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Baby Friendly Hospital
in Switzerland
瑞士爱婴医院情况介绍

Christa Müller-Aregger
IBCLC (International Board Certified Lactation Consultant), Adult trainer

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Baby Friendly Hospitals in Switzerland

Content 内容

- BFHI in general 爱婴医院概括
- Swiss Foundation to support Breastfeeding 瑞士母乳喂养支持基金会
- How to become Baby Friendly 如何成为爱婴医院

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Baby Friendly Hospitals in Switzerland

BFHI in general 瑞士爱婴医院概述

- change over time 不断改进
- started by UNICEF in 1992 1992由联合国儿基会倡导开始
- well established 完善建立
- 98% breastfeeding rate after one week 产后一周母乳喂养率98%
- 60% breastfeeding rate after 3 month 3个月母乳喂养率
- 30 -40% breastfeeding rate after 6 month 6个月母乳喂养率
- high costs for hospitals 对医院而言成本较高
- 59 hospitals out of 130 are Baby Friendly 130个医院中59个是爱婴医院

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Baby Friendly Hospitals in Switzerland

Swiss foundation to support breastfeeding
瑞士母乳喂养支持基金会

- started in 2000 始于2000年
- 14 members which run this foundation 14个成员运营这个基金会

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Baby Friendly Hospitals in Switzerland

Organization of the Swiss foundation to support Breastfeeding
瑞士母乳喂养支持基金会的组织结构

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Baby Friendly Hospitals in Switzerland

Swiss foundation to support breastfeeding
瑞士母乳喂养支持基金会

- Coordination and organization BFHI for hospitals in the name of UNICEF 以联合国儿基会的名义协调和组织爱婴医院创建工作
- Organization of campaigns to inform about breastfeeding 组织母乳喂养宣传活动
- Watching the WHO Code 监督WHO国际母乳代用品销售守则的执行
- Organization of breastfeeding week together with other organisations 与其他组织一起联合组织国际母乳喂养周的活动

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Steps to become Baby Friendly
成为爱婴医院的步骤

- Minimum requirements
最低要求
- 10 Steps to successful breastfeeding
促进母乳喂养成功的十点措施
- Checklist 核对表
- Develop BF Standards
制订母乳喂养干预标准
- Implement BF Standards
实施母乳喂养干预标准
- Evaluation 评估
- Certification 认证
- re-evaluation after 4-6 years
4-6年后再次评估

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Interkantonales Netzwerk für die Förderung des Stillens
Richtlinien und Standards für die Förderung des Stillens
Richtlinien und Standards für die Förderung des Stillens

Checkliste 核对表

Unternehmen: _____
Ausgewählte Name: _____
Funktion: _____
Datum: _____

Bitte überprüfen Sie die folgenden Fragen sorgfältig auf und markieren Sie mit „ja“ oder „nein“.

Interkantonales Netzwerk für die Förderung des Stillens
Richtlinien und Standards für die Förderung des Stillens
Richtlinien und Standards für die Förderung des Stillens

Baby Friendly Hospitals in Switzerland

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Clinical Practise
母乳喂临床实践

Christa Müller-Aregger
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International Education Manager Medela AG

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Clinical Practise
Content 内容

- Lactation and Breastfeeding 泌乳和母乳喂养
- Development and anatomy of female breast 女性乳房的发育和解剖学
- Breastfeeding positions 哺乳姿势
- Breastfeeding difficulties during the first 10 days after birth 产后最初10天的母乳喂养困难
 - First feed 第一次吸吮
 - Nipple forms 乳房形状
 - Physiological engorgement 生理性乳胀
 - Additional nipples and glandular tissue 多余的乳头和腺体组织
 - Red, sore and cracked nipples 乳头发红、疼痛和皲裂
 - Milk supply 乳汁分泌量
 - Separation mother/child 母婴分离

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Clinical Practise
Development of the unborn baby
胎儿的发育

Weeks of gestation 孕周:

- Week 11 : swallow 吞咽
- week 24 : suck 吸吮
- week 32 : looks for objects to suck 寻找吸吮目标
- week 34 to 38 : coordination swallow, suck, breath 吞咽吸吮呼吸协调性

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Clinical Practise
Lactation 泌乳

When starts the development of the female breasts in live?
女性乳房何时开始发育

Milchflüsse bei Erwachsenen – frühe Entwicklung
Milk flow in adults – early development

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Clinical Practise
Development of the breast 乳房发育

1. Before puberty 青春前期
2. Beginning of puberty when oestrogen secretion starts 雌激素开始分泌，青春开始
3. End of puberty. During the monthly cycles the alveoli proliferate under oestrogen and progesterone
青春结束后，在每个月的雌激素和孕酮的周期性调节作用下，乳泡每月增加
4. Milk ducts and alveoli during sexual maturity 性成熟过程中乳导管和乳泡的发育
5. Milk ducts and alveoli in pregnancy and during lactation 孕期和哺乳期乳导管和乳泡

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Clinical Practise
Hormones during pregnancy and lactation
孕期和哺乳期激素的变化

Hormone Levels

Progesterone 孕酮
Prolactin 催乳素
Oxytocin 催产素
Estrogen 雌激素

Pregnancy Birth Postpartum

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Lactation



Weeks of pregnancy: 孕周

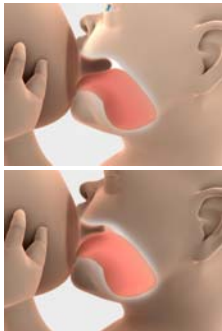
- Week 6: ductal tissue proliferate 乳导管组织增生
- Week 16: Lactogenesis I starts 泌乳I期开始
- at birth: Colostrum 出生, 初乳
- Day 2 to 5 after birth: Lactogenesis II 产后2-5天: 泌乳II期

