

# Subtitle Format Zulu

## Chapter 1 Introduction

Uhlelo olubabazekayo lwe-zygote eneseli elilodwa eba wumuntu onamaseli angu 100-trillion mhlawumbe yisehlo esiggame kunazo zonke kwimvelo.

Abaphenyi sebeyazi ukuthi imisebenzi eminingi evamile yomzimba womuntu omdala isunguleka esesesiswini - kusekude azalwe.

Ukukhula ngaphambi kokuzalwa sekuthathwa njengesikhathi sokulungiselela okuthi ngaso umuntu okhulayo athole izakhiwo eziningi, enze namakhono amaningi, okudingeka ekuphileni esezelwe.

## Chapter 2 Terminology

Ukukhulelwa kubantu kuba cishe wu 38 amaviki kusukela ekuhlanganeni kwembewu neqanda, kuye ekuzalweni.

Ngamaviki okuqala awu 8 emva kokukhulelwa, umuntu okhulayo kuthiwa wumbungu, okuwukuthi "kukhula ngaphakathi." Le sikhathi, okuthiwa esombungu, siggame ngokwakheka kweningi lezinhlelo ezisemqoka zomzimba.

Ukusuka emva kwamaviki awu 8 kuya ekubeletheni, "umuntu okhulayo kuthiwa yi-fetus," okuwukuthi "okungakazalwa." Ngale sikhathi, okuthiwa esokungakazalwa, umzimba uyakhula nezinhlelo zawo ziqale ukusebenza.

Bonke ubudala bombungu ne-fetus kulo luhlelo kusho isikhathi kusukela ekukhulelweni.

## The Embryonic Period (The First 8 Weeks)

### *Embryonic Development: The First 4 Weeks*

## Chapter 3 Fertilization

Ngokwemithetho yempilo, "ukukhula komuntu kuqala ekukhulelweni," uma owesilisa nowesifazane emunye efaka 23 wama-chromosomes abo ngokuhlangana kwamaseli abo enzalo.

Iseli yenzalo yowesimame kuthiwa yi"qanda" kodwa igama eliyilo yi-oocyte.

Ngokunjalo, iseli yenzalo yowesilisa kuthiwa yi"mbewu" kodwa kungcono uma kuthiwa yi-spermatozoon.

Emva kokukhishwa kweqanda esizalweni sowesimame ngohlelo okuthiwa yi-ovulation, iqanda nembewu kuyahlangu kwelinye lamashubhu esibeletho, avame ukubizwa ngama-Fallopian tubes.

La mashubhu ahlangu isizalo sowesimame nesibeletho sakhe.

Umbungu owumphumela kuthiwa yi-zygote, okuwukuthi "kuhlangu."

## **Chapter 4 DNA, Cell Division, and Early Pregnancy Factor (EPF)**

### **DNA**

Ama-chromosomes e-zygote awu 46 amele ingxenye yokuqala yesifanekiso sofuzo somuntu omusha. Le sakhiwo sihlala kumamolikuli athothene okuthiwa yi-DNA. Inemiyalelo yokukhula komzimba wonke.

Amamolikuli e-DNA anjengesikhwelo esisontekile okwaziwa njenge-double helix. Amaqophelo esikhwelo enziwe ngamamolikuli angamabili, okuthiwa yi-guanine, cytosine, adenine, ne-thymine.

I-guanine ihambisana kuphela ne-cytosine, i-adenine ihambisane ne-thymine. Iseli ngalinye lomuntu cishe libe no 3 billion wala mapheya ayiziqu.

I-DNA yeseli elilodwa inolwazi oluningi kangangoba uma lungahle lubhalwe ngamagama, ukuhlela igama lokuqala lesiqu ngasinye kungadinga amakhasi angaphezu kuka 1.5 million!

Uma ilandelaniswa, iDNA kwiseli lomuntu elilodwa ikaleka ibewu 3 1/3 amafidi noma 1 imitha.

