



Photo story  
**Kangaroo care: the power of a  
parent's touch**

# Kangaroo Care

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# INTERNATIONAL KANGAROO CARE AWARENESS DAY

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In Your Arms, I Thrive





# The evolution of the science of kangaroo care

The early KMC technique was first presented by Rey and Martinez in [1978, in Bogotá](#), Colombia, where it was developed as an alternative to inadequate and insufficient incubator care for those preterm newborn infants who had overcome initial problems and required only to feed and grow





# Prevalence of prematurity

- ✓ Newborn mortality was responsible almost **half 46%** of all under five deaths in 2019.
- ✓ Preterm birth complications caused approximately **36%** of these newborn deaths.
- ✓ **14%** LBW / **10%** preterm globally



# Target

- By 2025, at least 80% of districts in a country should have at least one level-2 inpatient unit to care for small and/or sick newborns, with respiratory support, including provision of CPAP and KMC.

# What is KC?

- A holding technique, skin-to-skin, in an upright position where the baby is only wearing a diaper on the parent's bare chest.
- A non-invasive, supportive, and natural early intervention for preterm infants
- It's also known as “kangaroo care” and has been the subject of more than 263 studies.





# What is KMC?

- ❖ KMC is early, continues and prolonged skin- to-skin contact between mother and her low birth weight/ preterm baby
- ❖ Excluding breastfeeding or breast milk feeding
- ❖ Early discharge after hospital- initial KMC with continuation at home
- ❖ Adequate support and follow-up for mothers at home, including postnatal care visits and developmental follow-up





# What is KC?

- KMC is different from the routine skin-to-skin contact recommended for all newborns in the **first hours after birth**.
- KMC refers to skin-to-skin contact that is for preterm or LBW infants, both well and sick.
- Continues and prolonged at least 8 hours per day.
- Accompanied by support for exclusive breastfeeding or breast-milk feeding.
- Closely monitored if the baby is transport home in KMC.



# Benefit of KMC for baby

- Thermoregulation- reduce cold stress
- Stable heart rate (reduce of bradycardia/tachycardia)
- Improve regular breathing – reduced incidence of apnea
- Improved oxygenation- lower oxygen requirements and reduced incidence of desaturations
- Release oxytocin and decrease cortisol reduces stress, crying and irritability
- Engages all five senses



# Benefit of KMC for baby

- Improved sleep patterns- increase time spent in quiet sleep
- Longer alert states and less crying
- Improved brain development
- More successful breastfeeding
- Improved weight gain
- Non-pharmacological pain relief
- Enhanced mother and infant attachment bonding
- Reduced risk of infection and increased immaturity



# Benefit for parents

- Improves interactions
- Increase psychological well being and improves psychological adaptation and recovery after preterm delivery
- Promotes recovery from post-partum depression
- Salivary cortisol decrease in mothers of babies born at 25-33 weeks





# Benefit for parents

- Behavioral cues, becoming aware of their baby's
- Increase parental satisfaction with care giving
- Attachment with an increase source of confidence in caring for their baby.
- Promote breastfeeding and attachment
- Enhance source of improvement and reduction feeling of anxiety



# Benefits for breastfeeding

- Facilitates access to the breast and increase the production of breast milk
- Increase breastfeeding rates, the proportion of exclusive breastfeeding at discharge, and longer breastfeeding
- Promotes breastfeeding by increasing milk volume and enhancing the duration of lactation



# Benefits for health system

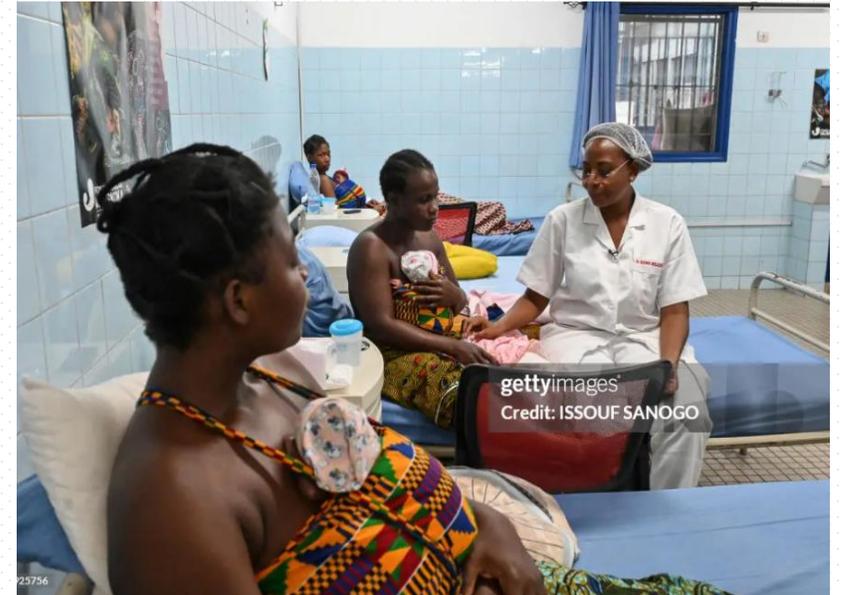
- کاهش عفونت های بیمارستانی
- کاهش بار کاری بخش های مراقبت ویژه نوزادان
- افزایش رضایت شغلی پرستاران
- کاهش فرسودگی شغلی
- کاهش مدت زمان مراقبت مستقیم
- کاهش نیاز به انکوباتور
- ترخیص سریعتر
- کاهش شانس بستری مجدد نوزاد