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Feeding /Suck 哺喂/吸吮



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Latch on 衔乳



- stimulate, touch mouth, lips and chin of the baby with nipple ... 刺激, 触碰嘴, 宝宝唇和下巴与乳房的关系
- ... until he or she opens up her mouth wide 直至婴儿张大嘴巴

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Latch on 衔乳

- bring baby quick to breast 快速将婴儿抱过来
- he will take as much breast tissue as he needs into his mouth 含住尽可能多乳房组织



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Conclusion 结论

Latch on: 衔乳

Tip of the baby's nose opposite the nipple stimulate with the nipple baby's mouth, lips, chin until he or she opens up his or her mouth wide bring baby quickly to the breast. 鼻尖对着妈妈乳头 乳头刺激婴儿嘴、唇、下巴 婴儿张大嘴巴 迅速将婴儿抱至胸前

Take the baby off the breast:

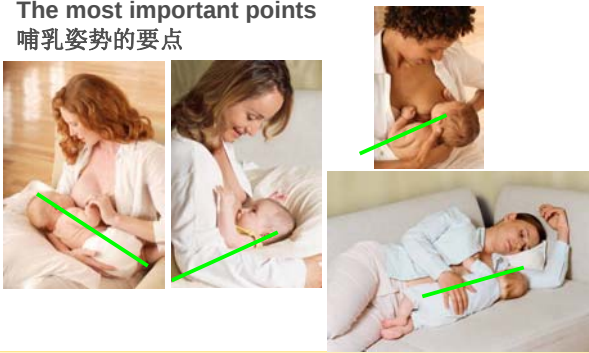
Insert your small finger in the angle of baby's mouth until the vacuum releases. 将较小手指深入婴儿口中 至口腔负压释放

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The most important points 哺乳姿势的要点



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The most important points 哺乳姿势的要点

- Babys body is in its base position, ears, shoulders and hips in one line 婴儿耳朵、肩膀、臀部处于一直线
- Babys chin and nose are in light contact with his mothers breast 下巴和鼻子轻轻触碰乳房
- The baby has as much breast tissue in his mouth as he needs to 含住尽可能多的乳房组织
- Babys lips are turned inside out 嘴唇外翻

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First feed



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Flat nipples 乳头扁平



Nipple former 乳头矫正器



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Inverted Nipples 乳头凹陷




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Inverted nipples 乳头凹陷



Nipple shields 亲密接触型乳头护罩



Inverted nipples after pumping 凹陷乳头，吸乳后

Symphony, electric breastpump 心韵，医院级电动吸乳器

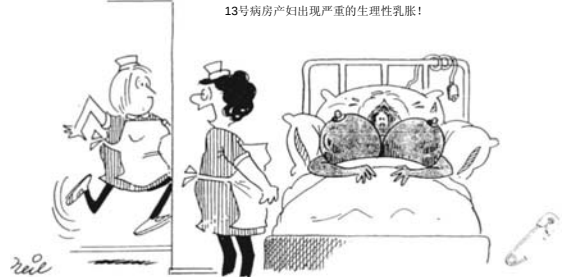
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Alarm! Physiological Engorgement in Room 13!

13号病房产妇出现严重的生理性乳胀!



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Physiological Engorgement 生理性乳胀

- High blood circulation in the breast 乳房血液循环增加
- More lymphatic liquid 淋巴液增加

Result 后果:
Hard, red, warm breast 乳房红、肿、热、胀



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Physiological Engorgement 生理性乳胀

Solution: 解决方案

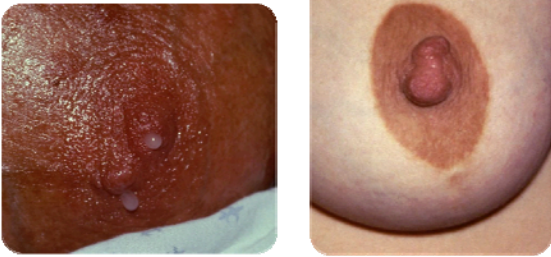
- Early and frequently breastfeeding 早吸吮，勤哺乳
- Hot and warm compress before breastfeeding 哺乳前热敷
- Breast massage 乳房按摩
- Massage the mothers back 后背按摩
- Pumping before breastfeeding until the milk flow starts 哺乳前吸乳，直至乳汁流出
- Cooling in between breastfeeding sessions 哺乳间隔用冷敷
- or ...?其他?