Uma singayiqaqqa yonke iDNA ekumaseli omuntu angu 100 trillion, ingaba ngaphezu kwamamayela angu 63 billion. Le libanga lifika elangeni libuye izikhathi eziwu 340.

### **Cell Division**

Cishe emahoreni awu 24 kuyaku 30 emva kokukhulelwa, i-zygote iqeda ukuhlukaniseka kwamasele lokuqala. Ngohlelo lwe-mitosis, iseli lihlukaniseka kabili, amabili abe mane, njalonzalo.

### **Early Pregnancy Factor (EPF)**

Emva kuka 24 kuyaku 48 amahora ukukhulelwa kuqalile, kungaqinisekiswa ngokuthola ihomoni okuthiwa "wuphawu lokuqala " egazini likamama.

## **Chapter 5 Early Stages (Morula and Blastocyst) and Stem Cells**

Ngosuku luka 3 kuyaku 4 emva kokukhulelwa, amasele andayo ombungu aba sandilinga bese umbungu kuthiwa yi-morula.

Ngosuku luka 4 noma 5, kwakheka umgodi kule libhola lasele bese umbungu kuthiwa yi-blastocyst.

Amaseli ngaphakathi kwi-blastocyst kuthiwa yinqwaba yamaseli angaphakathi kanti akha ikhanda, umzimba, nezinye izakhiwo ezisemqoka kumuntu okhulayo.

Amaseli angaphakathi kule nqwaba yamaseli kuthiwa ama-embryonic stem cells ngoba akwazi ukwakha inhlobo ngayinye yamaseli kwezingaphezu kuka 200 asemzimbeni womuntu.

## **Chapter 6 1 to 1½ Weeks: Implantation and Human Chorionic Gonadotropin (hCG)**

Emva kokwehla ngeshubhu lesibeledho, umbungu wokuqala uzishutheka odongeni olungaphakathi lwesibeledho sikamama. Lo luhlelo, okuthiwa wukuzihloma, luqala emva kuka 6 izinsuku luphele emva kuka 10 kuyaku 12 izinsuku emva kokukhulelwa.

Amaseli ombungu okhulayo aqala ukukhiqiza ihomoni okuthiwa yi-human chorionic gonadotropin, noma hCG, etholwa yiningi lokuhlolela ukukhulelwa.

I-HCG itshela amahomoni owesimame ukuthi akuyekise ukuya esikhathini okuvamile, okuvumela ukukhulelwa kuqhubeka.

## **Chapter 7 The Placenta and Umbilical Cord**

Emva kokuzihloma, amaseli azungeze i-blastocyst akha ingxenye yalokho okuthiwa yi-placenta, ewukuxhumana phakathi kohlelo lukamama nolombungu lokugeleza kwegazi.

I-placenta ihambisa i-oksijini, izakhamzimba, amahomoni, nemithi kukamama embungwini okhulayo; isusa wonke udoti; bese ivimba ukuxubana kwegazi likamama nelombungu nele-fetus.

I-placenta ibuye ikhiqize amahomoni ibuye igcine izinga lokushisa lomzimba wombungu libe ngaphezudlwana kwelikamama.

I-placenta ixhumana nomuntu okhulayo ngemithambo yenkaba.

Amakhono enkaba okweseka impilo e-placenta alingana nalawo amagumbi abagula kakhulu ezibhedlela zesimanje.

## **Chapter 8 Nutrition and Protection**

Ngeviki 1, amaseli enqwaba yamaseli engaphakathi akha izingqimba ezimbili okuthiwa yi-hypoblast ne-epiblast.

I-hypoblast yakha i-yolk sac (isikhupahshi), okungesinye sezakhiwo okuthi ngaso umama aphakele izakhamzimba kumbungu wasekuqaleni.

Amaseli aphuma kwi-epiblast akha ijwabu okuthiwa yi-amnion, ngaphakathi embungwini kamuva kwi-fetus liyakhula kuze kube wukuzalwa.