# Preparation for KC

- Consultation
- Show procedure
- Ensure family support
- KC support group





# تجهيزات

- لباس KMC: لباس جلو باز- پوشش و سبک متناسب با فرهنگ و خواست مادر



- لباس نوزاد: کلاه، جوراب، دیاپر، ملحفه و پتو به عنوان روانداز

- سایر لوازم: تخت، صندلی، زیرپایی و سایر ملزومات به تناسب نیاز





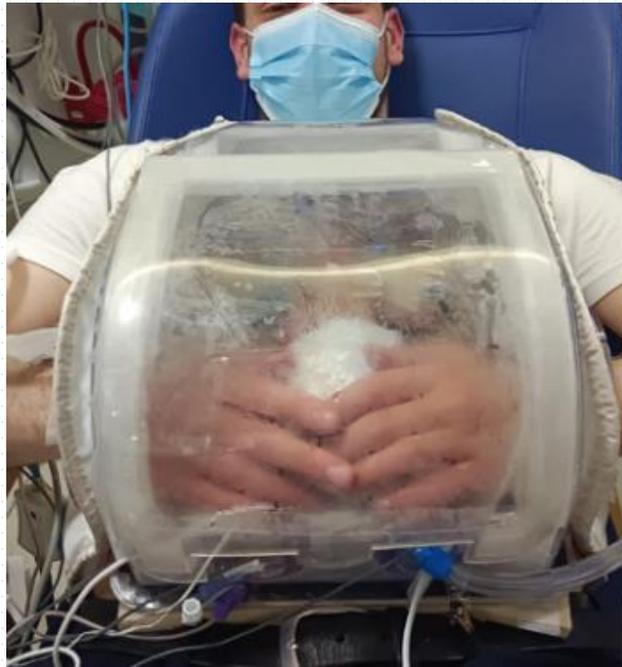
# صندلی KC





# skincubator

- The Skincubator: A Novel Device for Early Prolonged Skin-to-Skin Care for Very and Extreme Preterm Neonates
- Humidity (>70%, 95% ), temperature regulation, and good visibility





# برای چه نوزادانی می توان KC انجام داد؟

- Birth weight > 1800 gr (gestational age 30-34 week or more)  
شروع بلافاصله پس از تولد
- Birth weight 1200-1799 gr (gestational age 28-32 week or more)  
به محض تثبیت همودینامیک
- Birth weight < 1200 gr (gestational age below 30 weeks)  
به شرط تثبیت همودینامیک





# Hemodynamic stability is a must

تثبیت همودینامیک یکی «باید» است.



# معیارهای نوزادی برای شروع KC

- When exactly KMC can be for the small babies must be judged individually and full account should be taken of the condition and status of each baby and mother





# معیارهای نوزادی برای شروع KC

- Birth weight 1200-1700 gr( gestational age 28-32 weeks):

In preterm infants with birth weight between 1200- 1700 gr problem such as RDS and other complications are frequent, and therefore require some kind of special treatment initially.

**It might take a week or more before KC can be initiated**



# معیارهای نوزادی برای شروع KC

- Birth weight < 1200 gr( gestational age below 30 weeks):  
frequent and sever problem due to preterm birth.

Mortality is very high and only a small proportion survive prematurity- related problems.