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Additional nipples 副乳



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Additional glandular tissue 多余的腺体组织



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Breastfeeding difficulties

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Red nipples 乳头发红



Source: B. Wilson-Coy, K. Hoover, Breastfeeding Atlas

Reasons 原因

- Sucking of baby stresses nipple at beginning heavily 婴儿开始吸吮时吸力较大
- incorrect positioning of baby 哺乳姿势不正确

Solution 解决方案

- control baby's position 控制宝宝哺乳姿势
- apply some milk after breastfeeding 哺乳后乳汁涂抹乳头
- apply PureLan 使用纯羊脂膏



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Sore Nipples 乳头疼痛



Source: B. Wilson-Coy, K. Hoover, Breastfeeding Atlas



Breast shells 乳头保护罩

Nipple shields 亲密接触型乳头护罩

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Cracked Nipples 乳头皸裂



Symphony, electric breast pump
心韵，医院级电动吸乳器

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Blisters 水泡



Solution: 解决方案

- hot, wet compress before breastfeeding
哺乳前湿热敷
- change breastfeeding position
调整哺乳姿势
- keep clean 保持清洁
- disappears after 1-3 days
1-3天后消失

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Not enough milk 母乳不足

Symptoms: 症状

- mother worries about her milk supply
妈妈担心她的泌乳量
- mother does not feel any physiological engorgement
妈妈没有感觉任何生理性乳胀症状
- baby is crying a lot 宝宝经常哭闹
- scale shows insufficient weight gain
宝宝称重时体重增长不够

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Not enough milk 母乳不足

Solution: 解决方案

- breast massage 乳房按摩
- frequently breast feeding, 6 – 8 times/24 hours
勤哺乳，每24小时6-8次
- control liquid intake of the mother
控制妈妈的液体摄入量
- use electric breast pump
电动吸乳器的使用

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Too much milk 乳汁过多



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Separation Mother and Baby 母婴分离



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您好 欢迎大家



我叫Müller Christa
我叫穆丽华，中国的茉莉花

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Breastfeeding Standards Topic (Menü Einfügen/Insert, Kopf-Fusszeile/Header-Footer) medela
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Content 内容

- Breastfeeding Standards (BF Standards)
母乳喂干预标准（指南）
 - Why do BF Standards exist? 为何需要干预标准
 - Where do BF Standards come from? 从何而来
 - What are BF Standards? 什么是母乳喂干预标准
- Developing Breastfeeding Standards 标准的制订
 - According to BFHI (Baby Friendly Hospital Initiative) 爱婴医院十
 - According to the rules of your hospital 每个医院的制度
- Implementation of Breastfeeding Standards 干预标准实施
 - Education / Training 教育/培训
- Conclusion 总结



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Thema eingeben/Insert Topic (Menü Einfügen/Insert, Kopf-Fusszeile/Header-Footer) medela
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Please be aware 需要强调

Breastfeeding standards or guidelines are mentioned to support breastfeeding for term born healthy babies.
母乳喂干预标准是针对足月儿的母乳喂干预



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Breastfeeding Standards Topic (Menü Einfügen/Insert, Kopf-Fusszeile/Header-Footer) medela
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Why do BF Standards exist? 为何需要干预标准

- Breastfeeding rates dropped all over the world
全球范围母乳喂率呈下降趋势
- Many children died because of not been breastfed
许多婴儿由于没有经过母乳喂而死亡
- Because of globalization families do not live together anymore
全球化发展使家庭成员不再聚居在一起
- Breastfeeding knowledge got lost
母乳喂知识的失传

Where do BF Standards come from? 干预标准从何而来?



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Breastfeeding Standards Topic (Menü Einfügen/Insert, Kopf-Fusszeile/Header-Footer) medela
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What are BF Standards? 什么是母乳喂干预标准

- Guidelines 临床指南
- Information 母乳喂资讯
- Knowledge 母乳喂知识
- Training material 培训资料



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Breastfeeding Standards Topic (Menü Einfügen/Insert, Kopf-Fusszeile/Header-Footer) medela
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What are BF Standards? 什么是母乳喂干预标准

Guidelines 临床指南

- based on the Baby Friendly Hospital Initiative 基于爱婴医院十条
- individual developed according to the policy of a hospital
根据各医院的情况和制度而制订
- enable every body to help mothers in the same way
让医院每个人用同样的方式帮助产妇
- to make daily work easier
使日常工作更简单



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Ehrenstündig-StandartTopic (Menü Einfügen/Insert, Kopf-Fusszeile/Header-Footer) **medela** 美德乐

What are BF Standards?什么是母乳喂养干预标准

Information 母乳喂养资讯

- every information you need in one book or folder
将每条可能需要的信息放在一本书或一个文件夹中
- everybody has the same information
每个人都得到同样的信息



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What are BF Standards?什么是母乳喂养干预标准

Knowledge 母乳喂养知识

- all knowledge in one place
所有的知识信息放在一个地方
- again everybody the same knowledge
所有的人获得同样的知识



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What are BF Standards?什么是母乳喂养干预标准

Training material 培训资料

- BF Standards build a base for training sessions for all health care professionals
母乳喂养干预标准建立了所有医护工作者的统一培训平台
- BF Standards are a base for communication training
母乳喂养干预标准也是社区培训的平台



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Developing BF Standards 母乳喂养干预标准的建立

Steps to take 步骤

- Read about the 10 Steps to successful breastfeed by UNICEF
学习联合国儿基会的《促进母乳喂养成功的十条措施》
- Take the decision to develop BF standards 决心制订干预标准
- Name project manager 任命项目负责人
- Build project team 建立项目小组
- Define goal of standards 确定母乳喂养干预标准的目标
- Define contents 确定干预标准的内容
- Develop contents 制订干预标准的内容
- Present final BF standards to team 小组内发布干预标准最终版
- Implement BF standards step by step 逐步实施干预标准

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10 steps to successful breastfeeding 《促进母乳喂养成功的十条措施》