## **Chapter 9 2 to 4 Weeks: Germ Layers and Organ Formation**

Cishe ngo 2 1/2 amaviki, i-epiblast seyakhe 3 amathishu ayisipesheli, noma izingqimba zamagciwane, okuthiwa yi-ectoderm, endoderm, ne-mesoderm.

I-ectoderm yakha izakhiwo eziningi kubandakanya ubucopho, umgogodla, imizwa, isikhumba, izinzipho, nezinwele.

I-endoderm ikhiqiza untwentwesi lomgudu wokuphefumula nolomgudu wokugaywa kokudla, bese yenza izingxenye zezitho ezisemqoka njengesibindi namanyikwe.

I-mesoderm yakha inhliziyi, izinso, amathambo, uqwanga, imisipha, amaseli egazi, nezinye izakhiwo.

Emva kwamaviki awu 3 ubuchopho buhlukaniseka ezingxenyeni zokuqala eziwu 3 okuthiwa wubuchopho baphambili, ubuchopho obuphakathi, nobuchopho obungemuva.

Ukukhula kwemigudu yokuphefumula nowokugaywa kokudla nako kuyaqhubeka.

Khathi amaseli okuqala egazi evela kwi-yolk sac, kwakheka imithambo yegazi kuwowonke umbungu, bese kuvela inhliziyi esashubhu.

Cishe ngokuphazima kweso, inhliziyi ekhula ngamandla iyazisonga ngenkathi amakamelo ehlukeni eqala ukwakheka.

Inhliziyi iqala ukushaya kumaviki awu 3 nosuku emva kokukhulelwa.

Umgudu wegazi wumgudu womzimba wokuqala, noma iqembu lezitho ezihlobene, oveza isimo sokusebenza.

## **Chapter 10 3 to 4 Weeks: The Folding of the Embryo**

Phakathi kuka 3 no 4 wamaviki, isakhiwo somzimba siyavela ngesikhathi ubuchopho, umgogodla, nenhliziyi kombungu sekubonakala kalula eceleni kwe-yolk sac.

Ukukhula ngamandla kudala ukusongeka kombungu owendlalekile. Lo luhlelo luhlanganisa ingxenye ye-yolk sac ontwentwesini lomgudu wokugaya ukudla bese lwakha imigodi yesifuba nowesisu yomuntu okhulayo.

### ***Embryonic Development: 4 to 6 Weeks***

## **Chapter 11 4 Weeks: Amniotic Fluid**

Kumaviki awu 4 i-amnion ecacile izungeza umbungu esakeni eligcwele uketshezi. Lo luketshezi olungenamagciwane, okuthiwa yi-amniotic fluid, luvikela umbungu ekulimaleni.

## **Chapter 12 The Heart in Action**

Inhliziyo ishaya izikhathi eziwu 113 ngomzuzu.

Qaphela indlela inhliziyo eguqula ngayo umbala uma igazi lingena noma liphuma emagumbini ayo uma ishaya.

Inhliziyo izoshaya cishe izikhathi eziwu 54 million ngaphambi kokuzalwa nangaphezu kuka 3.2 billion esikhathini esiyiminyaka yempilo engu 80.

## **Chapter 13 Brain Growth**

Ukukhula ngamandla kobuchopho kuvezwa wukushintsha kokubukeka kobuchopho obuphambili, ubuchopho obuphakathi, nobuchopho obungemuva.

## **Chapter 14 Limb Buds**

Kuqala ukukhula kwezingalo nemilenze ngokuvela kwamahlumela emavikini awu 4.

Kule nkathi isikhumba sikhanya ngale ngoba siwugqinsi ngeseli kuphela.

Uma lwanda ugqinsi lwesikhumba, ngeke sisabonakala ngale, okushukuthi sizokwazi ukubona izitho zangaphakathi zikhula cishe enye inyanga.

## **Chapter 15 5 Weeks: Cerebral Hemispheres**

Phakathi kuka 4 no 5 amaviki, ubuchopho buyaqhubeka nokukhula ngamandla bese buhlukaniseka izingxenye eziwu 5 ezicacile.