**It may take weeks before their condition allows initiation of KC**

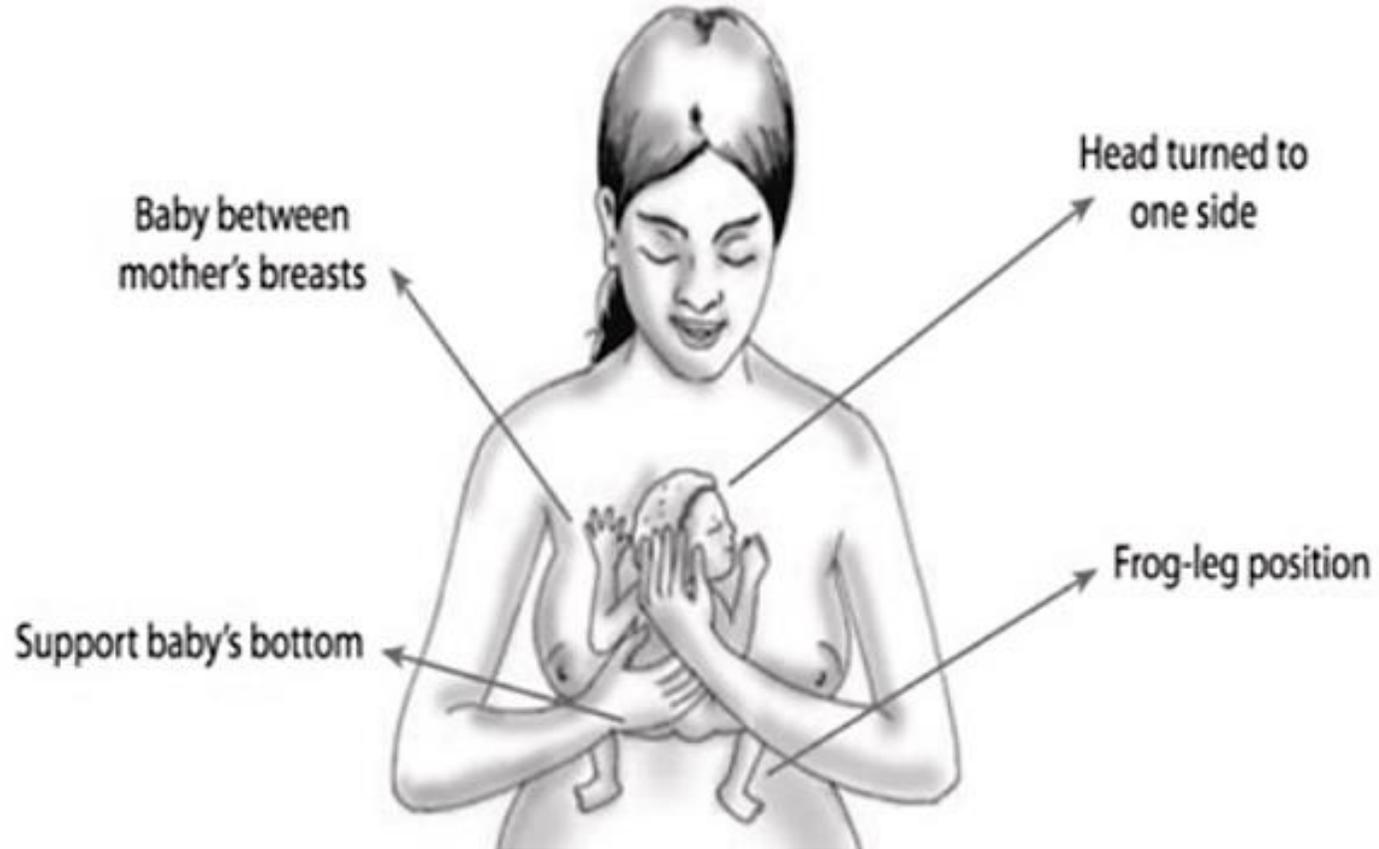


# پوزیشن KC

- نوزاد بین دو سینه مادر در حالت ایستاده قرار می گیرد.
- سر نوزاد کمی به یک طرف چرخیده باشد و مختصری اکستانسیون داشته باشد
- ران ها حالت فلکسیون داشته باشد.
- بازو ها خم شده باشد
- شکم نوزاد روی شکم مادر (اپی گاستر) قرار گیرد.
- پشت نوزاد حمایت شود.



# پوزیشن KC





# Clothing for the baby

- When the ambient temperature is 22-24<sup>0c</sup>, the baby is carried in kangaroo position naked, except for the diaper, a warm hat and socks.





# Secure babies with the binder

- Tie the cloth enough so that when the mother stands up the baby does not side out.
- Make sure that the tight part of the cloth is over the baby's chest.
- Baby's abdomen **should not be constricted** and should be somewhere of the level of the mothers epigastrium.
- This was baby has enough room **for abdominal breathing**.