- Have a written breastfeeding policy that is routinely communicated to all health care staff.
有书面的母乳喂养政策，并常规地传达给所有保健人员
- Train all health care staff in skills necessary to implement this policy.对所有保健人员进行必要的技术培训，使其能实施这一政策
- Inform all pregnant women about the benefits and management of breastfeeding.要把有关母乳喂养的好处及处理方法告诉所有的孕妇
- Help mothers initiate breastfeeding within half an hour of birth.
帮助母亲在产后半小时内开始母乳喂养
- Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.
指导母亲如何喂奶，以及在需与其婴儿分开的情况下如何保持泌乳

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10 steps to successful breastfeeding

- Give newborn infants no food or drink other than breast milk, unless medically indicated.
除母乳外，禁止给新生儿吃任何食物或饮料，除非有医学指征
- Practice rooming-in - that is, allow mothers and infants to remain together - 24 hours a day.
实行母婴同室，让母亲与婴儿一天24小时在一起
- Encourage breastfeeding on demand.鼓励按需哺乳
- Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
不要给母乳喂养的婴儿吸人工奶头，或使用奶头作安慰物
- Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.
促进母乳喂养支持组织的建立，并将出院的母亲转给这些组织

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Developing BF Standards 母乳喂养干预标准的制订

Steps to take 步骤

- Read about the 10 Steps to successful breastfeed by UNICEF 学习联合国儿基会的《促进母乳喂养成功的十条措施》
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- Implement BF standards step by step 逐步实施干预标准

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Developing BF Standards 母乳喂养干预标准的制订

Individual Breastfeeding Standards



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How to develop BF Standards 如何制订母乳喂养干预标准



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Content of BF Standards 母乳喂养干预标准的内容

8. Newborn Feeding 新生儿喂养

8.1 Breastfeeding 母乳喂养

8.1.1 General Overview 概述

- Aim 目的
- Background 背景
- Innocenti Declaration 因诺琴蒂宣言
- Ten Steps to Successful Breastfeeding 促进母乳喂养成功的十条措施
- The WHO International Code of Marketing Breastmilk Substitutes WHO国际母乳代用品销售守则
- Health Professionals and the WHO International Code 医疗专业人员和WHO国际母乳代用品销售守则
- References 参考文献

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Content of BF Standards 母乳喂养干预标准的内容

8.1.2 Professional Development Requirements for Staff 对医院工作人员的专业发展要求

- Aim 目的
- Background 背景
- Key Points 要点
- Requirements to be completed within the 2 years period prior to initial BFHI assessment. 创建爱婴医院前2年需要完成的要求
- Requirements for new staff and others who may assist mothers with breastfeeding 对于新员工和其他协助母亲母乳喂养的员工的要求
- Requirements for the 3 year period prior to the reassessment of the Facility 爱婴医院重新评估前的3年期要求
- References 参考文献

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Content of BF Standards 母乳喂养干预标准的内容

8.1.3 Antenatal Education and Counselling 产前教育和咨询



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Ernährungsstandards für die Geburtshilfe (Geburtsmedizin) | Fortbildung | Header-Footer

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Content of BF Standards 母乳喂养干预标准的内容

8.1.5 The first feed 第一次哺乳

- first breastfeed when the baby is ready
婴儿准备好就开始第一次早吸吮
- help mother to encourage her baby to suck
帮助妈妈鼓励婴儿吸吮



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Content of BF Standards 母乳喂养干预标准的内容

8.1.6 Showing the woman how to breastfeed 教会妈妈们如何进行母乳喂养

- different breastfeeding position 不同的哺乳姿势
- optimal intake 确保摄入
- weight gain 婴儿体重增加
- appropriate growth and development 适当的生长发育

8.1.6 Showing the woman
 how to breastfeed
 教会妈妈们如何进行母乳喂养

- different breastfeeding
 position
 不同的哺乳姿势
- optimal intake确保摄入
- weight gain婴儿体重增加
- appropriate growth
 and development
 适当的生长和发育



Ehrenborg, G. & Linderoth, S. (2019). *Evidence-Based Neonatal Nursing* (Printszelle/Header-Footer)



Content of BF Standards

母乳喂养干预标准的内容

8.1.6 Showing the woman how to breastfeed

- different breastfeeding position 不同的哺乳姿势
- optimal intake 确保摄入**
- weight gain 婴儿体重增加
- appropriate growth and development 适当的生长和发育

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Content of BF Standards

母乳喂养干预标准的内容

8.1.6 Showing the woman how to breastfeed

- different breastfeeding position不同的哺乳姿势
- optimal intake 确保摄入
- weight gain** 婴儿体重增加
- appropriate growth and development适当的生长发育

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Content of BF Standards 母乳喂养干预标准的内容

8.1.6 Showing the woman how to breastfeed

- different breastfeeding position 不同的哺乳姿势
- optimal intake 确保摄入
- weight gain 婴儿体重增加
- **appropriate growth and development 适当的生长发育**

Ernährungs-Standort (S) (G) (B) (M) (P) (F) (Z) (H) (F) (F)

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Content of BF Standards 母乳喂养干预标准的内容

8.1.7 Expressing 吸乳

- Situation can arise where mothers may need to express milk
产妇在某些特定情况下需要将乳汁吸出
- all mothers should know how to express breast milk by hand expression or by pumping
所有的产妇都需要了解如何手挤或用吸乳器吸乳
- mothers who are separated from their child need to be taught how to use the electric breastpump
教会母婴分离的产妇如何使用吸乳器



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Chemical Engineering Standardizing (Enhance Information Management) - Pre-Release/Header-Footer

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Content of BF Standards 母乳喂养干预标准的内容

8.1.10 Rooming in 母婴同室

- babies need to stay with their mother day and night
婴儿应该日夜与妈妈呆在一起



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Thema/Training/Standards/Topic (Editor/Editorial Meeting/Platz/Fortschritte/Header-Footer)