Ikhanda licishe libe wu 1/3 wabo bonke ubukhulu bombungu.

Kuvela ama- cerebral hemispheres, agcine eseyizingxenye ezinkulu kunazonke zobuchopho.

Imisebenzi egcina isilawulwa ngama-cerebral hemispheres ibala ukucabanga, ukufunda, inkumbulo, ukukhuluma, ukubona, ukuzwa, ukunyakaza kokuzithandela, nokuxazulula izinkinga.

## **Chapter 16 Major Airways**

Emgudwini wokuphefumula, kukhona awesokudla nawesobunxele asemqoka ama-stem bronchi kanti azogcina exhume uqhoqhoqho, namaphaphu.

## **Chapter 17 Liver and Kidneys**

Qaphela isibindi esikhulu esigcwele isisu eceleni kwenhliziyo eshayayo.

Izinso zonomphelo zivela kumaviki awu 5.

## **Chapter 18 Yolk Sac and Germ Cells**

Igobosi lesikhupha linamaseli enzalo asekuqaleni okuthiwa ama-germ cells. Kumaviki awu 5 lama germ cells aya ezithweni zenzalo eziseceleni kwezinsu.

## **Chapter 19 Hand Plates and Cartilage**

Futhi kumaviki awu 5, umbungu umila isithebe ezandla, bese uqwanga luqale kumaviki awu 5 1/2.

Lapha sibona isithebe lesandla sobunxele nesihlakala kumaviki awu 5 nezinsuku eziwu 6.

## ***Embryonic Development: 6 to 8 Weeks***

### **Chapter 20 6 Weeks: Motion and Sensation**

Kumaviki awu 6 ama-cerebral hemispheres akhula ngokushesha ngaphezu kwezinye izingxenye zobuchopho.

Umbungu uqala ukuzenzela iminyakazo ngokwawo. Lo mnyakazo uyadingeka ukusiza ukukhula kwemisipha nemizwa.

Ukuthintwa emlonyeni kwenza umbungu ugudluze ikhanda ngokulivikela.

### **Chapter 21 The External Ear and Blood Cell Formation**

Indlebe yangaphandle iqala ukwakheka.

Kumaviki awu 6, sekuqalile ukwakheka kwamaseli egazi esibindini lapho manje sekukhona ama-lymphocytes. Lo luhlobo lwamaseli amhlophe egazi yingxenye esemqoka yohlelo lwamasosha omzimba.

### **Chapter 22 The Diaphragm and Intestines**

Untu, umsipha ophambili osebenza ekuphefumuleni, lusuke selwakhekile kumaviki awu 6.

Ingxenye yethumbu manje iphumele okwesikhashana enkabeni. Lo luhlelo oluvamile, okuthiwa yi-physiologic herniation, lunika isikhala ezinye izitho ezikhulayo esiswini.

## **Chapter 23 Hand Plates and Brainwaves**

Kumaviki awu 6 amapuleti ezandla aba nokwendlaleka.

Amaza obuchopho aseqoshiwe kumaviki awu 6 no 2 wezinsuku.

## **Chapter 24 Nipple Formation**

Izingono zivela emaceleni omzimba ngaphambi kokufika endaweni yawo yokugcina ngaphambili kwesifuba.

## **Chapter 25 Limb Development**

Kumaviki angu 6 1/2, izindololwane sezicacile, iminwe isiqala ukwehlukana, nokunyakaza kwezandla kuyabonakala.

Ukwakheka kwamathambo, okuthiwa yi-ossification, kuqala ngaphakathi kwi-clavicle, noma ingqwababa, nakumathambo emihlathi.

## **Chapter 26 7 Weeks: Hiccups and Startle Response**

Ithwabi selike labonakala kumaviki awu 7.

Iminyakazo yemilenze isiyabonakala, kanye nokukhombisa ukwethuka.

## **Chapter 27 The Maturing Heart**

Inhliziyo enamakamelo awu-4 isicishe iphelele. Ngokuvamile, manje inhliziyo isishaya 167 izikhathi ngomzuzu.