# Head cap

- The need for routine use of a head cap has not been established.
- Even though 40% of body heat is lost through the exposed head in a full term infant.
- Body heat loss has not occurred in KC, because sufficient covering across the infant's back.
- Some units prefer to use a **head cap** with infants **less than 1000 gr** weight.
- Head cap if abdominal or axillary temperature falls **below 36<sup>0c</sup>**





# Covering over infant

- Infants can lose body heat **by convection** across the surfaces of their babies not in contact with maternal skin if insulation inadequate.
- A standard receiving blanket folded in fourths provides **1.0 clo heat resistance**.
- A measurement of insulation providing by clothing equal to 0.25- inch (0.5cm) thickness of wool, to prevent body heat loss.
- This insulation, in conjunction with flow of heat from the mother to the infant during KC.
- Ensure that even infants weighing only **600 to 800 gr** often become warmer, not colder during KC.





# Infant position

## KC positioning

- This KC position has been associated with a consistently high oxygen saturation level and only a slight heart rate increase.
- KC positioning is a 40° upright incline with the infant prone on the mothers chest.
- The upright position, in general **reduces apnea** incidence and permits on **optimal level of oxygenation**, even shortly after the stressful transfer period.
- Preterm infants tend to **slip down and slouch**, compressing the trunk and increasing risk of obstructive apnea. The incline is easily achieved with most **chairs used in NICU**.

## If infants are not ready for skin-to-skin holding, encourage the following:

- Gentle, still touch
- Hand swaddling (hand hugs)
- Reading at the bedside





# Transfer to KC

- The 11 minute adaptation time for a sitting transfer and 3 minute adaptation time for a standing transfer.
- Therefore recommended the standing transfer to KC position.
- Adaptation is defined as all physiological parameters returning to baseline and staying there for 3 minutes.
- If adaptation has not occurred in 15 minutes, the infant is probably not suitable enough to receive KC.

# Transfer to KC

Adaptation periods are recommended and should be considered part of any intervention with the preterm infant





# Monitoring during KC

Babies receiving KC should be monitored carefully especially in the initial stage.

- **Checking babies Position**





# Monitoring during KC

- **Color:** looking at the whole of the baby's body. Stable changes to color indicate changes in the baby's condition.
- **Tone:** the baby should have a good tone and not be limb or un-respond.
- **Temperature:** the baby is kept warm during skin contact



# Monitoring during KC

- The rooms should be equipped with **comfortable beds and chairs** for the mothers, is possible adjustable or with enough **pillows to maintain an upright or semi- upright position** for resting and sleeping.
- The rooms should be kept warm for small babies 26<sup>0c</sup>
- Mothers also needed bathroom facilities with tap water, soap and towels.
- Curtains can help to ensure privacy in a room with several beds.

# Monitoring during KC

Daily shower or washing is sufficient for maternal hygiene; strict hand washing should be encouraged after using the toilet and changing the baby



# Monitoring during KC

- Noise level should, however be kept low during such activities to avoid disturbing the small babies.





# Monitoring during KC

- During at the long stay facility visits by father and other members of the family should be allowed and encouraged.
- They can sometimes help the mother, replacing infant for skin to skin contact with the baby so that she can get some rest.





# Type of KC

## • متناوب

در این روش مادران چند بار در روز به مدت حداقل ۱ ساعت نوزاد خود را مراقبت می کنند.

## • مداوم

نوزادانی که مراقبت آغوشی مداوم می شوند بیشتر مراقبت های ضروری مانند تغذیه با شیر مادر را دریافت می کنند. این نوزادان صرفاً در زمان انجام مراقبت هایی مانند؛ تعویض پوشک، مراقبت بندناف، معاینه بالینی و انجام بهداشت فردی مادر(حمام، دستشویی) از تماس پوست به پوست محروم می شوند.

در نوع مداوم، مراقبت آغوشی به مدت ۸-۲۴ ساعت می تواند طول بکشد.

فرم گزارش روزانه مراقبت آغوشی مادر و نوزاد (پیشنهاد WHO)

تاریخ:		نام و نام خانوادگی پدر نوزاد:				نام و نام خانوادگی مادر نوزاد:				نام بیمارستان:
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										وزن گیری (گرم):
										روش شیردهی:
										ساعات متوسط تماس پوست به پوست در روز:
										عوارض و شکایات:
										بستری مجدد در بیمارستان:
دلایل قطع مراقبت آغوشی و دیگر ملاحظات:										تاریخ پایان مراقبت آغوشی: سن تولد (روز): سن (بعد از لقاح): وزن (گرم):



# Feeding during KMC

- Babies that need a breast/cup or bottle feed during KMC will need change their position during the feed but can continue with KMC after completing the feed.
- Babies that are tube feeding can continue to be feed as usual observe and document any observe.





# Until when?

- KMC should last for as long as possible each day.
- Mother and other family members can ensure continuous skin-to – skin contact.
- Continue until the baby weight 2.5kg or is 40 weeks post- conceptual age.

# Kangaroo mother care ward