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Content of BF Standards 母乳喂养干预标准的内容

- 8.1.11 Feeding according to need
按需哺乳
- 8.1.12 Use of artificial teats/dummies
人工奶嘴/安抚奶嘴的使用

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Themenfeld: Standards (Topic: Standard: Information: Platzzeile/Header-Footer)

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Content of BF Standards 母乳喂养干预标准的内容

8.1.13 Finger feeding using a fine tube or syringe 手指喂奶（胃管或注射器）




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Content of BF Standards母乳喂养干预标准的内容

8.1.14 Cup feeding 喂杯喂养



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Content of BF Standards母乳喂养干预标准的内容

8.2 Breastfeeding challenges 母乳喂养困难

8.2.1 Flat or inverted nipples 乳头扁平凹陷



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Content of BF Standards母乳喂养干预标准的内容

8.2.2 Nipple Trauma 乳头损伤

- Tender nipples 乳头疼痛
- Damaged nipples 乳头损伤



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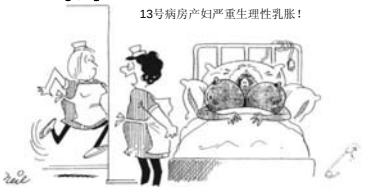
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Content of BF Standards母乳喂养干预标准的内容

8.2.3 Engorgement 乳胀

- Physiological Engorgement 生理性乳胀
- Pathological Engorgement 病理性乳胀

Heavy physiological engorgement in room 13!
13号病房产妇严重生理性乳胀!



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Content of BF Standards母乳喂养干预标准的内容

8.2.4 Blocked ducts 乳导管堵塞

8.2.5 Oversupply 乳汁过多

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Content of BF Standards母乳喂养干预标准的内容

8.2.6 Mastitis – causes 乳腺炎病因

- Trauma to breasts 乳房损伤
- Damaged nipples 乳头破损
- Unresolved engorgement 乳胀未缓解
- Incomplete draining of the breast 乳房未排空
- Stress, fatigue, poor overall health and nutrition 压力/疲劳/体弱/营养不良
- Poor positioning / attachment / sucking of baby 哺乳姿势/衔乳/吸吮不良
- Scarring causing incomplete drainage 乳头疤痕影响乳房排空
- Restrictive bra 文胸过紧
- Abrupt weaning 突然断奶

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Breastfeeding Standards (Chinese) (Breastfeeding Standards) (Header-Footer)

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Content of BF Standards 母乳喂养干预标准的内容

8.2.7 Breast abscess 乳房脓肿



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Breastfeeding Standards (Chinese) (Breastfeeding Standards) (Header-Footer)

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Content of BF Standards 母乳喂养干预标准的内容

8.2.8 Weight loss beyond 10% of birth weight
体重丢失超过10%

8.2.9 Increasing breast milk supply
增加泌乳

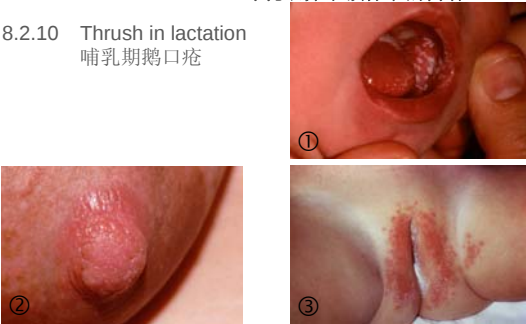
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Breastfeeding Standards (Chinese) (Breastfeeding Standards) (Header-Footer)

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Content of BF Standards 母乳喂养干预标准的内容

8.2.10 Thrush in lactation
哺乳期鹅口疮



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Content of BF Standards 母乳喂养干预标准的内容

8.2.11 Preterm, low birth weight or small for gestational age baby
早产儿，低体重儿或小于胎龄小婴儿

8.2.12 Baby of a mother with diabetes
糖尿病妈妈的婴儿

8.3 Breastfeeding aids 哺乳辅助工具

8.3.1 Supply line to supplement feeding
辅助哺乳（乳旁加奶）

8.3.2 use of nipple shields
乳头护罩的使用

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Implementation 母乳喂养干预标准的执行

Steps to take 步骤

- Read about the 10 Steps to successful breastfeed by UNICEF
学习联合国儿基会的《促进母乳喂养成功的十条措施》
- Take the decision to develop BF standards 决心制订干预标准
- Name project manager 任命项目负责人
- Build project team 建立项目小组
- Define goal of standards 确定母乳喂养干预标准的目标
- Define contents 确定干预标准的内容
- Develop contents 制订干预标准的内容
- Present final BF standards to team 小组内发布干预标准最终版**
- Implement BF standards step by step 逐步实施干预标准

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Breastfeeding Standards (Chinese) (Breastfeeding Standards) (Header-Footer)

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Implementation 母乳喂养干预标准的执行

Steps to take 步骤

- Present final BF standards to team 小组内发布干预标准最终版**
 - Everybody get a printed version of the standards 人手一册干预指南印刷版
needs to read until a certain death line 在截止日期前读完
- Organize training sessions for all staff on 安排所有医院相关人员培训**
 - the goal of the BF standards 母乳喂养干预标准的目标
 - each sector of the standards 母乳喂养干预标准的每个部分
 - positive communication 正面交流