Ukusebenza kukagesi wenhliziyo okwaqoshwa kumaviki awu 7 1/2 kuveza umgudu wamazwa ocishe ufane nowomuntu omdala.

## **Chapter 28 Ovaries and Eyes**

Kwabesimame, izindlala zamaqanda ziyabonakala kumaviki awu 7.

Kumaviki awu 7 1/2, ulwebu lwehlo olunemibala lubonakala kalula futhi amajwabu amehlo aqala ukukhula ngesivinini.

## **Chapter 29 Fingers and Toes**

Iminwe isihlukene kanti izinzwane zihlangene kuphela ngaphansi.

Izandla manje sezingathintana, ngokunjalo nezinyawo.

Amalunga amadolo asekhona.

### ***The 8-Week Embryo***

#### **Chapter 30 8 Weeks: Brain Development**

Kumaviki angu 8 ubuchopho sebukhule kakhulu futhi bucishe bube yineye we sisindo somzimba wombungu.

Ukukhula kuqhubeka ngesivinini esingajwayelekile.

#### **Chapter 31 Right- and Left-Handedness**

Kumaviki awu 8, u 75% wemibungu ukhombisa ukukhonya kwesandla sokudla. Esole ihlukaniseke ngokulinganayo phakathi kwamandla nonxazonke. Lobu wubufakazi bokuqala bokujwayela esokudla noma sobunxele.

#### **Chapter 32 Rolling Over**

Amabhuku ngezingane achaza ukuthi ikhono "lokuphenduka" livela kumaviki awu 10 kuyaku 20 emva kokuzalwa. Nokho, le likhono elihlaba umxhwele liyashesha ukuvezwa esimweni esingenangcindezi se-amniotic sac egcwele uketshezi. Kuphela wukuntuleka kwamandla adingekayo ukunqoba amandla angaphezulu engcindezi ngaphandle kwesibeletso kunqanda ingane ezelwe ekuphendukeni.

Umbungu uya ngokuba matasa ngale sikhathi.

Iminyakazo inganensa noma isheshe, kanye noma iphindaphinde, izenzekele noma iphendule okunye.

Ukujikisa ikhanda, ukwelula umqala, nesandla esithinta ubuso kuya ngokwanda.

Ukuthinta umbungu kudala ukuyaluzisa amehlo, ukunyakaza komhlathi, iminyakazo yokubamba, nokukhomba kwezinzwane.

#### **Chapter 33 Eyelid Fusion**

Phakathi kwamaviki 7 no 8, amajwabu amehlo akhula ngokushesha ngaphezu kwamehlo futhi aya ngokuhlangana.



## **Chapter 34 "Breathing" Motion and Urination**

Yize noma awukho umoya esibelethweni, umbungu uveza iminyakazo yokuphefumula kumaviki awu 8.

Ngale sikhathi, izinso zikhiqiza umchamo ochithwa kwi- amniotic fluid.

Kwimibungu yesilisa, amasende akhulayo aqala ukukhiqiza nokukhipha i-testosterone.

## **Chapter 35 The Limbs and Skin**

Amathambo, amalunga, imisipha, imizwa, nemithambo yegazi yezingalo nemilenze kucishe kufane nokwabadala.

Kumaviki awu 8 isikhumba sangaphandle, siba nezingqimba eziningi, silahlekelwe wukubonakala ngale.

Kumila amashiya ngenkathi kuvela uboya ngaphandle komlomo.

## **Chapter 36 Summary of the First 8 Weeks**

Amaviki awu 8 asho ukuphela kwesikhathi sombungu.

Ngale sikhathi, umbungu womuntu usukhule usuka kwiseli eyodwa waba cishe ngu 1 billion amaseli akha ngaphezu kuka 4,000 izakhiwo ezicacile zomzimba.

Umbungu manje usunezingaphezu kuka 90% izakhiwo ezitholakala kwabadala.

