/> Placenta previa and/or APH <input type="checkbox"/> Anemia < 8gm % <input type="checkbox"/> PET <input type="checkbox"/> IUGR <input type="checkbox"/> GDM <input type="checkbox"/> Preterm PROM <input type="checkbox"/> Hydramious or oligohydramious <input type="checkbox"/> Rh immunization <input type="checkbox"/> Malpresentation at term </td> </tr> </table>			Reproductive History <input type="checkbox"/> Age > 35 yrs <input type="checkbox"/> Parity ≥ 6 <input type="checkbox"/> Abortions ≥ 3 <input type="checkbox"/> PTL <input type="checkbox"/> Baby ≥ 4.5 kg <input type="checkbox"/> Baby ≤ 2.5 kg <input type="checkbox"/> SB or NND <input type="checkbox"/> Eclampsia <input type="checkbox"/> Scared uterus <input type="checkbox"/> PPH	Medical History <input type="checkbox"/> Cardiac Disease <input type="checkbox"/> Chronic hypertension <input type="checkbox"/> IDDM <input type="checkbox"/> Chronic renal disease <input type="checkbox"/> Pulmonary disease <input type="checkbox"/> Sickle cell disease <input type="checkbox"/> SLE <input type="checkbox"/> Thyroid disease <input type="checkbox"/> Epilepsy <input type="checkbox"/> Thromboembolic disease	Current Pregnancy <input type="checkbox"/> Multiple pregnancy <input type="checkbox"/> Placenta previa and/or APH <input type="checkbox"/> Anemia < 8gm % <input type="checkbox"/> PET <input type="checkbox"/> IUGR <input type="checkbox"/> GDM <input type="checkbox"/> Preterm PROM <input type="checkbox"/> Hydramious or oligohydramious <input type="checkbox"/> Rh immunization <input type="checkbox"/> Malpresentation at term
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PHYSICIANS NAME : _____ SIGNATURE: _____ NURSE # 1: _____ NURSE # 2: _____					

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Name: _____ الاسم: _____ MRN: _____ رقم الملف الطبي: _____

PARTOGRAM

Date & time of admission:	Consultant:	Parity:
Special instructions:		
<p>FETAL HEART RATE</p> <p>150 140 130 120 110 100 90 80 70 60</p> <p>0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</p>		
Duration of rupture of membranes (hrs)	Liquor	Moulding
<p>C</p> <p>E</p> <p>R</p> <p>V</p> <p>I</p> <p>X</p>	<p>10</p> <p>9</p> <p>8</p> <p>7</p> <p>6</p> <p>5</p> <p>4</p> <p>3</p> <p>2</p> <p>1</p> <p>0</p>	<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>
Duration of labor		

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OXYTOXIN		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
DROPS/ MINUTE																											
5	Contractions 4																										
	Per 3																										
	Minutes 2																										
1																											
	Drugs And I.V. Fluids																										
200																											
190																											
180																											
170																											
160																											
150	Blood																										
140	Pressure																										
130	and pulse																										
120																											
110																											
100																											
90																											
80																											
70																											
60																											
	URINE																										
	PROTEIN																										
	ACETONE																										
	GLUCOSE																										
	TEMPERATURE																										

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