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Implementation 母乳喂养干预标准的执行

Steps to take 步骤

- Implement BF standards step by step 逐步实施母乳喂养干预标准
 - start with common topics 从常见母乳喂养问题开始
 - followed by less common topics 然后进行不常见问题的干预
 - end with special topics 最后实施特殊情况的处理

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Infant Sucking Behaviors 婴儿吸吮行为

Christa Müller-Aregger
IBCLC (International Board Certified Lactation Consultant), Adult trainer
International Education Manager Medela AG

Author: Jan Newbold RM IBCLC
International Education Manager

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Infant Sucking Behaviors medela

Topics 内容

- Lactation 泌乳生理学
- Instinct 婴儿本能
- Ultrasound of infant sucking 吸吮的超声研究
- Muscle and teeth formation 肌肉和牙齿形成
- Sucking patterns 吸吮模式

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Lactation 泌乳生理学

- 6 wks 孕6周 – Breast changes 乳房变化
- 16 wks 孕16周 – Lactation 开始泌乳 (Lactogenesis I 泌乳I期)
- Birth 婴儿出生 – Colostrum 初乳
- 2 - 5 days – physiological engorgement 生理性乳房肿胀, transitional Milk 过渡期 (Lactogenesis II 泌乳II期)
- day 7 - 10 – mature milk 成熟乳



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Infant Sucking Behaviors medela

Topics 内容

- Lactation 泌乳生理学
- Instinct 婴儿本能
- Ultrasound of infant sucking 婴儿吸吮的超声研究
- Muscle and teeth formation 肌肉和牙齿形成
- Sucking patterns 吸吮模式

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Development 婴儿发育

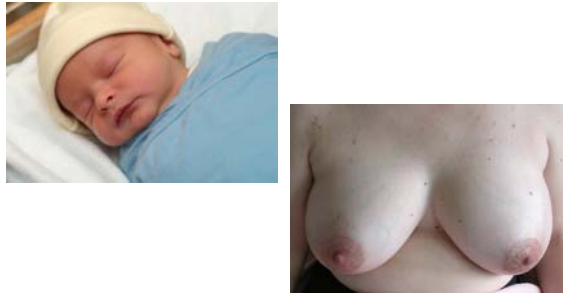


- 11 wks – Swallow 吞咽
- 24 wks – Suck 吸吮
- 32 wks – Rooting 寻乳
- 34-38 wks – Coordination 协调性

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Baby..... Breast 婴儿 乳房



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Infant Sucking Behaviors

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Instinct 本能



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Sometimes a little help is needed... 有时候需要一点点帮助



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Infant Sucking Behaviors

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Topics 内容

- Lactation 泌乳生理学
- Instinct 婴儿本能
- **Ultrasound of infant sucking 婴儿吸吮的超声研究**
- Muscle and teeth formation 肌肉和牙齿形成
- Sucking patterns 吸吮模式

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Ultrasound of Infant Sucking

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婴儿吸吮的超声研究

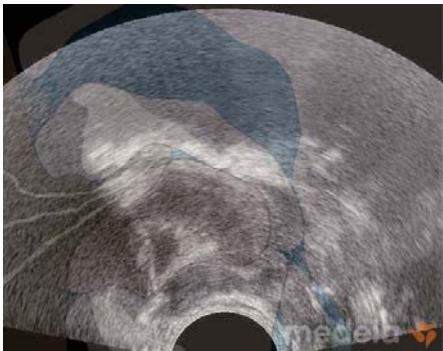


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Ultrasound of Infant Sucking

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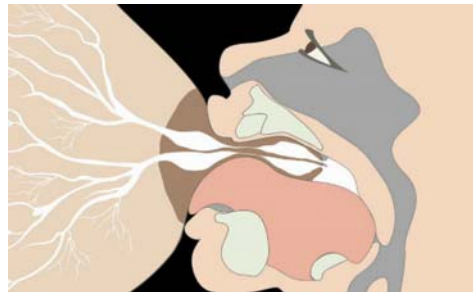


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Ultrasound of Infant Sucking

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婴儿吸吮的超声研究

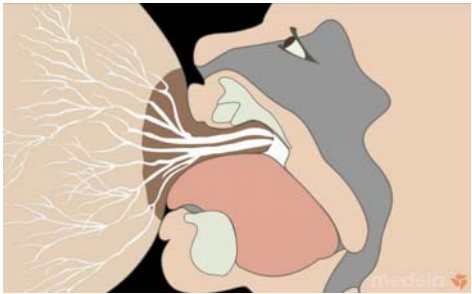


Conventional View
Peristaltic stripping of the milk from the lactiferous sinuses

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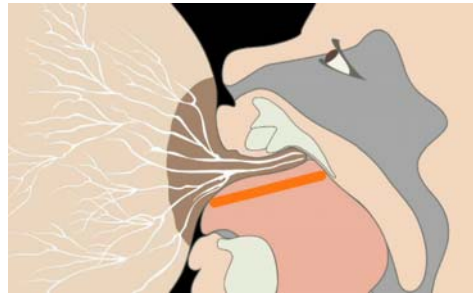
Ultrasound of Infant Sucking
婴儿吸吮的超声研究



Vacuum plays a key role in milk removal

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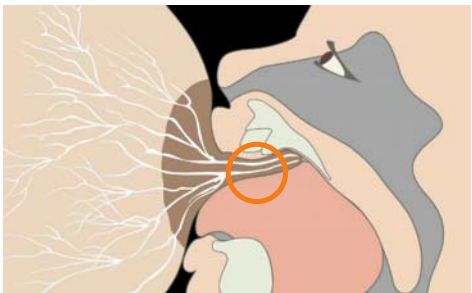
Ultrasound of Infant Sucking
婴儿吸吮的超声研究