## **The Fetal Period (8 Weeks through Birth)**

### **Chapter 37 9 Weeks: Swallows, Sighs, and Stretches**

Isikhathi somntwana ongakazalwa siqhubeka aze azalwe.

Kumaviki angu 9, kuqala ukuncela isithupha futhi ingane isingayigwinya i-amniotic fluid.

Ingane futhi isingayibamba into, iyise ikhanda phambili nasemuva, ivule ivale imihlathi, inyakazise ulimi, izamule, izelule.

Izamukeli zemizwa ebusweni, ezintendeni zezandla, nasezintendeni zezinyawo ziyezwa ukuthintwa.

"Ukuphendula ukuthintwa kancane entendeni yonyawo," ingane izogobisa inqulu nedolo mhlawumbe nezinzwane.

Amajwabu amehlo manje asevaleke ngci.

Emphinjani, ukuvela kwemisipha yezwi kusho ukuqala kokukhula kwezwi.

Ezinganeni zesifazane, isibeletho siyabonakala futhi amaseli enzalo angavuthiwe, okuthiwa ama-oogonia, ayaphindaphindeka endlaleni yamaqanda.

Izitho zobulili zangaphandle ziyacaca ukuthi eyesilisa noma yesimame.

### **Chapter 38 10 Weeks: Rolls Eyes and Yawns, Fingernails & Fingerprints**

Ukukhula ngesivinini phakathi kwamaviki 9 no 10 kwandisa isisindo somzimba ngo 75%.

Kumaviki awu 10, ukukhuthazwa kwejwabu lesi elingenhla kudala ukugingqikela ezansi kweso.

Ingane iyazamula futhi ivula ivale umlomo kaningi.

Iningi lezingane zincipha isithupha sesokudla.

Izingxenye zethumbu enkabeni zibuyela esiswini.

Ukuqina sekuyenzeka emathanjeni amaningi.

Izinzipho zeminwe nezezinzwane ziqala ukukhula.

Iminyatheliso yeminwe ehlukile ivela kumaviki awu 10 emva kokukhulelwa. Lokhu kungasetshenziselwa ukukhonjwa impilo yonke.

### **Chapter 39 11 Weeks: Absorbs Glucose and Water**

Kumaviki awu 11 ikhala nezindebe sekuphelele. Njenganoma iyiphi enye ingxenye yomzimba, ukubukeka kwako kuzoshintsha esigabeni ngasinye somjikelezo wempilo yomuntu.

Ithumbu liqala ukumunca iglukhozi namanzi okugwinywe yingane.

Yize noma ubulili buqokeka ngesikhathi sokukhulelwa, izitho zobulili zangaphandle manje sezizahlukaniseka njengesilisa noma isimame.

### **Chapter 40 3 to 4 Months (12 to 16 Weeks): Taste Buds, Jaw Motion, Rooting Reflex, Quickening**

Phakathi kuka 11 no 12 amaviki, isisindo sengane sanda cishe ngo 60%.

Amaviki awu 12 abalula ukuphela kwe-trimester yokuqala, noma ingxenye yokuthathu, yokukhulelwa.

Izindlala okuzwa ukudla manje agcwele emlonyeni. Ekuzalweni, amahlumela okudla azosala kuphela olimini nasolwangeni.

Ukukaka kuqala kumaviki awu 12 kuqhubeke cishe amaviki awu 6.

Okokuqala okuphuma ethunjini lengane kuthiwa yi-meconium. Yingxube yama-enzymes okugaya ukudla, amaphrotheni, namaseli afile okukhishwa wumgudu wokugaya ukudla.

Kumaviki awu 12, ubude bezingalo nemilenze kwangenhla sekufike ekugcineni kokuqhathaniswa nomzimba. Izingalo nemilenze kwangezansi kuyaphuza ukufika esilinganisweni sako.

Ngaphandle komhlane nengaphezulu lekhandu, umzimba wonke wengane manje uyakuzwa ukuthintwa kancane.

Ukwehluka kokukhula okuncike ebulilini kuvela ngokokuqala. Isibonelo, izingane zamantombazane ziveza ukunyakaza kwemihlathi kaningi ngaphezu kwezabafana.