The tongue does not move in a peristaltic motion

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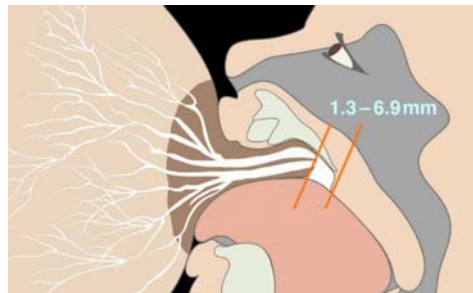
Ultrasound of Infant Sucking
婴儿吸吮的超声研究



There is no marked indentation of the nipple

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Ultrasound of Infant Sucking
婴儿吸吮的超声研究



1.3–6.9mm

The tip of the nipple does not reach the junction of the hard and soft palates

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Infant Sucking Behaviors

Topics 内容

- Lactation 泌乳生理学
- Instinct 婴儿本能
- Ultrasound of infant sucking 婴儿吸吮的超声研究
- **Muscle and teeth formation 肌肉和牙齿形成**
- Sucking patterns 吸吮模式

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Infant Sucking Behaviors

The Oral Cavity 口腔



- The tongue is at rest 舌头放松
- The jaw remains stable 下颌固定
- Teeth erupt straight 牙齿竖直生长

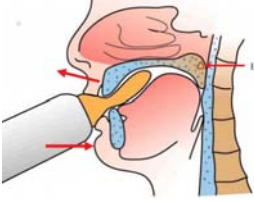
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Infant Sucking Behaviors

Teat or Pacifier Use 奶嘴或安抚奶嘴的使用



- The position of the teat could drive the tongue back into the mouth
奶嘴的位置使舌头回缩
- Tongue is used to control the flow
舌头用来控制流速
- Tongue thrusting 舌头挤压奶嘴
- Increased risk of otitis media 增加中耳炎发生率
- Long term effect on development of oral cavity
对口腔发育有长期影响

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Infant Sucking Behaviors

Malocclusions 咬合不齐



- Principle finding-the longer the duration of breastfeeding, the lower the incidence of malocclusion.
重要发现-母乳喂养时间越长，咬合不齐发生率越低
- Bottle feeding leads to a habit of forward tongue thrusting and a weakened development of the orbicularis muscles.
奶瓶喂养导致舌尖前顶习惯，影响轮匝肌发育
- There is a significant decrease in tongue thrusting with an increased duration of breastfeeding.
母乳喂养时间越长，舌头顶发生率越低
Labbok 1987
- There is a strong association between exclusive bottle-feeding and malocclusion.
纯奶瓶喂养与咬合不齐有密切相关性
Davies et al 1991

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Infant Sucking Behaviors

Lip and Facial Contours 唇和面部轮廓



Infant exclusively breastfed
纯母乳喂养的婴儿

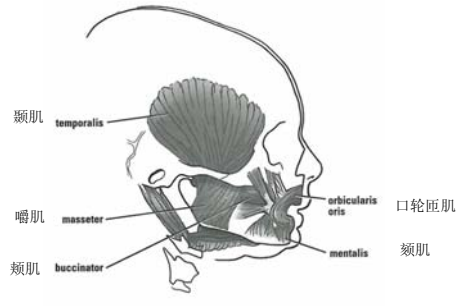
Infant who has sucked on a foreign object excessively
过度频繁吸吮外物的婴儿

Palmer B. (<http://www.brianpalmerdds.com>)