Ngokwehlukile ekubalekeni okubonwe ngaphambidlana, ukuthintwa eduze komlomo manje sekudala ukubheka ngasekuthintweni nokuvula umlomo. Lezi zenzo kuthiwa yi "rooting reflex" futhi siyaqhubeka nangemuva kokuzalwa, kusize ingane ezelwe ithole ibele likanina uma incela.

Ubuso buyaqhubeka nokuvuthwa uma ukungena kwamafutha kuqhubeka nokugcwalisa izihlathi futhi kuqala ukumila kwamazinyo.

Kumaviki awu 15, kufika ama-stem cells akha igazi aphindaphindeke emongweni wamathambo. Iningi lokwakheka kwamaseli egazi kuzokwenzeka lapha.

Yize noma ukunyakaza kuqala Kumbungu onamaviki awu 6, owesimame okhulelwe uqala ukuzwa ukunyakaza kombungu phakathi kwamaviki 14 no 18. Ngokwesiko, le sehlakalo kuthiwa wukukhahlela.

#### **Chapter 41 4 to 5 Months (16 to 20 Weeks): Stress Response, Vernix Caseosa, Circadian Rhythms**

Kumaviki awu 16, izinqubo ezibandakanya ukushuthekwa kwenaliti esiswini sengane ziletha ukuxineka kwamahomoni okudedela i-noradrenaline, noma i-norepinephrine, egazini. Izingane ezizelwe nabadala bakhombisa isenzo esifanayo kwizenzo ezisakuhlasela.

Emgudwini wokuphefumula, imithambo emaphashini isicishe iphelele.

Into yokuvikela emhlophe, okuthiwa yi-vernix caseosa, manje isiyemboze ingane. I-vernix ivikela isikhumba kwimiphumela ehluphayo ye-amniotic fluid.

Kusukela kumaviki awu 19 ukunyakaza kwengane, ukuphefumula, nokushaya kwenhliziyo kuqala ukulandela imijikelezo yosuku okuthiwa ama-circadian rhythms.

## **Chapter 42 5 to 6 Months (20 to 24 Weeks): Responds to Sound; Hair and Skin; Age of Viability**

Kumaviki awu 20 i-cochlea, okuyisitho sokulalela, isikhule ngokugcwele ngaphakathi kwesikhule ngokwenele indlebe yangaphakathi. Kusukela manje, ingane isizophendula uhla olukhulayo lwemisindo.

Izinwele ziqala ukumila esikhunjeni sezinwele.

Zonke izingqimba nezakhiwo kwesikhumba sekukhona, kubandakanya izimbobo zoboya nezindlala.

Kumaviki awu 21 kuyaku 22 emva kokukhulelwa, amaphaphu athola ikhono elithile lokuphefumula. Lokhu kuthathwa njengokuzimela ngoba ukuphila ngaphandle kwesibeetho sekunokwenzeka kwezinye izingane. Uchunge olude lobuchwepheshe bodokotela lwenza kukwazeke ukusimamisa izimpilo zezingane ezizalwe ngaphambi kwesikhathi.

## **Chapter 43 6 to 7 Months (24 to 28 Weeks): Blink-Startle; Pupils Respond to Light; Smell and Taste**

Kumaviki awu 24 amajwabu amehlo ayaphinda avuleke futhi ingane ikhombisa ukucwayiza okunokwethuka. Lokhu kuphendula imisindo, yokuphazima kweso kuvame ukufika kuqala enganeni yesilisa.

Abacwaningi abaningana babika ukuthi ukuthola umsindo omkhulu kungayiphatha kabi impilo yengane. Imiphumela yokuphazima kweso ibandakanya ukushaya kwenhliziyo okusheshayo kwesikhathi eside, ingane igwinya ngokweqile, kuvele kushintshe nokuziphatha. Imiphumela yesikhathi eside ingabandakanya ubuthulu.