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Infant Sucking Behaviors

Facial muscles for Feeding 吸吮相关口面部肌肉



颞肌 temporalis

嚼肌 masseter

颊肌 buccinator

口轮匝肌 orbicularis oris

颏肌 mentalis

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Infant Sucking Behaviors

Facial muscles for Feeding 吸吮相关口面部肌肉



Orbicularis Oris 口轮匝肌
Less use in breastfeeding 哺乳时少用

Temporalis 颞肌
More use in breastfeeding 哺乳多用

Masseter 嚼肌
More use in breastfeeding 哺乳多用

Mentalis 颏肌
More use in breastfeeding 哺乳多用

Buccinator 颊肌
Less use in breastfeeding 哺乳少用

Gomes, 2006
Syväski, 2001

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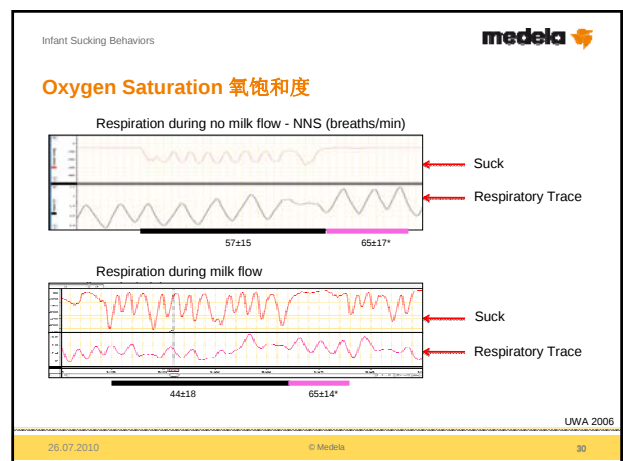
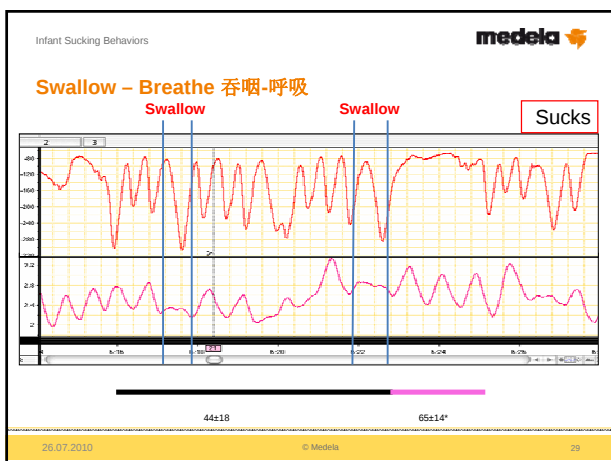
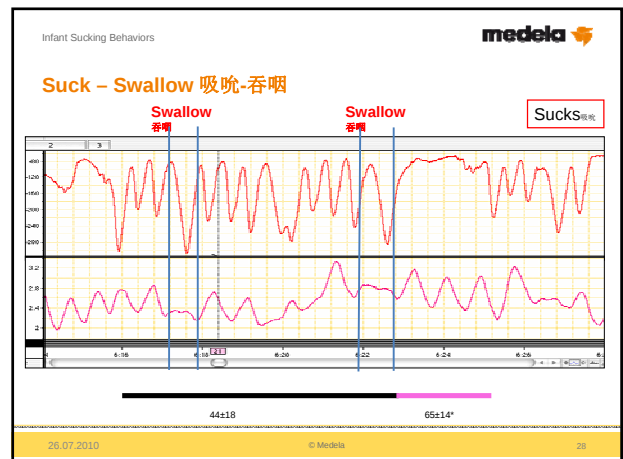
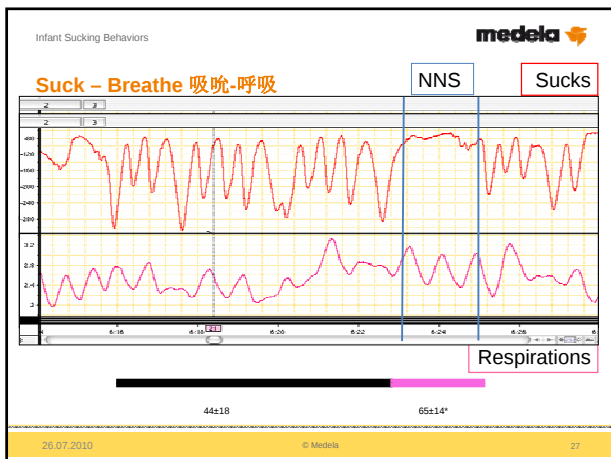
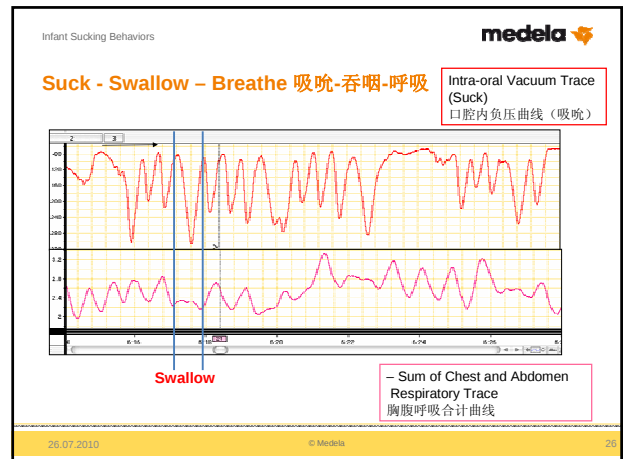
Infant Sucking Behaviors

Topics 内容

- Lactation 泌乳生理学
- Instinct 婴儿本能
- Ultrasound of infant sucking 婴儿吸吮的超声研究
- Muscle and teeth formation 肌肉和牙齿发育
- Overeating and obesity 过度喂养与肥胖
- Sucking patterns 吸吮模式

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Infant Sucking Behaviors

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Conclusion 结论

- Breastfeeding is the best option 母乳喂养最佳选择
- Vacuum is key to milk removal 负压最重要
- Promotes optimal development of oral cavity and facial muscles 有助于口腔和面部肌肉的发育
- Prevents tongue thrusting 预防舌头前顶
- The infant can 'pace' itself at the breast 哺乳时婴儿控制节奏
- If breastfeeding not possible – expressed breastmilk is next best option 直接哺乳不可行时，吸乳哺喂是第二选择

How can all the benefits mentioned be optimised when having to feed expressed breastmilk?....



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... and now? 现在

- Would you like to feed the own mothers milk to babies who cannot breastfeed directly ? 你是否打算给不能直接哺乳的婴儿哺喂自己妈妈的母乳？
- Would you like to feed donor milk to a premature baby if own mothers milk is not available ? 如果早产儿的妈妈没有乳汁，你是否打算喂他人的母乳？
- Could you imagine to have a tool to feed a baby and at the same time going back to his mothers breast without any difficulties? 你能否想象一种哺喂工具能够让他返回乳房时没有困难？
- Could you imagine to have a tool to feed a baby with human milk without violating the WHO Code ? 你能否想象一种哺喂母乳的工具不违背WHO母乳代用品营销法则
- Could you imagine how this tool should be and look like? 你是否想象这种工具是什么样的？

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