Izinga lokuphefumula lengane lingakhuphuka lifike kwimijikelezo yokudonsa nokukhipha umoya ewu 44 ngomzuzu.

Engxenyeni yokuthathu yesithathu yokukhulelwa, ukukhula ngamandla kobuchopho kudla ngaphezu kuka 50% wamandla asetshenziswa yingane. Isisindo sobuchopho sanda ngo 400 kuyaku 500%.

Kumaviki awu 26 amehlo akhiqiza izinyembezi.

Ameblo aphenndula ukukhanya emva kuka 27 amaviki. Lokhu kuphendula kulawula umthamo wokukhanya okufika kwi-retina impilo yonke.

Zonke izingxenyane ezidingekayo zekhono lokunuka elisebenzayo sezikhona. Ukucwaningwa kwezingane zangaphambi kwesikhathi ziveza ikhono lokuzwa amaphunga kumaviki awu 26 emva kokukhulelwa.

Ukufaka into ewuswidi kwi-amniotic fluid kwandisa izinga lokugwinya lengane. Ngokwehlukile, ukwehla kokugwinya kwengane kulandela ukufakwa kwento ebabyo. Izimo zobuso eziguqukile zivame ukulandela.

Ngochunge change lweminyakazo yemilenze enjengezinyathelo efana nokuhamba, ingane ishaya ungqimphothwe.

Ingane ibukeka kunciphile ukushwabana uma amafutha amanye engezeka ngaphansi kwesikhumba. Amafutha asemqoka ekugcineni ukushisa komzimba nasekugcineni amandla emva kokuzalwa.

#### **Chapter 44 7 to 8 Months (28 to 32 Weeks): Sound Discrimination, Behavioral States**

Kumaviki awu 28 ingane ingahlukanisa phakathi kwemisindo ephakeme nephansi.

Kumaviki awu 30, iminyakazo yokuphefumula iya ngokwanda futhi yenzeka ku 30 kuyaku 40% wesikhathi enganeni evamile.

Ngezinyanga ezine zokugcina zokukhulelwa, ingane ikhombisa izikhathi zeminyakazo evumelanayo ehlukane yizikhathi zokuphumula. Le zimo zokuziphatha zikhombisa ubuxhakaxhaka obuya ngokwanda bohlelo lwemizwa olusemqoka.

#### **Chapter 45 8 to 9 Months (32 to 36 Weeks): Alveoli Formation, Firm Grasp, Taste Preferences**

Kumaviki cishe awu 32, ama-alveoli eqiniso, noma amaseli angama"phakethe" omoya, aqala ukukhula emaphashini. Azoqhubeka nokwakheka kuze kube 8 iminyaka ingane yazalwa.

Kumaviki awu 35 ingane ibamba ngesandla kuqine.

Ukuvezeka kwengane ezintweni ezahlukene sengathi kunomthelela ekukhetheni okudliwayo emva kokuzalwa. Isibonelo, izingane omama bazo abebedla i-anise, into enika i-licorice ukunambitheka kwayo, zithanda i-anise emva kokuzalwa. Izingane ezingatholananga ne-anise zazingayithandi.

#### **Chapter 46 9 Months to Birth (36 Weeks through Birth)**

Ingane iqalisa ukusikwa ngokudedela ihomoni eningi okuthiwa yi-estrogen bese kuqala ushintsho olusuka esiswini luya ekuzalweni.

Ukusikwa kuba wukufingqeka okunamandla kwesibeletso, okuholela ekuzalweni kwengane.

Kusukela ekukhulelweni kuye ekuzalweni nangale, ukukhula komuntu kuyaguquguquka, kuyaqhubeka, futhi kunzulu. Okusha okutholwayo ngalo luhlelo olubabazekayo kuya ngokuveza umthelela osemqoka wokukhula kwengane esiswini empilweni yempilo yonke.

Ngokuqhubeka kokuqonda kwethu ukukhula komuntu kwasekuqaleni, kuyiqhubeka nekhono lethu lokwenza ngcono impilo - ngaphambi nangemuva kokuzalwa.